Study on Supporting School Innovation Across Europe

Final report
EUROPEAN COMMISSION
Directorate-General for Education, Youth, Sport and Culture
Directorate B – Youth, Education and Erasmus+
Unit B.2 – Schools and multilingualism
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Supporting School Innovation Across Europe

Final Report to DG Education and Culture of the European Commission

Report prepared by PPMI
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Luxembourg: Publications Office of the European Union, 2018

DOI: 10.2766/466312

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Acknowledgements:
The team responsible for this report would like to thank all national experts, interviewees and workshop participants in the regions across Europe where field work was conducted. We are also thankful to the officials from the European Commission, Member States and international organisations who contributed their time and expertise and provided assistance and advice during the research process. We are especially grateful to the 24 schools for their important work in ensuring positive learning experiences for their students and for their agreement to share with us their knowledge and practices. We also gratefully acknowledge the advice and useful comments from the expert panel participants, whose feedback helped to improve and finalise this report.

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Glossary

**Culture of innovation**: The introduction of innovative practices beyond a single classroom requires changes in the whole school culture. It means nurturing a collaborative learning environment that learns from failures and successes, encourages various ideas and translates them into actions to solve specific challenges and better meet different students’ needs. Sustainable innovation requires an effective system of delivery of positive change supported by the right processes, involving constant learning and multi-way feedback between all levels of the education system.

**Decentralisation in education**: refers to the extent to which authority and responsibility has been passed down to local communities and individual schools. Recent trends across some countries in Europe from the 1980s onwards have been towards decentralisation of education systems and increased school autonomy, resulting in local authorities and schools appearing as key actors of education policy.

**Disadvantaged region**: Although the EU policy-making framework does not provide an explicit definition of a ‘disadvantaged region’, it classifies EU regions to identify those that are eligible to specific support (EU regional policy) and monitors the situation of Member States against the EU policy objectives. In the study, NUTS-2 level regions showing low performance in meeting the goals set forth by the Europe 2020 and the ET 2020 strategies should be considered at disadvantage.

**Distributed leadership**: refers to a form of school governance that supports the distribution of different organisational and decision-making responsibilities to other members of the school staff who do not occupy the formal post of school leader, such as members of the school’s management team, and teachers.

**Evaluation of schools**: The evaluation of schools focuses on the activities carried out by school staff without assigning particular responsibilities to individual staff members. It seeks to monitor or improve school quality and/or student results. External evaluation of schools is conducted by evaluators who report to a local, regional or central/top education authority and who are not directly involved in the activities of the school being evaluated. It covers a broad range of school activities, including teaching and learning and/or all aspects of the school management. Internal evaluations are undertaken by persons or groups of persons who are directly involved with the school (such as the school leader or its teaching and administrative staff, and students). It may involve the evaluation of teaching and/or management tasks.

**Formative assessment**: refers to activities undertaken by both teachers and their students providing information to be used as feedback to continually inform the learner and the teacher and modify teaching and learning activities in the classroom. Formative assessment encompasses a variety of tools that provide feedback to teachers and students to help them learn more effectively.

**Horizontal accountability**: refers to accountability measures presupposing non-hierarchical relationships and involving multiple stakeholders at local and regional level with insight into schools’ and teachers’ educational processes, decision-making, implementation and results. Horizontal accountability (or ‘multiple school accountability’) relies on professional school accountability (professional standards for teachers and other educational staff and the creation of professional learning communities) and multiple school accountability (involving students, parents, communities and other stakeholders in formulating strategies, goal setting, decision-making, evaluation and appreciation of educational processes, outputs and outcomes).

**Horizontal connectedness of schools**: refers to the extent to which schools are engaged across areas of knowledge and subjects, and to other stakeholders in their local

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1 This glossary takes the reader through some of the key terms used in the study. It was composed by the core research team based on the literature review.
and wider community (such as local/regional authorities, higher education institutions, NGOs, businesses, cultural organisations) in networks and diverse collaboration activities to meet students’ needs and share resources.

**Instructional leadership:** a form of leadership which focuses on the teaching and learning that takes place in school, providing guidance to the teaching staff so that all students succeed. It can facilitate the establishment of reflective dialogues between teachers, supporting cooperation initiatives to develop new teaching practices, and improve teaching skills.

**Learner-centred approach:** refers to ways of teaching and learning which are centred on the learners. This type of pedagogical approach supports students as active participants in both the learning process and the assessment of learning.

**Parental involvement:** refers to parental attitudes, behaviours or activities happening within or outside the school aimed to support their children’s academic and/or behavioural success.

**Peer assessment:** refers to a form of classroom assessment where students assess the products or performance of their peers (such as writing, oral presentations, portfolios, test performance, or other skilled behaviours) which stimulates reflection, discussion and collaboration.

**Professional learning communities:** groups or networks of teachers within or between schools characterised by cooperation, reflective dialogue, shared vision, a collective focus on learning, reflective inquiry, and ‘de-privatisation’ of practice (involving peer-observation and formative feedback).

**Quality assurance (in school education):** policies, procedures, practices and activities involving planning, implementation, evaluation, reporting, and quality improvement, implemented to ensure that school education (content of programmes, curricula, assessment and validation of learning outcomes, etc.) meets expected quality requirements. Components of quality assurance in school education include teacher appraisal, internal evaluations and self-assessments, standardised pupil assessment and benchmarking, and external evaluation and inspection.

**School accountability:** Accountability can be defined as processes by which actors are obliged to answer, report fairly and accurately and provide reasons to stakeholders for their actions or performance results and/or the actions and performance of their organisation vis-à-vis mandated roles and/or plans. Systems of accountability operate in most school systems to check that the devolution of decision making from national to regional/local authorities and schools themselves is operating efficiently and effectively. School accountability practices include school monitoring (use of student assessments to monitor the schools progress from year to year), school comparison (use of student assessments to compare schools to each other), parent-school comparison (providing aggregated and comparable school results to parents), school leader evaluation (use of school achievement data to evaluate the school leader’s performance), and teacher evaluation (use of student achievement data to evaluate teachers’ performance).

**School autonomy:** refers to types of school policies where governance policies and practices rest with schools and decisions are made by the school leadership (school leader and/or school boards). Granting schools more autonomy over curriculum, the organisation of learning, school practices and organisation or their use of financial resources gives them more opportunities to adapt to their specific needs and local context. When accompanied by adapted accountability measures, greater autonomy for schools can have a positive effect on the quality of education.

**School competition:** refers to the competition between schools on students’ admission. Research evidence shows that school competition does not improve the performance of education systems, and is associated with greater segregation and isolation in the education systems.
School innovation: in this report, it is seen as a multi-level phenomenon. An innovative pedagogy is defined as a teaching practice or approach that is often new to a given context and which can lead to improved students’ outcomes (i.e. which has led to students’ positive cognitive and social development). At school level, innovation is the capacity of schools to embed and sustain innovation in teaching and organisational practices. At education system level, innovation is the capacity of the system to consolidate change and improvement – to promote experimentation, monitor, evaluate, learn from failures, support networking and exchange, as well as design favourable school policies to help embed, tailor and sustain innovation in schools.

School leadership: School leaders encompass the responsibilities of school leadership, management and administration. The concept of school leadership represents the balance between the multiple tasks and roles that school leaders (directors, principals, headmasters, or head teachers) are responsible for, and where authority to lead can be distributed among different people occupying various roles and functions within and beyond the school.

Self-assessment: Student self-assessment is a self-regulatory activity where students observe, analyse and judge their performance based on predefined criteria and determine how they can improve it with the support of their teachers. Self-assessment is an essential component of formative classroom assessment practices. Some self-assessment practices that can be used by students include self-estimation of performance, self-correction, self-rating, or rubric based judgements.

Student engagement: can occur at behavioural level (in rules and classroom norms, learning and academic tasks, extra-curricular activities or school governance), emotional level (affective reactions in the classroom, interests, values, and emotions), and cognitive level (psychological investment in learning, motivation to learn, strategic learning and self-regulation such as self-assessment). Encouraging student engagement implies recognising learners as core participants in the learning process, developing in them an understanding of their own activity as learners.

Teacher leadership: refers to teachers taking on leadership responsibilities outside the classroom while maintaining classroom-based teaching responsibilities. Teacher leaders can lead their school towards greater teacher collaboration, encourage professional learning, disseminate best practices and offer assistance with complex aspects of teaching.

Vertical accountability: refers to ‘top-down’ and hierarchical forms of accountability in school education policy. Vertical school accountability measures are based on the assumption that holding schools accountable for attaining high standards will motivate them to improve their quality. These types of measures rely on regulatory school accountability (compliance with laws and regulations, focus on inputs and processes within the school, reporting mechanism to higher levels of school authority) and school performance accountability (periodic school evaluations including standardised student testing, public reporting of school performance, and rewards or sanctions).

Whole school approach: In this approach, all members of the school community (school leaders, teaching and non-teaching staff, learners, parents and families) together with external stakeholders and the local community (social, youth, health workers, psychologists, local authorities, NGOs, businesses, etc.), cooperate in a process to promote excellence, equity, improve school quality and the achievement of all learners. Additional key elements of a whole school approach include greater flexibility or autonomy of schools, distributed leadership, and whole-school improvement processes (including internal school evaluations).
Executive summary

The success of learners in school and in life is highly dependent on the capacity of education systems to address their diverse needs, and to keep pace with rapid societal and economic changes. To achieve this, education systems must become more flexible and dynamic, employing innovative approaches to learning and teaching, reconsidering the traditional roles and players in education, and opening up to a wider range of stakeholders and communities.

This study seeks to consolidate evidence on the ways in which schools and education systems can embrace innovation and ensure that every child can realise his or her potential. By engaging in discussions with a variety of national stakeholders and looking at inspirational examples of innovative schools that have succeeded in transforming their pedagogical and organisational practices regardless of unfavourable conditions, this study explores what drives and supports sustainable innovation in education.

Why do schools need to innovate?

Numerous innovations analysed in this study, and in the broader literature, demonstrate that new approaches to teaching and school organisation are not only possible, but also effective in creating favourable learning environments and improving academic and social outcomes for learners. A number of inspirational, innovative schools across Europe have broken free from traditional views of schooling, challenging conventional boundaries in terms of time, space, teaching and learning processes. In the process, they have succeeded in engaging with wider communities and put learners at the centre of the education process.

The diversity of the innovative approaches applied by these schools demonstrates the numerous ways in which education can transform not only what but how children learn. This offers great potential to address the persistent problems of inequality in skills and uncertainty as to their future outlook. Flexible, learner-centred teaching methods can help to customise the educational process, allowing teachers to better address the individual needs of each learner and, where necessary, offer timely support. The fast pace of societal and economic change demands that learners are well equipped with the necessary key competences and transversal skills to face uncertainty, be resilient, work collaboratively to solve complex problems, and become active citizens.

Innovation can help to transform teaching and learning practices, enabling the development of the breadth of skills and competences necessary for the future. Innovation can also be perceived as a way to address the problem of productivity in education systems, stimulating more efficient provision. Leveraging the potential of new technological tools can help to transform teaching and learning, making it more interactive, personalised and engaging.

To achieve this transformational change, however, isolated examples of innovative schools are not enough. Education policies must be better engaged as to how and when to adopt innovative approaches in their ongoing efforts to encourage reform of the education system, and to improve its governance and capacity for innovation. The body of knowledge on how students learn best is now much richer than it was when school policies were designed. This knowledge, together with the know-how that stems from multiple examples of innovative schools, could be used as a driver for system-wide change, ensuring that modern schools help each and every learner to grow and succeed.

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2 Annex 2 to the final report provides details on the innovative methodology used in this study.
What do we mean by school innovation?

Although innovation has become a ubiquitous topic in discussions of education policy, the concept remains blurred and elusive in practice. No single definition of innovation exists in terms of school practices and pedagogies. At the core of all definitions, however, stand two distinct features: the novelty aspect of innovation (i.e. pedagogical or school organisational practices that are new in a particular context, or which differ from those practices usually applied); and the potential effectiveness of these new practices or measures (i.e. the new pedagogies or practices should lead to positive student developmental outcomes). These two features distinguish genuine educational innovation from mere reform or change, though these terms are often used interchangeably.

Beyond a few rare exceptions, the introduction of innovative approaches requires fundamental changes in the school culture, rather than simply introducing or changing isolated practices. To succeed, school innovations must be flexible, responsive to local needs, embedded in local contexts and open to their environments. They must also be culturally sensitive and engage multiple stakeholders – there are no ‘one-size-fits-all’ models. In a culture of innovation, the primary goal is to learn, so that the organisation or system as a whole can improve. This means nurturing a collaborative learning environment that learns from failures, encourages various ideas and ways of thinking, and translates them into actions to solve specific challenges and better meet the needs of different students.

Innovation can occur at many different levels. It may range from the continuous improvement of existing pedagogical and organisational practices in a particular classroom or school, to a transformation of the ways in which educational goals are achieved. It may even involve the rethinking of what those goals are, at a systemic level. Innovation can be driven by governments, individual schools or school networks, civil society organisations, or the private sector. Regardless of who drives innovation, to be sustained and scaled up, a culture of innovation must be nurtured at all levels of the education system. School innovation, therefore, needs to be approached as a multi-level phenomenon.

Definition of school innovation

In this study, the definition of innovation has three components:

✓ An innovative pedagogy is a teaching practice or approach that is often new to a given context, and which can lead to improved students’ outcomes (i.e. one which has led to students’ positive cognitive and social development). Innovation should not be confused with the mere introduction of new information and communication technologies in the classroom. In this context, ICT is a tool to enhance teaching and learning, rather than an innovation in itself.

✓ At school level, innovation is the capacity of schools to embed and sustain innovation in teaching and organisational practices. The development of this capacity can often require fundamental changes in the school culture.

✓ At education system level, innovation is the capacity of the system to consolidate change and improvement – to promote experimentation, monitor, evaluate, learn from failures, support networking and exchange, as well as design favourable school policies to help embed, tailor and sustain innovation in schools. This definition recognises that innovation is not simply about a moment of invention, but a continuous learning cycle, which includes several stages and the involvement of many stakeholders, following a long-term vision.
**What drives innovation in schools?**

Our analysis of school innovation success stories reveals many entry points to the process of innovation in schools. Certain conditions must, however, be met to ensure that change is managed effectively, and leads to positive outcomes.

**Supportive and distributed school leadership is the key to successful innovation**

School leaders are a dynamic and influential force in the school community. They can guide schools in creating a culture that initiates and supports innovation – or hinders its progress. Good leadership can ensure a supportive environment for teachers; promote collaborative practices such as peer-learning, mentoring, formative feedback, reflective and inquiry-based practices; and provide relevant opportunities for networking and professional development. Furthermore, innovation is always a team effort. Creating strong leadership teams and encouraging teachers to assume increased responsibilities, engaging in individual or collective initiatives, and building their capacity to take on leadership roles within their particular area of expertise, are all key factors in achieving sustainable innovation.

**Shared vision, strategy and action plan are necessary conditions for effective change**

Evidence indicates that schools which have been successful in transforming their practices tend to set up clear and detailed internal strategies and implementation processes. A shared vision and clear action plans help to structure the implementation process, ensuring the sustainability of school innovations. This begins with identifying the school's needs and agreeing on the way to go, and extends to providing feedback and reflection in the process. Agreeing on a shared vision and a robust set of priorities also helps to instil a sense of commitment and stability among school staff, students, parents and local stakeholders. Innovative schools do not work in isolation. They promote an active role for students, teachers and school leaders, parents and other stakeholders, helping to build a system of horizontal accountability.

**Teachers are key agents of change**

Teachers’ preparedness, commitment and capacity are key factors in ensuring that the proposed changes are implemented effectively. Internal and external training, collaboration and learning opportunities are important elements in supporting the implementation of innovations. These processes collectively focus on achieving success in teaching and learning, and developing innovative mindsets among teachers. Professional learning communities, developed through cooperation initiatives among teaching teams; practice-oriented action research projects; enquiry-based learning; reflective and formative feedback mechanisms – all of these are core enablers, supporting the development of teacher competences, and fostering the innovation process. Teachers can only be agents of change, however, if sufficient time, space and resources are set aside to make these activities part of their everyday practice.

**Innovative schools open up to their communities, and engage in a variety of partnerships**

Creating wider partnerships is an intrinsic feature of innovative schools. In such schools, parents and other local actors are equal partners in the education process. Engaging with parents can be a necessary step to overcoming their potential resistance to changes, stemming from their own past schooling experiences. Schools also need to
draw on the various resources and opportunities provided by other schools, as well as municipalities, teacher education providers, local businesses, civil society organisations and other local stakeholders. Recognising and supporting the horizontal connectedness of schools with their communities is a crucial step towards overcoming school isolation, facilitating different forms of learning, and bringing learning closer to real-life contexts. These help to ensure a sustainable innovation process and horizontal forms of accountability.

**How can innovation become system-wide? Gaps and ways forward**

While it is evident that in all EU countries, individual schools and local communities can drive innovation on their own, innovation is not yet a systemic feature of education policy. Some of the gaps and limitations in the system are not new, and this report serves as an important reminder that they should be acted upon.

Most EU countries commit to some innovation-related goals, but only a few embed school innovation in their education policy strategies, followed up with clear implementation plans.

Evidence shows that education systems still struggle to provide coherent policy support for schools. The policy foundations for the development of innovation-friendly learning systems and innovative school cultures should be reinforced. Although most European countries have committed to some innovation-related policy goals, these tend to have been added to existing structures without fundamentally reviewing the long-standing objectives, established rules and routines of education systems, which can often inhibit school innovation. In the light of changing political priorities, education policies risk continuing to operate in the short term. The inability of education policies to develop a shared vision and strategic thinking that considers national, regional and local priorities, remains a serious challenge in many countries.

Furthermore, innovation goals cannot be implemented effectively in the absence of clear action plans, backed by adequate resources and the capacity to implement them. Inspirational examples of school innovation examined in the study demonstrate the potential of education to become more equitable, of high quality, relevant and efficient. However, coherent policy framework is necessary to achieve transformational, system-wide change.

**Looking ahead**

- Innovation must be explicitly embedded into education policy priorities and strategies. Innovation should be viewed as a means to improve education systems, ensuring positive experiences and development for learners.
- Innovation requires coordinated system-wide change, involving a broad set of actors, looking beyond conventional partners and structures, and promoting open dialogue between them.
- Innovation objectives in school policy should be translated into operational objectives and specific measures, followed up with clear action plans and the resources to implement them.

**Balanced school autonomy, with built-in accountability mechanisms, improves schools’ capacity for innovation**

An increasing emphasis on efficiency and accountability for schools and teachers may discourage them from innovating and experimenting, when there is the expectation of immediate results, and possible sanctions for failure. These factors can lead to tensions between potentially conflicting forces in education governance, such as accountability
and trust, innovation and risk-avoidance. Therefore, it is crucial to build ‘intelligent’ systems of accountability, that will combine both vertical and horizontal accountability. Limited school autonomy can prevent schools from innovating, and may create incentive structures that reward risk-averse behaviour. Greater autonomy can create the conditions to experiment, innovate and develop supporting learning environments. However, autonomy must be accompanied by the necessary support mechanisms to empower schools and build their capacity to innovate.

**Looking ahead**

- Enhancing schools’ autonomy can encourage and stimulate their innovation potential by allowing teachers and school leaders to adapt their curriculum and classroom assessment practices to better suit the needs of learners. More autonomous schools can also hire their own teachers; remunerate and recognise those teachers who undertake extra work; and organise schooling processes in line with their vision of high-quality education (e.g. in terms of lesson duration and location, etc.)
- Horizontal accountability measures need to be established to complement more traditional vertical accountability. These mechanisms must include diverse groups of actors in the governing process at school and at system level,
- A monitoring system needs to be put in place to identify schools that are struggling to mobilise their community for the improvement of teaching and learning. Measures should be put in place to encourage and support educational transformation in these schools, by providing them with the necessary support.
- Education systems should encourage evidence-informed policy experimentation with in-built risk management mechanisms, developing a system that learns from and reflects on both its failures and its successes.

**Policy-makers need to review financial incentives for school innovation**

Grants can help schools that are already innovating, but grants alone are not sufficient to promote innovative pedagogies and school organisation practices. While it is crucial that schools’ basic funding needs are met, one of the main barriers to developing a school’s capacity to innovate often relates to how rather than how much funding is provided. Schools are often restricted in the way they can use available budgets, which limits their opportunities to design strategies for change. A favourable environment for innovation is created when a school’s overall financing and teacher remuneration system allows its leaders sufficient flexibility to allocate resources in a way that supports the development and implementation of innovative practices.

**Looking ahead**

- Policy-makers should review financial incentives for innovation and positive transformation in schools to ensure flexibility and sufficient levels of long-term funding, along with additional funding for networking and collaboration.
- Schools’ efforts to develop or sustain innovation can be encouraged and supported by financial incentives such as rewards or other forms of recognition (e.g. status, additional functions, authority, exchange and learning opportunities)
- Additional financial schemes to support innovation should focus on networks and partnerships of schools and other stakeholders, to scale up innovation across schools and empower them to learn from each other.

**Systems of professional development should better prepare school leaders and teachers for new ways of teaching, learning and school organisation**

Most countries have not yet established extensive systems to prepare school leaders and teachers for new ways of teaching and learning, change management and collaborative practices. Case study evidence demonstrates that one of the main barriers to innovation
is the existence of conservative belief systems and traditional risk-avoiding mindsets among educators and families, rooted in past behaviour and experiences. These can be tackled through effective professional development systems. Although inspirational initiatives and programmes do exist across Europe, they tend to remain ad hoc or may not be available to all schools, in particular those in remote and disadvantaged areas. Schools that manage to succeed in their process of change have often created their own learning communities, and learnt from experience. These schools can become effective training agents for other schools, if such an option is supported and scaled up to system level.

### Looking ahead

- Professional development systems (ITE, induction programmes and CPD) should more systematically incorporate training on new pedagogies (including the potential of ICT), collaboration practices and change management. High-quality school leadership programmes that focus on innovation and change management, should be made available to all school leaders.
- Schools and teacher education need to be better connected through dialogue and partnerships, to bridge the gap between theory and practice.
- More practice-oriented action research projects and learning laboratories should be set up in schools, to test new theory-based approaches to improving pedagogies and organisational practices. Evidence should be fed back into teacher education programmes.

### School partnerships and horizontal interconnectedness with other actors need to be strengthened

The capacity of today’s complex and fragmented education systems to learn and share knowledge is an important enabler for the spreading and sustaining of innovations. There is a lack of system-level mechanisms that encourage and support the transfer of innovation beyond the walls of the institution in which it was developed. Furthermore, current remuneration systems often fail to compensate teachers for the time required to collaborate, conduct research and prepare new materials and approaches. This study identifies the role of municipalities as an especially weak link.

In many countries, local authorities establish and finance schools, but play only a limited role in ensuring the quality of the education provided. Given a greater role in school monitoring, local authorities could act as intermediaries for the implementation of sensible education policies, and could relay bottom-up signals from schools when regional or national policies are failing. Where municipalities are supportive of local school networks and partnerships, they can act as an intrinsic part of local education environments and engage into an open dialogue with relevant stakeholders. This provides strong support for innovative pedagogies and school organisational practices to thrive.

### Looking ahead

- Local authorities can play more active roles in monitoring their school networks and improving the quality of education provision. They should act as brokers for implementing national/regional policies and for bottom-up signals from schools when policies are failing.
- Municipalities should support local school networks and partnerships, and generate discussion and exchange on which schooling practices work, for whom and under what circumstances. Assigning municipal school counsellors and inspectorates to actively engage in dialogue and learning processes with schools has proved to be an effective strategy, helping to identify specific schools’ needs, and enabling them to be supported in the innovation process.
- Education authorities should invest in the development and sustaining of high-quality
networks and platforms for teachers, schools and a variety of other stakeholders to exchange their knowledge and experiences, receive recognition, and collaborate on joint projects at different levels. They also should support schools in networking at European and international level.

Developing a culture of evaluation is key to the success of innovation processes

A wealth of data is collected on the inputs, institutions, processes and outcomes of education systems. However, this data could be better used to identify which education policy initiatives are successful, and to understand the reasons for each initiative’s success or failure. Education systems often lack the capacity to use and interpret the available data effectively. Short-term thinking at policy level, and an increased focus on high-stakes tests to evaluate school performance, can both hamper innovation, as schools are reluctant to engage in processes of change if they are required to show immediate results. Developing a culture of evaluation can be one of the most powerful tools for innovation.

Looking ahead

✓ Education authorities should promote a culture of evaluation by undertaking evaluations of their policy initiatives using the wealth of monitoring data already collected on an education system’s inputs, institutions, processes and outcomes, along with primary research.
✓ Education authorities should pilot school policy initiatives to test innovative ideas on a smaller scale. Evaluation mechanisms should be built into the design of these initiatives to collect hard evidence on performance and areas for improvement.
✓ It is also important to strengthen the capacity of education actors, including schools and policy-makers at all levels, to use and interpret the available monitoring data.
✓ Online knowledge-sharing platforms should be strengthened to better spread inspirational examples of school innovation (that proved to be effective), both nationally and internationally.
1. Introduction

1.1. Introduction to the report and its structure

PPMI is pleased to present the Final Report of the Study on Supporting School Innovation Across Europe. The report is structured as follows:

- **Chapter 1** provides an introduction to the report, including the aims and scope of the study, the operationalisation of the main concepts used, and a summary of the methodological approach;
- **Chapter 2** sets the context of the study, discussing the need and relevance of school innovation and what it means for students’ successful learning;
- **Chapter 3** looks in more detail at specific factors that facilitate or hinder the experimentation and implementation of innovation in schools, supported by illustrations from case studies. The chapter aims to analyse what an innovative school culture is and how schools can promote it against all odds.
- **Chapter 4** looks at the system level. It overviews how school innovation is understood and defined in national education policy agendas across the EU, and discusses current obstacles and policy solutions for promoting innovation across schools and regions. It aims to analyse how education systems can support all schools in nurturing innovative learning environments.
- **Chapter 5** presents our conclusions and recommendations on key steps to promote positive change at all levels of school education systems and to support schools to engage in innovation processes.

Further information is separately attached in the following annexes:

- **Annex 1**: Overview of school innovations analysed during the case study stage. This annex provides a brief overview of the case study schools and of their innovative approaches analysed in this study.
- **Annex 2**: Methodological tools. This annex describes in detail the study’s methodological approach, as well as the research tools employed by the team (policy mapping case study, change workshop guidelines).
- **Annex 3**: 12 case study reports. Each case study report provides a full analysis of the innovation processes in the two schools selected in the region, as well as an analysis of the potential to upscale those innovations to other schools and regions.
- **Annex 4**: 24 school innovation profiles. Each school profile presents a summary of the particular school innovation story: what inspired the innovation processes, what was achieved and what helped and limited schools on the way. All school innovation stories can be found in the database of the European Toolkit for Schools⁴.

1.2. Context, aims and scope of the study

Investing in people, and young people in particular, is a top priority for Europe (European Commission, 2017c). The 2016 Commission Communication on Investing in Europe’s Youth emphasised the importance of opening up new opportunities for young people, with high-quality education playing a key role in their successful development and life chances (European Commission, 2016f). High-quality education underpins inclusive and resilient societies, fosters personal development, and lays a foundation for active citizenship (European Commission, 2017c). However, if European societies are to reap these benefits, high-quality education needs to become a reality for all learners (Ibid).

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The Commission’s reflection papers on Harnessing Globalisation (2017e) and on the Social Dimension of Europe (2017f) highlight that many school education systems struggle to provide high-quality education for all and to respond to the profound and complex changes our societies and economies are undergoing. The OECD’s recent PISA results shows that there are significant disparities in how children perform within and between countries. On average, one in five students in the EU have difficulties in developing sufficient basic skills (reading, mathematics and science) (European Commission, 2016a). Furthermore, there is a need for schools to adapt to the changing context in which they operate, including the digital era and the increasing diversity among pupils. Addressing these challenges requires not only the re-thinking of school curricula, but the introduction of more diverse teaching and learning to address the needs of all learners.

Innovation can play a crucial role in creating opportunities to develop favourable learning environments and flexible approaches to teaching, ensuring that each child can realise his or her potential. Furthermore, the demands on all learners are evolving quickly. Reproducing content knowledge is no longer enough to meet the needs of learners and of society. There is a clear need to enable students to develop their ability to apply their competences in constantly changing environments (see e.g., Camacho & Legare, 2016; Halász & Michel, 2011). In addition to quality learning, contemporary education needs to equip learners with transversal skills such as creativity, critical thinking and problem solving, as well as resilience and the ability to adapt to change (OECD, 2015). This requires different innovative ways of teaching and of organising the learning process (European Parliament, 2015). The Commission’s Communication on Improving and Modernising Education (2016e) calls for the governance of school education systems to promote higher quality, more inclusive, and more relevant, education through sustainable innovation.

In this context, this study seeks to consolidate the existing evidence base on the ways in which schools and education systems can embrace innovation and ensure that every child can realise his or her potential. The body of knowledge on how students learn best and what learning strategies and school practices are the most effective is now much richer than it was when school policies were initially designed. However, innovation is not yet a systemic feature of many education systems (European Commission, 2014b). Schools in many regions still function in isolation and continue to struggle to address rapidly growing diversity and complex classroom realities, as well as persisting socio-economic inequalities. Nevertheless, there are inspirational examples of schools that have managed to break free of traditional organisation of schooling (see Figure 2) and improved the academic and social outcomes for their learners, regardless of the unfavourable socio-economic situation these schools may function in.

This study looks into these schools’ innovation stories and explores what helped them succeed. By engaging in dialogue with education experts and policy stakeholders, the study tries to understand what system changes are necessary to help all schools, and particularly those in disadvantaged regions, to innovate and realise their students’ potential (for details on the methodological approach and selections of regions and schools, see Section 1.4. and Annex 2).

More specifically, the study aims to:

- Analyse what the selected schools are doing to better serve the diverse needs of their students and to become more innovative and succeed, despite whatever unfavourable socio-economic situation they may find themselves in;
- Explore existing school innovation stories across Europe and understand what makes their success possible regardless of unfavourable external conditions;
- Consolidate the evidence on system-level factors that support or inhibit innovation processes in schools across different contexts;
• Develop concrete conclusions and recommendations on how schools and education systems as a whole can promote sustainable innovation.

The study examines policies and initiatives aimed at strengthening school capacities for enabling positive change, mainstreaming and sustaining innovation at primary and secondary educational levels (ISCED 1-3) in the 28 EU Member States. The study also seeks to integrate inspirational examples of school innovation policies from the US, Canada, Australia, the BRICS countries, Japan and Singapore, with the aim to bring additional perspectives and lessons from beyond Europe. However, since the countries included in the analysis are very diverse in terms of education system realities and structures, the examples and contexts brought up in this report often come from different levels of governance (national, regional, local) and therefore, may not be representative of the whole country, especially in the case of federal states. Therefore, when referring to specific structures and policies, we acknowledge the governance level and context it is coming from, providing generalisations only if appropriate.

1.3. Methodology: summary and limitations

To address the study’s scope and objectives to the fullest, the proposed methodological approach consisted of multiple steps and involved consultation with numerous stakeholders at the national and European level at different stages of the project (see Figure 1 below). Each stage of the study complemented and informed the others and was carefully designed to ensure the smooth progression of the overall study and rigour of the data collected. The short description of research activities at each stage is provided in the table below. A more detailed explanation of the process, as well as the research tools designed for this study, are provided in Annex 2 to the current report.

Figure 1. Research process

Source: compiled by PPMI.

As the main focus of the study was school innovation, the proposed methodology also aimed to integrate certain innovative elements. The main distinct, but also challenging, steps of the study included:
Conceptualising ‘innovative’ vs ‘traditional’ pedagogies and school organisational practices. Definitions were one of the major challenges of the research process, as what can be understood to be ‘innovative’ can vary significantly across and within countries (see also Section 4.1.1.). Calls for constant changes and reforms in education systems, as well as challenges in measuring concrete outcomes of the implemented changes, cause numerous debates in the area of educational innovation.

Therefore, an important element of our work was to identify definitions used in the literature and to produce a working definition of ‘innovative’ to be employed when carrying out the rest of the research (see the working definition adopted for this study in Section 1.4.). The research team based its understanding on the idea that new approaches to teaching and school organisation would change the specifics of students’ involvement in the learning process from a passive to an active one; would reconsider power relationships in the classroom and outside school; and would open learning and teaching to wider actors and stakeholders (see e.g. Hattie, 2009). Some of the differences between ‘innovative’ and ‘traditional’ approaches to learning, stemming from the literature review, are outlined in the table below.

Table 1. Examples of traditional and innovative approaches to learning

<table>
<thead>
<tr>
<th>Traditional approaches to learning vs. Innovative approaches to learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the learner</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Teacher-centred, learner is a listener</td>
</tr>
<tr>
<td>Role of the teacher</td>
</tr>
<tr>
<td>Facilitator, mentor, counsellor</td>
</tr>
<tr>
<td>Organisation of the classroom</td>
</tr>
<tr>
<td>Big group, individual work, teacher-student interaction</td>
</tr>
<tr>
<td>Teaching approaches</td>
</tr>
<tr>
<td>Direct instruction, rote learning, content is given without context</td>
</tr>
<tr>
<td>Assessment</td>
</tr>
<tr>
<td>Standardised summative assessments, grades</td>
</tr>
<tr>
<td>Focus of curricula</td>
</tr>
<tr>
<td>Emphasis on academic skills in traditional core areas, measured objectively</td>
</tr>
<tr>
<td>School environment</td>
</tr>
<tr>
<td>School as an isolated learning institution,</td>
</tr>
</tbody>
</table>
hierarchy relationships, limited parental engagement teams, professional learning communities, parents and other stakeholders are active partners in learning and teaching

Source: compiled by PPMI based on the literature review.

