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# OECD Education Policy Outlook 2014: Part 3 A special focus on reforms

**10-11 April 2014**

*This document presents the first draft of the Education Policy Outlook 2014 edition and its timeline for production: OECD Education Policy Outlook 2014: Overview and introduction (EDU/EDPC(2014)6); Part 1 Trends (EDU/EDPC(2014)6/PART1); Part 2 Snapshots (EDU/EDPC(2014)6/PART2); Part 3 A special focus on reforms (EDU/EDPC(2014)6/PART3).*

*This first draft is meant for discussion. Delegates are asked to:*
*• Keep in mind that this is a first draft for general information and overview, and is still incomplete.*
*• Provide general comments on the draft publication, its content and future orientation. Concrete edits in Part 1 on trends (see cover note in EDU/EDPC(2014)6/PART1), Part 2 on country snapshots (see cover note in EDU/EDPC(2014)6/PART2), or Part 3 on reforms (EDU/EDPC(2014)6/PART3) are welcome in writing to Beatriz Pont (beatriz.pont@oecd.org) and Diana.toledofigueroa@oecd.org by 25 April, 2014.*
*• Discuss how OECD and countries can best mobilise the report to support education system reform efforts across countries.*
*• Welcome the organisation of the dissemination conference by the Department of Education (England) in London, next 10-11 November 2014 (tentative date) and reflect on what content would be most useful to engage their participation.*

Richard Yelland Email: richard.yelland@oecd.org Tel: +33 (0)1 45 24 92 60
Beatriz Pont Email: beatriz.pont@oecd.org Tel: +33 (0)1 45 24 18 24

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# OECD EDUCATION POLICY OUTLOOK 2014 PART 3: A SPECIAL FOCUS ON REFORMS

*This part discusses the key elements which affect the implementation of reform in selected areas to provide information and analysis to policy makers who may be looking to respond to similar challenges or to implement reforms in general. The introduction and the following two sections describe common factors of successful reform implementation drawing from OECD reviews and analysis of policies in* ***school improvement***, ***evaluation and assessment*** *and* ***innovative learning environments****. In addition, this chapter has two sections on how and on what areas can stakeholder engagement in reforms be effective, from the perspective of teacher unions and from the perspective of employers.*

*Research shows there is no single model for success in implementation of education reforms. Factors such as the history of the country's education system, institutional and political settings, existing policies, teachers' beliefs and competences will influence how policies are interpreted and implemented in the local context. Nevertheless, the analysis of the different policy issues in this chapter indicate key factors for effective implementation include: 1) putting the student and learning at the centre; 2) capacity-building; 3) leadership and coherence; 4) stakeholder engagement; and 5) policy evaluation. These factors are explored in the introduction and in the sections on reforms in evaluation and assessment and in innovative learning environments. The analysis is enriched with country examples. Engagement of stakeholders is further developed in the final two sections of the chapter based on surveys implemented by both the OECD Teacher Union Advisory Committee (TUAC) and the OECD Business and Industry Advisory Committee (BIAC).*

# CHAPTER 5. SCHOOL IMPROVEMENT AND EDUCATION POLICY IMPLEMENTATION

1. Policy makers have ambitious goals for their education systems and for the types of skills and attitudes they are looking for their students to develop. To support them, educational research has progressed to provide an overview of the factors that characterise improved student outcomes, such as good instruction, stimulating learning environments and effective schools, teachers and leaders. In addition, policy makers are increasingly looking towards international experience to benchmark their performance, and for evidence of what works to develop new ideas and design reforms.

2. At the same time a key challenge for education policy makers has become to ensure that their planned reforms have an impact on their education systems. Many studies on reform over the last decades have concluded that more often than not, reforms fail to take hold in classrooms, and there is awareness of the limitations of direct policy borrowing. Systematized knowledge on the best ways policy makers can implement policies to promote improvement in their schools and classrooms is limited. More nuanced knowledge on how improvement of student outcomes can be achieved in different education systems is needed. Thus, the questions remain: *What factors need to be taken into consideration when planning the introduction of different education policy reforms, and what are the policy processes that can change the classroom context and lead to improved student outcomes?*

3. To address these questions, this chapter analyses policy reform processes in general and then in the specific cases of assessment and evaluation and in developing innovative learning environments, building on OECD thematic studies. It ends with contributions on how the social partners can effectively engage in reforms by providing employers and teacher union perspectives.