This report, however, by no means intends to prescribe certain ways of teaching and school organisation, and the examples of innovative approaches outlined in the figure above are far from being exhaustive. There is a rich body of knowledge on the proven methods and practices that can be used in different contexts and adjusted to local needs, which promote a learner-centred approach and empower schools to improve the learning experiences of their students. The schools analysed in this project are a good example of the variety of approaches school communities could apply to improve students’ learning outcomes and adjust them to their local needs and structures. Details on the specific innovations practised in the selected schools are provided in Annex 1 and Annex 3 to the present report.

- **Conceptualising disadvantaged regions and selecting schools for in-depth analysis.** One of the key stages of the study was the selection of regions and schools for case study analysis. The assumption was that affluent regions would naturally have more schools demonstrating good results. Therefore, it was particularly interesting and innovative to research less better-off regions, exploring what makes some schools succeed in contexts with fewer resources and less support. Empowering other schools to ensure that they grow the necessary capacity for innovation (in terms of these key drivers) would help achieve system-wide change.

Taking into account the operationalisation of the concept of ‘disadvantaged region’ in the literature, as well as the overall availability of harmonised statistical data, the research team decided to use the EU policy-making perspective for defining disadvantaged regions. Although the EU policy-making framework does not provide an explicit definition of a ‘disadvantaged region’, it does classify EU regions according to whether they are eligible for specific support (EU regional policy) or to monitor the situation of Member States against EU policy objectives (i.e. targets defined by the Europe 2020 strategy or benchmarks defined by the EU framework for cooperation in education and training – ET 2020). The project team made the assumption that regions showing low performance in meeting the goals set forth by the Europe 2020 and the ET 2020 strategies should be considered as being at a disadvantage (see the detailed methodology for the selection of the regions in Annex 2).

Cluster analysis of statistical indicators, complemented with qualitative analysis of education system characteristics and policy reforms in different EU Member States, allowed selecting 12 NUTS-2 level regions for further in-depth analysis. It is important to note that the size and the policy weight of the selected NUTS-2 regions differs significantly (for instance due to their small size, entire countries are considered NUTS-2 level regions (e.g. Estonia or Lithuania), while larger countries would have their local administrative units classified as NUTS-2 level regions (e.g. Berlin in Germany). These differences had certain implications for the comparative analysis: in some cases, the analysis refers to the regional level only (e.g. in Germany or Spain), while in other cases it includes the national level.

Once the regions were selected, the next step was to identify two innovative schools for field work in each region. The research team aimed to study regular

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5 See further: http://ec.europa.eu/eurostat/web/nuts (Accessed 01.12.2017). The research team chose the NUTS-2 classification due to the availability of statistical data (there are very few statistical indicators available for NUTS-3 level regions).
public schools\textsuperscript{6}, which managed to ‘break free’ from traditional views of schooling and improve their students’ outcomes and learning experiences, regardless of low regional averages. The strategy for school selection was based on interviews with relevant regional stakeholders, as well as experts’ opinions (see Table 1 below for the final list of schools included in the analysis). The willingness and availability of schools to cooperate was also an important factor for the final selection. It should be noted that the research team is fully aware of the potential bias in the applied selection strategy, and it by no means intends to undermine the important work which other schools that were not selected for this research project are doing for their students and communities.

Table 2. The list of schools selected for the field work

<table>
<thead>
<tr>
<th>Country</th>
<th>School and its location</th>
<th>School and its location</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>Vežice primary and lower secondary school, Rijeka</td>
<td>Vyturys progymnasium (primary and lower secondary school),</td>
<td>Lithuania</td>
</tr>
<tr>
<td></td>
<td>Zadar primary and lower secondary school, Zadar county</td>
<td>Panevėžys progymnasium (primary and lower secondary school),</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Wolfgang-Borchert secondary school, Berlin</td>
<td>De Tjotter pre-primary and primary school, Lelystad, Flevoland</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Friedenauer community school (primary and lower secondary)</td>
<td>Warande pre-primary and primary school, Lelystad, Flevoland</td>
<td>The Netherlands</td>
</tr>
<tr>
<td>Greece</td>
<td>4th Primary School of Thiva, Viotia County</td>
<td>Scoala Gimnaziă “I. L. Caragiale” (Early childhood, primary and lower secondary school), Tulcea</td>
<td>Romania</td>
</tr>
<tr>
<td></td>
<td>2nd Primary School of Aliartos, Viotia County</td>
<td>Colegiul Economic Buzău (upper secondary vocational school), Buzău</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>Kiviõli I. Keskkool (primary and secondary), Kiviõli</td>
<td>Clara Campoamor pre-primary and primary School (CEIP), nearby Granada</td>
<td>Spain</td>
</tr>
<tr>
<td></td>
<td>Jõgevamaa Gümmaasium (upper secondary school), Jõgeva</td>
<td>Sierra Nevada Primary School, nearby Granada</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>Nyitott Ajtó / Open Door (primary and secondary school), Miskolc</td>
<td>Centralskolan (lower secondary school), Arvika</td>
<td>Sweden</td>
</tr>
<tr>
<td></td>
<td>IV. Bela Primary and lower secondary school, Hejőkeresztőr</td>
<td>Kyrkebyskolan (lower secondary school), Arvika</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>I.C. Ugo Foscolo comprehensive school (primary and lower secondary), Taormina, Sicily</td>
<td>President Kennedy School and Community College (secondary school), Holbrooks, Coventry</td>
<td>UK</td>
</tr>
<tr>
<td></td>
<td>Papa Giovanni XXIII comprehensive school (primary and lower secondary), Acireale, Catania, Sicily</td>
<td>Willenhall Community Primary School, Coventry</td>
<td></td>
</tr>
</tbody>
</table>

Although the study looked at both primary and secondary schools and at a variety of innovative approaches schools implement depending on the age of

\textsuperscript{6} Private schools or alternative schools (e.g., Waldorf schools) were not considered for analysis.
their students, the ISCED\(^7\) level did not stand out as an important factor when analysing key drivers of change in these schools and the overall system barriers or enablers supporting school transformation. Therefore, the analysis in the final report does not distinguish between the levels of education, though that might be an interesting angle to look at in more in-depth future studies.

- **Facilitating intra-system dialogue via change workshops.** In order to triangulate the data and inspire the process of change at the regional or national level, the study team with the help of country experts aimed to conduct change workshops in each of the 12 selected regions. On the one hand, the workshops helped to validate the case study results and add additional perspectives from a wider group of stakeholders (practitioners, experts, policymakers) on the system gaps preventing wider transformations. On the other hand, the workshops set an ambitious goal to inspire partnerships and further actions to overcome these gaps and promote change at the policy level. The design and format of the proposed workshops had a high potential to facilitate intra-system dialogue (see Annex 2 for more details on the methodology and workshop guidelines\(^8\)). However, a single workshop conducted in the context of this study is hardly enough to promote system-wide change. Nevertheless, in a number of regions the workshops inspired stakeholders to continue dialogue in the suggested format and have had a series of follow-up events scheduled to discuss challenges and design action plans to address them.

### Table 3. Short description of methodological stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Short description</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Inception</strong></td>
<td>During the inception phase, the research team finalised the methodology and analytical framework, revised research questions, and developed draft research tools.</td>
<td>January - February 2016</td>
</tr>
<tr>
<td><strong>2. Literature and policy review</strong></td>
<td>The first step of the research was to conduct national or regional (in the case of federal countries) policy and research reviews in 39 countries: 28 EU Member States and 11 countries outside the EU. The reviews were conducted by national experts based on detailed guidelines and an extensive questionnaire prepared by the core team. The results of the national policy and research reviews fed into the selection process of 12 regions for the subsequent case studies. Findings from this stage also fed into the analysis of system factors supporting or hindering school innovation.</td>
<td>March - July 2016</td>
</tr>
<tr>
<td><strong>3. Interviews with experts and stakeholders</strong></td>
<td>Once the 12 regions were confirmed, the interview programme was implemented in each region by the respective national experts. The programme consisted of three or four semi-structured interviews with national education experts and key education policymakers at the national and regional level. The interview programme helped to identify 24 innovative schools (two per region) for the case study stage.</td>
<td>August - October 2016</td>
</tr>
<tr>
<td><strong>4. Case studies in</strong></td>
<td>The main aim of the field visits in 24 schools was to study the process of innovation in a particular school and understand</td>
<td>November 2016 -</td>
</tr>
</tbody>
</table>

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\(^8\) The workshop methodology can be easily replicated in other regions and countries and used as a technique to inspire intra-system dialogue.
24 schools what helped them succeed, as well as which barriers the schools faced on the way. The field visit methodology included interviews with school staff and other stakeholders, depending on the nature of the innovations studied, focus groups and school visits.

5. Change workshops
Change workshops represented the last phase of the case study process. The main objectives of the workshops were to validate the results of the case studies with the participating schools, other local schools, and relevant education stakeholders; discuss potential steps forward to overcome the identified barriers and improve the transferability of school innovations into different contexts; promote dialogue and cooperation among participating stakeholders and inspire further partnerships to encourage and sustain school innovation. The workshops were organised by the national experts following detailed guidelines prepared by the core team and the results of the pilot change workshop conducted by the core team in Lithuania in early March.

6. Comparative analysis
The comparative policy analysis brought together the evidence from all of the research tasks. It aimed to reveal what drives change in schools and what makes some schools succeed, against all odds, as well as what are the current barriers and policy solutions to promote and sustain innovation across schools in Europe.

7. Prospective analysis
This stage of the study aimed at consolidating the evidence base in order to develop key conclusions and recommendations. The prospective analysis took the form of an expert seminar, which involved renowned experts in education innovation and school governance, coming from academia, international organisations and NGOs. The seminar was extremely useful for validating the study results, as well as for fine-tuning and shaping study conclusions and recommendations.

Source: compiled by PPMI.

1.4. Key terms and concepts
School innovation
Despite the fact that educational innovation has become a ubiquitous topic in policy discussions, the concept still remains blurred and elusive in practice (Smith, 2009). There is no single definition of innovation in terms of school practices and pedagogies. The OECD (2014) refers to innovative school organisation as the implementation of newly applied practices that can affect students directly (e.g. through the provision of special programmes) and/or indirectly (e.g. through new organisational and human resource management practices and new ways of engagement with parents and the community).

Béchard (2000) defines pedagogical innovation as a change which is an intentional action that aims to introduce something original into a given context. This change is also pedagogical as it seeks to substantially improve students’ learning in a situation of interaction and interactivity. Kozma and Anderson (2002) understand pedagogical innovation as new pedagogical practices which are emerging in schools and which
involve changes in teachers’ and students’ behaviour during the teaching and learning process. In this light, pedagogical innovation should not be associated only with the introduction of new technological tools into the learning and teaching process. Although information and communication technologies (ICTs) undoubtedly bring much potential in improving teaching and learning, they do not constitute innovations in themselves if their usage does not lead to the transformation of the teaching philosophy (Tondeur et al., 2008).

To define innovation at the organisational (school) level, an ecological approach is often used. The European Commission (2015a) refers to a ‘whole school approach’ which looks at the school as a multidimensional and interactive system that can learn and change, an open learning hub which provides support to its neighbourhood and receives support from the community. Key conditions for a whole school approach to be implemented effectively cluster around five thematic areas that interact with each other: school governance; learner support; teachers, parental and family involvement; and the involvement of other stakeholders. Similarly, the OECD (2015a) emphasises the importance of mutually beneficial relationships between schools and their environments for innovation to be sustained. The authors describe school innovation as any dynamic transformation towards the creation of innovative learning environments or innovative ‘learning ecosystems’ (OECD, 2015a).

In this light, it is important to distinguish school innovation from mere reform and change, though these terms are often used interchangeably. The central element of innovation is not only the implementation of something new, but of something that also brings positive change and improved outcomes (OECD, 2017a). Therefore, definitions place an emphasis on the novel aspect of innovation (i.e. the teaching/learning form should be new in a particular setting, context or situation, and differ from typically applied practices) and on the potential effectiveness of the measure/policy (i.e. the new pedagogy or practice should lead to positive student developmental outcomes).

However, one needs to take into account the elusive nature of improved outcomes. The OECD (2017a) suggests that the perception of improvement can depend on the perspectives of the stakeholders, cultural values and policy priorities and goals. Therefore, when measuring the effects of innovation in education, it is important to link them to specific social and educational objectives such as learning outcomes, equity, public satisfaction at different levels, and according to different stakeholders’ perspectives.

On the other hand, innovating or trying something new often implies a risk of failure. Traditional governance approaches which seek to minimise risk and penalise failures do not provide an adequate environment for innovation to foster (Burns & Köster, 2016). Therefore, encouraging innovation in education systems while promoting accountability systems that seek to minimise risk and error is a difficult tension many countries face (Brown & Osborne, 2013). Burns and Köster (2016) suggest that risk-taking and the possibility of failure should always be considered as an intrinsic part of educational innovation, which needs to be effectively managed through experimentation with inbuilt transparent risk analysis processes or by developing a governance system that can learn from failures.
Box 1. Defining school innovation in this study

In this study, the definition of innovation focuses on three levels:

✓ An innovative pedagogy is defined as a teaching practice or approach that is often new to a given context and which can lead to improved students’ outcomes (i.e. which has led to students’ positive cognitive and social development). Innovation should not be confused with the mere introduction of new information and communication technologies in the classroom. In this context, ICT is a tool to enhance teaching and learning, rather than an innovation in itself.

✓ At school level, innovation is the capacity of schools to embed and sustain innovation in teaching and organisational practices. The development of this capacity often requires fundamental changes in the school culture.

✓ At education system level, innovation is the capacity of the system to consolidate change and improvement – to promote experimentation, monitor, evaluate, learn from failures, support networking and exchange, as well as design favourable school policies to help embed, tailor and sustain innovation in schools. This definition recognises that innovation is not simply about a moment of invention, but a continuous learning cycle which includes several stages and the involvement of many stakeholders, and which may not always bring visible results in the short-term.

Source: compiled by PPMI based on literature review.

The vast majority of innovations that we observed and analysed during the field work focus on changing the teaching and learning process by using more interactive and collaborative learning approaches. They frequently involve cooperation with a variety of stakeholders during their implementation, such as researchers, policymakers, civil society groups, or businesses (see Annex 1 for more details). The innovative pedagogies and school organisation practices analysed can be divided into two main forms of transformations:

- What children learn, emphasising the need of schooling to focus on a variety of skills (both academic competences and transversal skills, such as ICT literacy and STEM\(^9\) interdisciplinary approaches (e.g. in case study 1, Croatia), debate skills (e.g. in case study 6, Italy), social competences (e.g. in case study 7, Lithuania), entrepreneurship skills (e.g. in case study 9, Romania), or reading literacy (e.g. in case study 11, Sweden).

- How children learn, emphasising the need of schooling to be interesting and engaging, making room for interactive and experiential learning. Our case studies cover a variety of pedagogical approaches, such as project-based learning (e.g. schools in case studies 1 – Croatia; 3 – Germany; 10 – Spain; 12 – UK), service-learning (e.g. schools in case study 4 – Greece), flipped classrooms, informal learning (e.g. schools in case studies 4 – Greece; 5 – Hungary; 6 – Italy; 9 – Romania), inter-grade learning (e.g. schools in case study 3, Germany), integrated multidisciplinary teaching (e.g. schools in case study 2, Estonia), peer-learning (e.g. schools in case study 5, Hungary), individual achievement tracking (e.g. schools in case study 7, Lithuania), and collaborative learning (e.g. schools in case study 12, UK).

- A few cases also looked at the broader transformation of the school environment as a way to improve learning, such as the reorganisation of the school timetable (e.g. schools in case study 2, Estonia), developing school multi-professional teams and distributive forms of school governance (e.g. schools in case studies 8 – Netherlands; 12 – UK), and opening up schools to local communities (e.g. schools in case studies 10 – Spain; 5 – Hungary).

\(^9\) Science, technology, engineering and mathematics.
Innovation can happen at many different levels. It may range from the continuous improvement of existing pedagogical practices in a particular classroom or school to the transformation of how we achieve educational goals or rethink what those goals are at the system level (Burns & Köster, 2016; European Commission, 2016b). Innovation can be driven by governments, individual schools or school networks, civil society organisations or by the private sector (Winthrop et al., 2017). However, regardless of who the main driver of the innovation is, for it to be sustained and scaled up there is a need for a culture of innovation to be nurtured.

Culture of innovation
The introduction of innovative approaches beyond one single classroom often requires fundamental changes in the school culture, rather than simply adding or changing isolated practices. To succeed, school innovations need to be flexible and responsive to societal needs, culturally sensitive and embedded in particular local contexts – as there are no one-size-fits-all models (Oosterlynck, 2016). A close link between schools and their environment allows them to better adapt to specific local circumstances (European Commission, 2016e). Creating sustainable partnerships with a broad range of stakeholders can help schools create a culture of innovation and learning (European Commission, 2017b). However, schools might face many barriers that hinder the implementation of innovation, such as the lack of financial and human resources, inadequate collaborative learning environments, unfavourable working conditions for teachers, lack of support for teacher self-reflection and collaboration, and lack of flexibility within the school hierarchy (Hargreaves & Fullan, 2012; OECD, 2015; Winthrop et al., 2017).

Nurturing a culture of innovation does not necessarily imply to engage in a constant process of change and transformation, nor to merely equip school classrooms with new technologies, which may simply reproduce traditional methods and pedagogies in a different form if not accompanied by genuine changes in teaching and school organisation (OECD, 2017a). In a culture of innovation, the primary goal is to learn so that the organisation or the system as a whole can improve. It means nurturing a collaborative learning environment that learns from failures, encourages various ideas and ways of thinking and translates them into actions to solve specific challenges and better meet different students’ needs (Duty & Kern, 2014; OECD, 2017a).

Kools and Stroll (2016) emphasise that it is not only the schools that need to nurture a culture of innovation, but systems as a whole. Opening up schools to local and regional economies is crucial for sustainable innovation (OECD, 2017a). New governance arrangements and trust, giving stakeholders more legitimacy to play an active role, mutual feedback processes across levels, and horizontal accountability, can help nurture a culture of innovation at multiple levels and develop a system of learning and innovation.

Learning and innovation system
The way individual schools function is influenced by the design of the education system and by national/regional policies. The degree to which schools can develop, embed and sustain innovation as well as continue to develop a range of effective approaches, depends on the broader system of governance as much as on the culture and context of each school. For example, factors such as the degree of autonomy granted to schools, working conditions, the functioning of monitoring and evaluation mechanisms and the way they contribute to system learning, the quality and effectiveness of teachers’ and school leaders’ education, have a strong influence on how the majority of schools operate (European Commission, 2014a). The OECD (2015) further highlights that conventional frameworks, where policy is mainly set by the government and then implemented vertically by local authorities and schools and where other organisations are considered as mere extensions to the arrangements set by the governments, are no longer
adequate. Learning systems extend well beyond schools, and innovation means looking beyond conventional partners and structures. The ET 2020 Working Group on Schools’ report on ‘Teachers and school leaders in schools as learning organisations’ highlights that education as a learning system is an open system that provides opportunities to engage multiple stakeholders as a part of the process (European Commission, 2017b).

Therefore, for a culture of innovation to be sustainable, it needs to be embedded in all levels (vertically) and elements (horizontally) of the school education system. Multi-level school innovation also implies that promoting and supporting innovative practices at school might be influenced by ‘higher-level’ policy level factors. For example, the EU priorities (e.g. articulated in the Europe 2020 strategy and ET 2020 strategic framework) or global policy trends (e.g. communicated via the United Nations channels – UNICEF, World Bank, OHCHR etc.) might affect national/regional school education systems and their approach towards innovation.

Learning system also means improved connectivity between all its elements. For innovations to be sustained in schools, they need to be embraced and legitimised by all the key actors of an education system. Innovation also needs to be recognised as relevant to all components of school education, including in policy frameworks and curricula, accountability and monitoring systems, school governance, teacher education systems, and effective funding schemes, among others (European Commission, 2014b). All this entails that we should be thinking of learning systems where schools are part of an interdependent and interconnected combinations of stakeholders and partners, strengthening their horizontal connectedness. Such systems encourage and support many sources (both at the local and system levels) and directions of positive transformations embedded in regional or national contexts (see Figure 3 below).

**Figure 2. System of learning and innovation**

Source: adapted from OECD (2016c) and Kools & Stoll (2016).
Burns and Köster (2016) highlight that the core element of the system of learning and innovation are not the structures of government, but rather the processes that underlie governance. In fact, they argue that there is no right or wrong mode of governance. Nearly any governance structure, be it fully centralised to almost completely decentralised, can be successful in its education reforms and transformations if the processes that underpin these structures are favourable and well aligned and if all key stakeholders are working in partnerships (Ibid.). In decentralised systems, for instance, the central level can still remain important in driving and steering change, by providing the strategic vision needed for the effective delivery of reforms as well as equitable access and outcomes for all students (Burns et al., 2016).

Such a strategic vision, as well as an agreement of the whole system on how to get there, are important in explaining certain reforms and developments. Our policy reviews across European countries discovered large differences in the ways countries approach innovation and in the existing education paradigms and processes that underlie these policies and practices (see Section 4.1.1.). These differences need to be taken into account when explaining the current capacities of education systems to become learning and innovative ones and to ensure sustainable innovation.

**Sustainable innovation**

Sustainable innovation requires an effective system of delivery of positive change supported by the right processes, which involves constant learning and multi-way feedback between all levels of the education system. Analysing and learning from current successes and failures can generate innovative ideas and practices, as well as suggest more effective methods of developing, scaling-up and sustaining those ideas.

As already mentioned, there is no single pathway to innovation. It can be driven by civil society both in community and school settings, by schools themselves or by governments. However, innovations need to engage all the actors and elements of the system to become sustainable and embedded in the education process, helping to improve learning outcomes for all students. Education systems need to provide conducive environments for effective innovation to thrive and be scaled up (Winthrop et al., 2017). Therefore, constant learning and the resulting positive change need to be promoted at both school and system level simultaneously.

The model below explains these closely inter-linked dynamic cycles of innovation in school education:

- Development of innovative approaches in schools; and
- Promotion of systemic change.

These are inter-related and strongly-connected ‘logical steps’ towards sustainable innovation in school education. These cycles of innovation should be seen as part of iterative and coherent learning systems that promote learning at multiple levels (CISCO, 2011; OECD, 2017a).
This model describes an ideal continuous innovation process that encompasses and summarises the following crucial elements ('conditions') necessary for developing an innovative culture at school and system level:

- Innovation in school is likely to be sustainable if schools first understand their needs for particular change and improvements in their pedagogies and organisational practices, and then design innovations relevant for their particular context. This process needs to be open, coherent and evidence-informed; however, it will often involve an element of experimentation too (see above). The school then needs to develop a shared vision and strategy on where to go and how to get there (Burns & Köster, 2016), that is, on how to pilot, embed, tailor and sustain effective innovative pedagogies and organisational practices. As illustrated in Figure 1 above, schools need to become learning organisations that are closely linked to other stakeholders (such as governments, civil society organisations and the private sector), and that integrates feedback and reflections on innovation experimentation and implementation. This may support them to further improve their practices and approaches, with the ultimate aim of improving students’ learning and developmental outcomes.

- Simultaneously, schools are a part of broader local, regional and national systems with which they need to function in synergy and collaboration. Innovation cannot be sustained when schools operate in isolation. The broader systems within which schools operate have to become ‘learning systems’, with inbuilt mechanisms of reflection on current systemic gaps and that can learn from failures and successes, which can identify directions for further improvements. Such systems promote effective policy planning, based on careful gap analysis and informed by evidence, and develop a long-term vision and goals for system improvement. Furthermore, such systems consistently implement these goals, provide favourable conditions and environments for schools to innovate, and encourage open dialogue, networking and collaboration, both vertically and horizontally. However, the involvement of a broader range of stakeholders only
works when there is a strategic vision and set of processes to harness their ideas and input (Burns & Köster, 2016). Last but not least, positive system change can occur only when there are inbuilt systems of feedback and monitoring, ensuring that the system learns from its processes to strive for further improvements. Policies should support and encourage multiple pathways to innovate and scale up in organic ways, i.e. by promoting context-sensitive policies and the flexibility of schools to choose the new approaches that are most effective for their needs and priorities (Brečko et al., 2014).

Finally, both cycles of school innovation are strongly interconnected – school communities and policymakers need to continuously interact and learn from each other to ensure a constant improvement of learning and organisational processes.
2. Why innovation in education?

This chapter sets the context of the study. Based on a review of the literature and case study examples, it discusses the relevance and potential of school innovation to improve the quality of education provision and students’ learning outcomes. It also examines the role of school innovation in tackling inequality, providing equal educational opportunities, social cohesion, and a favourable school climate for learning. Finally, this chapter provides a reflection on the way education systems should effectively leverage the potential of innovation to increase the efficiency of education systems, as well as the quality and equity of school education and foster students’ engagement and holistic development.

High-quality education is the basis for inclusive and resilient societies. It lays the foundation for a successful professional career and can serve as a safeguard against unemployment and poverty. It fosters personal development and lays the grounds for active citizenship. However, for societies to harvest these benefits, high-quality education needs to be a reality for all learners, irrespective of their background (European Commission, 2017d).

In its 2012 Communication ‘Rethinking Education: Investing in skills for better socio-economic outcomes’, the European Commission recognised that education should become more relevant to the needs of pupils and the labour market, and called for a fundamental shift in education, with more focus on ‘learning outcomes’ - the knowledge, skills and competences that pupils acquire (European Commission, 2012). Accordingly, it expressed the need to reform education systems in three areas: quality, accessibility and funding. The new priority areas for the ET 2020 strategic framework outlined in the 2015 Joint Report of the Council and the Commission reiterated this message and called for further action in promoting:

- Relevant and high-quality knowledge, skills and competences developed throughout lifelong learning, focusing on learning outcomes for employability, innovation, active citizenship and well-being;
- Inclusive education, equality, equity, non-discrimination and the promotion of civic competences;
- Open and innovative education and training, including by fully embracing the digital era;
- Strong support for teachers, trainers, school leaders and other educational staff;
- Transparency and recognition of skills and qualifications to facilitate learning and labour mobility;
- Sustainable investment, quality and efficiency of education and training systems.

The European Commission’s 2016 Communication on ‘Improving and Modernising Education’ further called for innovation in school education. It is essential for education systems to establish close links between schools and their environment, and to use the potential of ICT in education, in order to improve innovation in classrooms through new didactic methodologies such as the use of digital media, collaboration, bottom-up practices and shared creation of content (European Commission, 2016e). The Communication noted that these reforms must be supported by empowering teachers and school leaders, as they are crucial in providing high quality teaching. The 2017 Communication on ‘School development and excellent teaching for a great start in life’ emphasised that for education reforms to bring positive change, there is also a need for improving the governance of school education systems so that they become more effective, equitable and efficient (European Commission, 2017c).

Even though there are numerous examples of innovation happening in schools and education systems across Europe, there is a need for more effort and commitment from education systems to develop policies for driving and upscaling innovation. While the
usage of active pedagogies such as individualisation, group work and joint teaching have seen a gradual increase, ‘traditional’ pedagogies (see Figure 1 above) are still prevalent in many EU Member States (European Commission, 2014b). In 2013, only a quarter of school children in Europe were taught by digitally-confident teachers (European Commission, 2013). Furthermore, across OECD countries, an average of two-thirds of teachers consider the school where they work to be an environment that is not encouraging innovation, and less than half of surveyed teachers used collaborative methods of instruction, according to 2008 TALIS10 survey results (OECD, 2009). The subsequent edition of TALIS (2013) revealed that although some schools were taking steps to implement organisational innovations, particularly in teacher collaboration and peer-learning, the level and nature of these practices was not uniform and did not yet happen systematically (OECD, 2014b).

Despite these overwhelming tendencies, the numerous innovations analysed in this study and in the broader literature demonstrate that new approaches to teaching and school organisation are not only possible, but also effective, in creating favourable learning environments and improving academic and social outcomes for all learners. The diversity of the innovative approaches applied by these schools (see Annex 1) demonstrates the myriad ways in which education can transform what and how children learn. This offers great potential to address the persistent problems of inequality in skills and uncertainty as to their future outlook. Flexible, learner-centred teaching methods can help to customise the educational process, allowing teachers to better address the individual needs of each learner and, where necessary, offer timely support.

The fast pace of societal and economic change demands that learners are well equipped with the necessary key competences and transversal skills11 to face uncertainty, be resilient, work collaboratively to solve complex problems, and become active citizens. School innovation can offer creative solutions and empower teachers, school leaders and local communities to address these new challenges and make sure that all learners grow and succeed.

2.1. Improving students’ learning outcomes and the quality of education provision

Educational innovation can help achieve better academic outcomes and increase the overall quality of education. The improvement of education systems to provide quality education for all - and foster a broader culture of innovation in society at large - remains among the central objectives of the EU agenda.

Although the EU is home to some of the best performing school systems in the world, recent results from PISA12 and PIAAC13 surveys revealed significant achievement gaps among students both within and between countries. On average, one in five students have difficulties in developing sufficient basic skills (in reading, mathematics and science) (European Commission, 2016a). In this context, the quality of education is widely perceived as a crucial condition both for students’ lifelong learning experience and for their holistic development as individuals.

There is a shared vision among policymakers that education systems need to support schools to be nurturing learning environments where students have equal opportunities to achieve their full potential. In this regard, transformations to the way learning is organised, and re-thinking teaching methods, could help customise the education process and address the individual challenges that children may face in their learning and which prevent them from succeeding academically. Much evidence suggests that effective innovative pedagogies can help transform schools into professional learning communities and positively affect student learning (see e.g. Vieluf et al., 2012).

Our case study analysis supports this finding and demonstrates that innovations helped to improve overall school learning environments and collaboration ties with stakeholders outside schools, such as the relationship with parents and local communities (e.g. at the Friedenauer community school in Berlin – case study 3, Germany; and the Open Door school in Miskolc – case study 5, Hungary). Furthermore, a consistent innovation in one particular element or class can lead to a gradual change within a school, as in the case of Sweden, where the collaborative learning and reading strategies first implemented in language classes were also transferred to science subjects (see e.g. at the Centraskolan and Kyrkebyskolan in Arvika – case study 11, Sweden).

Furthermore, the case study analysis suggests that innovation results in positive external recognition of schools, as well as improving school performance and image, which in turn encourages more support and guidance from external stakeholders, including policymakers (see examples in Box 2 below).

**Box 2. Examples of positive effects of innovations for schools**

**In England (UK),** as a result of school curricula innovation, the Willenhall Primary School rose from being adjudged ‘Satisfactory’ in 2008 to ‘Outstanding’ in all categories in 2013. The school was then able to support Whitmore Park Primary School in its progress from being a ‘failing school’ in 2013 to ‘Good with outstanding leadership’ in 2015 (case study 12, UK).

Similarly, in Lithuania (case study 7, Lithuania), the Panevėžys ‘Vyturio’ progymnasium turned from a disadvantaged school in the 1990s into a school with the second-best results in national tests, especially in social sciences. In 2015, the school received the award of ‘Good School 2015’\(^\text{14}\). The Lithuanian National Agency for School Evaluation (NASE) led quality assessment procedures and the ‘Vyturio’ progymnasium stood out in a number of aspects such as school activities directed at personal growth valued by students and parents; high yearly grades; use of diagnostic tests and test take-up; assessment of school’s microclimate; the quality of socially-oriented preventive programmes; educational orientation of the events; adaptation of educational spaces to learning; lesson organisation meeting students’ and parents’ expectations; financed project applications; performance quality, and more.\(^\text{15}\)

The Jõgevamaa Gymnasium in Estonia (case study 2, Estonia) witnessed within the first year of operating a considerable increase in school ranking based on state graduation exams. In spring 2016, Tallinn University carried out a study of 38 schools in Estonia, which showed that the students of the Jõgevamaa Gymnasium experienced the least problems with homework overload. This could be related to the 75-minute lessons and the school’s guideline of getting as much work done during school hours as possible so that students do not have an excessive amount of homework. Another study conducted by the foundation ‘Innove’ showed that the overall satisfaction level of students with their school and teachers was well above national average.

Source: compile by PPMI based on case studies.

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Furthermore, initiating innovation processes, either in pedagogical or school organisation practices, has a positive impact on teacher professional capacity (see also section 3.3.). This can be considered as both a driving force and an outcome of innovation, based on the perceptions and discussions of stakeholders during the case study stage. More specifically, interviewees and focus group participants underlined that particular curriculum-related or methodological innovations helped to improve teacher competences in specific subject areas (e.g. at the Wolfgang-Borchert-School in Berlin – case study 3, Germany); assessment methods and competence diagnosis (e.g. at the 4th Primary School of Thiva – case study 4, Greece); communication competences (e.g. at the Colegiul Economic Buzău – case study 9, Romania); and attitudes and teaching confidence (e.g. at the Salduvės progymnasium in Šiauliai – case study 7, Lithuania). Furthermore, school innovation can help address the low visibility of teachers’ work and their isolation in highly fragmented classroom arrangements, as well as the low level of engagement of other stakeholders (OECD, 2017a).

There is no available evidence to prove direct causality between innovative teaching approaches and student outcomes, and most of the case study schools did not conduct evaluations to measure the results of the innovations they introduced. However, the broader research suggests that certain types or elements of innovative pedagogies and school practices are particularly effective in terms of bringing positive outcomes in students’ academic achievement, dealing with diverse classrooms, and fostering holistic development.

Evidence shows that schools that manage to improve students’ performance bring innovations into their organisational practices: setting high goals for academic success; using time more productively; ensuring a secure and orderly school environment; conducting monitoring and self-evaluation more frequently to become deeply knowledgeable about the status of their students’ performance; making use of formative assessments; collectively reviewing evidence on good instruction; planning resources adequately; and improving leadership and engaging students fully in the learning process (Calvo et al., 2015; Roelande et al., 2012). These pedagogies and practices have the potential to engage all students, not just those who are already highly motivated to learn within and outside the classroom (Fullan & Langworthy, 2014).

When talking about innovative pedagogies, the research literature indicates that quality of teaching is the closest factor to the learner in achieving learning improvement in formal settings (OECD, 2014c). The quality of instructional or teaching practices applied by teachers in classrooms consistently predict the level of students’ learning outcomes (Soto Calvo et al., 2015). Therefore, the application of innovative approaches to instruction and the curriculum tends to have considerable positive effects on children’s learning outcomes. For example, Hattie (2012) found that eight out of the ten most important variables for students’ achievement are related to teaching practices such as feedback, instructional quality, direct instruction, remediation, class environment, peer tutoring, and mastery learning. Boonen et al. (2013) found that practices involving teaching estimation (i.e. the evaluation practices used to assess students) were positively related to mathematics achievement. Spending time on instruction and dividing students into homogenous reading groups were positively related to reading and spelling achievement (Ibid.).

The body of knowledge on how students learn best is now much richer than it was when school policies were designed. This knowledge, together with the know-how that stems from multiple examples of innovative schools, could be used as a driver for system-wide change, ensuring that modern schools help each and every learner to grow and succeed.
2.2. Enhancing equity in access and participation of different learner groups in education

Education occupies a special place in the inequality debate. Differences in educational attainment and status are important markers of inequality. In turn, unequal educational opportunities potentially weaken social cohesion and, especially, social mobility (European commission, 2017d).

PISA data reveal that educational achievements greatly depend on pupils’ family background, socio-economic and migration status (OECD, 2016e). On average, students coming from vulnerable groups tend to have worse education outcomes than their peers. In some cases, education systems aggravate their situation by providing unequal access to quality education and challenging transition experiences (in particular in the systems that practice early tracking) (Ruhose & Schwerdt, 2016). One’s place of residence significantly impacts educational opportunities and outcomes: pupils coming from wealthy neighbourhoods, cities, regions and countries tend to stay in education longer and reach higher levels of qualification than their poorer peers (Ballas et al., 2012).

Migrant pupils, who are often over-represented among socio-economically disadvantaged groups, face additional challenges in schools. Education system factors such as the age at which pupils start school, the transition between levels of education, and the availability of language support, play a significant role in determining these children’s learning experiences (Crul at al., 2012). European education systems also struggle to provide inclusive education for pupils with special needs. Inflexible and standardised curricula, grade retention, and suspension from school, all affect pupils with learning difficulties and foster discrimination (Riddel, 2012). Another dimension of inclusiveness is that schools must be safe places for teachers and pupils. Four percent of pupils, roughly one per class, report that they are hit or pushed around by other students (OECD, 2016e). Evidence shows that bullying, cyberbullying, discrimination, exclusion and violence negatively affect performance at school (Ibid.).

There is a shared vision among education policymakers that systems need to support schools in becoming nurturing inclusive and safe learning environments where pupils have equal opportunities to achieve their full potential, regardless of their background. The European Commission 2016 Communication on ‘Improving and Modernising Education’ stresses that high-quality education for all “is a foundation for social cohesion and an open society”, as well as for lifelong personal, social and professional development. High-quality education is also “one of the most effective ways to address socio-economic inequalities” (European Commission, 2016e, p. 2).

Promoting innovation in schools can help tackle an unfavourable school climate, violence and bullying, a learning environment in which learners do not feel respected or valued, and insufficient learner support, all of which often negatively affect learners’ performance and participation in the education process (see e.g., Budaginaite et al., 2016; Hattie, 2009; OECD, 2016a; van Driel et al., 2016). For vulnerable students, teacher preparedness, attitudes and teaching methods play an important role. Research suggests that an active learner-centred approach, continuous formative assessment (OECD, 2013b) and interactive learning strategies (Hammond, 2003; van Driel et al., 2016) bring about a positive impact on students’ academic achievement; together they foster students’ holistic development, add to social cohesion through better inclusion in education, and utilise the learning opportunities offered by diversity. Effective innovative pedagogical approaches could help to transform schools into inclusive learning communities and positively affect children’s learning process (Fullan & Langworthy, 2014; Vieluf et al., 2012). Furthermore, the OECD (2014c) found that education systems that have innovated the most are also the most equitable in terms of students’ learning outcomes.
2.3. Nurturing the development of competences and skills crucial for future societies

The nature of knowledge and the role of educational institutions are rapidly changing. Globalisation and the associated economic, social and cultural changes, as well as the rapid advancement of ICTs, have been fundamentally altering the way people live, work and learn (Busca Donet et al., 2017; Takayama, 2013). Learning objectives are no longer the exclusive domain of the skills associated with an academic discipline and specific subject knowledge. Education is expected to develop individuals' abilities to deal with problems and complex demands, mobilising psycho-social resources, knowledge, skills and attitudes previously acquired in learning situations similar to the contexts which they will come across in their daily professional or academic lives (Tiana et al., 2011). In a series of reports on skills in the workforce, the World Economic Forum stressed the magnitude of these changing skills demands, noting that “on average, by 2020, more than a third of the desired core skill sets of most occupations will be comprised of skills that are not yet considered crucial to the job today” (World Economic Forum, 2016, p. 3). However, the pace of change in society – from technological innovation to global interconnectedness – is fast-evolving compared to the pace of change in school systems (Winthrop et al., 2017).

At the same time, as previously mentioned, there are still too many children in Europe who do not acquire sufficient levels of basic skills, along with transversal competences (see Section 2.1.). These young people are likely to face significant, lifelong obstacles to social inclusion and employability in the fast-changing world. For schools, this requires a change in the way learning happens, such as by linking learning with real-life experience and making it more individualised to ensure that all children manage to acquire basic skills. The European Commission is currently revising the 2006 Recommendation on key competences for lifelong learning16, which defined eight key competences combining the knowledge, skills and attitudes necessary for personal fulfilment, active citizenship, social inclusion and employment in the 21st century. They include both ‘traditional’ and primarily cognitive competences (such as mathematical competence) and cross-curricular, non-traditional competences (such as digital competence, learning to learn, etc.) and transversal skills, such as problem solving, risk assessment, initiative taking, critical thinking, etc. This revision process aims to update the original key competences and to help more people acquire the core set of skills necessary to work and live in the 21st century’s knowledge-based societies.

In 1996, the UNESCO report Learning: The Treasure Within called for a re-orientation of school education, suggesting that learning should be about “how to be, how to do, how to know, and how to live together”. This implied a broader learning experience than traditionally understood, encouraging not only the development of individual cognitive-intellectual competences, but also transversal skills, and calling for more collaborative learning and teaching experiences. In this light, education is not simply about learning 21st century skills in isolation from doing, nor is it about acquiring basic skills and knowledge out of context, but rather about collaborative learning through reflection in action and on action (Fullan & Langworthy, 2014). Fullan and Langworthy also refer to this changing role of learning as “deep learning”, the goals of which is to provide students with competences and dispositions necessary to become “creative, connected, and collaborative life-long problem solvers and healthy, holistic human beings” (Ibid., p. 2). The ongoing revision of the EU Framework on Key Competences for Lifelong Learning17 specifically calls for promoting entrepreneurial and innovation-oriented mindsets and skills, and developing resilience and the ability to adapt to change.

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Lingard and Mills (2007) propose new ways of reforming pedagogical practices, in which knowledge is seen as integrated across a range of subject areas, where there is connectedness in the sense that an activity or task is linked to competencies or contexts beyond the classroom, and where practices are problem based with a focus on identifying and solving intellectual and/or real-world problems. In addition, Fullan and Scott (2014) emphasise that in a deep learning process, teachers and other education staff as well as stakeholders beyond classrooms become proactive learning partners and brokers between and among students, other teachers and high-quality learning resources worldwide. In this context, access to others is supported by new digital developments so that “learning becomes learning with anyone, anytime, anyplace” (Fullan & Scott, 2014, p. 7).

Evidence demonstrates that school innovation can help develop key competences necessary for the 21st century, which include ‘traditional’ as well as horizontal skills (Fullan & Scott, 2014). The case study analysis supports this evidence and demonstrates a large range of learning outcomes that innovations helped to achieve. However, the analysis also reveals that the available evaluation of specific measures and change processes is limited, and it is often difficult to identify the direct impact of the innovations. The positive results reported are based on participants’ perceptions and informal feedback, as well as on anecdotal evidence coming from the interviews conducted during the case studies (see Box 3 below for more detailed examples).

**Box 3. Effects of innovations for students**

In Croatia, the primary school Vežice (case study 1, Croatia) focused on the introduction of digital technologies into teaching and learning processes and transformed itself into an ‘iSchool’. The effects of using tablets at school were investigated and evaluated in cooperation with the Faculty of Philosophy of Rijeka. As stated by the school principal, “the results demonstrated that students were better motivated for learning, and slightly improved their school achievements. Students were more cooperative in building the teacher-student relationship, and teachers were more open to students in the sense of acknowledging their potentially better knowledge on ICT technologies, which resulted in students being praised for skills they have acquired in their leisure time.” Based on the teachers’ statements from the focus group, “the implementation of the Edmodo [online educational platform] offered space for students who are more anxious and ‘closed’ to open up in an unconventional way, in a virtual community”.

At the Wolfgang-Borchert-Schule (case study 3, Germany), there were also many positive achievements observed. Through the different measures of innovation that have been implemented by the school, teachers and school staff observed that students feel more motivated to come to school and feel more welcome. In the ‘Young people as researchers’ (Jugend forscht) project, teachers observed that the participating students gained self-confidence and autonomy, and developed entrepreneurial aspirations through the scientific work and the success that they accomplished. Many students join the project again after the first year of participation and motivate others to participate in it as well. As for the effects of ‘practical learning’ introduced in the school, it has been observed that students gain more self-confidence to interact with employers and adults in general, they work more independently and develop more autonomy and responsibility through the independent working style. Through frequent presentations, considerable improvements in presentation skills can be observed. Overall, students as well as teachers are more engaged and gained more satisfaction and comfort with the learning and teaching process because both are able to respond to individual interests and needs.
due to the method's flexibility. It is remarkable that most students of ‘practical learning’ pass their final exams with good results even though they have many fewer school-based lessons than do students of regular classes.

Source: compiled by PPMI based on case studies.

New pedagogies demand sophisticated pedagogical capacities, requiring expertise across a repertoire of different teaching strategies and continuous evaluation of where students are in their learning progressions (Fullan & Langworthy, 2014). Similarly, more is expected from students who need to build their confidence, as they are urged to learn through personal motivation and self-assessment. Ultimately, these pedagogies foster a new kind of learning that is more engaging and more connected to real life and that better prepares young people for life and work in the contemporary and future world (Ibid.).

Currently, the inability of education systems to keep up with rapid changes and expectations affects students interest, motivation and engagement in the learning process, which is directly linked with their academic performance (Gallup, 2013; Mehta, 2013). Students’ level of engagement or disengagement with school is largely dependent on the degree to which their needs for competences, autonomy and belonging are fulfilled (OECD, 2017d). This calls for schools to innovate and develop as learning communities, partnering with a variety of stakeholders beyond formal education settings, to be able to provide well-rounded student development which is directly linked to real-life contexts.

2.4. Increasing the efficiency and productivity of education policies

Appropriate funding is essential for the good performance of education systems: although increasing resources does not, on its own, significantly improve education systems’ performance, the level of spending on education does affect educational outcomes, in particular of children and young people from disadvantaged backgrounds, as it can reduce socio-economic differences between pupils from poorer and more affluent families (Hanushek & Woessmann, 2015).

In the years following the economic crisis (between 2010 and 2014), there was a general increase in the resources invested in education in many countries (OECD, 2017c; European Commission, 2017d). However, as indicated earlier, recent PISA results did not show improvements in test scores across the EU, but rather the contrary (European Commission, 2016a). The 2017 Communication on ‘School development and excellent teaching for a great start in life’ (European Commission, 2017c) highlights that making the best use of limited resources to enhance the performance of all students is of critical importance. PISA surveys show that effective educational outcomes cannot be achieved if financing falls below a minimum level.

Strengthening cooperation between education and economic policy areas can improve the evidence-base and generate consensus about ‘what works’ in education investment. Challenges include investments in infrastructure, including digital infrastructure and connectivity, as well as in human capital (Ibid.). For instance, although there is growing investment in the ‘digitalisation’ of schools, it has not yet been possible to associate the increased availability of computers in schools with improvements in learning outcomes; this would suggest that schools and education systems as a whole have not been effective in “leveraging the potential of technology” (OECD, 2017a, p. 54).

It is widely accepted that technology can be a powerful tool for innovation and can help increase the efficiency of education systems, as well as the quality and equity of school education and school engagement, by making learning more interesting and exciting. However, for this to happen there is a need for a smart use of technology accompanied by a re-thinking of teaching and learning organisation processes at their core (OECD, 2017a). The mere presence of technology is not yet an innovation in itself. Much of the technological investments in schools have been made based on the assumption that
technology-mediated learning environments provide opportunities for students to search for and analyse information, solve problems, communicate and collaborate, and hence equip them with a set of competencies to be competitive in the 21st century marketplace (Lime et al., 2013). However, practice suggests that in many cases, unprepared and pressured educators tend to abandon technology that does not fit within the social organisation of schooling (Cuban, 2005; Lime, 2007). In this respect, it is not enough just to install computers in classrooms. Rather, the process of technology integration is a dynamic one, involving interacting factors and re-designing both educational philosophy and the teaching process (Tondeur et al., 2008).

The emerging education industry is developing on a global scale, offering various kinds of products and services to schools, most markedly in the field of education technology, education resources, textbooks and various kinds of support services, all of which have great potential to support and enable pedagogical innovations and innovative organisation practices in schools. Research suggests that the following are further enhanced by the smart use of technology: when schools and teachers take an active learner-centred approach, build on continuous formative assessment, and include collaborative tasks and partnerships between and among teachers, students, businesses, community groups and families. The enhancements brought about by technology bring positive outcomes in academic achievement, in dealing with diverse classrooms, and in fostering holistic development (see e.g., Cachia et al., 2010; Fullan & Langworthy, 2014). These efforts need to be further supported by effective governance and sustainable investment by defining clear responsibilities for funding and empowering schools for democratic change (European Commission, 2017c).

### 2.5. Key findings

Based on the review above, the following key issues can be highlighted:

- Recent PISA results demonstrate that there are still too many children across Europe who do not have sufficient level of basic skills (in maths, science and reading). Furthermore, ensuring equity remains a formidable challenge for European education systems, as students from disadvantaged background fare worse in educational attainment and learning outcomes than their better-off peers.

- The fast pace of societal and economic change demands that learners are well equipped with the necessary key competences and transversal skills to face uncertainty, be resilient, work collaboratively to solve complex problems, and become active citizens.

- School innovation can offer creative solutions and empower teachers, school leaders and local communities to address these challenges and improve learners’ experiences and outcomes.

- Innovation can also be perceived as a way to address the problem of productivity in education systems, stimulating more efficient provision and sustainable investment. Leveraging the potential of new technological tools can help to transform teaching and learning, making it more interactive and personalised.

- Numerous examples of innovation happening in schools and education systems across Europe demonstrate that new approaches to teaching and school organisation are not only possible, but also effective in creating favourable learning environments and improving academic and social outcomes for learners.

- The body of knowledge on how students learn best is now much richer than it was when school policies were initially designed. This knowledge, together with the know-how stemming from multiple innovations already implemented in schools across the world, could be used as a driver for system-wide change, ensuring that modern schools help each and every learner to grow and succeed.
3. What drives innovation in schools?

Supported by evidence from case studies, this chapter examines the specific factors that facilitate the experimentation and implementation of innovation in schools, including the role of school leadership, a shared school vision, teachers and professional learning communities, student engagement, and external partnerships. It analyses the constituting elements of an ‘innovative school culture’ and the way schools can promote innovation against the odds, including socio-economically disadvantaged environments and imperfect education policies.

Although many EU Member States still lack consistent policy foundations to support systematic school innovation, evidence exists for the potential of innovation to thrive. School communities in a variety of contexts have succeeded in transforming their learning environments and improving the well-being and performance of their students. The following sections analyse the internal factors that drive change within schools, drawing on evidence provided by the 12 case studies conducted for this project. These factors are indispensable to, and sometimes outcomes of, the processes of innovation.

As discussed above, school innovation is a multi-level phenomenon that is influenced by factors at all levels of the education system. Schools are the central actors in the process of implementing innovative pedagogies and organisational practices, and are the main mediators between other stakeholders participating in the development of innovative learning environments.

As described in our hypothetical model (see Figure 3) and validated by the case study analysis, there are five key steps the process of innovation at school level. These steps do not constitute a rigid and linear process, but instead represent multiple entry points to, and key stages in, the process of innovation in schools.

- **Understanding students’ needs** is often the first step that a school undertakes before introducing changes to its pedagogical or organisational practices. Many factors can lead schools to innovate, but an initial internal reflection and analysis based on the needs of the children and the school, their successes and failures, or a genuine desire to do things differently, can effectively ignite change in the organisation (e.g. schools in case studies 7 – Lithuania and 10 – Spain).

- **Developing a shared vision and strategy in schools** implies the building of a pedagogical and/or organisational approach to innovation focused on enhancing the learning experiences and outcomes of all students. This approach is built around and supported by teaching and learning objectives and an implementation strategy. Creating and agreeing on a vision for teaching and learning also implies support for experimentation with innovative pedagogies and practices backed by theory, experience or training (as seen in case studies 4 – Greece; 5 – Hungary; 7 – Lithuania; 12 – UK). A shared vision and strategy is the outcome of a process supported by a school’s leaders and teaching staff, as well as parents and local stakeholders in a ‘whole school approach’. Several case study examples demonstrated that this step is crucial for the implementation of innovations in schools and helps to instil a sense of commitment and motivation for success within the whole school (see section 3.2. below).

- **Experimentation and implementation.** Experimenting with an innovative practice for a short period before implementing it throughout the school can be a decisive step as it may decide the future of a specific innovation at the school. Successful experimentation depends on a shared vision, as well as corresponding objectives and implementation strategies, plus structured feedback, monitoring and self-evaluation mechanisms involving other stakeholders at school and community level such as students, teaching staff and parents (e.g. in case studies 6 – Italy and 7 – Lithuania). The capacity to experiment also implies that innovation can
happen when schools are supported in taking risks and are able to learn from potential failures.

- **Feedback and reflection** is a necessary step in each change process, as it helps schools and education systems to monitor and evaluate the effectiveness of innovations implemented, and to understand where further improvements are needed. Case studies provide multiple examples of reflection on the process of change: through regular internal feedback, self-evaluations and/or quality assurance initiatives (e.g. schools in case studies 3 – Germany; 2 – Greece; 7 – Lithuania; 9 – Romania; 12 – UK; 11 – Sweden), involving students, teachers and/or parents (e.g. in case studies 2 – Greece and 6 – Italy), or based on the monitoring of standardised test results (e.g. in case study 8, the Netherlands).

- **Sustaining innovation in schools** implies that the innovations experimented with are integrated into the teaching and learning process, leading to a genuine culture of innovation throughout the whole school. Whether an innovation that has been implemented is sustainable can be observed by the way it is integrated in the school culture, and by the extent to which students, school staff, parents and local stakeholders are positive about the quality of the improvement brought to the learning environment (e.g. in case study 2, Estonia).

This chapter examines the key drivers at school level that enable the promotion, experimentation and sustainable implementation of innovative pedagogies and school organisation practices. Our analysis of school innovation success stories reveals many entry points to the process of innovation in schools. Certain conditions must, however, be met to ensure that change is managed effectively and leads to positive outcomes. First, innovation will not be possible without key agents of change. Most often, these are school leaders and teachers, though sometimes change can be inspired by students themselves, or by wider school communities. Most importantly, however, the processes within schools that connect the key actors with a shared vision and meaningful reflective practices, are the ones that drive innovation with schools and help to implement sustainable change.

These factors can represent both drivers and elements in, or outcomes of, the innovation process. For example, the introduction of a collaborative teaching method may lead to the development of a professional learning community and may foster a culture of positive formative feedback within a school. In this case, professional learning communities constitute both drivers and outcomes of the innovative process.

This chapter delves into these complexities, analysing the findings from our extensive policy and literature review, interview data and case studies.

### 3.1. School leadership

#### 3.1.1. Effective school leadership for innovation

Research evidence and the case studies show that school leadership plays a crucial role in supporting the promotion, experimentation and sustainable implementation of pedagogical and organisational innovations in schools. We understand this concept as encompassing school leadership, management and administration, defining the balance between the multiple tasks and roles for which school leaders (directors, principals, or head teachers) are responsible (Pont et al., 2008). School leadership is a broad concept “where authority to lead does not reside only in one person, but can be distributed among different people within and beyond the school (...) occupying various roles and functions such as principals, deputy and assistant principals, leadership teams, school governing boards and school-level staff involved in leadership tasks” (Ibid., p. 18).

School leaders are a dynamic and influential force in the school community. They can guide schools in creating a culture that initiates and supports innovation – or that hinders its progress (Bocconi et al., 2012). Instructional leadership (which focuses on the
teaching and learning that takes place in school and provides guidance to teachers so that all of their students succeed) can facilitate the establishment of reflective dialogues between teachers. These dialogues support cooperation in developing new teaching practices and in improving their teaching skills (OECD, 2016b; Schleicher, 2015). Effective school leadership can positively affect student achievement, teaching quality, staff motivation and self-confidence (European Commission, 2017d; Schleicher, 2015). School leaders play a crucial role in facilitating a supportive environment for teachers, promoting collaborative practices within and between schools such as teacher peer-learning, mentoring and formative feedback, as well as reflective and inquiry-based practices. They also help to provide relevant professional development opportunities (European Commission, 2015a).

School leaders also play a key role in initiating and orchestrating innovations by introducing and monitoring changes, providing adequate resources and infrastructures, challenging misconceptions and conservative thinking, as well as taking opportunities to build partnerships with external stakeholders (Bocconi et al., 2012). Evidence from the case studies reveals the importance of two main elements relating to school leadership: the preparation of successful leaders and the implementation of a distributed form of leadership in schools.

### 3.1.2. Preparation of school leaders

School leaders occupy a key position in developing and implementing change, including whole-school approaches involving external partners (European Commission, 2015a). The initial preparation of education professionals for senior management positions, and their continuous professional development, are essential to ensure the quality and success of school leadership. School leaders who participate in professional development activities in instructional leadership notably tend to be more engaged in this type of leadership in their schools, and are more likely to ensure that a school environment is safe and conducive to learning, as well as ensuring that teachers’ efforts are focused on instruction and on improving their own practice, which can support the implementation of innovations (OECD, 2016b; Schleicher, 2015).

Leadership development programmes at initial level; at teacher level; for leader candidates; at induction; or at CPD level, may all help to support the implementation of innovations in schools and classrooms. School leaders should be appropriately selected, prepared, and supported through relevant leadership development opportunities at all stages of their careers (European Commission, 2015a; Pont et al., 2008). While it is essential to provide comprehensive programmes at initial and CPD level on effective and innovative school management at system level (see Section 4.4 and examples in Box 4 below), evidence from the case studies shows that preparing school leaders for innovation can also happen at school level, such as through informal mentoring and continuous training programmes.

**Box 4. Case study examples of training for school leaders supporting the innovation process at school**

The school leader’s individual initiatives were one of the key success factors in supporting the implementation of innovations at the President Kennedy School in the West Midlands (case study 12, UK). He was well read in the educational development literature, and had trained as an inspector at the British Office for Standards in Education, Children’s Services and Skills (Ofsted). He had found an SSAT (Schools, Students and Teachers Network) course for ‘aspiring head teachers’ very useful in helping him to think about vision and about how to hold teachers accountable.

The personal training experience of the head teacher from the Salduvės progymnasium in Šiauliai (case study 7, Lithuania) proved to have an important impact on the school’s innovative approach. Her Master’s degree in educational leadership inspired her to orient the school towards children’s holistic development and education in
Many school leaders from the schools we analysed often found additional training opportunities themselves, and did not undergo specific initial training related to innovation in education. Most of these school leaders had a strong vision and desire to change their schools, which was a driving force to find learning opportunities through self-education, peer-learning, or leadership courses offered by higher education institutions or civil society organisations.

### 3.1.3. Distributed leadership

Distributed leadership refers to a form of school governance that supports the distribution of different organisational and decision-making responsibilities to other members of the school staff who do not occupy the formal post of school leader, such as members of the school’s management team, vice-school leaders, and teachers (Schleicher, 2015). Effective school leaders can be defined by their ability to work in a team and to mobilise the school community (Bagdonė, 2015). Formally or informally organised distributed leadership can improve school outcomes (Pont et al., 2008) and enhance the participation of students and families in school life and in formal and informal decision-making processes.

Implementing a distributed leadership model in schools “requires developing a reflective practice and sharing tasks and responsibilities across the entire school community” (European Commission, 2015a, p. 10). ‘Learning leadership’, which is integral with the endeavour of innovation and drives the design of learning environments, “should not be reduced to the qualities of individuals as it is essentially social and interactive” (OECD, 2017b, p. 64). Innovation is always a team effort.

Distributed forms of leadership in schools encourage teaching staff to “take on leading roles in a particular area of expertise, assume responsibility and take initiatives as individuals or groups” (European Commission, 2015a, p. 10). Moreover, it promotes “teamwork, multi-disciplinary and professional collaboration among teaching and non-teaching staff, other stakeholders, professionals and services” (Ibid.).

Thematic working groups of teachers and other educational professionals within schools based on a distributed form of leadership can be effective tools to implement innovative practices. In most European countries, school leadership is shared among formal leadership teams. However, innovative practices remain scarce (European Commission/EACEA/Eurydice, 2013). Across OECD countries, while school leaders still exert the greatest share of the discretion and responsibilities available at school level (e.g. in budget formulation and allocation, and to a lesser extent in personnel management), some others (e.g. student policies and curriculum) are distributed to vice-, deputy and assistant leaders, and teachers (Pont et al., 2008). Teachers can exercise leadership roles and responsibilities in different areas of school organisation, responsible for teams, curriculum areas, or creating internal collaboration initiatives, which can support the implementation of innovations in schools.

Distributed school leadership is one of the most crucial conditions for high quality teaching practices that can foster innovation, with trust and positive working relationships, adequate resources, school safety and discipline (Isac et al., 2015). Distributed leadership increases teachers’ ownership of and commitment to their work, and encourages them to implement new practices of collaboration (European Parliament, 2015). In general, a high level of teacher (and school) autonomy tends to support the capacity of educational staff to innovate (European Commission, 2016b). A higher degree of distributed participation and responsibility in decision making at school also leads to increased teacher satisfaction levels (European Commission/EACEA/Eurydice, 2015a). Assigning responsibilities among the school staff is a factor to support high quality leadership to develop throughout schools. Pont et al. (2008, p. 74) note that “this
requires recognition through incentives and rewards as well as appropriate support structures”. Moreover, distributed forms of school leadership among teachers and school staff can represent one of the outcomes of innovative and collaborative school practices.

Evidence from case studies shows that distributed forms of leadership in schools can create opportunities for teachers and school staff to introduce pedagogical innovations and organisational initiatives, and to become genuine actors of change at school level (see examples in Box 5 below).

**Box 5. Case study examples of distributed leadership supporting innovation**

At the **President Kennedy School** in the West Midlands (case study 12, UK), a strong and cohesive leadership team, where all members are fully engaged with the learning process, has enabled the school to achieve significant improvements in student performance, in developing a positive school ethos, and in the ability to cope with recent changes in the English education system. The school has implemented a distributed leadership structure in which each year group operates as a ‘college’ within the school. Each ‘college director’ has full responsibility for learning and for the personal and social development of the students in their year group.

The **Warande school** in Flevoland (case study 8, Netherlands) is characterised by a large degree of ‘self-government’ by teachers. The school aims to create a culture in which students feel responsible for their learning process, and this has contributed to positive academic results so far. Teachers and pedagogical assistants are actively involved in developing a common view of both education and day care. The innovative culture at the school includes bottom up involvement and making people who do the work responsible for how it is done. This school stands out because teachers are the ‘owners’ of the innovative process. The school is working in a bottom up approach to make the teaching team co-owners of the innovation and is actively using resources within the team. The school is also active in monitoring the innovation, and manages to involve the team of teachers in the monitoring process.

Source: compiled by PPMI based on case studies.

**3.2. Shared school vision and strategy for innovation**

Implementing innovative pedagogies and school organisational practices is supported by a shared vision to teaching and learning, corresponding objectives, and an implementation strategy. The process of innovation benefits from planning concrete actions to ensure the smooth implementation and monitoring of new approaches, their sustainability, and the continuity of the schooling process. The case studies demonstrate that schools which have adopted a shared vision and concrete objectives, and have ensured coherent internal processes, were successful in implementing and consolidating innovations in pedagogies and school practices.

Evidence indicates that schools that have been successful in transforming their practices tend to develop sets of concrete goals to support their innovative policies. Case studies show that designing and agreeing on a clear vision for the future and a robust set of priorities can help to structure the work of schools. In addition, a shared approach towards the objectives and requirements of innovation at all levels of the education process helps to create a sense of commitment, ownership and stability among the school staff and boost all stakeholders’ commitment to work towards common objectives.

Initiating a shared vision largely depends on the initiatives of the school leadership (see 3.1. above). In most case studies, changes were initiated by the school leadership or by members of the school staff. In several cases, the replacement of the school leader was a decisive factor in creating the impulse needed to implement a change in pedagogies and/or organisational practices (see examples in Box 6 below).
Box 6. Case study examples of innovations based on the vision of the school leadership

At the 4th Primary School of Thiva in Central Greece (case study 4, Greece), the main enablers for implementing innovations originated from the school leader; she had a genuine vision for the school, and she was positively supported by a regional school counsellor of primary education from the Ministry of Education. The school leader inspired a sense of teamwork among the teaching staff. Her vision and availability were key factors for the school community and the development and sustainability of all of the implemented innovative practices.

At the Béla IV Primary School in Northern Hungary (case study 5, Hungary), faced with the lack of CPD opportunities to prepare teachers for the Complex Instruction (CI) methodology, the school leader decided to experiment with it in a single class before embedding it in the whole school. She then gradually involved teachers who showed interest, which then led the whole staff to take part in in-house CPD activities. The strong and direct involvement of the school leader provided genuine leadership that helped the school move forward and innovate. According to local stakeholders, her motivation and support was a key factor in the implementation of this innovative approach in the school.

Source: compiled by PPMI based on case studies.

A lack of clarity makes it hard for school staff to translate policy into practice (Kirkland & Sutch, 2009). Moreover, the lack of a clear strategy for schools can constitute a barrier to the implementation of innovations and of the provision of high quality education. This can also lead teachers to reduce their commitment and efforts.

Examples from the case studies show that innovative schools often establish shared pedagogical and/or organisational goals to provide a clear orientation to their work. These goals can be based on certain values or educational ethics, on particular educational or pedagogical objectives, or on whole-school organisational objectives. Several case study schools developed their shared vision and strategy based on specific values, such as the promotion of equity and non-discrimination, or the development of entrepreneurship competences among students (e.g. in case studies 2 – Estonia; 3 – Germany; 12 – UK).

Case study schools also emphasise a set of pedagogical objectives which aim to drive teaching and provide a structure for the innovations implemented in the school, or simply focus on reaching the highest possible standards and learning outcomes for students (e.g. in case studies 2 – Estonia; 4 – Greece; 6 – Italy). School objectives can also have a holistic nature, focused on whole-school organisational and governance-related issues, such as to improve cooperation among the teaching staff, establish mechanisms of shared governance, or simply improve the quality of the school climate and learning environment (e.g. in case studies 1 – Croatia; 3 – Germany; 7 – Lithuania).

Box 7. Example of school goals supporting innovative processes

At Willenhall Community Primary School in the West Midlands (case study 12, UK), five ‘Golden Rules’ – Honesty; Kindness; Respect; Community; Growth – are prominently displayed around the school and clearly form the basis for a shared understanding of how students think of themselves and relate to others. The school seeks to provide its students with an understanding of the learning processes in which they are involved (meta-cognition) – and to build their self-belief. The teaching of philosophy to all students is also a vital element in developing students’ thinking skills, resilience and self-confidence. The school’s approach to teaching and learning is based on attaining educational excellence and achievement for all students – in the context of serving a
disadvantaged catchment area. The school provides a ‘bespoke’ curriculum, tailored to the needs of the students, particularly in relation to building their confidence and self-esteem and providing them with a wide range of social and cultural experiences.

Source: case study 12, UK.

The evidence collected in case studies indicates that schools that have been successful in implementing innovative pedagogies and school organisation practices tend to set up internal strategies and processes aimed at implementing them. These can take the form of strategic implementation plans, multi-annual programming documents, or detailed school curricula. In highly centralised systems, national policy documents and/or curricula tend to strictly prescribe, define, and impose the teaching content, limiting space for school staff to experiment and innovate. In systems marked by a high degree of school autonomy, schools have more flexibility to develop internal strategies and implementation plans, such as multi-annual programmes or school curricula. These may provide opportunities for adapting or transforming classroom pedagogies, along with planning and organising extra-curricular activities or specific school organisational practices.

In the UK, for instance, the removal of National Curriculum Levels in 2014 has allowed both primary and secondary schools more freedom to develop their own curricula and methodologies. Curriculum Levels had the effect of setting a ceiling on aspirations for the achievement of some students. These new freedoms, however, opened the door for innovative forms of leadership from school leaders (see case study 12, UK).

Box 8. Case study examples of internal processes and documents to plan the implementation and monitoring of innovation in schools

At the Zadarski otoci school in Adriatic Croatia (case study 1, Croatia), internal documents regulate the organisation and the work ethics of the school in the context of its innovative organisational practices. In addition to the official programme of instruction, the school curriculum includes features which influence the creation of the school's image, such as the quality of relationships, concerns about equality, the school performance evaluation by means of self-assessment, and the ways in which the school is organised and managed.

The Vyturio progymnasium in Panevėžys (case study 7, Lithuania) uses triannual comprehensive Strategic Plans, which review strategic priorities, effect criteria, and the expected and achieved results for the previous three years. Strategic plans provide details on the effect indicators, expected results, responsible staff members, and detailed timing for presenting and discussing activity results. According to the school leader, such a detailed plan and constant monitoring according to the set indicators provide an evidence-base from which to learn from past experiences and to set future directions.

Source: compiled by PPMI based on case studies.