## Common policy factors of effective policy implementation[1]

4. Five common factors of effective policy implementation highlighted in a literature review on school improvement programmes and the policy areas in the following sections include:

- **Placing student and learning at the centre:** The student and their learning are at the heart of education. Improving education systems requires improving student outcomes, and maintaining a focus on the student and their learning as central to the process of policy implementation. Evidence on school improvement programmes concludes that focusing on learning and instruction contributed to the modest gains in student achievement. The work on policies in evaluation and assessment and in ILEs also indicate the importance of focusing on the local level (*i.e.* the classroom and learning environment) as well as putting student learning at the centre of reform.

- **Supporting capacity building of professional staff:** To fundamentally change the teaching approaches of a large number of teachers, resources, time and learning opportunities are needed. The research on school improvement programme seems clear: There is no way around building the capacities of the schools, and increasing teachers' skills and competencies. In the long-term, policy makers can do very little with schools which do not have these capacities. Many of the policy instruments in use today, such as accountability regimes or market mechanisms, rely on schools being able to turn these measures or pressures into improvement of their classrooms and

their students learning. Furthermore, the sections on policies in evaluation and assessment and in ILEs suggest that professional capacity must be built *at all* levels of the education system.

- **Ensuring leadership and coherence:** Leadership is a key to implementation, and can be exercised by one individual or by a group of staff depending on circumstances. Effective leadership at the school level and the administrative (system) level can provide guidance on policy implementation and coherence, alignment and a long-term perspective of the policy agenda to ensure coherence between policies and the education system. Conflicting messages and policies can contribute to reform failure. Schools are usually not only exposed to one programme at a time, but will be expected to deal with more than one programme, reform or change of law or expectation at the same time. It will therefore be necessary for school authorities, local and central, to consider the totality of changes that schools are expected to undertake. Policies in evaluation and assessment under a coherent framework can help avoid duplication of tasks and inconsistencies. "Growing and sustaining" ILEs suggests examples on ways countries are working towards coherence.

- **Engaging key stakeholders:** Policy makers can choose to involve stakeholders and external expertise from the beginning of the design process in an effort to create policies which will be well-received and have legitimacy in the sector. The literature on school improvement programmes is also very clear on the need for understanding the teachers 'views on school improvement and the necessity of getting teachers on board with the content of school improvement programmes. It can be especially critical to involve teachers' unions or finding ways of having dialogue with teachers. The contribution by TUAC provides examples on teacher unions' contributions and engagement with governments on the development and implementation of education and training policies in different areas. In addition, the contribution from BIAC addresses engagement mechanisms by which employers, policymakers and education institutions can co-operate to increase the employability of individuals which can generate significant shared benefits for all actors, as well as for economies and societies.

- **Evaluating impact:** Many educational systems have weak traditions of evaluating programmes and reforms, and if there are evaluations, they often rely on survey data from teachers' and not on measures of student learning progress. Based on the literature review of school improvement programmes, most of the articles included in this study contain some account of the impact of the school improvement programmes on student learning. Data can be used to monitor students' progress as well as the changes taking place in the school organisation. However, the review found that most of the school improvement programmes have not been evaluated in a way that satisfies rigorous scientific criteria such as high-quality experimental and quasi-experimental study standards.

5. These common success factors have been identified and can serve as guidance for policy makers when planning new programmes and reforms intended to change education systems, learning environments, schools and classrooms. At the same time, the research shows there is no single model for success and that education systems may achieve results by combining policies and approaches to implementation in different ways. Each of the policy areas might have specific factors related to how a reform in that certain policy area should be designed and implemented to increase quality and student learning and may not apply to other areas, which can relate to the design of the programme, its components which could increase the likelihood of success; and the conditions and the environment in which the programme is implemented.

6. The context of educational systems plays an important role on how policies are interpreted and implemented, and some programmes might be effective in one setting and not in another. Among the

contextual factors that need to be taken into account when looking at a policy or reform are: the composition of the student population; the traditions and development of the specific policy area in the specific country as this varies across OECD countries; the governance structure (i.e. whether the system is decentralised or centralised, the number of levels of governance and the number of actors); the political context in which the policy is being implemented; and historical and cultural traditions of the system. Reform implementation takes time (3-8 years), and changes in context whether political or social can impact the interpretation and implementation of policy in both the short and long-term.

7. In-depth analysis and reflection should go into the planning and the implementation activities of policies and reforms. Looking to other countries and the experiences of implementation of education policy making around the world can give policy makers some guiding questions, more than the answers. Just as teaching must be evidence-based, policy making should build on the best evidence of what works. But just as teaching is also the art of adapting the knowledge base to the local circumstances and opportunities, so is policy making.