3.3. Teachers and professional learning communities

The implementation of relevant innovations in pedagogies and school organisational practices significantly depends on teachers’ capacity, engagement and commitment to innovate. At the heart of the innovation process in schools, teachers have a central role in promoting, experimenting and implementing pedagogical and organisational innovations. The successful implementation of innovations also relies on teachers’ leadership, enthusiasm and commitment necessary to maintain students’ motivation to learn and experiment (Hattie, 2009).

However, for teachers’ work to be effective and innovative, they require support and favourable working conditions to ensure a safe learning environment, a positive climate for good relationships with students, collaborative practices with peers, adequate resources, and a common purpose in improving student achievement (European Commission, 2017d; Isac et al., 2015). Teachers’ capacity to innovate is also affected by
the quality and availability of ITE, induction and CPD programmes (see Section 4.4.). Relevant teacher education – encompassing formal qualifications and competences, positive attitudes, and ‘practical wisdom’ towards change (Zondervan, 2016) – are instrumental to implementing and mainstreaming innovation in schools. However, despite the existence of many innovative initiatives and practices in ITE and CPD, evidence shows that teacher education systems across Europe do not sufficiently prepare teachers to effectively implement and mainstream a culture of innovation that could benefit to schools and enhance student learning (see Chapter 4.4). Successful schools also aim to provide relevant opportunities for teacher professional development through various internal training initiatives, such as peer-learning, observation and mentoring.

3.3.1. Teachers’ attitudes

Teachers’ attitudes towards innovation can directly affect its success and be crucial in ensuring the smooth implementation of new approaches in schools. Teachers’ attitudes may vary from support and eagerness, to reluctance or even hostility, towards innovation (Kirkland & Sutch, 2009). Attitudes may be influenced by the school environment (e.g. among school managers, colleagues, students and their parents), and personal learning networks (Ibid.). Greater expectations towards students encourage the creation of supportive learning environments. This may facilitate teachers’ motivation to improve the teaching process by introducing something new as well as securing students’ interest and engagement.

A current research project from the Association of Teacher Education in Europe’s (ATEE) Research and Development Community (RDC) on the Professional Development of Teachers notes that “innovative teachers” display certain characteristics, including an active agency in their teaching practice and “a willingness to take risks and to pursue ways to develop their own learning and development” (European Commission, 2017b, p. 30). Using the example of the professional profile developed by the Windesheim Teachers College in the Netherlands, Zondervan (2016) emphasises that innovative teachers need to acquire 21st century skills such as creativity, flexibility, problem solving, ingenuity, collective (shared) intelligence, professional trust, risk taking, continuous improvement, the ability to cope with uncertainty, and democratic citizenship, all of which constitute key aspects of a teacher’s ‘change agency’.

Teachers’ self-confidence in using innovations affects their effectiveness, especially in the case of ICT-related innovations (Cox et al., 2003). In Bulgaria, Desev (2015) and Shehova (2010) concluded that difficulties and barriers for innovations appeared partly because the benefits of innovation in educational and organisational practices were not understood by teachers (and parents). In Lithuania, a quantitative survey on teacher attitudes regarding the factors that facilitate the use of ICT-based educational innovations in classrooms showed that their implementation is facilitated when innovative activities are interesting for the teachers themselves, or when they provide job satisfaction and help enhance teachers’ professional knowledge and skills (Pečiuliauskiė, 2010). Teachers’ leadership in the classroom contributes to the success of innovation. Evidence shows that in classrooms where teachers take a strong leadership role in the planning, preparation and follow-up of lessons, students’ class work tends to be more focused (Ibid.).

Box 9. The role of teachers’ attitudes in the implementation of innovation: case study examples

At the Clara Campoamor School in Andalusia (case study 10, Spain), the management team considers teachers to be agents of change, capable of reinventing the school. This helps to inspire other teachers and to keep the school ahead of societal needs by being innovative. Teachers’ motivation to carry on diverse activities such as develop classroom
blogs to share activities with parents, initiate projects with other schools, or to engage in local council activities, has a positive influence on the whole school. This strong commitment of the teaching staff was fostered by the school’s good working climate. While some teachers may have had some resistance at the beginning of the innovation process, it has been overcome because of the achievements reached and the fact that the teachers play a prominent role in the organisation of the learning process.

Source: compiled by PPMI based on case studies.

In turn, resistance from teachers can slow down the implementation of the innovation process, or lead to its rejection by some of the teaching staff. Evidence from case studies shows that the most important barriers to innovation were reluctance to change, lack of self-confidence, as well as uncertainty regarding new methods and possible learning outcomes – on the part of teachers, parents and local authorities. According to several school leaders interviewed, in addition to support measures aimed at preparing teachers, proper communication with the school staff to manage their concerns and to convince them of the added value of the innovations pursued can be useful methods to overcome resistance and fear to innovate.

3.3.2. Teacher preparation and professional learning communities

The attitude and motivation of teachers is crucial for the innovation process and their preparedness is a key factor to ensure that the proposed changes will be implemented smoothly and effectively. Teachers can be better prepared to implement innovations in schools through relevant internal training, collaboration initiatives such as professional learning communities, and initiatives which support teacher leadership (Vieluf et al., 2012).

Internal training

A wide range of internal training activities were observed in the case study schools, organised either in an informal manner through mentoring, coaching and classroom peer-observation arrangements, or formal training sessions (see examples in Box 10 below).

Box 10. Example of internal training initiatives supporting innovation in schools

At the Salduvės progymnasium in Šiauliai (case study 7, Lithuania), internal training is more valued than external training courses (unless the latter concern a very specific method/field of expertise in which the teaching staff may need training). The school staff practise action research at organisational and individual levels. This methodology allows the same person to be both actor (implementer) and observer (researcher) in daily activities. Interviews revealed that the school staff benefit and progress the most when they observe, discuss and learn about their own daily practices. This helps them relate to concrete situations and to look for practical solutions for actual issues. Additionally, each teacher must visit at least four lessons per year in order to learn from his/her school colleagues. This method is used for learning new teaching practices, and as a way to get into a positive contact with each student. Teachers are encouraged to visit classes from different educational levels and teaching subjects.

Similarly, the Tjotter school in Flevoland (case study 8, Netherlands) uses a variety of internal training instruments, such as team schooling with subsequent follow-up and monitoring within the learning community of teachers, and individual coaching. The head teacher encouraged the implementation of a common view of teacher mutual learning, as well as a culture of continuous improvement. Learning from good examples, such as by observing how other teachers have implemented an innovation, or by watching videos describing the implementation of pedagogical innovations, played an important role for the learning process of teachers.

25 Relevant examples were found at the Warande and Tjotter schools in Flevoland (see case study 8, Netherlands).
Teacher collaboration

Collaboration initiatives within schools can help the innovation process by collectively focusing on achieving continuing success in and improvement of teaching and learning practices (European Commission, 2017d; Vieluf et al., 2012). Teacher collaboration is positively associated with teacher’s capacity to implement innovations (Holmes et al., 2013; Vieluf et al., 2012). Evidence shows that informal reflection, and meaningful and formative feedback, can help teachers to improve and innovate in their practice (European Commission, 2016; OECD, 2017a).

Collaborative professional development practices such as professional learning communities (or ‘teacher learning communities’) can promote and sustain the learning of all professionals within and across school communities, and have positive effects on teachers’ attitudes, self-confidence and self-efficacy, while supporting student achievement, learning processes and motivation (OECD, 2016b; Schleicher, 2015).

Professional learning communities are characterised by cooperation, shared vision, a focus on learning, reflective inquiry, and de-privatisation of practice (Vieluf et al., 2012). They can help to provide targeted and sustained professional development that can support innovative pedagogical practices such as formative assessment methods (Benett, 2011; Pepper, 2013; William, 2006). Moreover, learning communities can be effective in improving teacher learning, in addition to benefiting students’ learning outcomes (Lieberman & Pointer Mace, 2008).

The OECD (2016b, p. 49) identifies five interconnected characteristics of professional learning communities:

1. **Reflective dialogue**: extent to which teachers engage in professional discussions about specific educational issues to further improve their teaching;
2. **Deprivatised practice**: extent to which teachers observe each other’s classes, discuss teaching practices, and share ideas and problems based on peer observations, aiming to provide feedback on their teaching;
3. **Collective focus on student learning**: extent to which teachers are committed to students’ success, intellectual growth, and development, as distinguished from simply focusing on activities or strategies that may engage student attention;
4. **Collaborative activity**: extent to which teachers engage in co-operative practices, share expertise, and create shared understandings from complex data;
5. **Shared sense of purpose**: extent to which teachers agree on the school’s mission and its operational principles, referring to common goals and accompanied by a common mindset to work towards them and to take them into account for decision making.

Professional learning communities are more effective when teachers are supported by the school leadership (OECD, 2016b). A strong and cohesive leadership team where all members are fully engaged with the learning process can enable schools to achieve significant improvements in student performance, a positive school ethos, and an ability to cope with setbacks. In turn, a lack of cooperation between teachers can constitute a barrier for innovation, and for the development of a genuine teacher learning community.

Several features of a school environment can facilitate internal collaboration initiatives and participation in professional learning communities, such as trust and positive working relationships, distributed forms of leadership, positive working conditions, and continuous self-evaluation (Isac et al., 2015; Kirkland & Sutch, 2009). Vieluf et al. (2012) note that formal conditions – school size, availability of resources, and school autonomy – and social conditions – a supportive and respectful social climate notably influenced by the school management – can support the development of professional learning communities. Collaboration activities and networks help schools and teachers access information about various innovations applied in different classrooms and schools,
provide an opportunity to discuss and reflect on successes and failures in a supportive environment, and to stimulate new ideas (European Commission, 2014b).

Evidence from case studies shows that characteristics of professional learning communities, such as cooperation initiatives among teaching teams, action research projects, the quality of teamwork and formative feedback mechanisms, are core enablers to support teacher competence development, and for the implementation of relevant innovations (see example in Box 11 below). They were notably observed to increase teachers’ motivation to support student learning.

**Box 11. Examples of collaboration initiatives at school level**

The **Kiviõli I Secondary School** in Ida-Virumaa (case study 2, Estonia) has been piloting a ‘360° feedback system’ to teachers, which includes peer-review. The school applies an open-door policy, meaning that if a teacher has left his/her classroom door open, anyone can come and visit. In August, before the school year starts, teachers and the school leadership gather to set goals for the coming year and to analyse the developments of the past year. To boost learning, professional development and to formulate new ideas, teachers also have the chance to “shadow” a colleague in another school. According to the school leader, this is a chance for teachers not to be encapsulated in one environment only and to keep an open eye at what is happening in other schools. New ideas are also promoted in the school from teacher to teacher, in a spontaneous way.

At the **Centralskolan** in North Middle Sweden (case study 11, Sweden), a state-funded research project between five schools from the local district concerning literature and reading strategies involved a team of researchers from Karlstad University. The project supported the introduction of collaborative practices between school teachers, who had the opportunity to discuss the course content and to plan their lessons together with the researchers. Teachers continued to work with the new innovative approach after the end of the project, and have spread the ideas to teachers of other subjects from the same school. Teachers of Swedish have informed the rest of the teachers and organised some internal learning clusters involving the science teachers within the school who needed to improve their teaching in terms of reading text within their subjects.

Similarly, at the **Zadarski otoci school** in Adriatic Croatia (case study 1, Croatia), teaching staff are provided with opportunities for collaboration, discussion, exchange of experience and development of interdisciplinary projects. This enables learning loops among teachers and professional staff with the support from the school principal, in the context of regular weekly teacher meetings aimed at discussing and analysing the school’s results. At the same time, the meetings are used to develop new projects and to discuss the possibilities of implementing something innovative in the school.

Source: compiled by PPMI based on case studies.

**Teacher leadership**

Evidence shows that distributed leadership involving teachers and the rest of the school staff facilitates the experimentation and implementation of innovative pedagogies and school organisation practices. In particular, distributed leadership can support collaboration practices among in-service teachers, support the professionalisation of teachers by offering alternative career paths, and empower the teaching staff in taking on and sharing roles and responsibilities for managing and leading in schools (European Commission, 2017d; Pont et al., 2008). Teachers can take on roles in middle management such as team or curriculum leaders, department heads, ‘learning managers’, ‘teacher leaders’ or ‘specialist leaders’, which can facilitate the experimentation and implementation of innovation (see examples in Box 12 below).

The model of the ‘teacher leader’ can represent an alternative to top-down innovation and is an important aspect of school leadership. As teachers are well versed with the complexities involved with teaching, they are uniquely positioned to promote change
within schools. Teacher leaders have the capacity to lead the school towards greater teacher collaboration, to encourage professional learning, to disseminate best practices, and to offer assistance with complex aspects of teaching (Wenner & Campbell, 2017).

**Box 12. Examples of leadership roles taken up by teachers supporting innovation in school**

In **England**, specialist leaders of education (SLEs) are outstanding middle and senior leaders with at least two years’ leadership experience in a particular specialism (e.g. maths, school business management, initial teacher training). Their role is to support individuals or teams in a similar position in other schools and to help others achieve outstanding leadership in their area of specialism (see case study 12, UK).

In **Sweden**, the position of ‘literacy skill developer’ held by a teacher of the *Kyrkebyskolan school* in North Middle Sweden was crucial to initiate, spread, and maintain the innovative pedagogies implemented in the school (see case study 11, Sweden). On the other hand, the departure of this teacher from the school led other teachers to struggle to maintain the innovations in the school, which demonstrated the importance of acknowledging, encouraging and rewarding such initiatives taken by individual members of the teaching staff.

Source: compiled by PPMI based on case studies.

Case study evidence shows that reward systems encouraging teachers to take on additional responsibilities can effectively support and recognise the efforts and initiatives of the teaching staff. These can consist of improved professional recognition and status such as a specific title, or financial rewards. Such teacher professionalisation and recognition systems can help to tackle the existing problems of poor teacher retention, high turnover in schools, and low attractiveness of the teaching profession (see case studies 6 – Italy and 10 – Spain).

### 3.4. Student engagement

The UN Convention on the Rights of the Child emphasises that education "shall be directed to the development of the child's personality, talents and mental and physical abilities to their fullest potential" (United Nations, 1989, Article 29). Education systems and schools need to support all learners to develop the full range of key competences, respond to their specific needs, and ensure their participation in learning and in school life (European Commission, 2017c).

Schools should be safe, welcoming and caring learning environments where all actors collaborate in learning and teaching and where students play a central role (European Commission, 2017g). According to the OECD, the first principle characterising an innovative learning environment is that it “recognises the learners as its core participants, encourages their active engagement and develops in them an understanding of their own activity as learners” (OECD, 2017b, p. 22). Fredricks et al. (2004) identify three dimensions to student engagement:

1. **Behavioural engagement**: following the rules and classroom norms, involvement in learning and academic tasks, and participation in extra-curricular activities or school governance;
2. **Emotional engagement**: students’ affective reactions in the classroom, including interests, values, and emotions (e.g. boredom, sadness, anxiety);
3. **Cognitive engagement**: psychological investment in learning, motivation to learn, strategic learning and self-regulation (such as self-assessment).

Student cognitive engagement can notably be promoted through assessment methods such as student peer and self-assessment. Research has underlined the role of self-assessment in supporting student learning, self-regulation of competences, and in increasing academic achievement (Brown & Harris, 2013). Peer-assessment occurs when students assess the products or performances of their peers such as writing, oral
presentations, portfolios, test performance, or other skilled behaviours, and in this way, stimulate reflection, discussion and collaboration (Strijbos & Sluijsmans, 2010; Topping, 2009). Peer-assessment can be a powerful tool to engage students in active learning, reflection (Dziedzic et al., 2008) and to raise their motivation and academic standards (Black & Wiliam, 1998; McMahon, 2010).

Student engagement can be considered to be both a supporting factor and an outcome of school innovation. Evidence suggests that students’ engagement can be beneficial to ensure the relevance of innovative pedagogies used in the classroom or of organisational practices in school. Student participation can occur in the context of pedagogical activities such as self-assessment or self-reflection mechanisms, as well as in the context of school organisational issues, such as to support conflict prevention, or in the context of extra-curricular activities (see examples in Box 13 below).

**Box 13. Examples of innovations supporting and benefiting from students’ active participation**

Active student participation is one of the innovative pedagogies implemented at **Wolfgang-Borchert-Schule** in Berlin (case study 3, Germany). The ‘Guardian Angels’ project is a pedagogical concept for the personal development and responsibility of students which aims to foster students’ positive thinking and acting, conflict prevention and resolution, and overall active participation in school processes. In the context of this project, a selected team of students receives targeted training in order to intervene in crisis situations with the goal that conflicts be solved by students themselves. School staff intervene only if this approach fails. Moreover, the school also relies on the participation of students in the context of the ‘Responsibility’ project that it implements in cooperation with the Protestant church association of the Berlin-Spandau district. The project is implemented in grade 7 through working groups in the school, in which students work together on a certain topic concerning responsibility. In grade 8, the project involves volunteer activities in organisations in the community. In grade 9 and 10, it implies targeted work in the form of projects in the school.

Student engagement is a key part of the innovative process at the **Vyturio progymnasium** in Panevėžys (case study 7, Lithuania). In the context of the Individual Achievement Tracking (IAT) system, the school uses self-assessment methods in its teaching practice. At the beginning of each school year, students in grades 5 to 8 review their previous achievements and set personal goals. They look at past challenges and successes, identify which factors help and hinder their learning process, and plan what steps need to be taken. To support this process, students use a notebook in which they inscribe their personal goals. Once the semester is over, teachers discuss individual results with students and their parents. Moreover, according to the school staff and parents, one of the success factors of the competence-based educational approach adopted by the school is that students are directly involved into the process of innovation to apply general competence. Finally, the school organises ‘Tea Hours’ when they invite former students and seek to receive their feedback on innovations (as then students have a better comparative perspective).

Source: compiled by PPMI based on case studies.

**3.5. External partnerships**

The implementation of relevant innovations in pedagogies and school organisational practices relies on the collaboration of several key stakeholders at school level (school leaders, teaching staff, students), as well as on partnerships with external actors from local communities (European Commission, 2017c). Adopting a ‘whole school approach’ improves learning outcomes, inclusiveness and equity for all students (European Commission, 2015a). External actors such as parents, other schools, local communities and authorities, businesses, NGOs, higher education institutions, cultural partners or
sports clubs, can have a highly beneficial impact on the implementation of innovation in schools and on students’ learning process.

Figure 5 below presents an overview of key stakeholders in education, which can all have a role in the development and implementation of innovations in school.

**Figure 4. Potential stakeholders in school education**

Source: adapted by PPMI from Burns and Köster (2016).

Local partners can bring a unique added value such as by actively engaging students in learning outside of school (Gallup, 2013). The OECD showed that innovative schools are characterised by a high degree of “horizontal connectedness to their environment” (OECD, 2017a, p. 61). This section aims to explore the role of external stakeholders in the implementation of innovative practices at school.

### 3.5.1. Collaboration with parents

Parental involvement can be defined as “any parental attitudes, behaviours, styles or activities that occur within or outside the school setting to support children’s academic and/or behavioural success” (van Driel et al., 2016, p. 71). Parental involvement is linked to their children’s academic outcomes in supporting higher academic achievement and more positive attitudes towards school (Fan & Chen, 2001; Jeynes, 2005; Rogers et al., 2009). While McNeal (1999) argues that parental involvement can be a relevant factor in explaining behavioural rather than cognitive outcomes, others insist on the central role in children’s outcomes played by various types of social support provided by parents, other family members, and their peers (Schnell et al., 2015).

There is a relation between parents’ socio-economic background and their children’s educational attainment and likelihood to leave school earlier (Considine & Zappala, 2002). Students coming from single-parent families also tend to score lower in PISA tests than others, after accounting for socio-economic background (OECD, 2010). However, Jeynes (2005) points out that low family SES and low educational background do not
necessarily have a negative influence on children’s performance and participation where families transmit high educational aspirations to their children. Research shows that the emphasis on parental involvement tends to advantage middle class parents (and their children), thanks to their knowledge of the education system and their social networks (e.g. Crozier, 2012). In order to develop successful school relationships and tackle inequality, policies and initiatives supporting parental involvement must go beyond a mere symbolic level and provide the socio-economic and cultural resources to engage with and empower all families, including those with a disadvantaged, migrant and/or minority background (Crozier, 2012; Paniagua-Rodríguez & Bereményi, 2017).

Parents can be both drivers and inhibitors of innovation in schools. Case study examples demonstrate that parents can resist change, driven by their belief systems or traditional risk-avoiding mindsets (see examples in Box 14 below). In such cases, the school community needs to work together to establish a shared vision of change which will help to ensure sustainable innovation.

Box 14. Examples of schools’ ways to overcome parents’ resistance towards innovation in schools

At the Sierra Nevada School in Andalusia (case study 10, Spain), the changes initiated by the new management towards the creation of a ‘learning community’ have generated resistance among some families which were accustomed to a traditional functioning of the school. Some parents failed to recognise their children’s work if they did not bring home ‘traditional’ homework or did not receive explicit written directions from their teachers in notebooks, believing that their children’s learning would decline and that they would be poorly prepared for high school. Moreover, substituting the textbook with cooperative project work and the development of research projects, or permitting the entry of parents and volunteers into the school, have disrupted expectations and the ways in which some families construe education from their own experience. The lack of knowledge of the activities of the school as a Learning Community was eventually cleared up, and led parents to more fully engage in working with teachers and with their own children.

At the Vyturio progymnasium in Panevėžys (case study 7, Lithuania), the school invested time to explain to parents the expected benefits of developing key competences in the school curriculum. This helped to ensure that the transition was smooth and gradual, notably by gathering parents’ feedback and opinion on the proposed changes. The school also engages parents in simple practice learning, which consists of trainings for parents where students are the main lecturers. According to the school’s head teacher, the fact that parents better understand the school’s functioning helped to make them contribute more consciously to the school’s pedagogical and organisational practices.

Source: compiled by PPMI based on case studies.

Case study schools demonstrate that parents can be engaged in school life and the innovation process in multiple ways (see examples in Box 15 below). The involvement of parents in specific projects can be facilitated through the role of bodies for parental representation in schools, such as parents’ councils and parents’ boards. Parents associations can be involved in consultation, shared decision-making processes, or training initiatives. In some cases, the implementation of innovations in schools depended on parents’ approval and support. The involvement of parents can also depend on the willingness of the school to engage with them, to ensure that the innovative projects are carried out successfully.

Box 15. Example of parental engagement in innovative practices in schools

At the 4th Primary School of Thiva in Central Greece (case study 4, Greece), there is ongoing cooperation and communication between parents and teachers, notably through the ‘Parents’ school’. This group organises optional seminars provided for adults that
provide knowledge on family issues and child care. They particularly focus on psychological and health issues and counsel on problems encountered in the family (Hourdaki, 2000).

The Ion Luca Caragiale School in South East Romania (case study 9, Romania) was one of the first to benefit from the support of a legally registered parents’ association in the Tulcea county which has consistently accompanied the school in its activities. Parents closely monitor the end of cycle performance of students and the opportunities that they could access upon finishing lower secondary education. Parents have multiple roles such as the supporting quality control through feedback, bridging the relationship between the school and local institutions, as well as offering resources (time, know-how) when possible.

Source: compiled by PPMI based on case studies.

3.5.2. School-to-school partnerships

Evidence shows that school partnerships and networks are crucial to support the effective implementation of innovations in schools. Working in connection to diverse networks of schools and professional learning communities can help to build and sustain innovative learning environments, and benefit schools reciprocally (OECD, 2013c). Multiple examples of collaboration and networking initiatives between local schools have been observed in the case studies, in the form of peer-to-peer learning initiatives, exchange of facilities, project-based cooperation initiatives, or exchanges based on a cooperation around the curriculum (see examples in Box 16 below).

Box 16. Examples of collaboration between schools based on networks promoting innovations

President Kennedy school (in the West Midlands) has links with partner primary schools that are very strong (see case study 12, UK). The Leader of Literacy & Numeracy in Year 7, for example, speaks individually with the relevant Year 6 teacher about every child coming into the school. The knowledge gained from this activity is crucial in ensuring successful learning outcomes for the students concerned. Students in the upper years of the primary schools are also invited into President Kennedy School on various occasions. Learning days are organised for Year 6 students about to join the school. A week’s Summer School is also arranged, free to all students.

Collaboration initiatives between schools can also be organised in an informal setting, based on a school’s pragmatic needs and on contextual circumstances. The Wolfgang-Borchert School in Berlin (case study 3, Germany) developed a form of informal cooperation with another school (the Lise-Meitner-Schule) in Berlin’s district of Neukölln through a joint scientific project that the schools conducted. Both schools now exchange the use of some of their facilities. The Lise-Meitner School, for example, has better equipped laboratories that Wolfgang-Borchert is now able to use for projects like ‘Young people as researchers’.

Source: compiled by PPMI based on case studies.

3.5.3. Collaboration between schools and communities

Collaboration between schools, local and regional authorities

The quality of the collaboration between schools, regional and local policymakers in the implementation of innovative practices can be an important support factor to ensure their effectiveness and sustainability, as revealed by case studies. The increasing political autonomy of regions, their growing importance in national innovation strategies, as well as the increased levels of inequality, have placed regions and cities at centre stage in the development of innovation policies in science, research and technology, and education (OECD, 2017a).

Various types of national, regional and local institutions intervene in collaboration with
schools in the implementation of school innovation, such as ministries, national agencies, regional or local authorities (see also Chapter 4). Top down approaches promoted and supported at national or regional level may not be effective without partnering with schools and teachers (Hofman et al., 2012). Thus, stronger partnerships between national, regional, local authorities, teaching staff as well as researchers are crucial to support innovative schools, notably by setting priorities among possible ways to promote innovation, design relevant policies, and mobilise resources (European Commission, 2014; OECD, 2017a). Evidence from the case studies shows that cooperation between schools and local policymakers at municipal or regional level has been effective in several examples in supporting the implementation of innovations in schools (see examples in Box 17 below).

**Box 17. Examples of collaboration between schools and local policymakers**

At Campoamor school in Andalusia (case study 10, Spain), the education counsellor assigned to the school has played a key role in bringing together different educational ideologies and establishing synergies between schools, making possible a way of working which draws on the commitment, transparency and the opening of the schools to the educational community, the surrounding area and the municipality.

The support from Šiauliai city regional education centre was crucial for the creation of the SCD system by five local schools, including the Salduvės progymnasium in Šiauliai (case study 7, Lithuania). Following up on this initiative, the municipality of Šiauliai has signed agreements with a network of partners so that schools who wish to implement SCD could cooperate with them. Moreover, the school receives support from the Ministry of Education and Science (MoE) for the implementation of innovations. The school leader is regularly participating in working groups with representatives from the MoE and receives positive feedback for her work. Moreover, she is often invited to take part and share their experience in various conferences, training, and other events organised by the MoE.

Source: compiled by PPMI based on case studies.

**Collaboration between schools and local communities**

A whole school approach including all members of the school community together with local stakeholders can help achieve inclusive and equitable quality education for all (European Commission, 2017c). In this approach, the school is seen as “a multidimensional and interactive system that learn and change: an open learning hub which provides support to its environment and receives support from the community” (European Commission, 2017g, p. 17). As the nature of the school process is transforming, and learning can happen in many different ways and places (often outside schools), schools cannot operate in isolation and need to engage in partnerships with local actors to ensure the relevance and meaningfulness of the learning process (see Section 2.2.) Schools’ horizontal interconnectedness and the availability of space for learning, dialogue and cooperation are crucial factors for transforming school learning environments (OECD, 2017a).

Cooperation activities between schools and local stakeholders such as higher education institutions (in particular teacher education providers), civil society organisations, cultural organisations or businesses can be particularly beneficial for schools and help them in the different steps of the implementation process of innovations in school pedagogies, organisational practices, or extra-curricular activities. Successful partnerships with external stakeholders depend on several key factors, including schools’ willingness and capacity to cooperate, and the available local opportunities such as active and willing local NGOs, businesses, cultural or religious organisations, or sports associations.

While the benefits of engaging employers and industry in education is most obvious in

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26 In Spain, counsellors are educational psychologists who serve several schools in every municipality on behalf of the regional education authorities, and belong to the local centres for teachers’ professional development.
the VET sector (through cost-sharing mechanisms, feedback mechanisms so that VET can better meet labour market needs, workplace learning and apprenticeship systems, support to local employer engagement strategies), building school-business relationships can be beneficial for schools and students’ learning process (OECD, 2017a).

The OECD (Ibid.) highlights that school-business relationships can have positive effects for:

- **The school and its community**: increased student motivation, achievement and skills; school-community cohesion and mutual awareness; projects involving national and local authorities.
- **Teaching and learning**: community support, encouragement and resources to schools; supporting and enriching the school curriculum; providing diverse contexts, learning styles and experiences.
- **Curriculum specialisation**: increased opportunities for innovation; support for the development of specific curriculum expertise and achievement in schools; contribute to vocational learning.
- **School-to-work initiatives**: opportunities to learn about the world of work and gain workplace skills; link and support to transitions between academic and vocational learning; awareness of career opportunities; provision of role models.
- **Mentoring and management practices**: opportunities for teachers to learn about employability skills and understanding in students; increased understanding of educational practices in businesses; mentoring opportunities for teachers to improve management/technical skills.
- **Resourcing**: skilled volunteers for school-based programmes/activities; access to state-of-the-art equipment and supplies, additional funds for the schools; exploration of innovations.

Cooperation activities with higher education institutions such as teacher education providers can also be decisive to support the implementation of innovative pedagogies and ensure their sustainability, and can inspire change and transformation. This type of collaborations can involve CPD initiatives for practising teachers delivered by partner teacher education providers, practical training initiatives for student teachers at ITE or induction level, or joint research projects between teacher education institutions and schools (see examples in Box 18 below).

**Box 18. Example of partnerships between schools and external stakeholders**

The innovative approaches implemented in both **Kyrkebyskolan** and **Centralskolan** in North Middle Sweden (case study 11) involving reading strategies and working on critical reading skills were initiated by a group of researchers from Karlstad University. The implementation process was well-structured and supported by the researchers, who acted as external experts. Researchers provided teachers with texts to analyse and to discuss, articles to read, and lectures to attend on argumentative analyses. Teachers also received guidelines on what to teach and how to teach it. The external expertise and continuous support provided by the researchers enabled the participating teachers to gain knowledge and confidence in these innovative practices.

As a VET high school, the **Colegiul Economic Buzău** in South East Romania (case study 9) has benefited from the support of local businesses when planning and implementing some of its innovations. Rather than engaging a small number of large employers, the school has had to adapt its teaching practices to suit the needs of very diverse small and medium enterprises. Although the labour market has been a driving force for change at the school, evidence shows that more comprehensive relations with enterprises would be beneficial, but that this would require a better developed local economic sector.
The Caragiale School in Tulcea in South East Romania (case study 9) emphasises the role of non-formal education for successful student development. In 2011, it introduced the ‘Şcoala altfel’ Programme, involving an entire week of the school year dedicated to non-formal education. Partnerships with NGOs and the local community are the core of the school activities and have led to the implementation of several projects dealing with a range of topics, from environmental awareness and the civil justice system, to local heritage.

Source: compiled by PPMI based on case studies.

### 3.6. Key findings

Our analysis of school innovation success stories reveals many entry points to the process of innovation in schools. Certain conditions must, however, be met to ensure that change is managed effectively and leads to positive outcomes:

- **Students** are at the centre of learning, and their engagement is crucial to ensure the relevance of school innovation. They can be active actors in the learning process, e.g., through self- and peer-assessment, as well as in school governance and partnerships with external stakeholders.

- **Teachers’ preparedness, commitment and capacity to manage change** are key factors in ensuring that innovations are implemented effectively. Professional development and collaboration initiatives, such as professional learning communities, teaching teams, action research projects, teamwork and formative feedback mechanisms, can help the implementation process, collectively focus on achieving success in teaching and learning, and developing innovative mindsets among teachers.

- **School leaders** are a dynamic and influential force in the school community. They can guide schools in creating a culture that initiates and supports innovation. Good leadership can ensure a supportive environment for teachers; promote collaborative practices such as peer-learning, mentoring, formative feedback, reflective and inquiry-based practices; and provide relevant opportunities for networking and professional development. Distributed leadership constitutes one of the conditions for sustainable innovation by encouraging teachers to assume increased responsibilities, to engage in individual or collective initiatives, and to build their capacity to take on leadership roles.

- **A shared vision and clear action plans** help to structure the implementation process, ensuring the sustainability of school innovations. This begins by identifying the school’s needs, then by agreeing on the way to move forward, and extends to providing feedback and reflection throughout the process. This also helps to instil a sense of commitment and stability among school staff, students, parents and local stakeholders. Innovative schools promote an active role for students, teachers and school leaders, parents and other stakeholders, helping to build a system of horizontal accountability.

- **Creating wider partnerships** is an intrinsic feature of innovative schools. Engaging with parents can be a necessary step in overcoming their potential resistance to changes. Schools also need to draw on the various resources and opportunities provided by other schools, as well as municipalities, teacher education providers, local businesses, civil society organisations, and other local stakeholders. Recognising and supporting the horizontal connectedness of schools with their communities is a crucial step towards overcoming school isolation, facilitating different forms of learning, and bringing learning closer to real-life contexts.
4. Supporting sustainable innovation across the system

This chapter explores how education systems can better support innovation in schools, empowering all schools to become sustainable learning organisations. It overviews how school innovation is understood and defined in national or regional education policy documents across the EU, and discusses current obstacles and policy solutions for promoting innovation across schools. It considers the roles of local, regional and national policies in supporting all schools in nurturing innovative learning environments, and lays out the policy principles behind the creation of learning education systems.