8. The sections that follow include analysis on specific reform processes from two different perspectives:

- Concrete reforms in evaluation and assessment and the development of innovative learning environments: the analysis reviews main objectives, background and contextual factors to understand the specifics of each policy, the key elements of the reform (*i.e.* professional training and guidance: leadership and capacity building; resources; use of data; degree of local adaptability; etc.), and the central processes to successfully implement the reform (*i.e.* stakeholder engagement, communication, alignment to policy agenda, long-term perspective, follow-up of reform etc.). Country examples are presented throughout the chapter, and the chapter like the messages stated above does not focus on what kind of methods are more appropriate, or on what kind of policies be said to be effective in general.

- Stakeholder engagement in reforms in general: With contributions from teacher union and employers perspectives, the sections explore how these key social partners can be engaged more effectively in education policy reforms processes.

***Bibliography***

Skalde, A., and B. Pont, (*2013),* "A literature review on the implementation of school improvement programmes: Common success factors and the role of context", EDU/EDPC/RD(2013)5.

## CHAPTER 6. EVALUATION AND ASSESSMENT REFORMS IN SCHOOLING[2]

9. Across the OECD, many countries have launched ambitious school reform programmes which include a strong element of evaluation and assessment. There is widespread recognition that evaluation and assessment arrangements are keys to improving educational practices and student learning. They are also instrumental in recognising and rewarding the work of educational practitioners and in certifying the achievements of students. Promoting evaluation and assessment is clearly in the interest of students and their families, educational practitioners and school systems.

10. The OECD Reviews of Evaluation and Assessment in Education provides analysis of policies and practices in 28 countries[3] and policy advice to countries on how evaluation and assessment can bring about real gains in performance across the school system. The review found that countries have different traditions in evaluation and assessment and take different approaches. Nevertheless, in designing effective evaluation and assessment frameworks, all countries face a number of common challenges. There is a need to:

- Take a comprehensive approach: Most countries have a whole range of provisions for student assessment, teacher appraisal and school evaluation that have developed quite independently of each other. A key concern is to bring all these pieces together in a coherent framework. This will create synergies for learning by avoiding duplication of tasks and inconsistencies across different evaluation and assessment efforts.

- Focus on improving classroom practices and place students at the centre: The strength of evaluation and assessment is the potential to improve what is at the heart of education – student learning. Policy makers should promote the regular use of evaluation and assessment results for improvements in the classroom. Students should be fully engaged with their learning and empowered to assess their own progress. The development of critical thinking and social competencies should also be monitored.

- Build capacity at all levels: Creating an effective evaluation and assessment framework requires capacity development at all levels of the education system. For example, teachers may need training in the use of formative assessment, school officials may need to upgrade their skills in managing data, and principals – who often focus mainly on administrative tasks – may need to reinforce their pedagogical leadership skills. In addition, a centralised effort may be needed to develop a knowledge base, tools and guidelines to assist evaluation and assessment activities.

11. Drawing from the OECD Reviews of Evaluation and Assessment in Education, this chapter illustrates how countries address these challenges in three policy areas: student assessment for learning, school self-evaluation and system evaluation. Each policy area provides analysis and information on the main policy objectives, the relevant contextual factors, key elements of reforms to consider, the key processes to be aware of for effective implementation, and country examples of reform.

### Using student assessment to improve learning

12. Student assessment results should be used to improve student learning. A large amount of research has been conducted around the world regarding the impact of using student assessment to improve

teaching and learning, with some researchers concluding that the achievement gains associated with *assessment for learning* (or formative assessment) are among the largest ever reported for educational interventions.

13. Current policy and practice in many countries emphasises the importance of assessment for learning (or formative assessment), which should occur as an integrated part of day-to-day classroom interactions. Traditionally assessment has been thought of as separate from the teaching and learning process – for example, a test or examination coming at the end of a study unit. However, classrooms across OECD countries are becoming more diverse in terms of student backgrounds and prior learning, and teachers are increasingly expected to identify what students already know and can do in order to respond to students' individual learning needs. This is to be done on the basis of ongoing assessment activities in the classroom. In this context, the thinking about different assessment purposes has evolved considerably over the past decades.