Traditional schooling methods often fail to keep students and teachers engaged and to ensure that each individual students’ needs are met. The ongoing development of innovative pedagogies and school practices is reflected in the growing body of research on the effectiveness of specific pedagogical approaches, and this research has shown that the transformation of education systems is imperative. As we have seen in Chapter 3, some of these developments are driven and sustained by schools and teachers themselves. They foster collaborative, risk-sharing cultures that develop and support change in schools and education systems. However, whole-system changes still face significant barriers in most EU countries. These barriers often include a lack of consistent policy priorities, inadequate systems of teacher and school leader professional development, and school accountability mechanisms that tend to define school success too narrowly and discourage experimentation (Burns & Köster, 2016; Fullan & Langworthy, 2014; Hooge, 2016; Smith, 2016).

Figure 5 below summarises the conditions for a systemic take-up of school innovations (which also reflect the six key principles of learning systems in Figure 2). They are further analysed in-depth in this chapter. Based on policy mapping and case study evidence, this chapter also discusses how these elements can better contribute to school innovation.

Figure 5. Conditions for a wider take-up of school innovations

Source: developed by PPMI.
As described in our hypothetical model (see Figure 4), and validated by case study analysis, certain systemic processes need to be in place to ensure an effective system of change delivery which is able to learn from its successes and failures:

- Each innovation should be evidence-informed and driven by a balanced understanding of the possible directions of school development and system improvement. Therefore, needs analysis is an essential step to identify current gaps in the education system in order to understand what potential evidence-informed directions school education policy could take to fix systemic inconsistencies.

- Policy planning should be participatory, and consider national, regional and local perspectives and priorities. Effective policy planning is based on a shared vision with strategies to support school innovation, accompanied by coherent action plans, adequate financial resources, and implementation support.

- Policy implementation requires a supportive environment from education authorities at national, regional and local levels for the development of schools’ capacity to implement and manage change, and a balance between school autonomy and accountability.

- Networking, exchange and peer-learning imply open dialogue and collaboration at national, regional and local levels, both vertically and horizontally. This is a crucial condition for innovative school practices to develop, embed and up-scale. The twelve change workshops conducted in the context of this study served as opportunities to promote networking between schools, policymakers, and broader stakeholders.

- Monitoring and evaluation of school policies imply that decisions about innovation are based on reliable evidence. Effective monitoring and evaluation systems ensure that the whole education system learns from its processes to strive for further improvements.

Evidence from case studies suggests that only a few education systems in the EU follow these steps systematically, while comprehensive and integral system-level support is still largely absent.

### 4.1. Policy frameworks for innovation

Although many education stakeholders agree that education systems need to transform and become more flexible and relevant for the changing needs of our societies, there is scarce evidence of comprehensive systemic approaches to innovation in education policy across Europe. This section looks at how school innovation is defined in policy contexts and can be embedded in comprehensive education policy strategies, based on examples from both across and outside Europe.

#### 4.1.1. Understanding school innovation in different policy contexts

The way innovation in education is defined has significant implications for policy development and implementation, not least because it can help provide a shared vision and understanding for education stakeholders. Despite widespread discussions among education policymakers, academics and practitioners on the need for schools to adopt student-centred approaches and stimulate innovative learning environments, most EU Member states still do not explicitly address school innovation in their education strategies and policies.

Based on a review of national and/or regional policy documents on school innovation, EU Member States can be grouped into three broad categories:

- Countries that define school innovation as a continuous process which can lead to the transformation of the education system, looking beyond the traditional roles of education actors.
• Countries that tend to look at innovation as a specific tool, teaching method or practice, or that understand innovation as the integration of new technologies into teaching and learning.

• Countries that do not provide any explicit reference to school innovation in their policy documents.

This categorisation is not intended to classify countries and/or regions, as a clear attribution of a country and/or region to one or another grouping could be contested based on contextual knowledge and recent policy developments. Below we provide some examples of how innovation has been differently framed in national contexts at the time of our review.

**Innovation as a process of systemic change**

In several EU Member States, the understanding of innovation in education policy is linked to a paradigm shift from content-based to competence-based learning (Halász & Michel, 2011). This approach places an emphasis on students’ competences, individual needs and potential, and calls for the transformation of teaching and learning approaches. Within this group of countries, some locate innovative processes at the level of schools, while others also perceive innovation as a system change, a transformation of its underlying rules, standards and processes (see examples in Box 19 below).

**Box 19. Examples of countries understanding innovation as a system change**

**Denmark** considers innovation as a new mode of thinking, involving new methods and forms of teaching, such as brainstorming, feedback, reflection, casework and project work. It is considered important that these types of activities are organised in a systematic way, direct the processes of learning, and lead to a cultural change in the education system (Danish Ministry of Education, 2011).

Innovation is an objective of the current coalition agreement of the Belgian Flemish government, which states that education should be ambitious, aimed to prepare children to deal with the challenges of the future (Vlaamse regering, VR, 2014-2019). Innovation is defined as “a learning process in itself” and “a new way of thinking” (King Baudouin Foundation (KBF), Flemish Education Council (FEC) & Department of Education and Training (DET), 2014, p. 28).

**Ireland** envisages innovation as a holistic process within the curriculum, affecting subject matter, teaching and learning, material and technical support, student welfare, assessment, and evaluation (NCCA, 2012). The Irish National Council for Curriculum and Assessment (NCCA) highlights that “innovation in classrooms is not about an artefact or a one-off activity or event. It is a not something to add to education or to include in a special module. It is not exclusively for one subject or one cohort above another. It is a way of working and a way of learning” (NCCA, 2011, p. 9). Innovation in education is also seen as an aspect of the broader development of a creative and innovative economy (Ibid.).

Similarly, in **Catalonia (Spain)**, the Law on Education 12/2009 emphasises the need to strengthen systematic and structured educational innovation, to recognise good practices with the encouragement and support of the educational leadership, teacher education, the digital infrastructure of the school, and the provision of model educational centres. The Catalonian department of education sees pedagogical innovation as a planned process of change and renewal that is based on research, which leads to improvement in the quality of the learning (Department d’Ensenyament, Generalitat de Catalunya, 2015).

In **Finland**, the concept of innovation is not explicitly spelled out in the education policy documents (such as the Education Act and Government Programme). However, it is embedded in the entire education system, including core curriculum, teacher education and education administration, which allows a high degree of autonomy and creativity for municipalities, schools and teachers. Sahlberg (2015) explains that one of the core elements of the Finnish strategy was the pursuit of reform in a way that went beyond the
simple optimisation of the existing structures, and which instead moved towards a complete transformation of the paradigm and beliefs that underpinned educational policy and practice until the 1960s.

Source: compiled by PPMI based on policy reviews.

Although there is no consistent definition of school innovation across these countries mentioned above, most of them imply the importance of collaborative policy-making. This means that the effective functioning of education systems is a product of the collaboration between students, teaching and non-teaching staff, school leaders, parents, local stakeholders such as NGOs and businesses, and policymakers at various levels of government. The key pillars of such a systematic approach to innovation include school autonomy and effective accountability systems, partnerships and networks, flexible and competence-based curricula, and continuous investment in the capacities of school leaders and teachers to innovate (see sections 4.2. to 4.6.).

**Innovation as a specific tool, teaching method or practice**

Strategic policy documents in several EU Member States do not refer to innovation as a whole system change, but rather mention innovation as a specific tool, teaching method or practice. In this context, school innovation is often linked to the integration of ICTs in teaching and learning practices, as a means to improve students’ achievement (see examples in Box 20 below). In most of these cases, such innovative elements are added within existing traditional education structures without reconsidering the overall education framework itself.

**Box 20. Example of understanding innovation as a specific tool or practice**

In **Hungary**, innovative pedagogies are mostly understood as methodological solutions for achieving the goals of the Europe 2020 strategy and for “improving the quality of education for all” (Hungarian Ministry of Human Resources, 2014). A variety of national programmes between 2004 and 2015 were aimed at implementing and strengthening competence-based education and the modernisation of pedagogical processes in general (e.g. in terms of the use of technology) (Hunya, 2016).

Source: compiled by PPMI based on policy reviews.

Countries that promote a narrow understanding of school innovation, such as through the introduction of specific innovative approaches or tools, are unlikely to develop comprehensive education strategies viewing innovation as a continuous process at system and school level.

**No explicit reference to school innovation in policy documents**

In the education policy documents of most EU countries, there is only limited or no explicit reference to school innovation. Although the analysis of some policy documents reveals that the improvement of the quality of education is often among the important goals that these countries promote, a clear link between quality and innovation seems to be missing. In some countries, policy documents avoid references to school innovation and innovative learning processes (see examples in Box 21 below).

**Box 21. Examples of countries which do not mention school innovation in policy documents**

In **Sweden**, many education stakeholders associate the word ‘innovation’ with an ‘engineering’ approach to knowledge and teaching, allowing methods aimed at results that are easily measured and not necessarily part of educational research contexts (Carlgren, 2015; Lyngfelt, 2003). Even if innovation has been inherent to Swedish school policies during the last twenty years, the concept of ‘school innovation’ or ‘innovative pedagogies’ is rarely used. Recently, the policy focus has been on making

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28 Competence-based education lost its flagship role in 2011 with the new law on education (2011) and the new national core curriculum (2012). The focus shifted to content teaching, but the innovative methods, including digital tools are still part of all the policy documents (Hunya, 2016).
schools more attractive and improving test results, rather than on understanding how student learning and achievement could be improved or on defining innovative pedagogies (Carlgren, 2015). Gustavsson et al. (2016) suggest that the 2011 national curriculum is too prescriptive, for example, it does not leave room for teachers to define their assessment criteria and to demonstrate their professionalism in that sense.

The current British government, in its management of the education system in England, has also been committed to a knowledge-centred rather than a process-centred approach to learning, and has been cautious in using the term 'school innovation' and related concepts, such as 'independent learning', 'learning to learn' and 'individualised instruction' (Simons & Porter, eds., 2015). The lack of consistent government support has led to the absence of a consistent approach towards educational innovation among schools (Whittle, 2016). However, since schools possess a great degree of autonomy in the UK, they are free to define their teaching methods and learning goals.

In Latvia, Lithuania and Malta, school innovation is not specifically referred to in national policy documents. Nevertheless, education policymakers emphasise the importance of non-traditional pedagogies, creativity-oriented education, greater autonomy of schools and specific models of school organisation, or to fostering networking capabilities and partnerships initiatives, which is seen as moving away from traditional views of schooling.

4.1.2. Embedding innovation into education strategies

The process of continuous improvement in schools can be stimulated when school innovation is embedded into general education strategies. Research evidence suggests that a long-term policy orientation, supported by a coherent vision and related policy objectives, are crucial for a comprehensive and effective implementation of innovations at both school and system level (see e.g., Burns and Köster, 2016; European Commission, 2017h). The development of such a policy orientation must be based on a shared vision and understanding, which take into consideration national, regional and local perspectives and priorities on school policy, and which need to be characterised by a process of co-construction with the key stakeholders directly affected by these new developments (European Commission, 2017h; OECD, 2017h).

Furthermore, if innovation is considered as a continuous process of system improvement, it has to be underpinned by effective governance mechanisms and policy support, such as rethinking curriculum frameworks, transparent delegation and accountability rules, professional development activities, and quality assurance (European Commission, 2017h). The Welsh example of school improvement reform (see Box 22 below) illustrates how important it is that reforms in key education policy areas are coherent and maintain continuity; this helps to ensure that the ongoing process of education improvement is both comprehensive and effective (OECD, 2017h).

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Box 22. The Welsh comprehensive school improvement reform

After its significantly lower-than-average performance in the 2009 PISA survey, in 2011, Wales embarked on a large-scale school improvement reform aimed at improving the quality and equity of its school system. The Welsh approach to school improvement has moved from a fragmented and short-term policy orientation towards one that is guided by a longer-term vision and involves key stakeholders into policy design and implementation. To support the realisation of its education objectives and provide all learners with opportunities to realise their potential, Wales considered several simultaneous reforms initiatives that were coherent with an overarching vision and were underpinned by sustained investments in key policy areas and clear implementation process.

Several measures have been taken by the Welsh government to ensure the comprehensive implementation of its strategic objectives. Specifically, they have:

- developed a new ‘21st century curriculum’;
- supported the professional learning of teachers (including ITE reforms and by promoting strong partnerships between ITE institutions and schools);
- strengthened school leadership (e.g. by establishing the National Academy of Educational Leadership, which offers professional learning for leaders aligned with the new teaching standards and vision of school as a learning organisation);
- increased school-to-school collaborations and participation in networks;
- rationalised the school funding formula;
- developed a new assessment and evaluation framework.

Source: OECD (2017h).

System level strategies supporting innovation

Findings from the policy reviews and case studies suggest that to a large extent, national education frameworks in many countries remain fragmented, expressing support for innovation as an ad hoc objective within existent structures and governance arrangements. However, there are several examples of recent reforms and initiatives that indicate a move towards comprehensive education strategies, which view innovation as an intrinsic part of education policy development (see examples in Box 23 below).

Box 23. Examples of system-level strategies supporting school innovation

In Danish education policy, school innovation is strongly linked to a general government policy of innovation as a way to improve the country’s competitiveness and welfare system (Rasmussen, 2016). This policy, first developed by the Globalisation Council established in 2005 (Danish Government, 2006), laid out four general objectives for Danish competitiveness: “World top level education”; “Denmark as a top performing knowledge society”; “Denmark as a top performing entrepreneurial society”; and “Denmark as a top performing innovative society” (Ibid.). Education was also one of the three main priority areas of the 2012 Danish National Innovation Strategy (Danish Government, 2012)\(^30\). The government innovation strategy also includes a long list of more concrete policy goals and initiatives linked to the education system, such as supporting innovation in teacher education, and ensuring new forms of teaching and learning (Ibid.).

\(^30\) In 2012, the development of the strategy involved many analyses, studies, and dialogue with stakeholders in the context of consultation meetings. This process helped to include inputs from private individuals and about 40 stakeholder organisations about what the innovation strategy should contain. As part of the preparatory work, an international evaluation of the Danish innovation system was also carried out. The evaluation was undertaken by the European Research Area Committee (ERAC) under the European Commission. For more information, see: https://ufm.dk/en/publications/2012/denmark-a-nation-of-solutions. Accessed 6.12.2017.
In **Estonia**, the **Tiger Leap** programme (2010-2013) for promoting the ‘digital turn’ of schools (**Tiigrihüppe Sihtasutus** [Foundation Tiger Leap], 2010) addressed several fields of innovation: innovative governance of schools through the use of ICT by school leaders and systematic training of teachers in the use of innovative technologies and methods, and additional financial support of schools to procure ICT solutions (Ers, 2016). Recently, the Estonian Ministry of Education and Research, as a part of the Strategy for Lifelong Learning 2020\(^{31}\), has initiated the ‘Digital Turn’ programme to switch to 1:1 computing in classrooms. The programme promotes changes in the teaching and learning paradigm, and focuses on a more purposeful and efficient use of digital technologies in teaching and learning, the improvement of the digital skills of the whole population, and access to the new generation of digital infrastructure (HTM, 2014b). Since 2015, all new textbooks and other teaching aids are electronically available (Ibid.). Moreover, the programme promotes digital assessment through standardised tests and exams (HTM, 2016b).

Source: compiled by PPMI based on policy reviews.

Examples from outside Europe bring an additional perspective on how innovation can find its way into coherent policy frameworks, not only by setting clear policy priorities, but also by strengthening the implementation structures, such as accountability mechanisms, professional development systems and funding policies (see example from Vermont, United States, in Box 24 below). The Brazilian example of the promotion of governmental literacy programme emphasises the importance of co-constructing policies with key stakeholders, ensuring that everyone involved has a clear understanding of the direction and expected results, as well as of their roles and responsibilities.

**Box 24. Examples of strategic policy frameworks for school innovation from beyond Europe**

In **Vermont** (US), the state’s strongest support for school innovation is through its comprehensive policies that promote personalised and competency-based learning (Cambridge, 2016). In 2013, the Vermont legislature passed **Act 77, the Flexible Pathways Initiative** and the Vermont State Board of Education approved **Rule 2000: Education Quality Standards (EQS)**\(^{32}\), which created a policy environment for personalised, proficiency-based learning. Important elements within these policies include proficiency-based graduation requirements, personalised learning plans, systems of assessments for learning, accountability for continuous improvement, flexible pathways, and educator and school leader development initiatives (INACOL, 2016). At the end of 2013, at least five US states – Iowa, Maine, New Hampshire, Oregon, and Vermont – have revised their funding policies to support competency-based education initiatives (Twyman, 2014). In Vermont, the Vermont Agency of Education is the main source of technical and financial assistance to support the shift. Moreover, there are a number of organisations and networks that support proficiency-based learning (AoE, 2016).

In **Brazil**, around one million people have been mobilised to support the governmental literacy programme called **Escola Viva, Comunidade Ativa** (Living School, Active Community) in the state of Minas Gerais. School communities located in areas with significant levels of social vulnerability were the original beneficiaries of the programme\(^{33}\). It was initiated in 2003, and was later expanded to all regions of the state (Akkari, 2016). The first step was to raise awareness and build momentum for change. Work was needed at multiple levels, including the state, regional departments, individual schools, and surrounding communities. The second step was to set clear, etc.

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\(^{31}\) Overall, the Estonian LLL Strategy advocates for a change in the approach to learning – supporting each learner’s individual and social development, nurturing creativity and entrepreneurship. Another key pillar of the Strategy is competent and motivated teachers and school leadership (Ministry of Education and Research, 2014). The Estonian schools from case studies referred to the LLL Strategy as a supporting factor to innovate, with the support of the governmental agency INNOVA in implementing the Strategy. Under this Strategy, all schools are required to have development plans and teachers’ motivation models (for more details, see case study 2 – Estonia).


meaningful and fair performance targets to align incentives and efforts across the system. Every school received its own set of improvement targets, which were then agreed upon in collaboration between school leaders and system officials. Each principal signed a performance contract based on these targets, and teachers in schools that met their targets were eligible to receive up to one-month extra salary. Third, to build capacity at all levels of the system, the state of Minas Gerais provided teachers with high-quality teaching materials for each lesson. The instructional guides in these sets proved to be so effective that many private schools and other school systems subsequently adopted them. The Education Department also gathered feedback from schools and teachers on their needs, challenges, and progress in implementing the programme (Ibid.; Prado, 2012).

Curricular reform can be a powerful instrument to institutionalise and embed school innovation into all levels of compulsory education and to create a basis for the sustainability of innovative approaches in schools’ daily practices. Appropriate reform of the curriculum may also provide a basis to guide systemic reform of school education more broadly – if, that is, it “clearly defines the status of the new constructs, and prevents them from becoming merely a distorted version of the old system” (Marciniak, 2015, p. 22). A comprehensive curriculum framework can perform a range of functions. These include: setting out the vision, aims and objectives of schooling; providing the structure of the content of learning, both in terms of competences and skills and organisation of learning; supporting a range of effective teaching and assessment practices; and improving the quality of teachers.

Curriculum reform is often an intrinsic feature of innovative education systems, as well as an important foundation upon which to develop the capacity of individual schools to innovate (Stabback, 2016). The latter function is largely conditional on the autonomy that schools have to adjust the curriculum to the local needs (see Section 4.2.1.).

There have been many attempts to introduce curriculum reform to revise what and how students learn, at various levels of education across European countries (Cort, 2014; Psifidou, 2009; and Box 25 below). However, evidence from policy mapping shows that ad hoc amendments to the curriculum have only limited and isolated effects at the level of the education system.

Box 25. Examples of curriculum reform supporting school innovation

Since 2009, the Polish Core Curriculum for general education and school vocational education and training has shifted from narrow, subject-related requirements to more general ones, emphasising transversal skills and competences defined by learning outcomes (OECD, 2015b). Based on Poland’s recent PISA results, the revised curriculum implies a more collaborative approach, experimentation, scientific enquiry, problem-solving and reasoning (Marciniak, 2005; OECD, 2015b). As a result, examination standards have shifted from knowledge assessment to the evaluation of more general skills (OECD, 2015b). The curriculum reform has been carried out in tandem with a more systemic change in education. The new curriculum “constitutes the backbone of the Polish education system transparently indicating the objectives of school education to all stakeholders” (Marciniak, 2005, p. 20). PISA 2009 and 2012 results allowed Polish policymakers to evaluate the effects of the reforms introduced in 2008. Poland witnessed an important improvement in limiting inter-school differences in student performance, and in students’ average scores in reading proficiency, mathematics and science (Jakubowski, 2015).

Basic Education Curriculum Reform in Finland was implemented from 2016 with the aim to make school a better learning environment and supportive community. The main changes in the curriculum embedded technology into all areas of teaching and learning, emphasised broader skills, updated school subjects, multidisciplinary learning modules and diversity in learning assessments (Vitikka, 2016). The curriculum foresees that
education providers shall ensure that schools include a ‘phenomenon-based’ approach to education, where schools together with students identify core themes around which all subject teaching is formulated (Venäläinen, 2016). In practice, this means that at least one multidisciplinary learning module must be introduced every school year. To plan and implement multidisciplinary learning modules, cooperation is required between all subjects involved. The objectives, contents and implementation of multidisciplinary learning modules are decided in the local curriculum and specified in schools’ annual plans (Vitikka, 2016).

Curriculum innovation can focus not only on the content of learning, but also on how it is organised. For instance, introducing new approaches to learning such as experiential learning, inter-grade and inter-subject learning, or flexibility in the length of instruction time, can guide schools in their improvement strategies (see e.g., European Commission, 2017h).

Policy continuity and long-term vision

One of the key factors of successful education systems is sustainable leadership and political stability. According to Sahlberg (2015), the success of Finland’s education system is not the result of any major national education reform per se, but has been based on the continuous adjustment of schooling to the changing needs of society. The basic values and the main vision of education have remained stable since the 1970s (Rinne et al., 2002). The key message is that Finnish governments from both sides of the political spectrum have made education a key priority and have maintained the consensus that only a well-educated nation will be successful (Ibid.). The success of the Welsh education strategy has also been conditional on the ability to ensure successive government officials’ commitment to the on-going reform (OECD, 2017h). India offers an illustrative example of how important long-term commitment and vision are for the success and upscaling of innovation (see Box 26 below).

Box 26. Continuity of the activity-based learning programme in India

The activity-based learning (ABL)³⁴ programme in India has been scaled-up from the state of Tamil Nadu to more than 37,500 primary schools since 2007, and has since been implemented at the national level (and transferred to other countries such as Bangladesh and Ethiopia). Bedi and Kingdon (2016) identified five major factors that have enabled the massive reform to be sustained for more than 10 years in Tamil Nadu: 1) Favourable initial conditions, with a history of educational innovations having been tried out in the state in the 1970s and 80s; 2) the passion, sustained work and interpersonal qualities of the education officer responsible for the reform, who involved teachers, ministers, and teacher union leaders into the design and implementation of his educational reforms; 3) the continuity of leadership: the Tamil Nadu government appointed the same officer the State Project Director of the Sarva Shiksha Abhiyan programme³⁵ and provided continuous support and policy endorsement; 4) joint construction of the programme with the teacher unions of Tamil Nadu, by making feasible compromises and cooperative amendments to the ABL based on teachers’ views; and 5) the sustained training and robust monitoring of the ABL programme’s implementation by the Sarva Shiksha Abhiyan office.

Source: compiled by PPMI based on policy reviews.

The examples discussed above show that the effects of education reform can take a long time to yield positive results. In a meta-analysis of compulsory school reforms in the US, Borman et al. (2003) found that the strongest effects are only evident 8 to 14 years after the introduction of a reform. Policy-making that is oriented to short-term results may derail reforms because their immediate effects are not demonstrable (Burns & Köster, 2016).

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³⁴ More about the ABL innovation itself and its results, see evaluation reports: Singal et al. (2016); Aslam et al. (2016).
³⁵ SSA is an Indian Government programme aimed at the universalisation of elementary education.
This susceptibility of reforms to political changes was evident in our field work; there are several examples in Europe where changes in government shifted political priorities, which consequently impeded the sustainability of policies supporting innovation in schools (see examples in Box 27 below).

**Box 27. Examples of discontinued policies to support innovation in schools**

Education reform in **Croatia** has suffered from a lack of continuity and political support. In 2014, the government charged an expert group with providing a proposal for a new school curriculum[^36^], in line with the ‘Strategy for Education, Science and Technology’. Transversal skills such as learning to learn, entrepreneurship, personal and social development, health, sustainable development, ICT use and citizenship education were elaborated in more detail (European Commission, 2016c). In spring 2016, expert consultations with over 60,000 school leaders, teachers, experts, institutions and organisations showed that teacher unions, parents and the non-governmental sector expressed support for the reform (Ibid.). However, the reform was halted by the Minister’s decision to change the leadership of the project. An attempt to give greater influence to the Catholic Church, and to experts close to the ruling Croatian Democratic Union (HDZ), raised concerns about the influence of ideology on education policy, which provoked large-scale protests across the country in mid-2016 (Petak et al., 2017). Moreover, the lack of clear vision about the timeline and budget for its implementation led to a loss of momentum (European Commission, 2016c).

In the **Netherlands**, a curricular reform in secondary education started in 1998. Apart from curricular issues, it was accompanied by a non-mandatory pedagogical reform called The Study House (‘Het Studiehuis’). This reform notably presented ‘New Learning’ as an alternative to whole-class instruction. It created much turmoil and discussion in the field, eventually prompting a Parliamentary Investigation in 2008 (Dijsselbloem, 2008). It concluded that “while it could not be said with any certainty that these reforms had led to a drop in the standard of education (...), the government’s control over the situation was not firm enough to prevent a loss of quality“ (Borghans et al., 2016, p. 191). As a result, the government became hesitant to impose clearly defined innovations on schools, and increasingly focused on improving test scores, gathering data for better monitoring, and granting more autonomy to schools themselves (Ibid.; Bulterman-Bos, 2016).

**Box 28. Example of government policies hindering innovation**

In the **UK (England)**, schools are under pressure to respond to government reforms, to maintain and improve examination and test results, and to satisfy the demands of the inspection system (see case study 12, UK). There are tensions between the requirement to respond to these pressures and the need to provide a broad educational experience for pupils. The sheer pace of government reform, inconsistencies in relation to changes of focus and direction, the narrowing of the curriculum, cuts in central and local funding, and the pressure on schools to constantly maintain and improve their test results and satisfy inspectorial demands, all act as significant inhibitors on mainstreaming innovation in schools (case study 12 - UK). Schools which receive a poor rating from Ofsted, for instance, are forced to re-focus their efforts on addressing issues of concern, while other

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developments then tend to be put on hold or even abandoned (Ibid.).

Source: compiled by PPMI based on the UK policy review and case study.

The analysis and illustrative examples presented above emphasise how important it is to adopt a coherent policy framework and long-term vision and policy orientation, in order to embed innovation into school education and ensure a system-wide transformation. This also includes bringing coherence and clarity to the issue of how different initiatives and policies relate to each other and contribute to realising the common vision, and to ensuring that key education stakeholders are active participants in co-constructing policies and their implementation.

However, a coherent policy framework for innovation is just one out of six elements identified in our hypothetical model (see Figure 3) as necessary conditions for developing a learning system that supports all schools in their attempts to innovate. There is a need for supportive policy mechanisms, consistent with the overall policy framework and vision, to help develop schools’ capacity to manage and sustain change. These include: school autonomy accompanied by horizontal accountability measures; ‘smart’ funding formulas; professional development systems; quality assurance; and collaboration opportunities. Each of these are discussed in detail in subsequent sections.

## 4.2. School autonomy and accountability

To be successful, education systems need to be able to adapt to accommodate students’ diverse needs, and this is especially true in socio-economically disadvantaged contexts (European Commission, 2014a). Education systems’ adaptive capacity is closely linked to the degree of school autonomy (Ekins, 2010). The highest quality of teaching will have little effect if schools are unable to make decisions that ensure a design and delivery of response to their needs (Caldwell & Harris, 2008).

Decentralisation of education systems in Europe has been accompanied by a general move towards greater autonomy for the school as a whole, and particularly for those assuming leadership roles (Eurydice, 2007). The link between the degree of school autonomy and the positive impact on quality of education provision, so long as accountability arrangements are in place, has been widely established in the literature (see e.g. the review made by European Commission, 2017h).

This section explains how different levels of school autonomy can act either as a facilitator for change, or as a barrier, to schools aspiring to adapt to the learning needs of their students and deliver high-quality education. It then discusses the extent to which school accountability mechanisms can better support school innovation.

### 4.2.1. School autonomy as a facilitator of change

School autonomy is an important condition for the improvement of school practices to meet increasing demands for high-quality education (Cheng et al., 2016). Schools with greater autonomy can better adapt to changing educational circumstances if they are granted the capacity and self-ownership to make changes to enhance student learning (Caldwell & Spinks, 2013; OECD, 2013c). Autonomy can nurture schools’ capacity to define their own teaching and learning targets, and create the right conditions in which to experiment, innovate, and develop favourable learning environments for students’ and schools’ overall improvement (Borghans et al., 2016; Sahlberg, 2015).

Across Europe, schools have varying areas and degrees of autonomy and decision-making. School autonomy can cover pedagogical (curriculum, teaching methods, student assessment), organisational (human resources management, support structures such as mentors, teaching assistants and school-home mediators, parental involvement, relations with peers, teacher-student relationships), and financial aspects (use of public and private funds) (Ekins, 2010; Eurydice, 2007). In some European education systems, there is more centralisation, and political influence is more pronounced, while other systems are characterised by greater local autonomy and higher level of trust among
actors (European Commission, 2017b). It is important to keep these national variations in mind when analysing specific policy reforms and the capacity of schools to implement them. It is also important to note that autonomy will only be nominal if it is primarily viewed as a means of pushing responsibility (but which does not in effect grant more authority to, or create a sense of empowerment for, school leaders and teachers) down a hierarchy onto schools (Ibid). While the authority to make decisions can be shifted from central authorities to schools, if school leaders adopt a compliance perspective of their role and don't use their increased authority to drive change in their schools, classrooms are unlikely to be affected (Hamilton Associates, 2015). Consequently, how policymakers communicate and enact autonomy is critical.

School autonomy must go hand in hand with accountability measures (Cole, 2011). Research indicates that schools can make effective use of their autonomy over curriculum and learning organisation to improve students’ performance, in particular as a result of incentives and information provided by accountability measures, such as inspection (Dedering and Mueller, 2011). In this case, it is crucial not only for schools to be given new expectations to accompany their new roles, but also to provide them with the capacity and resources to exercises their autonomy. At system level, schools may benefit from regulatory policy frameworks that support them in the exercise of their autonomy over decision-making; data management systems that support schools to effectively administer their resources; monitoring the transition to greater school autonomy and disseminating emerging examples of innovative practices; and supporting the capacity building of school leaders, teachers and school councillors (Cole, 2011, and Box 29 below).

Box 29. Package on school autonomy in Austria

The Austrian Package on School Autonomy, adopted in 2017 under the Act on Teaching Practices (Bildungsreformgesetz), is an example of a comprehensive policy approach to school autonomy. It aims to increase schools’ decision-making capacity over the organisation of school time and learning groups to meet students’ and parents’ needs. It also aims to give schools more autonomy over staff recruitment and performance management, by professionalising school leadership and devolving responsibility for some human resource functions to school leaders (OECD, 2017e). The package also includes a concurrent evidence-based quality assurance framework. The package includes an administrative reform which establishes new education directorates for each of the nine provinces. These new education directorates will be responsible for the administration of both federal and provincial schools.

Source: OECD (2017e).

Furthermore, strategies for school autonomy need to be sensitive to the local circumstances and the capacities of each school (Cole, 2011). Encouraging all schools to innovate without adequate support and empowerment may push disadvantaged schools into even more critical situations (Mourshed et al., 2010). Schools with weaker capacities require higher levels of external support to develop and/or sustain their commitment to improve (Stosich, 2016). Professional development is one of the essential tools for bridging the gap between ambitious policy goals and the capacity of teachers and schools to meet these goals and respond to external demands (Ibid, see also section 4.4.). The Australian Independent public school (IPS) initiative is an illustrative example of a government programme which grants more autonomy to schools and that goes hand in hand with the empowerment of school staff to exercise new responsibilities (see Box 30 below).

Box 30. Independent public school (IPS) initiative in Western Australia

The Independent Public Schools (IPS) initiative was introduced into the Western Australian public school system in 2009. The objective was to empower school communities by giving schools greater decision-making authority over key aspects of their operations, such as staffing and
budgets. Over 100 schools expressed an interest in being part of the programme. A selection process determined that 34 schools were ready to operate with greater autonomy and were accepted in the first intake in 2010. Since that time there have been four additional intakes, and in 2015 Independent Public Schools constituted 57% of all public schools in Western Australia and 70% of the students and staff.

An independent evaluation of the programme undertaken by a Melbourne University team headed by Professor John Hattie (2013) found that IPS had been successful in creating the conditions for improved student performance, thanks to several distinct policy measures accompanying the initiative: a comprehensive professional development programme for school leaders, intelligent accountability mechanisms, and the creation of conditions for collaboration within and among schools, among others (Hamilton Associates, 2015).

Source: compiled by PPMI based on the Australian policy review.

This section looks more closely at how the three following elements of school autonomy can better support innovation:

- **Pedagogical autonomy** (e.g. curriculum, teaching methods, assessment practices);
- **Organisational autonomy** (e.g. timetable, rules of staff and student admission, human resources management, logistics, buildings, etc.);
- **Financial autonomy** (e.g. control of school budget, staff remuneration and procurement). Since financial autonomy of schools relates to overall school funding formulas, its importance is discussed in the section 4.3.1.

### Pedagogical autonomy

Schools’ autonomy over the curriculum, teaching methods and classroom assessment methods can be correlated with the capacity of schools to implement innovative pedagogies. The OECD (2013a) shows that systems that allow schools to elaborate or adapt their curricula and assessment practices tend to perform better than systems that do not grant such autonomy, even after accounting for countries’ national income. Several national policy reviews and case studies illustrate how pedagogical school autonomy can influence innovation (see Box 31 below).

#### Box 31. Examples of policies supporting school pedagogical autonomy facilitating innovation

In **Malta**, greater pedagogical autonomy has come together with innovative school governance as a result of the ‘For All Children to Succeed: A New Network Organisation for Quality Education in Malta’ initiative (Darmanin, 2016; Ministry of Education, Youth and Employment, 2005). This change gave schools more pedagogical autonomy regarding the selection of which programmes to follow (as with the Core Curriculum Programme) and which to develop (as with the take-up of suggestions from the National Literacy Strategy) (Ibid.).

The **Dutch** educational system is based on the constitutional principle of freedom of education, meaning that both public and private schools have a high degree of educational autonomy, under certain legal conditions (Borghans et al., 2016). The high degree of educational autonomy granted to schools underlines the importance of defining each school’s vision, strategy and objectives in a dialogue with relevant stakeholders such as students, parents, policymakers, academics and civil society organisations, and through experimentation and innovation (Ibid.).

The **Slovak** education and curricular reforms from 2008 introduced several features of innovative approaches aimed at introducing a competence-based orientation of education and training programmes, giving more pedagogical autonomy to schools to adapt to local needs, and to develop their own curricula and teaching methods (Huttova, 2016). One of the key changes in the ‘State educational programme’ (Štátny vzdelávací program) (2008) was a shift away from traditional content-based teaching and learning. The new national curriculum emphasised basic and cross-curricular competences to be achieved by pupils at various levels of education. The national curriculum framework was gradually
introduced in pre-schools, primary and secondary schools (Ibid.). Although reforms have been criticised for being insufficient (e.g. not providing enough funding, lack of clarity and guidance, missing tools and training for educators), they have been acknowledged as headed in the right direction (e.g. see Novak, 2013; Shewbridge et al., 2014).

Source: compiled by PPMI based on policy reviews.

On the other hand, schools in some countries experienced strict national curriculum frameworks that barely left any room for adjustment to local contexts. Findings indicate that this approach negatively affects teachers’ self-confidence and motivation to assume increased responsibility for education provision. A detailed and prescriptive national curriculum can lead to teaching plans becoming too crowded, leaving no time for learning or introducing new approaches, methods and tools (see examples in Box 32 below).

Box 32. Examples of restrictive curriculum-related legislation hindering innovation

In **Greece**, Spyropoulou et al. (2008) found that the rigidity of the curriculum partly contributed to a reduction of the number of innovative initiatives by teachers. The prescribed heavy load of teaching material and the examination system put pressure on individual teachers towards a strict interpretation of the curriculum (case study 4 - Greece). The lack of local differentiation of the curriculum was another barrier. However, case study evidence suggests that some schools did find ways to implement local innovations despite the restrictions (see examples of primary schools of Thiva and Aliartos in Viotia county, case study 4). Success was usually achieved in cases where innovations were tailored to fit the central framework and/or where extracurricular activities attracted external funding.

In **Hungary**, legislative changes introduced since 2011 increased the number of teaching hours and restricted schools’ autonomy in several areas: teaching content, textbook choice, and the management of financial and human resources (European Commission, 2016d). Teachers are now appointed and paid by the Klebelsberg School Institution Maintenance Centre (*Klebelsberg Intézményfenntartó Központ*, KLIK), which also manages school procurement. Teachers’ compulsory self-appraisal and assessment by the newly established agency directly affects teachers’ promotion and salaries (Ibid.). The school book market was nationalised, and the offer of textbooks was dramatically reduced. The national curriculum was revised and became more prescriptive, leaving little room for local variations (Hunya, 2016).

Source: compiled by PPMI based on case studies and policy reviews.

**Organisational autonomy**

National policy reviews and case studies demonstrate that many of the analysed schools have significant organisational autonomy. However, not all schools are aware of their degree of autonomy, in which case they do not fully exercise it to make innovations to their practices. Box 33 below exemplifies some elements of organisational autonomy that support innovation in schools and in the education systems where they operate.

Box 33. Examples of organisational autonomy which supports innovation

In **Estonia**, schools are rather autonomous with respect to staff management (selection, dismissal, duties and responsibilities, additional salary payments) (Eurydice, 2007; OECD, 2016f). However, school supervisory bodies still participate in teacher recruitment processes and school staff appointments, discuss school development plans, and approve salary rates for educational personnel as proposed by school leaders (OECD, 2016f).

In **Berlin (Germany)**, organisational autonomy enables schools to reach their goals in a way that best fits the particular circumstances of the school. Schools can flexibly set their lesson timetables and introduce whole-day schooling where needed (case study 3 – Germany (Berlin)).

In **Poland** since 2009, school leaders have been granted more flexibility to manage
instruction time for curriculum subjects (OECD, 2015b). Moreover, Polish schools are relatively autonomous with respect to staff management and distributing merit-based and needs-based scholarships (Ibid.).

Source: compiled by PPMI based on case studies and literature review.

Despite flexibility of some schools in Europe to organize their learning and teaching the way they see fit, there are also many examples when rigid frameworks and lack of organisational autonomy of schools stifle innovation. Those are, for instance, restrictions on schools for staff management, for decisions regarding school facilities and equipment, or for teacher working time (see Box 34 below).

Many national policy reviews explicitly highlight the issue of time and overload of school staff. Although there are many teachers who are willing to initiate and implement optional innovative practices, fewer can do so due to their high workload. Teachers’ overloaded schedules make the promotion of innovations at schools rely on personal factors, such as motivation and determination to experiment.

**Box 34. Examples of limited organisational autonomy and its effect on innovation**

In **Greece**, the centralised system of appointing school leaders and teachers prevents schools from making the most appropriate choices according to their needs (Eurydice, 2007; case study 4, Greece). Innovative programmes in the Greek educational system are centrally applied and imposed in a ‘top-down’ approach, without involving schools, teachers and other stakeholders in the planning and design of innovations (Ibid.).

In **Italy**, school leaders cannot choose their own teaching and non-teaching staff, and make certain organisational decisions on school furniture and facilities, as they fall under the control of local and regional authorities (Eurydice, 2007). If municipalities are not supportive, schools can be hindered to introduce certain pedagogical or organisational innovations (see case study 6, Italy).

In **Croatia**, teachers must teach in several schools to collect the number of teaching hours required by law, which negatively influences their participation in various school learning activities and limits their possibilities to dedicate more time for planning the lessons. This also makes it hard to organise interdisciplinary lessons and ensure consistent collaboration of teachers within schools (see case study 1, Croatia).

Source: compiled by PPMI based on case studies.

The traditional organisation of learning in some schools can also be an obstacle to the experimentation and implementation of innovative methods. Formal limitations on organising outdoor learning may also exist, in terms of time, duration, transportation, and assisting staff (e.g. in case studies 7 – Lithuania; 4 – Greece). Big class sizes also make it difficult to address each student’s individual needs (e.g. in case studies 5 – Hungary; 6 – Italy).

Many case studies indicate that teachers feel overburdened, or have too many administrative tasks to do because there are shortages of administrative staff. A substantial part of this burden is linked to school monitoring and accountability requirements, which are themselves linked to short-term policy orientation and demands for immediate results (as discussed in the section 4.1.2). Accountability mechanisms, therefore, can either stifle or enhance school performance and development as a learning organisation, depending on how they are organised and function to engage, inform and support school innovation.

**4.2.2. School accountability**

The recent policy context has put increasing emphasis on school and teacher efficiency and accountability for education processes and outcomes (European Commission, 2016b). In the last decades, there has been a global expansion of the use of standardised comparable testing to support the increasing transparency, accountability
and improvement of education systems, although the literature reveals only a marginal positive association between student achievement and educator-based accountability (Smith, 2016).

Accountability in education is traditionally defined as the act of compliance with agreed upon rules and standards, and reporting on performance results vis-à-vis mandated roles and/or plans (Cedefop, 2011; Rechebei, 2010). However, accountability does not exclusively imply vertical, top-down and hierarchical mechanisms. Horizontal accountability presupposes non-hierarchical relationships in a networking environment, which changes the relationships between schools and their main stakeholders (Hooge, 2016; OECD, 2017a). For instance, including wider stakeholders into school governance (e.g., via school councils) fosters school accountability (Barrera et al., 2009). It can also involve peer-review processes embedded into the work of learning communities (Government of Victoria, 2013).

In some countries, there has been a recent trend towards multiple school accountability involving various relevant stakeholders such as governments, inspectorates, local authorities, parents, and other organisations, groups or persons in the school’s environment (Eurydice, 2007; Hooge, 2016). While the decentralisation of school education policy has given schools more autonomy, at the same time schools find themselves at the centre of an accountability network where the perceptions of different stakeholders on the quality, effectiveness and efficiency of schooling must increasingly be taken into account. For example, in England and Wales, every school has a school governing body responsible for general administration and staff management, and is comprised of the school leader, parents’ representatives, teaching and non-teaching school staff, the local education authority, as well as local political representatives (Hooge, 2016).

Increasing accountability can lead to unintended drawbacks for the development and sustainability of school innovations. While all countries wish to have strong accountability systems that allow both achievement and innovation, Burns and Köster (2016, p. 24) note that there is an “inherent tension between accountability and innovation, in that tightly controlled accountability mechanisms seek to minimise risk and error, both of which are fundamental elements of the innovation process”. Strict accountability mechanisms may restrict innovation, when underlying paradigm of accountability relies on high-stake tests in which student performance is expected to reflect the quality of teaching work (European Commission, 2016b). A balanced approach to school accountability — combining vertical accountability mechanisms focused on achievement and excellence, while allowing horizontal measures supporting innovation, experimentation and the participation and feedback of a variety of stakeholders — could help build consensus and improve the overall quality of education (Burns & Köster, 2016; Hooge, 2016). Box 35 below provides examples of effective systems of school accountability that support innovation.

**Box 35. School accountability in Finland**

Finland’s accountability policy enables schools to remain focused on teaching and learning, and permits greater freedom in curriculum planning (Sahlberg, 2015). The Finnish policy of educational accountability preserves and enhances trust among teachers, students, school leaders and education authorities. It involves all key stakeholders in the process, and offers them a strong sense of shared professional responsibility and initiative (Ibid.).

The Finnish system relies on building professional responsibilities within schools and encouraging lateral capacity-building among teachers and schools, rather than on an external accountability structure. Features of the Finnish system are sample-based testing, thematic assessment, and reflective self-evaluation, and a culture of mutual responsibility and trust is considered critical (Acquah, 2013).

Source: compiled by PPMI based on literature review.
Education systems must build intelligent systems of school accountability that do not distort the primary activities of schools by imposing high costs without securing substantial benefits (O’Neil, 2013). The concept of ‘intelligent accountability’ implies trust in professionals, a focus on self-evaluation, appropriate measures that do not distort the purposes of schooling, and measures that encourage the fullest development of every student (Cowie & Croxford, 2007). Accountability mechanisms should also provide guidance regarding the expectations and responsibilities of all actors, ensuring that schools and local stakeholders are able to meet the challenges of complex and multiple school accountability.

Overall, the capacity of schools to innovate is to a great extent dependent on their autonomy over what and how to teach. However, autonomy must go hand-in-hand with accountability; that is, it must be accompanied by a system of mutual responsibility for the quality of education provision and adhere to the long-term vision and policy orientation. Building schools’ capacity to reconcile multiple accountability pressures and exercise their autonomy effectively is one of the key success factors for transforming schools into learning organisations and for sustaining innovations.

4.3. Financial support for school innovation

The successful implementation of any education strategy is conditional on an adequately resourced implementation plan (see e.g., OECD, 2017h). Policy reviews and case studies demonstrate that along with the necessity to earmark additional resources for improving professional development systems, quality assurance and data collection systems, school infrastructure and collaboration platforms, school innovation to a great extent depends on the ways educators and school leaders are flexible to use already existing school budgets, i.e. on their financial autonomy.

4.3.1. Financial autonomy of schools

Although there is a tendency for greater school autonomy across Europe, financial matters are still mainly and formally in the hands of national and/or regional governments (Walther et al., 2016).

Greater financial autonomy can play a positive role in supporting school innovation, along with transparency and accountability mechanisms at local level. For example, in Estonia, schools have the freedom to allocate their resources rather independently, with school supervisory bodies reviewing school budget plans (OECD, 2016f). For instance, the development and implementation of the new instructional system by the Jõgevamaa Gymnasium did not require any additional resources, because Estonian schools can redistribute their budgets as they see fit (case study 2 – Estonia).

In several other case studies, restrictions within school funding systems were cited as major impediments to innovation (see examples in Box 36 below).

Box 36. Examples of constraints limiting schools’ financial autonomy and capacity to innovate

In Lithuania (case study 7), the main source of school funding is the student’s basket, but its use is heavily regulated and does not envisage enough hours for the general and preparatory work of teachers. When developing and implementing innovations, teachers must work together (in addition to their individual work in their classrooms), but the funding methodology does not foresee hours/funding for teachers’ joint activities. Furthermore, schools are not allowed to move the funds of the basket from one title to another. For example, a share of the basket is strictly devoted for buying textbooks. However, innovative schools tend to employ a multitude of other open sources and update them immediately as new, relevant sources become available. Unable to use these resources for any other purpose, these schools can be forced to buy textbooks or otherwise lose this funding resource (Ibid.).
In Andalusia (Spain), the organisational rigidity of the schools is well illustrated by the “cheque libro”, which consists of funds to acquire textbooks. This system was not used in the innovative case study schools because they could not know what materials they would need before they had undertaken their yearly assessments. Therefore, these resources were lost, whereas they could have been used to purchase other materials later (see case study 10, Spain).

Source: compiled by PPMI based on case studies.

### 4.3.2. Additional funding for school innovation

Adequate resources make schools more capable of investing into students’ performance development and of implementing innovative pedagogies and school organisational practices (Coleman & Anderson, 2000; Thro, 2012). Case studies and national policy reviews suggest that the availability and level of additional financial resources for school innovation at national, regional and/or local level, EU level, or from civil society actors, can have a crucial impact on the frequency, quality and success of innovative practices.

**National, regional and/or local public sources of funding for school innovation**

Additional financial incentives for school innovation mainly come from public authorities at national, regional and/or local level (see examples in Box 37 below).

**Box 37. Examples of national, regional and local financial incentives to support innovation in schools**

In **Sweden**, state funding for pedagogical innovation is available for schools, who can apply to the Swedish National Agency for Education for grants to participate in different educational projects (see case study 11, Sweden). Financial incentives for teachers have also been introduced recently, allowing school leaders to promote innovative pedagogies (Lyngfelt, 2016).

In **Andalusia** and **Castilla y León (Spain)**, financial awards and national recognition are given out for innovations in teaching practice that improve the results and procedures of educational centres (Pàmies Rovira & Carrasco Pons, 2016).

In **Estonia** and **Germany (Berlin)**, additional funding for the procurement of innovative ICT solutions and equipment was made available via national programmes and state funding (Erss, 2016; case study 3, Germany (Berlin)). For instance, in Berlin, the Friedenauer Community School was granted additional funds during a project’s pilot stage by Berlin’s Senate for Education to cover the costs of a person’s half-time role of managing the pilot project. Extra funding for a special pedagogue for each grade, and two school development advisors, have been also allocated (see case study 3, Germany (Berlin)).

In the **Netherlands**, since 2008, a bursary system is available for teachers to participate in Master’s programmes (**Lerarenbeurs**) focusing on learning and innovation (European Commission, 2017b). The programme aims to develop teachers’ leadership competences, attitudes of enquiry and action research in schools. Teachers have the opportunity to apply for a study grant for a Master’s or a second Bachelor’s (two or three years), which covers the study fee for the duration of the programme and replacement costs for one day a week (Ibid.). Moreover, in 2015, the Teacher Development Fund (**LerarenOntwikkelFonds**) was launched with financial support from the government to support teachers through project grants, accompanied by a support programme and a coach, to “put innovative ideas into practice through small-scale school-based projects, without the constraints of the financial implications or the priorities of the school where they are employed” (Ibid., p. 42)

In **Denmark**, the Danish Foundation for Entrepreneurship was established in 2010 by an inter-ministerial partnership between four ministries on the basis of the government’s overall strategy for entrepreneurship education. The Foundation is the national knowledge centre and focal point for the development of education, and focuses on...
innovation and entrepreneurship at all levels of the education system (Rasmussen, 2016).

Source: compiled by PPMI based on policy reviews and case studies.

Sustainable investment in key policy areas underpinning national reforms and modified education strategies is necessary to strengthen their implementation process (see e.g., OECD, 2017). The establishment of the Technology and Learning Fund in Ontario (Canada) illustrates how education authorities can design a multi-faced investment plan to support transformation in teaching and learning, by investing in school infrastructure, professional development of teachers, and innovation research (see box below).

**Box 38. The Technology and Learning Fund in Ontario, Canada.**

In Ontario (Canada), Technology and Learning Fund (TLF) was established in 2014 as a result of a partnership between the Ministry of Education and the Council of Ontario Directors of Education (CODE). This three-year multi-faceted investment was designed to support transformation in teaching and learning, modernise classrooms and support educators’ efforts to bring innovation to learning (CODE, 2015). The $150 million TLF is comprised of two interrelated allocations to district school boards, school authorities, and provincial schools: 1) Funding Allocation for TLF Enhanced Supports (for the acquisition of relevant technology and learning tools, and provision of professional learning opportunities for educators related to the meaningful integration of the technology); and 2) Funding Allocation for Innovation Research (documenting local theories of action, and progress toward systematising and scaling-up innovative teaching and learning practices) (CODE, 2017). By 2014, the 21st Century Teaching and Learning Initiative had resulted in over 100 school or district innovation pilots (Ontario, 2014), and the programme continues to receive support and applicants (Beggs, 2015).

Source: Compiled by PPMI based on Canadian policy review.

Some European countries do not provide additional financial resources to support school innovation. It can be much harder for schools to adopt innovative approaches if they struggle to cover their basic needs (see examples in Box 39 below).

**Box 39. Limited funding for innovation**

In the two Greek case study schools, the limited financial resources and support was reported as problematic. Certain material and financial support was only made available due to the school leaders’ connections with and the interest of the local community (see case study 4, Greece).

In the UK (England), schools have had their funding substantially cut in recent years, and as staff left schools, some could not be replaced. Funding professional development activities also became increasingly problematic (see case study 12, UK (England). These problems impact schools in disadvantaged areas the most, where there tend to be more social problems to address, a greater concentration of students with special needs, and less support for education from parents (Ibid.).

In Romania, the education systems’ financial resources to support innovation are inadequate to implement its own initiatives/policies. Schools have limited funds that they can use to support innovation. The budget allotted to education in Romania is the smallest in the EU. Interviewees from case study schools emphasised that there is a genuine need to have at least a minimum amount of resources available to schools, rather than extra resources (see case study 9, Romania, schools in Buzau and Tulcea).

Source: compiled by PPMI based on case studies.

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37 The Foundation also develops and publishes its own education material, advises on the implementation of entrepreneurship in teaching, and facilitates the cooperation and networking about entrepreneurship education. It has a yearly budget of 25 million DKK (EUR 3.36 million). See more: http://eng.ffe-ye.dk/the-foundation/about-the-foundation.
**EU financial support for school innovation**

Several case studies show that additional funding from EU funds and programmes are important sources of support in some countries. The European Social Fund (ESF), for example, assisted the restructuring of school networks, developing various support services, arranging CPD programmes, and acquiring technological equipment, in several countries (e.g. in case studies 1 – Croatia; 2 – Estonia; 5 – Hungary; 7 – Lithuania) (see examples in Box 40 below).

**Box 40. Examples of school innovations supported by EU funds and programmes**

In **Croatia**, 85-90% of national education budget is allocated to salaries, and the remaining 10-15% is insufficient to cover infrastructural investments, teachers’ education and training, equal opportunities for pupils, school equipment, etc. This is where the ESF stepped in and supported schools via the Human Resources Development Programme (HRDP) (see case study 1, Croatia).

Since joining the EU in 2004, **Hungary** has used EU cohesion funds for educational reforms and innovative initiatives. All funding for projects was provided on a competitive basis. Both case study schools have been very active, and along with others took part in the Integrated Pedagogical Programme, which helped sustain their methods (case study 5 – Hungary).

Another common source of EU funding for school innovation comes from the Erasmus+ programme, such as from Key Action 2 (Cooperation for Innovation and Exchange of Good Practices) and eTwinning (the platform for schools in Europe) (see e.g. case studies 7 – Lithuania; 9 – Romania). In the two case study schools in **Romania**, the Erasmus+ programme and its predecessors have made it possible to acquire international experiences and to enrich a portfolio of practices (see case study 9, Romania, schools in Tulcea and Buzau). The eTwinning platform has been also used as a stepping stone towards the Lifelong learning programme (LLP) and Erasmus+ projects, and as a tool to disseminate their results (Ibid).

Source: compiled by PPMI based on case studies.

**Financial support for school innovation from civil society organisations**

Private financial support from NGOs, foundations and business organisations can be a useful additional resource to experiment with and implement school innovation practices. Their support can be used to develop CPD programmes; help prepare various grant applications; invest in classroom equipment, libraries, cultural and sports activities; help to develop teaching materials; and support schools in socio-economically disadvantaged regions (see examples in Box 41 below).

**Box 41. Funding for innovation from private stakeholders**

In **Hungary**, the Open Society Foundation (OSF) provided professional and financial help and organisational frameworks for introducing and implementing the Step by Step programme (SbS), among other educational initiatives, at the Open Door school in Northern Hungary (case study 5 – Hungary). Financial support from the OSF was directed to the implementation, maintenance and dissemination of the SbS programme, as well as for classroom furnishing according to the needs of the programme, a class library for parents and students, and cultural and sports activities. The state also provided financial support partly to sustain and disseminate the SbS programme, as well as to help the education of socially disadvantaged students in the framework of the nationwide Integrated Pedagogical System.

In the **Netherlands**, the school leader from the Tjotter school in Lelystad obtained additional financial support for teacher professionalisation from the Teacher Foundation (case study 8 – the Netherlands).

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In **Belgium**, the King Baudouin Foundation supported the project ‘Innovation and Excellence in Education’ where 13 schools innovate, enhance wellbeing and learn, by utilising a powerful learning environment and efficient leadership (Desoete, 2016).

In **Germany**, non-governmental stakeholders play a key role in the promotion and mainstreaming of innovations in schools (Koelher, 2016). A considerable number of large and smaller foundations initiate programmes in the education sector that contain relevant elements of school innovation (such as the Mercator Foundation, Bertelsmann Foundation, Zeit Foundation, Hertie Foundation, Goethe Institute). In many cases, these programmes are continued based on evaluations proving their success (Ibid.).

**Continuity of funding for sustainable innovation**

Case studies reveal that the continuity of innovative activities is difficult to ensure once dedicated financial resources are exhausted or when funded programmes terminate. Schools that only rely on additional financial incentives tend to develop a ‘project-driven mentality’ and their activities lack a long-term vision (as in case studies 4 - Greece; 5 - Hungary; 7 – Lithuania; see Box 42 below).

**Box 42. The role of continuous funding for sustaining innovations**

In **Lithuania**, interviewed stakeholders referred to the phenomenon of so-called ‘project schools’, when schools try to participate in as many projects as possible, without making a lasting impact and change on the quality of teaching and learning. At the same time, these schools seem unable to continue the new practices with lower budgets and to innovate further once the support from extra funds ends (see case study 7, Lithuania).

In **Germany (Berlin)** and **Greece**, short-term funds hinder both the establishment, up-scaling and sustainability of innovations (see case study 3, Germany (Berlin). Innovations are highly dependent on funded programmes, and tend to be terminated once the programme is over (see case study 4, Greece).

As mentioned earlier, schools across countries have different capacities to innovate. This capacity depends not only on the available financial resources, but also on the school staff, their competences, and the level of support from the broader community. In **Romania**, the ‘Şcoala Altfel’ programme created opportunities for introducing innovative practices within schools, but it did not offer schools any additional financial or material support. This meant that in many areas, access to high quality activities was limited by the capacity of schools and parents to attract financial resources; this was especially true in economically disadvantaged areas where financial resources are scarce (see case study 9, Romania).

Education systems must take into account differing school capacities when building support mechanisms. Competitive grant schemes tend to favour better-off schools, which can only exacerbate inequality in the education system and society. Struggling schools can only make use of additional funding when they receive external support from state agencies, universities, NGOs or other relevant stakeholders. Innovation-related funding support should be built in to the overall school financing mechanisms so that all schools can access and use it successfully.

At the same time, national, regional and local contexts differ in their need for additional funding for innovation, as well as in its nature and role, as evidence from policy reviews and case studies suggests. Increased funding is not necessarily a sufficient solution, as the ways in which funds are allocated, managed and sustained can matter more. In some cases, it is not financial resources that schools are most in need of, but rather better **know-how** to address emerging societal challenges, for example related to the increasing numbers of students with a migrant/refugee background (e.g. Bunar, 2017). Policymakers must ensure that financial resources meet an adequate threshold, provide sustainable budgets and funds for building capacity of schools to innovate, as well as
ensure enough flexibility for schools in how the available resources are allocated and managed.

4.4. Teachers and school leaders

As discussed above, professional development systems are crucial for building school leaders’ and teachers’ capacity to innovate and manage change (Munich and Rivkin, 2015; Falch and Mang, 2015). Through professionalisation of the school staff, professional working and learning cultures can be created, which will also contribute to teachers’ job satisfaction, motivation, self-confidence and perceptions of the status of their profession (European Commission, 2017b; OECD, 2016h).

The research literature highlights three important dimensions of teacher professionalisation: 1) knowledge base for teaching, including ITE, induction and CPD; 2) autonomy – teachers’ decision making over aspects of their work (discussed in more detail in the section 4.2.); and 3) peer collaboration and networks (e.g., mentoring practices, peer feedback, and professional learning communities (see section 3.3. above). Education systems differ in terms of the emphasis they place on each of the dimensions of teacher professionalism. Furthermore, the latest TALIS results (OECD, 2016h) show that practices supporting teacher professionalism are less common in more disadvantaged regions.

Policy reviews demonstrate that current teacher education systems across Europe do not sufficiently prepare teachers and school leaders to effectively implement and sustain a culture of pedagogical and organisational innovations that could benefit schools and enhance pupils’ learning. There can be quite a lot of resistance and lack of confidence among school staff when asked to transform their learning and teaching practices and to assume leadership responsibilities (see e.g., case studies 4 – Greece (schools in Viotia county); 2 – Estonia (schools in Kiviõli and Jõgeva), etc.). Existing teacher education systems tend to reproduce traditional pedagogies rather than support innovation and collaborative teaching practices (OECD, 2015a). Integrating new technologies into teaching, as well as approaches to individualised learning and school management, were identified as some of the most pressing needs by teachers in the latest TALIS survey (OECD, 2014b). A recent survey of European schools on the use of ICT in education has also showed that while most schools in the EU are equipped with relevant technology, many teachers are still lacking the skills to help students learn with digital tools and methods (European Commission, 2013). The increasing role of new technologies and approaches requires teachers, teacher educators and school leaders to acquire new sets of competences, which calls for a transformation of teacher education to facilitate the implementation of innovation in schools (European Parliament, 2015; Erdsieg-Rave & John-Ohnesorg, 2012). The next sections discuss in more detail the approaches to teacher and school leader professional development that can build schools’ capacity to innovate.

4.4.1. Fostering effective school leadership

As discussed in Section 4.2., greater autonomy for schools requires them to assume leadership roles and to effectively manage education processes in their local contexts. However, in schools as learning organisations, school leadership goes beyond mere management processes. This refers to the capacity of schools to develop a common vision and act upon it, to nurture a collaborative working culture, and to create an environment that enables the innovation process to be experimented with and learned from. Our analysis of inspirational examples of innovative schools (see Chapter 3) demonstrates that school leadership is often a team effort, where both the school leader and teachers assume a variety of leadership roles throughout the process of improving children’s learning experiences.
However, there is a perceived lack of systematic approaches to develop the school leadership competences of school staff; policy reviews and interviews with national stakeholders in a number of the EU countries make this clear. It is, therefore, crucial that the introduction of new policy strategies for school innovation are accompanied by consistent opportunities for school leaders and teachers to improve their ability to think strategically, to plan and implement innovations, and to collaborate and self-reflect (see e.g., European Commission, 2017b).

Despite this perception, however, there are numerous initiatives at the system level that focus on the development of leader’s professional capacities: for instance, by defining competence frameworks for school leaders, or by providing specialised training programmes and resources (see examples in the box below).

**Box 43. Examples of training initiatives and policies supporting school leaders’ skills**

In **Estonia**, the national school leaders’ competence framework highlights the importance of school management competences, which includes the capacity to foster school collaboration (see case study 2, Estonia).

In **Slovenia**, change management is a compulsory element of the initial training all school leaders go through to acquire a headship license. Moreover, before certain changes are to be introduced in schools across the education system, school development teams are established to manage the changes at school level. The teams are expected to act as agents of change within their schools and are trained both in the content of the changes introduced and in change management (European Commission, 2017b).

In **Lithuania**, the programme ‘Time for Leaders’ seeks to create a support infrastructure for education leaders, while promoting proactive educational activities and allowing the implementation of advanced ideas and innovation in the education system. The overall goal was to increase “the critical mass” of well-trained school leaders through a tailored MA programme in management. Unique leadership development models were settled on and implemented in 15 municipalities between 2009 and 2015, which were accessible by school leaders and also municipalities officers managing schools. Consultancy, training and networking support was provided for each municipality (national policy review and case study 7, Lithuania).

In **Poland**, the ‘Framework plan and curriculum for qualification course in management in education’ of the Minister of Education issued in November 2015 has changed the curricula of the professional development courses. According to this plan, those who completed the management course can become school leaders. New curricula focus on leadership for learning, distributed leadership, and self-development (Mazurkiewicz, 2016).

In **Italy**, the case study schools have benefited from webinars for school leaders on ‘proactive management’ and ‘school innovation’ organised by the INDIRE institute (case study 6 – Italy). In 2017, a new system of evaluating school leaders was introduced: in an annual exercise, a team of evaluators interview the school leader and assess his/her obligatory individual portfolio. The evaluation of school leaders is aimed at enhancing and improving their professionalism as part of broader policy efforts to increase the quality of the school service and in accordance with the National Evaluation System (European Commission, 2017b).

Source: compiled by PPMI based on case studies and literature review.

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39 For example, this strategy was adopted to support the modernisation of curricula, first in Gymnasiums, then also in VET schools, and to develop schools’ self-evaluation.

40 INDIRE is the institute for education research and innovation, coordinated by Italian Ministry of Education, Universities and Research. Its mission is to provide support for educational innovation and improvement of documentation, educational research, and in-service training of school personnel, including good practice on the diffusion and use of new technologies. See: http://www.indire.it/en/. Accessed 7.12.2017.
Encouraging school leaders to show personal initiative, such as reading additional literature, doing their own research, or obtaining a Master’s or PhD degree in school leadership, can be useful in supporting innovations. Creating favourable conditions and ensuring the availability of platforms for information exchange, scholarships, and more flexible working arrangements, also appear to be success factors. According to Fullan (2002), only school leaders who are equipped to handle a complex, rapidly changing environment can implement the reforms that lead to sustained improvement in student achievement.

A recent extensive literature review provides evidence on the positive impact of such programmes on quality and inclusiveness of learning in schools (European Commission, 2017h). A review of OECD programmes concluded that those school leadership programmes that took a system-wide perspective to align school processes with the broader policy goals for school improvement and enhancing students’ learning experiences, proved to be most effective in ensuring quality of education provision (Pont et al., 2008). The Australian example of the Principal Fellowship programme (see box below) serves as a good illustration of how professional development initiatives can support regional programmes to grant schools’ more autonomy and to build schools’ capacity to assume new leadership roles. Singapore offers another interesting and effective example: joint leadership training that is participated in by both school leaders and education ministry officials.

**Box 44. Development of leadership competence in Australia and Singapore**

In Australia, The Independent Public School (IPS) Principals’ Fellowship Program was initiated by the Western Australian Department of Education in 2016. It targets those school leaders from the IPS who are ‘willing to trial, enhance, support and advocate for policies, systems, programs and processes to provide an even better education for students’ (Government of Western Australia, 2016, p. 7). The fellowship programme takes two years to prepare principals for active leadership roles in their schools and in high priority areas of system reform (Government of Western Australia, 2016). The fellowship programme involves gaining international experience at Harvard University, developing a short-term change project for their schools, executive mentoring, and developing and implementing areas of system reform in groups of fellows (Government of Western Australia, 2017). The Programme fellows form a group of well-credentialed and highly-skilled principals who can then be called on for a range of roles as needs arise. This may include being involved in specific reform agendas, acting as mentors to other principals, developing alternative policies and processes, and contributing to leadership development programmes (Government of Western Australia, 2016). Although the programme is very new, it has already been highly praised by participating school leaders (Ibid).

Singapore offers the Leaders in Education Program (LEP) that was launched by the National Institute of Education (NIE) in 2001. It is a six-month milestone executive programme for selected vice principals and ministry officers (30-40 are chosen for one cohort) to prepare them for school leadership. The programme aims to develop ‘principal-ship capability that is values-based, purposeful, and forward-looking, anchored on both strong people leadership and instructional leadership’ (Jayapragas, 2016, p. 94). The selected participants have a good track record in teaching and management, and have successfully passed tests and selection interviews conducted by the MoE. They are fully sponsored by the ministry and receive a salary during their participation in the programme (Ibid; Ng, 2008). For the past 15 years, a key theme of the LEP has been on innovation and the creation of new knowledge. The participants are stimulated through a series of challenging learning experiences: case studies, dialogues with senior officials from the MoE, overseas study trips, and more (Jensen and Clark, 2013). The effects of the LEP have been...
analysed to some extent, and the programme has benefitted participants in their ability to handle the complexities of school leadership, contextualise best practices into local contexts, be adaptable and flexible, and collaborate in a self-organising paradigm. To date, though, it is unclear whether the LEP has made a lasting impact on student learning, curricular innovations and teacher development (for a more detailed discussion on its results, see: Jayapragas, 2016, pp. 97-102).

Source: Compiled by PPMI based on policy reviews.

4.4.2. Developing teacher professional capacity to innovate

Initial teacher education and continuous professional development are important to the success of innovations in school education. Studies have demonstrated the positive impact of professional development activities on the performance of pupils in the areas of science, reading, language, writing and self-efficacy (Hofman et al., 2012; Timperley et al., 2012). A recent review of the literature indicated that CPD, which is needs-based, collaborative, that links practice with theory, and is supported by external expertise and sustained overtime, has a positive impact on quality of learning process (European Commission, 2017h). Moreover, teachers’ knowledge is especially important for shaping technology-mediated learning opportunities, as teachers need to understand and know what ICT resources are available in education and how to incorporate them into their lessons (Cox et al., 2003).

As noted above, key policy developments, such as granting schools with more autonomy and responsibility, curricular reforms, developing intelligent accountability systems, promotion of an evidence-informed innovation process, and creating a culture of research and evaluation in schools, need to be accompanied by comprehensive professional development systems that ensure teachers can act on their new roles. Such professional support must be available throughout the whole teacher education continuum, which includes closely linking initial teacher education, induction and continuous professional development (European Commission, 2017h).

Initial teacher education

Zondervan (2016) refers to certain challenges that changes in education system imply for teacher education: re-designing teacher education curricula in line with curricular changes at schools, as well as the development of new pedagogies and didactics both in schools and in teacher training. Since each education innovation is accompanied by a certain degree of uncertainty, teacher education must prepare student teachers with the ability to deal with such fundamental uncertainties (Ibid.). As Biesta (2013) puts it “what we should be after in teacher education is a kind of virtuosity in making wise educational judgements” (p. 135). Windesheim teacher college serves as an example of ITE that has designed teacher education programmes that aim to equip future teachers to deal with uncertainty and become an innovative teacher (see box below).

Box 45. Example of innovative ITE in the Netherlands

WinTC is a Windesheim’s teacher education programme preparing students for Bachelor teaching degree in primary and/or secondary education. The programme is interdisciplinary, multimedial, creative and has a strong international and cultural orientation.

of future leadership. They include: featuring designing and managing learning school organisations that can sustain a competitive advantage in a fast-changing and turbulent environment; strategic choice and marketing; innovative communication and information technology; designing an integrative and innovative curriculum in order to achieve excellence in teaching and learning; and building human and intellectual capitals. See: https://www.nie.edu.sg/leadership-professional-development/leadership-programmes/leaders-in-education-programme. Accessed 7.12.2017.
The programme combines core elements of Dublin descriptors\(^{44}\) with the framework of competences of New Pedagogies of Deep Learning (NPDL). The WinTC model of competences consists of two categories:

- the professional competences typical for an educational professional: competence in pedagogy, didactics and subject-knowledge;
- deep learning competences: critical thinking, character, collaboration, communication, creativity, citizenship and ethical entrepreneurialism.

Based on this model, WinTC programme profiles future teachers as “education change agents, such as being creative, innovative, entrepreneurial, having a strong concern with quality of life, social justice and sustainability, and disposing of a fine ability to deal with normative aspects of education” (p. 217).

Source: Zondervan (2016).

European Commission (2015b) emphasises that transformation of ITE needs to be based on understanding of teachers’ development as a coherent continuum with several, interconnected perspectives, which include teachers’ learning needs, support structures, job and career structures, competence levels and local school culture. Effective ITE provide attractive possibilities for professional development, are based on reflection and inquiry and develop innovative mindsets, strengthening teachers’ capacity for learner-oriented teaching (Ibid., Munich and Rivkin, 2015). Collaborative practices and cultures need to be promoted in the content and process of ITE, as well as links between theory and practice.

European Commission (2017b) demonstrates that many countries are making efforts to reinforce school practice within ITE and strengthen partnerships between schools and ITE providers, while a few education systems are moving towards school-led ITE (see e.g., England (UK)).

As part of the continuum of professional development, some research also emphasises the importance of the point of entry into the teaching profession on the quality of teaching and the capacity of schools to insure creative and innovative learning environments (see e.g., Munich and Rivkin, 2015). Improving the attractiveness of the teacher profession, encouraging motivated and high-skilled individuals entering the teaching route, and carefully adding alternative teaching certification routes\(^{45}\), can help improve schools’ professional capacity and their potential for innovation (Cooper & Alvarado, 2006; Munich and Rivkin, 2015). For example, the Estonian ‘Young people to school’ (‘Noored kooli’) programme is an NGO initiative that promotes a modern learner-centred paradigm to teaching, encouraging and preparing university graduates from different fields to teach in public schools. According to representatives from one of the Estonian case study schools, many young, enthusiastic teachers from this programme have been instrumental in introducing learning methods to the school (see case study 2, Estonia).

**Induction**

Induction is a crucial step for continuity of teacher professional development (European Commission, 2015b). The research review in this field demonstrates that novice teachers which participated in some kind of induction programmes, had higher levels of commitment, satisfaction and retention, as well as performed better in different tasks, such as developing effective lesson plans, adjusting classroom activities to meet pupils’ interests and demonstrating successful classroom management (Ingersoll & Strong, 2011). There is less consensus in the literature regarding the types of induction that are

\(^{44}\) The Dublin Descriptors are the cycle descriptors (or “level descriptors”) presented in 2003 and adopted in 2005 as the Qualifications Framework of the European Higher Education Area.

\(^{45}\) One should be careful, though, when discussing alternative pathways to the teaching profession. In certain cases, they may undermine the quality of the teaching profession, teacher status and professionalism (see e.g. Oon Seng Tan et al., 2017).
the most effective. However, European Commission (2017b) suggests that induction process can support professionalism in schools if novice teachers into the school culture, which allows them to become agents of change too.

**Continuous professional development**

Responsibility for determining what CPD teachers should receive is shared between central, local/municipal education authorities and individual schools in the majority of European countries, with some variations. In some countries (e.g. the Czech Republic, Denmark and Germany) individual schools have primary responsibility for defining their teachers’ professional needs, while in other countries (e.g. France and Italy) municipalities or central authorities (in Greece) have a lead role (European Commission/EACEA/Eurydice, 2015a). Regardless of the types of these arrangements, it is crucial that all teachers have the opportunity to engage in professional development they need, especially when demands for new ways of teaching and organisation of education provision are growing.

Our field work indicates that there are a variety of professional development programmes that were made available to schools and to teachers to support their efforts to innovate and improve students’ learning experiences (see box below).

**Box 46. Examples of national institutions supporting teachers and schools to innovate**

In **Spain**, Sierra Nevada Primary School has benefited from the training and support it has received from the Centre of Teachers (CEP), which provides advice and continuous training for teachers working in public schools and supports the initiatives of schools aiming to improve. The work of the CEP has revitalised the school’s plans by focusing on new methodologies, introducing innovative practices that other schools have used successfully, and organising peer-learning visits (see case study 10, Spain). At **Clara Campoamor School** (see case study 10, Spain), various external training opportunities helped the school implement innovations in classrooms, notably through the COMBAS Project. The school participates in a network of 150 primary and secondary schools in Spain that aims to develop innovation. Moreover, the school has a ‘Base Team’ — comprised of members of the teaching staff supported by external professionals who provide guidance — which serves to support learning and consolidate the key contents and methods for the new curriculum development. In the context of this project, the teaching staff received training from the IFIIE institute (Instituto de Formación, Investigación e Innovación Educativa), which helped to introduce profound changes in its teaching practice.

The **Swedish** National Agency for Education has played a key role in promoting school innovations in Kyrkebyskolan in Arvika. It provided access to free web courses and national programmes to train school staff (see case study 11, Sweden). The systematic (mandatory) four months’ training for teachers in comprehensive schools on improving literacy was implemented by the Agency in 2015. The training programme is based on collaborative learning and on materials prepared by researchers (Ibid).

At the **Acireale school** (see case study 6, Italy), teachers underwent a couple of years of online training through webinars, via subscription to the Avanguardie Educative (AE), a platform created by the INDIRE institute. The AE platform hosts monthly videoconference webinars structured on four planning stages (**Plan, Do, Check, Act**). Teachers are also provided with guidelines and an online active community to discuss

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46 The Consolidation of Basic Competences as a central element of the Curriculum (COMBAS) project. The webpage of the COMBAS Project is no longer active, but it can be accessed through the Andalusian education authority’s website and its regional parallel Project PICBA (programme of integration of the basic competencies in Andalusia carried out in schoolyears 2011/12 and 2012/13). See: https://sites.google.com/site/picbaccbbandalucia/. Accessed 7.12.2017.

any issues or find answers to their questions.

Source: compiled by PPMI based on case studies.

In an evolving understanding of the role of teachers — from mere consumers of research to producers or mediators of knowledge — recent efforts have been made to stimulate multidimensional interactions between educational research and practice (Pareja-Roblin et al., 2014). These efforts are also fostered by the increasing awareness of the small impact that research findings (due to their limited use) have on average classroom practice (Broekkamp & Van Hout-Wolters, 2007). One of the ways to facilitate collaboration between teachers and researchers is via teacher communities (‘professional learning communities’, or ‘teacher learning communities’) 48 (Butler & Schnellert, 2008; Vieluf, 2012; Schleicher, 2015). Teacher communities designate groups of teachers who then work in collaboration with university researchers, teacher educators and/or other stakeholders, with the ultimate goal of understanding and improving their practice and support professionalism at schools (Pareja-Roblin et al., 2014).

**Box 47. Professional learning communities in Estonia**

The Estonian Teacher Education Strategy (2012) 49 calls for the promotion and support of professional learning communities. The overall vision of the strategy is for teachers to use analytical thinking and empirical problem-solving methods, so that they become familiar with and make use of the most recent research on teaching and learning, and so that they can evaluate the efficiency of their working methods and participate in research. The strategy envisages that teachers will disseminate the results of action research and best practice among colleagues in their region and all over the country. To make the strategy work, the Estonian Ministry of Education and Research has launched programmes financed from EU structural funds, including a programme to support teachers’ professional networks, such as Eduko (2008-2015) 50, which aimed to support education sciences in Estonia and to train a new generation of education researchers and teacher educators. Moreover, new professional standards for teachers were adopted in 2013 to develop formal and continuous teacher education plans and to assess future teachers’ readiness to enter the profession (ET 2020 National Report for Estonia, 2013).

Representatives from one of the case study schools has pointed out that in recent years, ITE had introduced peer-teaching as a compulsory element — which has helped the school to implement integrated learning (see case study 2, Estonia).

Source: compiled by PPMI based on case studies.

One more way to strengthen the links between research and practice is to introduce teacher research in the curricula of teacher education and training institutions. For example, in Finland, teacher education is research-based, integrating research, content knowledge, didactics and practice (Sahlberg, 2015). Teacher education is based on and supported by scientific knowledge, and is focused on the thinking processes and cognitive skills needed to design and conduct education research (Niemi, 2008). All graduating teachers complete research-based master’s theses accompanied by rigorous academic requirements of theory, methodology and critical reflection (Sahlberg, 2015). Research orientation prepares teachers to work in complex changing societal and educational environments. According to Sahlberg (2015), such enhanced professional competences have contributed to increased trust in teachers and schools regarding curriculum planning, student assessment, reporting of student performance and school improvement. Peer coaching — a process through which teachers work together to reflect on current practices, exchange ideas, improve and learn new skills, conduct classroom

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48 Other overlapping concepts are also commonly used: communities of practice, communities of enquiry, action research, and lesson study. See: Pareja-Roblin et al (2014); Levine (2010).


research, and solve other issues at school together — has also become a common practice in school improvement programmes and professional development in Finland since the 1990s (Sahlberg, 2015). It is, therefore, crucial that school governance arrangements allow sufficient time and space for teachers to collaborate.

Examples of practices from China and Singapore demonstrate how education policies can provide conditions for professional learning communities to operate within a school schedule, notably developed in synergy with other key areas of education governance, overall professional development systems, accountability and autonomy mechanisms.

**Box 48. Integrating teachers’ collaboration into school schedule in China and Singapore**

In China, there is a long tradition of teachers forming ‘teaching study groups’ for each subject in each school. Teachers prepare lessons in teams, and these are formal structures of a school (jiaoyanzu in Chinese) (Kai-ming Cheng, 2016). As shown by TALIS 2013-2014 results, Shanghai teachers spend more time per week on group work than their counterparts in other TALIS countries (OECD, 2014b). It is also commonplace for other team members to sit at the back of the classroom and observe the lesson. There are often subsequent team discussions, where the observers may give feedback and comments, and the originally decided plans may be reconfirmed and/or altered according to student reactions. Peer teachers of other grades, other subjects, administrators or even teachers from other schools, may also observe classes (Kai-ming Cheng, 2016). Traditionally, there is also a Teaching-Study Office in each school district, comprised of full-time “researchers of teaching”. More recently, in many different parts of China, the teaching-study leadership has been integrated into ‘Colleges of Teachers’ In-service Development’ which are akin to a hub of teachers’ CPD (Ibid).

In 2009, the Ministry of Education (MoE) of Singapore mandated the creation of PLCs to encourage intra- and inter-school collaboration. These PLCs were complemented by the establishment of the Academy of Singapore Teachers and six centres of excellence for professional development to enable teachers to discuss and share innovative teaching methods (MoE, 2010). PLCs are mandated by the MoE in all schools, while the National Institute of Education dovetails its training programme closely with the MoE’s policy priorities, and has most of its research funded by the MoE (Tan and Dimmock, 2014). The mode of control from the ministry has become less direct (YAN Yifei, 2016). Instead of issuing binding documents such as the Principal’s Handbook, more autonomy and room for experimentation is given to the schools while the MoE uses more subtle means of quality control such as self-evaluation of schools (Ibid; Tan and Dimmock 2014).

Source: compiled by PPMI based on policy reviews.

The process of innovation also depends on the ability of teachers to assume leading roles along with the school management and to take charge of methodological leadership in transforming teaching and learning. The model of the ‘teacher leader’ is often presented as an alternative to top-down innovation. In the literature and in practice, teacher leadership is considered an important aspect of school leadership (see section 3.3.) and it is crucial that teachers have opportunities to diversify their careers and roles (e.g., coordinating roles, school development functions, project coordinators, etc.) (European Commission, 2017b). Many countries have established mechanisms to enable teachers to take additional roles and responsibilities, besides teaching (e.g., differentiated salary scales in the Netherlands, teacher career system with opportunities for horizontal specialisation in Slovakia, network for resource teachers specialised in school development in Luxembourg) (Ibid.).

As this section demonstrated, professional development systems are crucial for building school leaders’ and teachers’ capacity to innovate and manage change. Therefore, key education policy reforms need to be accompanied by revisions in professional development systems, which should be driven by identified learning needs, sustained overtime, based on research and practice, promote collaboration, reflective practice and enquiry-based learning and provide opportunities for diversification of teachers careers.
4.5. Monitoring and culture of (self-) evaluation

The monitoring and evaluation of education policies and practices help to regulate the desired quality levels of educational outcomes, to hold educational service providers accountable, to support ongoing improvements in education (Glas, Scheerens & Thomas, 2006), and to maximise the effectiveness of public investment in education (European Commission, 2016b). Monitoring and evaluation generally help generate evidence for collective stakeholder reflection on past performance and for agreeing on new, potentially innovative initiatives that address identified weaknesses. High-quality monitoring and evaluation of school performance in implementing innovations contribute to evidence-based decision making. Evidence on the effectiveness of innovative measures can also help convince school staff and other stakeholders to engage in and support the process of innovation.

Monitoring and evaluation can be external and internal — they are complementary and mutually reinforcing. External procedures mostly help to ensure quality (OECD, 2008) and to make schools more accountable (Brečko et al., 2014). Research evidence shows that thorough and systematic self-evaluations help schools improve (Glas, Scheerens & Thomas, 2006; Jakobsen et al., 2003). Self-evaluation deepens understandings of school education: where and how it works best, and what positive changes happen when, for example, schools engage with students, parents and teachers. Self-evaluation mechanisms help to better identify and address the needs of the school community and engage in continuous, cyclical processes for improvement. Schools that actively use planning and self-evaluation are in a stronger position to cope with challenges (European Commission, 2015a).

While there is a broad consensus that monitoring and evaluation of school performance is needed, implementation of policies and school practices vary considerably (see examples in Box 49 below, and European Commission, 2016b).

**Box 49. Examples of comprehensive monitoring and evaluation processes**

In Slovenia, the Ministry of Education, Science and Sport monitors and evaluates novelties introduced in pre-school institutions and schools through national and international evaluations. The law obliges public research and development institutes to assess the effects of the introduction of novelties in school practice, to monitor the development of pre-school institutions and schools, to provide them with professional support during the transfer of new findings into practice, and to assess the quality of practice implementation (Štremfel, 2016).

Schools in Finland are not evaluated externally in the same way as in other countries (Caldwell & Harris, 2008). The primary goal of the education system is to provide equitable access to high-quality education for all. Therefore, there is little desire to compare and rank schools (Ibid). The Finnish National Board of Education carries out national evaluations, which overview how the schools are performing but do not name individual schools (Ibid). Schools are very active in performing self-evaluations and comparing their self-evaluation results with the results of the national evaluations. This is how they learn and identify those areas in which they can make further progress (Ibid). Determining students’ personal and cognitive progress is regarded as the responsibility of the school, not of external assessors (Sahlberg, 2015).

In Poland, a new curriculum focusing on learning results was introduced in 2008, and in 2009 the new data-driven system of school evaluation replaced the old system of school inspections. These two changes seem to be crucial for further improvements in the results of Polish students. The new school evaluation system has been gradually introduced since 2009 and replaced the old overly bureaucratic system of inspections. The new system provides reports that are made publicly available, although the main goal is not accountability but improving teaching and learning. The system is based on visits by assessors but is supported by self-evaluation tools. It is also data-driven as the assessors, teachers and school principals can benefit from numerous research tools that
provide quantitative and qualitative information about students, teachers and parents. Although the system is still changing, it is already providing the necessary feedback to improve the quality of teaching. Together with the national system of professional development, it provides strong support for teachers (Jakubowski, 2015).

In the Netherlands a new school inspection scheme was introduced in 2017. In the previous scheme, schools had to account for their quality based on a standardised list of minimum criteria. This approach created two problems: a lack of ownership by teachers and school leaders towards the criteria used, and little motivation for schools to perform above the minimum standards. In the new scheme, schools can establish their own ambitions and the goals they want to achieve, and indicate the criteria they want the inspectorate to use for the assessment of their performance against these aims. These criteria are added to the minimum criteria. Each school is given feedback on how to improve further (European Commission, 2017b).

Source: compiled by PPMI based on policy and literature review.

Generally, a wealth of data is collected on the inputs, institutions, processes and outcomes of education systems across Europe. This includes, for example, education statistics, monitoring data on European education systems collected by Eurydice, international assessments of student learning outcomes, and standardised testing at national level. However, evidence from national policy reviews and case studies shows that there is a lack of policy evaluation and evidence-based research across European school education systems with the exception of few examples. Few countries are piloting education policy initiatives on a smaller scale with in-built evaluations before they decide to roll out those initiatives across the entire school system.

Several case studies (see e.g. Germany (Berlin), Greece, Croatia, Hungary, Lithuania and Sweden) also emphasised that there was no proper monitoring done at schools, and/or that there were no evaluations or impact assessments of the innovations performed. As a result, schools mostly rely on assumptions and general impressions about their success or performance and students’ achievements, or on internal feedback mechanisms. Case study schools indicated that issues related to the effectiveness and sustainability of innovations were not tackled with enough attention. For example, case studies from Lithuania and Greece suggest that there are no evaluation mechanisms embedded into the planning of innovations in schools. The lack of sound studies and conclusive results also negatively affects the spreading of innovations. Well-grounded scientific evidence could raise interest in innovative practices (see case studies 4 – Greece; 7 – Lithuania; and Box 50 below). Various policymakers interviewed acknowledged that it was more difficult to introduce innovations to schools and teachers if their value was unclear (due to the lack of evidence).

**Box 50. Examples of limited monitoring and evaluation systems**

In Croatia, although self-evaluation of schools is an obligation defined by the National Pedagogical Standard Act, in practice, not all schools participate in the self-evaluation and there are no sanctions. The Act defines the foundations for assessing the quality of the performance of educational activities as external evaluation and self-assessment, which refers to the implementation of national examinations and measurements of the level of quality of all components of the curriculum (Pavkov, 2016).

In Hungary, in most cases, a final evaluation is made based solely on the numbers of participants, trainings, or amount of money spent, but the effectiveness, impact or sustainability of the evaluated projects are not discussed in the activity reports (see case study 5, Hungary). In another example, hundreds of schools were introduced to the Step by Step (SbS) programme (‘Lépésről lépésre’), providing playful education in child- and family-centred environments. However, there is no data on how many of them started and continued using it and for how long, mostly due to irregular financial and professional support (Ibid).
In Latvia, one of the main system-level factors hindering the implementation of educational innovations is the lack of education monitoring system (MoES, 2014). As a result, new projects are implemented, but the impact of the innovative potential of their products is not assessed accordingly, so there is no ground to scale up new approaches at the system level (Ose, 2016).

Source: compiled by PPMI based on case studies and policy reviews.

The absence of evidence-based research also means that innovations might not be introduced into teachers’ ITE and CPD programmes. The lack of in-depth evaluation of the impacts of education policy programmes makes it difficult to change the intervention logics of the established policy instruments and undertake more effective and efficient actions helping to transform and improve schools. In the absence of an evaluation culture, education systems are lacking one of the most powerful tools for innovation.

4.6. Multi-level partnerships and collaboration platforms

Globally, education systems are tending to open up their governance to multiple sources of knowledge and integrate diverse stakeholders into policy making, implementation, evaluation and policy learning (Burns et al., 2016). Education, and educational accountability more specifically, is approached as a shared responsibility between schools, teachers, families, and other parts of society to ensure that all children are encouraged and supported through the educational process. Different stakeholders need to be recognised and adequately supported as “co-educators” in children’s learning, starting from an early age (Fullan & Langworthy, 2014).

Partnerships are fundamental to schooling as they open new learning opportunities and knowledge, provide the critical links between schools and their communities, and broaden the support base on which dynamic schools and teacher professionalism depends. However, evidence from case studies, policy reviews and the literature show that systemic, deep-rooted and encompassing whole-school approaches and partnerships are still missing in most cases (see also section 3.5.).

4.6.1. School isolation and competition

Cooperation between schools may be limited due to competition among schools, especially from the same district. Research evidence shows that school competition along with school choice do not improve the performance of education systems, and are associated with greater segregation in the education systems (OECD, 2013c), which can create negative consequences for equity in learning opportunities and outcomes (Sahlberg, 2015). Competition among schools over students’ enrolment, standardised teaching and learning, and test-based accountability are commonly perceived negative attributes of school education systems (Ibid.). The Swedish experience shows that an increase in school competition and municipal autonomy over education policy did not translate into improvements in the demand for sensitivity to local education (while it was intended to improve responsiveness to local contexts) (Burns et al., 2016). Other relevant examples are provided in Box 51 below.

Box 51. Examples of school competition hindering innovation

In Lithuania, cooperation between schools in the same region is very limited, since they fall into the same area of competition. The size of a school’s budget directly depends on its success in attracting students, each representing a certain ‘financial basket’. Existing financial regulations set the basis for competition between schools from the same region, which explains why more viable partnerships exist between schools from different regions (see case study 7, Lithuania).

In the UK (England), schools are seen as “independent units” expected to compete and produce high standards in the context of a dominating market-based approach. The emphasis on school choice and competition for students between schools tends to
disadvantage students, schools and communities, especially in socio-economically disadvantaged areas (see case study 12, UK).

Source: compiled by PPMI based on case studies.

Geographical school isolation and distance from other stakeholders may also prevent collaboration between these actors. For example, attending various seminars, networking events or getting timely extensive feedback from other members is a problem for schools in socio-economically disadvantaged regions (e.g. see case studies 4 - Greece; 5 - Hungary; 1 - Croatia). As Hargreaves and Ainscow (2015) emphasise, large-scale success cannot be achieved if districts continue to act independently of one another. This also suggests that in order to mitigate competition between schools, it is crucial to work with networks of school, rather than individual schools (see section 4.6.3). As the recent literature review on governance and management policies in school education systems highlights, networks of schools increase schools’ capacity to deal with immediate challenges by sharing resources and developing new collaborative solutions and offering mutual support (European Commission, 2017h).

4.6.2. Local and regional authorities’ capacity to support schools

In a recent report, the OECD (2017a) advocates for regions to be made “agents of change” in school education. Local and regional authorities play a key role in recognising opportunities for change, mobilising resources towards diversification, identifying new frontiers, and encouraging openness to change by agents in the system (Ibid).

There are many examples across Europe proving that municipal and regional authorities, together with other local stakeholders such as school counsellors, school inspectorates, and school boards, can take an active position as an intermediary between central authorities and schools, serve as hubs for innovations, and provide space for networking, among other responsibilities (see examples in Box 52 below).

Box 52. Examples of middle-tier governance at local levels.

The case study from the Netherlands illustrates well the active role of the Lelystad City Council, where local educational policy is highly based on cooperation, dialogue and consensus building between the local government, civil society and educational partners/schools. Every four years, the City Council establishes a ‘local educational agenda’, which represents the Dutch ‘Polder model’ at work. It consists of negotiation, cooperation and consensus building between the government and stakeholders. Current priorities of the local education agenda for 2015-2018 include: closing the achievement gap (with a focus on early education), addressing special needs, adequate job preparation and 21st century skills. The city council focuses primarily on the process of bringing various stakeholders together and has established a project group in which schools participate, connect with each other, make plans, and set priorities. The budget made available by the City Council is primarily intended to catalyse innovation. Annually, a conference is organised where the development of the local education agenda goals is discussed, involving the local teacher education college (see case study 8, the Netherlands).

In Denmark, after a structural reform in 2007, the number of municipalities was reduced from 271 to 98, and new relations and governance chains were introduced. More than half of all municipalities now combine a traditional structure with a new business-like structure, where fewer political boards govern a broader range of institutions, including preschool, school, adult education, leisure time, and social affairs institutions (Moos, 2014).

51 In Denmark there are two types of school boards. The first type is a political board representing the municipal council, which decides on the overall policies for school education within the municipal jurisdiction. The second type concerns local school boards that are represented by students, parents, school leader and teachers (Moos et al., 2014). The key role of this board is to establish overall principles for the organisation of teaching, the cooperation between school and parents, the communication of students’ results to parents, the work distribution between teachers, and other arrangements for the students (Ibid).
As a result, new layers of middle management have emerged in the municipalities, such as district leaders who may lead up to six schools (Moos et al., 2014).

In Greece and Spain, schools benefit from regional school counsellors. In Greece, their role is to provide teachers with scientific and pedagogic guidance, promote educational research, and participate in educational evaluation (Vasilopoulou, 2016). In the Greek case study, both schools acknowledged the significant role of the school counsellor in promoting and spreading innovations across schools, as well as fostering collaboration between schools from the same region (case study 4 - Greece). The added value of the school counsellor was also acknowledged by both Spanish case study schools. The counsellor has played a key role in establishing synergies between schools and making possible a way of working based on the commitment, transparency and the opening of the schools to the educational community (case study 10 – Spain). One of the schools underlined the role of the regional education inspectorate, which played a crucial role in the process of school transformation, especially during critical moments such as when facing resistance from families (Ibid).

In the UK, Eight Regional Schools Commissioners (RSCs) were recently established. RSCs act on behalf of the Secretary of State for Education and are accountable to the National Schools Commissioner. They work together with school leaders to take action in underperforming schools. Each RSC is supported by the headteacher board (HTB), which is responsible for advising their RSC, contributing their local knowledge and professional expertise to help the RSC’s decision-making. RSCs also work closely with a number of partners, including leaders from the education sector, Ofsted, local authorities and local dioceses. However, this recent construct of RSCs has been criticised by various education stakeholders. For example, the National Union of Teachers has claimed that these education structures are not accountable enough to local communities and lack transparency (NUT, 2017).

Source: compiled by PPMI based on case studies and policy reviews.

As discussed in the Section 4.2.2. more autonomy for schools, municipalities and other intermediate bodies need to be accompanied by effective accountability mechanisms to ensure the effectiveness and equity of education provision across regions. Therefore, it is crucial to clarify well in advance the roles and responsibilities of all actors involved, and support their capacity-building so that they can realistically carry out their respective envisaged roles and responsibilities (Bernbaum, 2011). It is equally critical to ensure that decentralisation does not create administrative burden and additional bureaucracy at the local level, although this does not suggest that local authorities should not follow accountability rules, as Swedish example illustrates (see Box 53). Instead, it implies a ‘constructive accountability’ (Burns & Köster, 2016).

**Box 53. Municipalisation of schooling in Sweden.**

In Sweden, local education authorities have not been properly prepared for the sudden changes arising after the national reforms of educational decentralisation in the early

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52 School counsellors in Spain are educational psychologists who serve a number of schools in every municipality on behalf of the regional education authorities, and belong to the local centres for teachers’ professional development (see case study 10, Spain (Andalusia)).


54 Each HTB is made up of four to eight members. HTB members are generally headteachers, former headteachers, trustees or business leaders. Local academy headteachers elect four members on each HTB. Each HTB member, no matter how they are appointed, has equal status.


1990s. The municipalisation of schooling has shifted many responsibilities to municipalities without accompanying this shift with corresponding support for capacity building, or the necessary human and financial resources. The reform resulted in a mismatch between official responsibilities and the actual powers of various stakeholders (Blanchenay et al., 2014). In more detail, the key issues included:

- **Lack of a systemic vision**: decentralisation took place too quickly and without enough support from the central authorities. Municipalities did not have time to develop solid strategies on how to manage their new responsibilities. The lack of internal discussion within municipalities resulted in some ambiguity among municipal leaders as to what the new responsibilities really entailed, and how they would be divided at municipal level. As a result, the municipalities have managed these responsibilities in an *ad hoc* manner, without a systemic vision.

- **Capacity challenges for governance**: the reform was designed to give municipalities a fair amount of leeway in terms of how they should handle their responsibilities. As a result, the central government provided little support, especially in the early stages. Combined with the fact that municipalities did not have sufficient time to prepare, this meant that municipalities (particularly the smaller ones) often lacked local capacity to manage their new responsibilities. They also did not adequately prepare structures that would allow local experts to be more involved in the decision-making process, nor did they build local capacity for the proper use of assessment data.

- **A mismatch between powers and responsibilities**: the reform has resulted in a mismatch between official responsibilities and the actual powers of the various stakeholders. The central government has few tools to incentivise compliance with national goals. At the municipal level, financial resources are often allocated based on tradition and local politics rather than actual needs, which is in part due to the misuse of available data and of expert knowledge by decision-makers (Blanchenay et al., 2014).

Lacking a clear understanding of the new responsibilities and roles to be played by local stakeholders, municipalities did not change their processes as envisioned. Instead, municipalities generated a variety of different structures and strategies for educational governance that ultimately inhibited mutual learning due to their lack of comparability, and were often unsuited to internal evaluation and reacting to local demands (Burns et al., 2016).

Source: compiled by PPMI based literature review.

### 4.6.3. Ways to enhance networking and collaboration

As discussed above, boundaries between schools and their surrounding environment are opening up: parents and local stakeholders are increasingly engaging with schools, which are progressively engaging with their local communities. This interconnectivity is crucial to ensuring successful learning and sustainable innovation (see section 3.5.). ‘Top-down’ approaches to innovations, which are highly promoted and supported at national level, are not effective without collaborative partnerships with schools and teachers who implement these innovations (Roelande & Hofman, 2012). Stronger partnerships between central/municipal authorities, teaching staff and researchers are a condition for supporting innovative schools.

Relevant stakeholders need to be involved in the creation of wider partnerships to exchange their expertise and knowledge. Partnerships have to be chosen strategically to ensure that they provide valuable input for the pedagogical processes (OECD, 2017a). Supportive mechanisms at systemic level can encourage and support the transfer of innovations beyond the walls of the institution where they were developed. Networks of professional communities bring benefits both ways — from the wider community to specific learning contexts as well as from distinct areas to the whole education system (Ibid).
Education systems can encourage such collaborative environments and structures in a variety of ways. First, frameworks for cooperation and partnerships between schools can bring significant positive impact to the pace of innovation transfer and scaling-up. In addition, horizontally established forms of collaboration between stakeholders in education offer valuable input of different expertise and enhance synergies in the educational system. On the other hand, the active role of policymakers is crucial to ensure permanent professional support, access to local and national networking opportunities, and to serve as a safeguard against financial difficulties.

**Promoting school-to-school collaboration, partnerships and networks**

In complex education systems, the capacity to learn and share knowledge is an important enabler for promoting innovation across regions, for example, to make innovative practice at decentralised levels available in other parts of the system (Burns & Köster, 2016). Despite the fact that the content, skills and strategies promoted by cooperative learning face challenges in the contemporary context (Johnson & Johnson, 2014), there is considerable evidence that such cooperation is an effective source (Bowman-Perrott et al., 2013). It is crucial for teachers to work alongside each other and to develop practices after getting to know the experiences and knowledge of their colleagues (Hargreaves & Fink, 2006).

Cooperation may take different forms and happen at different levels, according to national circumstances, ranging from formalised structures to more flexible networking arrangements. Peer-to-peer learning could be encouraged through joint training sessions, school visits, shadowing practices, exchange of facilities and curriculum ideas, and more (e.g. case studies 3 - Germany; 5 - Hungary; 7 - Lithuania; 8 - the Netherlands; 9 - Romania; 12 - UK).

School-to-school collaboration initiatives and networks can be an important source of innovation and learning for schools (see also section 3.5.2. above). For instance, the case studies demonstrated that teaching staff and management are often inspired to implement innovative practices after observing and peer-reviewing practices in other schools, either in the same region or country, or even abroad. Cooperation practices benefit from international exchange projects or peer-learning activities, as they might provide ideas and techniques that are unavailable in a specific country at that moment. (see examples in Box 54 below).

**Box 54. School visits as a source of innovation**

The **Friedenauer community school** in Berlin was established after visiting several schools in the capital and other German cities, observing other teachers’ approaches and participating in relevant in-service trainings (case study 3, Germany).

The instructional leader from **Jõgevamaa School** in Estonia implemented 75-minute lessons after a study visit to Scotland and training in the Entrepreneurship centre. After implementing the practice in Jõgevamaa School, it spread to most state-funded gymnasiuims nationwide (see case study 2, Estonia).

Similarly, the idea for the technological innovation at the **Vežice school** in Croatia originated from the cooperation with British and Dutch schools that already used tablets in their teaching practice (see case study 1, Croatia).

Source: compiled by PPM based on case studies.

Networks of innovative schools prove to be another effective way to boost cooperation. For example, there are supported networks of community schools in Germany (case study 3); entrepreneurial schools in Estonia (case study 2); or networks with universities in several case study countries (case study 7 - Lithuania; case study 5 - Hungary; case study 11 - Sweden). The Slovenian strategic framework included the establishment of a network of innovative schools as one of the key ways to develop educational methods, while some schools in the UK have autonomously established frameworks (see Box 55 below). Similar regional networks were initiated in Austria, such as the ‘Innovations Make...
Schools Excellent’ network (‘Innovationen machen Schulen Top’, IMST), which ensure sustainable school-to-school cooperation (Herzog-Punzenberger, 2016).

**Box 55. Networks and school partnerships**

*Slovenian* national authorities have included the development of a network of innovative schools in the Annex to the Strategy on Lifelong Learning in Slovenia, citing it as an important contribution to the transformation of the content and methods of ITE. It helps to transform the currently rigid and traditional pedagogical/didactical organisation of education, and to accelerate the development and implementation of didactic and methodical teaching and learning strategies arising from and supporting the philosophy, objectives and characteristics of lifelong learning.

The main vehicle for sharing the good practices of the *President Kennedy School* (case study 12 - UK) is the Multi-Academy Trust (MAT) that the school is leading. Currently, the trust is at an early stage of its development, with the finance and human resources director working across two schools currently involved in the MAT. The MAT has the potential to expand to include more schools, based on its current successful reputation. Funding is drawn from the participant schools, but management costs are kept to a minimum. The key idea of the approach is that there is some overstaffing in participating schools and that allows them to temporarily transfer teachers with expertise in a certain area to where they are most needed within the MAT. It can act as an effective vehicle for disseminating best practice as the experience of schools as members of MATs vary.

In the *Netherlands*, the government supports a cross-school national network (*Leraren met lef*) of innovative teachers through funding and the invitation to provide input on teacher policies. The aim of the network is to connect innovative teachers who feel isolated at their school for lack of a learning culture, with like-minded colleagues from other schools. Financial support is given to the network to organise national events and masterclasses (e.g. on sharing leadership at school). The network emphasises teacher agency, and representatives were invited to contribute their ideas during the development process of the governments Teacher Agenda 2013-2020 initiative (European Commission, 2017b).

**Source:** Compiled by PPMI based on case studies and literature review.

As several case studies demonstrated, EU programmes such as Erasmus+ and the European Social Fund (ESF) are often perceived as useful tools to share knowledge and foster networking between school across borders. For instance, between 2011 and 2015, the main Slovak teacher education institution (Methodological and Pedagogical Centre, MPC) implemented an EU funded national project entitled ‘Professional and career development of educational staff’ (‘Profesijný a kariérový rast pedagogických zamestnancov’); it was a key national initiative aimed at improving the quality of teaching and developing and sharing effective and innovative teaching practices. In Latvia, a range of projects addressing teacher education and competences is supported through the ESF and ensures support for the implementation of education reforms (European Commission, 2017b). In some countries, innovation in education is approached as a mainly EU-driven initiative with primary mechanisms to promote the experimentation and dissemination of innovative approaches in schools that are being project-development funded under the ESF (e.g. case study 7, Lithuania; OSE, 2016).

**Promoting horizontal partnerships**

Schools do not operate in isolation, but they generally need to open up even further and engage multiple stakeholders at local, regional and national levels to create innovative

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58 This includes projects on the implementation of competence-based approaches to curricula; prevention and intervention measures to reduce early school leaving; support to the development of students’ individual competences; and career guidance.
learning environments (European Commission, 2017b). The promotion of networks and partnerships between different stakeholders (at international, national, regional and local levels) is a strong supporting factor for innovative pedagogies and school organisational practices. Stakeholder networks and partnerships are an important aspect of creating, mediating and using knowledge to turn whole schools into ‘learning organisations’; these rely on collaborative arrangements, diverse stakeholder membership and active engagement, and the qualities of professionalism and dynamism (Burns & Köster, 2016). The European Commission (2017h) also found that school-community cooperation helps bringing learning closer to real-life contexts.

For instance, various stakeholders in several German states cooperate between existing initiatives involving different local and regional partners according to the ‘Support for Children and Young People with a Migrant Background’ programme (‘Förderung von Kindern und Jugendlichen mit Migrationshintergrund’, FörMig) (Koehler, 2016). This initiative helped to develop innovative approaches for the optimal teaching of language skills, and evaluated and initiated a transfer of good practice for the future planning of education measures. Also, school networking at different levels, including school leaders’ associations, teachers’ associations and municipalities, has significantly supported the transferability process for the Kiviõli School in Estonia. The local municipality enhanced school networking with events organised by other municipalities (such as the ‘Education Festival’ in Tartu) and made presentations on the innovative projects for the stakeholders in other regions (see case study 2, Estonia). Some countries feature examples of cooperation with other actors. For example, Lithuanian schools receive visits from various textbook authors and publishing houses who wish to consult with school staff on their educational materials (see case study 7, Lithuania).

**Schools as innovation hubs**

Schools can act as ‘innovation hubs’ by providing support to other schools in various ways, such as teacher education or coaching. In innovative and learning systems, innovating schools have a transformative effect on themselves as well as on other schools (Hargreaves, 2003). Many less-resourced schools are too small to initiate innovations themselves, and even less able to organise workshops or trainings on innovative approaches. Cross-school cooperation that involves training for other schools can generate strong innovation as it ensures a more efficient use of human resources.

It is particularly important that in this context, national, regional and local authorities come to mediate and encourage the relationship between relevant education stakeholders. Governments are in the best position to foster this objective by establishing institutionalised networks and by providing various type of support (Ibid.). Schools sometimes push national authorities to implement changes at national level. For example, Šiauliai ‘Salduvės’ progymnasium urged the Lithuanian Ministry of Education and Science to expand the number of hours devoted for social activities in the curriculum and in this way managed to scale-up this approach (case study 7 - Lithuania).

In some cases, schools themselves took the initiative and encouraged the dissemination of their knowledge and experience (see Box 56 below).

*Box 56. Schools as innovation hubs*

Although in the UK (England) schools tend to compete with each other, some policy initiatives seek to promote collaboration between schools. The Greater Manchester Challenge (GMC) was a governmental initiative from 2007 to 2010 which brought together ten school districts (local authorities) to share their best practices with each other. The initiative was based on three principles:

- Leaders from better-performing schools would work with schools that face more
challenges, in order to improve their leadership teams;

• Schools with similar student populations would be clustered to share their best practices;

• Local problems would be met with local solutions (Ainscow, 2015).

Thanks to this initiative, recently turned-around schools became key in helping other schools (Hargreaves & Ainscow, 2015). Hub schools that excelled in particular areas provided extensive training and development for teachers in other schools and local authorities. Schools at different stages of development organised in ‘families’. Schools began to focus on delivering better, more interesting teaching and learning through strategies like cooperative learning, or ‘Japanese lesson study’. There was a lot of pressure on teachers and schools to work hard to improve results, but there also was more emphasis on caring for the adults in the schools as well as the children so that the schools became happy and professionally fulfilling places to work (Ibid.).

In Estonia, the Jõgevamaa School welcomed over 14 schools and gave workshops about the integrated curriculum approach in cooperation with Tallinn University, as well as on the ‘Interesting School’ network, that was initiated by the ministry and some experts of school innovation (see case study 2, Estonia).

Similarly, the Hejőkeresztúr School in Hungary gives non-accredited trainings on request. Members of 57 schools have been trained so far, and 26 applied the Complex Instruction Programme (CIP). The school teachers have become effective trainers and created professional networks while the approach continued to be mainstreamed. Continuous efforts can be made in the context of wider scaling-up initiatives of innovative approaches: the integration of specific good practice innovations into CPD programmes could take the burden off schools (or provide additional opportunities, in case school trainers take part) and facilitate the transfer of knowledge and experience to future teachers. The CIP method has been adapted to three CDP programmes by two Hungarian universities and an NGO. After a year-length training, participants can start applying this approach in their daily routines (case study 5 - Hungary). The CIP methodology of the Hejőkeresztúr School was rolled out within the framework of another EU-funded project named KOALA, which aims to decrease early school leaving by training the teachers of endangered schools. Teacher education providers, the central Education Office, and the Hungarian Institute for Educational Research and Development, participate in this initiative planned for five years from 2015 with a budget of 9.86 billion HUF (more than 30 million euros).

Source: compiled by PPMI based on case studies.

There are also a number of inspirational examples of school collaboration and networking in the countries beyond the EU. In China, for example, at the school district level, each district selects a few schools — subject champions. They are then responsible for upgrading teaching in the respective subjects in the district, producing at least one ‘model lesson’ each school year, mentoring three promising teachers, chairing or participating in one research project at/above district level, and publishing at least one paper in an academic journal at/above district level (Kai-ming Cheng, 2016).

National exchange and collaboration platforms

National authorities can play a decisive role in promoting school innovations via exchange and collaboration platforms. For example, the Swedish National Agency for Education provides several free web courses for schools or national programmes for staff education (see case study 11, Sweden). In Romania, the county-level School Inspectorates support schools and teachers in the exchange of good practices (see case study 9, Romania). However, while there are many pilot projects that offer sufficient proof of impact for

further expansion, transfers of innovations rarely occurred. School Inspectorates act as intermediaries between schools and the Ministry of Education for the approval of curriculum developed by the schools, the development and support for local strategies and initiatives, local regulations, dissemination of information that supports innovation in pedagogical practices, establishment of partnerships with local stakeholders, for the selection and promotion of certain initiatives, and for labelling them as innovative (Iacob, 2016).

The lack of collaboration among schools can also have a detrimental impact on pupils’ success, reducing the capacity of schools to understand and address different needs, and thereby to carry sustainable reform. Online networks can also be beneficial due to their very interactive links, power of involvement (e.g. of ministerial administrators, schools, teachers, students, parents), high degree of self-management, and dynamic structures (Burns & Köster, 2016).

For instance, there are several online networks in Hungary, two of which have been initiated and maintained by national authorities. The ‘Knowledge base’ (Tudásbázis, co-funded by the EU until 2015) and ‘Clever Portal’ (Okosportál, since 2015) allow teachers to share experiences and collaborate. In some cases, corporate stakeholders participate or support the networks. For example, Microsoft Hungary leads the ‘Innovative School Project, Partners in learning’ where participating schools and teachers receive support, participate in a yearly competition, and convene to share and learn good practices. In this case, the company provides examples of the ICT tools as well as training to teachers; this involves cooperation with experts and networking, including sharing experiences and institutional good practices (Hunya, 2016).

Even if platforms and networks are created, this does not guarantee the participation of all schools and other stakeholders. A lack of motivation to participate in various networks and platforms often appears because of several factors, such as limited time resources, lack of clear added value, or because these platforms are not regularly updated and not quality assured.

### 4.7. Key findings

The system-level barriers and enablers identified in this study are not new for practitioners, policymakers and other education stakeholders. However, the barriers still exist and this report serves as a timely reminder that they need to be acted upon. While it is evident that schools can be the driving forces of innovation on their own, comprehensive system-level support for innovation is necessary to ensure innovation thrives across regions. The key findings are the following:

- **Coherent policy frameworks and long-term vision and policy orientation is crucial for embedding innovation into school education and ensuring system-wide transformation.** This also implies that coherence and clarity must be formed as to how different initiatives and policies relate to each other and contribute to realising the common vision. Coherence and clarity are also necessary in ensuring that key education stakeholders are active participants in co-constructing policies and their implementation. A policy framework needs to go hand in hand with supportive policy mechanisms, which help develop schools’ capacity to manage and sustain change, such as autonomy accompanied by horizontal accountability measures, smart funding formulas, professional development systems, effective monitoring mechanisms, and support for networks and collaboration.

- **The capacity of schools to innovate is to a great extent dependent on their autonomy over what and how to teach.** However, autonomy must go hand-in-hand with accountability; that is, it must be accompanied by a system of mutual responsibility for the quality of education provision and adhere to the long-term vision and policy orientation. Building schools’ capacity to reconcile multiple accountability pressures and exercise their autonomy effectively is one of the key
success factors for transforming schools into learning organisations and for sustaining innovations.

- The evidence also indicates that the main barrier to developing schools’ capacities to innovate relates not simply to the amount of funding — provided there is adequate basic funding in place — but about how funding is distributed. School budgets often restrict the way they can use available funds, which limits their opportunities to design change strategies. Schools need funding mechanisms that, once they meet an adequate threshold, are no longer about ‘how much’ funding is allocated, but rather ‘how’ the available resources are managed, allocated and sustained.

- Countries have started establishing comprehensive systems for the preparation of school leaders and teachers for new ways of teaching and learning, change management, and collaborative practices. Even though inspirational initiatives and programmes do exist across Europe, they are often ad hoc and are not available to all schools, especially ones in remote and disadvantaged areas. The schools that managed to succeed in their process of change have often created their own learning communities and learned from experience. These schools have the potential to become effective training agents for other schools, if systemic conditions exist.

- In complex education systems, the capacity of such systems to learn and share knowledge becomes an important enabler for spreading and sustaining innovations. The municipalities could play a more influential role in this process, as the research findings suggest that their support to schools is quite limited in many countries.

- School competition acts as a barrier for upscaling innovations and collaborative learning. The promotion of networks and partnerships between different stakeholders (international, national, regional and local levels) is a strong supporting factor for innovation and overcoming school competition, as they are an important aspect of creating, mediating and using knowledge and turning schools into ‘learning organisations’.

- Finally, more effective external and internal monitoring and evaluation mechanisms are needed across Europe, which in turn would stimulate a wider uptake of innovations. Due to the increased focus on high-stake tests when evaluating school performance and short-term thinking at the policy level, many schools feel reluctant to innovate and engage in change processes, which is often a long-term process that does not yield immediate results.
5. Conclusions and recommendations

Ensuring that Europe’s children and young people reach their potential is a top priority for the EU and its Member States. High-quality education plays a key role in children’s successful development and life chances. However, evidence suggests that many education systems in Europe are struggling to provide high-quality education for all, and to respond to the profound and complex changes our societies and economies are undergoing. The OECD’s 2015 PISA results show that significant disparities remain in the way children perform, both within and between EU countries. On average, one in five students in the EU lacks a sufficient level of basic skills (in reading, mathematics and science). Schools must also adapt to the changing context in which they operate, including the digital era and increasing diversity in society. To address these challenges, policymakers must rethink school programmes, curricula and assessment methods, as well as introduce more diverse teaching and learning approaches to meet the needs of all learners.

Innovation can play a crucial role within education systems and schools in creating opportunities to develop favourable learning environments and flexible approaches to teaching, ensuring that each child can realise his or her potential. Numerous innovations analysed in this study demonstrate the multiple ways in which education can transform not only what children learn, but how. This offers great potential to address the persistent inequality in skills and uncertainty as to their future outlook.

This study consolidates evidence on the ways in which schools and education systems can embrace innovation and help each learner grow and succeed. By looking at inspirational examples of innovative schools that have succeeded in transforming their pedagogical and organisational practices — regardless of whether their socio-economic contexts are unfavourable, and by engaging in discussions with a variety of stakeholders — this study explores what drives and supports sustainable and system-wide innovation in education. The study’s key conclusions and policy implications are presented below.

5.1. Key conclusions

5.1.1. What drives change in schools?

Europe is home to many innovative schools that provide collaborative and inclusive forms of learning, and achieve excellent academic results. Led by committed teams of school leaders, teaching and non-teaching staff, in partnership with local communities, civil society organisations, businesses and other relevant stakeholders, many of them succeed against the odds, including socio-economically disadvantaged environments and imperfect education policies.

Our analysis of school innovation success stories reveals many entry points to the process of innovation in schools. Certain conditions must, however, be met to ensure that change is managed effectively, and leads to positive outcomes.
**Conclusion 1.** Supportive and distributed school leadership is key to ensuring sustainable innovation in schools.

School leaders are a dynamic and influential force in the school community. Evidence collected in the context of the study shows that changing the established routines of teaching, learning and school organisation requires supportive and forward-looking leaders. Such leaders can guide schools in creating a culture that initiates and supports innovation. Good leadership can ensure a supportive environment for teachers; promote collaborative practices such as peer-learning, mentoring, formative feedback, reflective and enquiry-based practices; and provide relevant opportunities for networking and professional development.

However, innovation is always a team effort. The innovative and successful schools analysed in this study have created effective leadership teams in which teachers were encouraged and empowered to take on leading roles in particular areas (e.g. specialist leaders of education or literacy skills developers) and supported in developing their capacity to act on their increased responsibilities.

**Conclusion 2.** A shared school vision and strategy, along with a clear implementation plan, is a strong explanatory factor in successful innovation.

School-wide innovation is a complex process that concerns many different actors, all of whom need to align their expectations and actions for change to be a success. Evidence shows that successful school communities took time to design a shared vision and strategy, plan their actions, reflect and act together. A shared vision and strategy helped to structure the implementation process and instil a sense of commitment, ensuring the sustainability of positive change in the long term. A clear plan of action also provided the basis for monitoring, reflection and constant improvement.

**Conclusion 3.** Teachers’ preparedness, commitment and capacity to manage change are key factors in ensuring effective implementation of innovation at school.

Evidence shows that teachers and school leaders are some of the key agents of change, and therefore need to be sufficiently prepared and self-confident. The schools that succeeded in implementing innovation invested in the professionalisation of their teachers, promoted team learning and collaboration initiatives, provided the necessary autonomy and trust for their teachers, and also provided space and platforms for staff to engage with professional learning communities. Evidence from the case studies shows that teachers’ motivation, cooperation initiatives among teaching teams, the quality of teamwork, peer-learning and formative feedback mechanisms, were all key enablers for the implementation of innovations.

**Conclusion 4.** Student engagement is a major element in pedagogical and school organisational innovation, and it is an important factor for successful change at school level.

Improving the experiences and outcomes of all learners should be the central goal of school policies and practices. It is therefore important that students are active participants in the change process. Consulting students, or ensuring their participation in the governance of schools, helped bring them on board as powerful actors for positive change. Student engagement in the learning process was crucial to ensuring the relevance of innovative pedagogies and organisational practices and for making school environments attractive to young people. The roles of students were also crucial in peer assessment, self-assessment or self-reflective practices, all of which are important components of successful pedagogical innovation.

**Conclusion 5.** Cooperation, networks and partnerships between schools and local stakeholders often provided inspiration, information and expertise for successful innovation.
Schools that managed to develop a culture of innovation collaborate with a variety of stakeholders, developing a system of shared ownership and multiple accountability. Engaging with parents is a necessary step to overcome their potential resistance to changes. Schools also need to draw on the various resources and opportunities provided by other schools, local and regional authorities, higher education institutions, businesses, civil society organisations and other relevant stakeholders. Recognising and supporting the horizontal connectedness of schools with their communities is a crucial step towards overcoming school isolation, facilitating different forms of learning, and bringing learning closer to real-life contexts.

5.1.2. What are the conditions for systemic change?

While in all EU countries, individual schools and local communities have broken free of traditional methods of schooling, innovation is not yet a systemic feature of education policy. The degree to which schools can develop, embed and sustain innovation depends on the broader system of governance as much as on the culture and context of each school. For example, factors such as the degree of school autonomy, flexibility in using financial resources, sound systems of monitoring and evaluation, and professional development systems, all have a strong influence on how schools operate. The overall capacity of an education system and its governance support innovation is therefore crucial.

This study identified a number of policies that can create favourable conditions and empower all schools to innovate. Even though many EU Member States have introduced a series of strategies and reforms to improve education governance and promote innovation, gaps still exist in the way education systems operate, and these should be tackled.

Conclusion 6. Many EU countries commit to some innovation-related goals, but only a few embed school innovation in their education policy strategies and follow them up with clear action plans.

Although teachers and school leaders are key agents of change, governments must exert strong strategic leadership to support the experimentation and diffusion of innovation throughout all schools. National and/or regional strategies that set clear priorities for school innovation can create an enabling environment for innovation. A coherent policy framework needs to go hand in hand with supportive policy mechanisms, which help develop schools’ capacity to manage and sustain change, such as autonomy accompanied by horizontal accountability measures, smart funding formulas, professional development systems, effective monitoring mechanisms, and support for networks and collaboration.

Education systems still seem to be struggling to provide coherent policy support for innovation. Although most European countries have committed to certain innovation-related policy goals, these often do not fundamentally review the objectives, rules and practices of education systems that can inhibit school innovation. The policy foundations for the development of innovation-friendly learning systems and innovative school cultures should be reinforced.

Curriculum reform can be a powerful instrument to institutionalise and embed school innovation into all levels of compulsory education and to create a basis to sustain innovative approaches in schools’ daily practices. There have been many attempts to introduce curriculum reforms at various levels of education across European countries. However, evidence from policy mapping shows that ad hoc amendments to the curriculum have only limited and isolated effects at the level of the education system. Expectations from reforms grow faster than the performance of education systems, which leads policymakers to operate in the short-term, despite evidence showing that innovative reforms need time to yield tangible results. The inability of education policies
to adopt a long-term shared vision, and policymakers’ lack of capacity for strategic thinking, remains a serious challenge in many countries.

**Conclusion 7.** A balanced autonomy with accountability mechanisms improves schools’ capacity to experiment and innovate.

In some systems, limited levels of pedagogical, organisational and financial autonomy can limit schools’ capacity to experiment with and implement innovative practices. Autonomy can nurture schools’ capacity to adapt their own teaching and learning methods, assessment practices, and manage their staff and organisational practices, thereby creating the conditions to experiment, innovate and develop supporting learning environments. However, autonomy must be accompanied by the necessary support mechanisms to empower schools and build their capacity to innovate.

The recent emphasis on efficiency and accountability across EU education systems risks discouraging teachers and schools from experimenting and innovating, and may reinforce inherent tensions between accountability and innovation. Education policies often employ traditionally vertical, hierarchical types of accountability. However, due to the changing nature of teaching and learning, increasing the autonomy of schools and the involvement of multiple stakeholders calls for new multiple horizontal accountability mechanisms.

Increasing accountability can lead to unintended drawbacks for the development and sustainability of school innovations. Balanced school accountability mechanisms should focus on achievement and excellence while supporting experimentation, risk taking and innovation, and the participation and feedback of a variety of stakeholders to build consensus and improve the overall quality of education. Accountability mechanisms should also provide guidance regarding the expectations and responsibilities of all actors, ensuring that schools and local stakeholders have sufficient capacity to meet the challenges of complex and multiple school accountability.

**Conclusion 8.** Sufficient and diverse sources of funding for innovation, as well as the flexibility of schools in using financial resources, are crucial in building their capacity to innovate.

While it is crucial that schools’ basic funding needs are met, one of the main barriers to developing schools’ capacity to innovate often relates to *how* rather than to *how much* funding is provided. Schools’ restrictions in the extent and flexibility to use their budgets limits their opportunities to design effective long-term strategies for change.

Schools benefit from a favourable environment to innovate when the overall financing and teacher remuneration system provides them with enough flexibility to allocate resources to support the experimentation with and implementation of innovation.

National, regional or local grants, as well as EU and civil society short-term sources of funding, can help schools to initiate or sustain innovative practices, but they are not sufficient conditions for promoting sustainable innovative pedagogies and school organisation practices in all schools. Funding mechanisms supporting innovation should be built in to the overall school financing mechanisms so that all schools could access and use it successfully.

**Conclusion 9.** Systems of professional development should better prepare school leaders and teachers for new ways of teaching, learning and school organisation.

National policies put limited emphasis on school leaders’ and teachers’ professional development as one of the main facilitators of innovation. Case study evidence demonstrated that some of the main barriers to innovation are conservative belief systems and traditional risk-avoiding mindsets of teachers and families.

Supporting teachers’ and school leaders’ capacity to change their teaching and school organisation methods is central to any school innovation. Nevertheless, many ITE and
CPD systems tend to reproduce the status quo in school education rather than to act as powerful agents of innovation and change. Even though inspirational teacher and school leader professional development programmes do exist across Europe, they are often ad hoc and not available to all. Schools that managed to succeed in their process of change have often created their own professional learning communities.

**Conclusion 10.** School partnerships, networks and horizontal interconnectedness of schools with other stakeholders are key conditions for promoting mutual learning and upscale of innovations.

There is a widespread sentiment among teachers that they lack the time to prepare new materials or approaches for their classes, or to share these with peers. This is partly explained by the fact that teacher remuneration systems tend not to compensate the time needed for teachers to collaborate, conduct research and prepare new materials and approaches.

On the other hand, this study sheds light on a variety of thematic networks and online platforms supported by central authorities or NGOs for storing good practices and exchanging knowledge and experiences (although many of them are either inactive, outdated, or lack quality control mechanisms). Central authorities would benefit from investing in developing and sustaining relevant networks and collaboration platforms for teachers, schools and other stakeholders.

Central authorities running large and complex school systems can struggle to analyse the realities of individual schools. In many countries, local authorities have increasing responsibilities over education, but only limited roles or capacities to ensure the quality of their education service delivery. Local authorities can act as useful intermediaries for implementing locally tailored national policies and for carrying bottom-up signals from schools when policies are failing.

Competition prevents schools from sharing experiences. Where municipalities are supportive of local school networks and partnerships, they engage in an open dialogue with relevant actors and stakeholders and promote participatory planning and decision-making. This serves as a strong supporting factor for school innovation to thrive.

**Conclusion 11.** Education systems collect large quantities of monitoring data, but in-depth evaluations of policy initiatives are still too rare.

Monitoring data collected on the inputs, institutions, processes and outcomes of education systems is not used to a full extent to learn whether and why certain education policy initiatives are successful or not.

Education systems often lack the capacity to effectively use and interpret monitoring data. Only a few countries are piloting policy initiatives with in-built monitoring and evaluation systems based on hard evidence. A culture of systematic monitoring and evaluation of the effectiveness and efficiency of education reforms and policies can be a supportive factor for the successful implementation of innovations in schools.

**5.2. Looking ahead: what can Member States do?**

**5.2.1. Transforming schools into learning organisations: what can schools do?**

**Recommendation 1.** Schools need to promote distributed forms of leadership and actively engage school leaders and teachers in building inclusive learning environments.

✓ School leaders should start a process of school strategy review and examine the established practices of teaching, learning and work organisation in their schools, and the extent to which they are compatible with the objective to improve the quality of teaching and learning.
School leaders should ensure a supportive environment for teachers with innovative ideas, introduce and sustain collaborative practices such as peer-learning, monitoring, formative feedback and reflection mechanisms, and organise relevant networking and professional development opportunities.

School leaders need to exercise a distributed leadership that encourages teaching staff to take on leading roles, assume increased responsibilities, and pursue individual or collective initiatives.

**Recommendation 2.** School communities should develop a shared vision and common strategies to improve the quality of teaching and learning, accompanied by clear action plans.

- School communities should take time to reflect on their past performance to develop a shared vision, strategy and action plan. These can help structure the implementation process and instil a sense of commitment to ensure the sustainability of positive change in the long term.
- Relevant stakeholders at school (students, teachers, school leaders) and local level (parents, local authorities, NGOs, businesses, etc.) should be represented at all stages of the development of a shared vision, school strategies, action plans, and during the implementation and monitoring of innovations.
- A continuous process of reflection and monitoring should be carried out at schools, followed by constant efforts to improve.

**Recommendation 3.** Teachers should receive relevant professional development opportunities, financial incentives and recognition for their work in the positive transformation of schools.

- Teachers should be acknowledged for their expertise and contribution to the development of schools as learning organisations.
- Schools should support a professional working and learning culture that motivates teachers and builds their capacity to adapt to the changing needs of learners and society.
- Schools should promote and invest in cooperation activities among teaching teams through mentoring and classroom peer-observation, and apply formative feedback mechanisms to underpin and support positive change.
- Schools should support a culture of research, reflective practice and enquiry-based learning among its teachers and school leaders.
- Schools should invest in external training and collaboration initiatives, and promote the engagement of their teachers in professional learning communities and networks.

**Recommendation 4.** Students should be consulted and involved at all stages of experimentation with and implementation of pedagogical and organisational innovations in their schools.

- Students should be consulted regularly, and where possible, their representatives should be involved in the governance of schools.
- Schools should engage students through adapted teaching methods, assessment practices (such as peer and self-assessment), school organisational practices, extracurricular activities, and in general in the environment in which they learn.

**Recommendation 5.** Schools should seek collaboration and partnerships with other local stakeholders.

- Parents should be consulted regularly, and where possible, their representatives should be involved in the governance of schools.
Schools should engage in peer-to-peer learning initiatives, and in exchange of facilities, networks, and project-based cooperation initiatives.

Higher education institutions (in particular ITE providers), local civil society organisations, sports clubs, cultural and religious institutions, and/or businesses, should play a stronger role in supporting the planning and implementation of innovations in pedagogies and organisational practices.

Schools and higher education institutions should develop partnerships and collaboration initiatives for CPD, practical training initiatives and induction programmes for student teachers enrolled in ITE, as well as joint action research projects.

5.2.2. Achieving system-wide change: how can we build a system of learning and innovation?

For schools to be able to act upon the recommendations suggested above, they need to have the necessary support and trust from all levels of the education system. The following recommendations are crucial to build schools’ capacity to innovate.

**Recommendation 6.** Policymakers should give innovation a more prominent role in school education policy priorities.

- Innovation must be explicitly embedded into school education priorities and strategies at system level, and should be viewed as a means to improve education systems as well as students’ positive learning experiences, achievements and social development.
- Innovation objectives in school policy should be translated into concrete operational objectives and specific measures, followed up with by clear action plans and the adequate resources to implement them.
- Clear expectations for schools should be set through standards, competence frameworks and curricula, that can help guide schools in the innovation process.

**Recommendation 7.** Policymakers should promote a balanced school autonomy along with horizontal accountability mechanisms.

- Schools can benefit from a degree of autonomy to reshape their curriculum, assessment practices, hire their own staff, remunerate and recognise teachers undertaking extra work, provide them with the means they need, and organise schooling in line with their vision of good quality education (e.g. in terms of lesson duration, diverse learning environments, etc.).
- Teacher work organisation and remuneration systems should have sufficient flexibility to reward teachers’ time spent on developing new teaching methods, materials, approaches as well as in learning, participating in research projects, testing, and integrating modern learning and assessment tools into their teaching practice.
- A greater autonomy for schools should only come with credible accountability mechanisms, including a greater role for local stakeholders (e.g. teachers, students, parents and local community leaders) in the governance of schools.
- Horizontal accountability measures need to be established as essential complements to traditional vertical forms of school accountability. There is a need for accountability mechanisms to include diverse groups of actors in the governing process at multiple levels, and to design ways to strengthen participatory governance processes.
- A monitoring system should be put in place to identify schools which are struggling to mobilise their community for the improvement of teaching and learning. Measures should be put in place to encourage and support educational transformation in such
Education systems should encourage evidence-informed policy experimentation with built-in risk management mechanisms, developing a system that learns from and reflects on failures and successes.

**Recommendation 8.** Policymakers need to review financial incentives for innovation and positive transformation in schools to ensure the flexibility of long-term funding.

- The overall school financing and teacher remuneration system should leave school leadership enough flexibility to allocate resources in line with their needs and to support their vision for innovation through adapted financial incentives.
- Instead of financing projects in individual schools, school partnerships and networks can help scale up innovation across several schools and empower them to learn from each other.
- There should be more incentives for schools to innovate, in the form of financial rewards or in different forms of recognition of schools’ and its staff’s efforts to innovate (e.g. status, additional functions, authority, exchange and learning opportunities).

**Recommendation 9.** Professional development systems should be reviewed and strengthened to support innovation and the positive transformation of schools.

- Professional development systems (ITE, induction and CPD programmes) should more systematically incorporate training on innovative pedagogies (including the potential of ICT), collaboration practices and change management. High-quality school leadership programmes that focus on innovation and change management should be made available to all school leaders.
- Schools and teacher education providers need to be better connected through dialogue and partnerships, to bridge the gap between theory and practice.
- More practice-oriented action research projects and learning laboratories should be set up in schools, to test new theory-based approaches to improving pedagogies and organisational practices. Evidence should be fed back into teacher education programmes.

**Recommendation 10.** School partnerships and horizontal connectedness with other actors need to be strengthened.

- The role of local authorities in supporting and monitoring their school networks and in improving the quality of education provision should be clarified. Municipalities should act as brokers for implementing national/regional policies and to pass along signals from schools when policies are failing.
- Municipalities should support local school networks and partnerships, and generate discussion and exchange on which schooling practices work, for whom, and under what circumstances.
- Assigning municipal school counsellors and inspectorates to actively engage in dialogue and learning processes with schools has proven to be an effective strategy, helping to identify specific schools’ needs, and enabling them to be supported in the innovation process.
- Education authorities should invest in the development and sustaining of high-quality networks and platforms for teachers, schools and a variety of other stakeholders to exchange their knowledge and experiences, receive recognition, and collaborate on joint projects at different levels. They also should support schools in networking at European and international level.
Recommendation 11. Education systems should develop a culture of evaluation as part of the development of learning and innovative environments.

- Education authorities should systematically evaluate education policy initiatives using the wealth of monitoring data already collected on the inputs, institutions, processes and outcomes of the education systems along with primary research.
- Education authorities should pilot school policy initiatives to test innovative ideas on a smaller scale. These initiatives should have evaluation mechanisms built into their design to collect hard evidence on performance and areas for improvement.
- It is also important to strengthen the capacity of education actors, including policymakers at all levels and schools, to use and interpret the available monitoring data.
- Quality assurance systems should support the development of a shared understanding that the fundamental purpose of evaluations is to support school development.
- Trust and respect among all levels and types of education stakeholders are fundamental elements of a culture of evaluation.
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