14. Given the widely reported benefits of using assessment to improve teaching and learning, many OECD education systems have developed policy frameworks (national or state laws or regulations) to promote and support assessment for learning (or formative assessment) practice in the classroom. Several countries have also introduced standardised assessments for formative use at the school level. The main objectives behind such reforms are:

- To identify student learning difficulties, diagnose learning needs and differentiate teaching accordingly;
- To provide timely feedback to students, which they can integrate into their learning process;
- To help students take risks and make mistakes in the classroom, so that they feel safe to reveal what they do not understand and are able to learn more effectively;
- To actively engage students in their own learning and assessment and to allow students and teachers to reflect on the learning process.

***Relevant contextual factors***

15. Several relevant contextual factors underlay decisions on the implementation of formative assessment reforms. Formative assessment is typically only one element of broader student assessment frameworks and needs to be carefully implemented alongside summative assessments that are conducted to judge and certify student achievements at particular points in time. In addition, many countries use student assessment results for a range of different purposes, such as holding teachers and schools accountable and monitoring the quality of the education system. There are often tensions between a stated commitment to formative assessment on the one hand, and public, parental and political pressure for accountability in the form of scores and rankings on the other. Education systems also have different traditions regarding the role of external standardised assessment in schools. In countries where teachers have experience in working with external tests and data, it may be easier to embed an external formative test in the regular functioning of schools. Teachers' assessment literacy and understanding of different aspects of reliability and validity also influences the extent to which they will be able to create their own assessments and set learning targets and assessment criteria together with their students.

***Key elements of successful reform***

16. Key elements of successful reform include: providing leadership for a deep understanding of formative assessment; putting students at the centre of assessment frameworks; building teachers' capacity

to use student assessment for improvement; and developing adequate tools and instrument to support assessment practice.

*Leadership for a deep understanding of formative assessment*

17. As teachers in most countries have long held the responsibility for summative classroom-based assessments, it may be challenging to embed a deep understanding of formative assessment in schools. It is often not well understood that assessment for learning requires a major shift in mindset for teachers, as well as fundamental changes *vis-à-vis* traditional classroom assessment practices. The challenge is to provide strong leadership and clear communication to ensure that teachers move beyond surface techniques for formative assessment, such as using a series of small tests to prepare a final summative assessment, or giving unspecific feedback. Formative assessment needs to be independent of the requirement to accredit performance. Its aim should be to identify misconceptions or missing elements of student learning in order to change instruction and provide feedback. To have the greatest impact, feedback to students needs to timely, detailed and specific, including concrete steps needed to progress further.

*Putting students at the centre of assessment frameworks*

18. Vision and leadership is also required to ensure that students are at the centre of the assessment process and participate actively in monitoring their own progress. Recent educational research emphasises the importance of assessment as a process of metacognition, where learners become aware of their own thought processes, personally monitor what they are learning and make adaptations in their learning to achieve deeper understanding. For example, self-and peer-assessment are powerful processes where students identify standards and criteria to make judgements about their own and their peers' work, which can promote a greater sense of agency and responsibility for their (life-long) learning. But developing skills for self-assessment and self-regulation takes time and requires structured support by teachers in the classroom.

*Building teacher capacity*

19. To ensure that policy commitments to formative assessment are matched with actual developments in the classroom, sustained investment in teachers' understanding and capacities regarding formative assessment is necessary. An important priority is to develop teachers' capacity to interpret student assessment data, including that generated by standardised tests, for the improvement of classroom instruction. To become assessment literate, teachers need to be aware of the different factors that may influence the validity and reliability of results and develop capacity to make sense of assessment results, identify appropriate actions and track progress. Other key areas of training in formative assessment are to help teachers understand which assessment information is most appropriate for a particular purpose, how to provide effective feedback to students and how to engage students in their own assessment.

*Developing assessment instruments*

20. Teachers' assessment practice can further be supported by adequate tools and instruments. Low stakes central assessments can provide external signposts for teachers and students by indicating the learning goals that are expected nationally and offer interesting pedagogical tools for teachers. However, many systems are facing challenges in the effective use of external assessments for formative purposes. The data gathered in large-scale assessments are often not at the level of detail needed to diagnose individual student needs and the results may be sent to schools too late to have an impact on the learning of students tested. While large-scale standardised assessments can be useful to provide some initial clues about areas that need attention, other more fine-grained diagnostic instruments are needed to identify the causes of poor performance and develop an appropriate instructional intervention.

### *Processes for effective implementation*

21. While existing policy frameworks signal the high level of attention given to formative assessment at the policy level, ensuring effective implementation is equally important. Evidence on different approaches indicates that assessment may support or diminish student motivation and performance depending on the way it is implemented and used. Assessments that are not well implemented and used may contribute to alienating students (and teachers) from the education system and exacerbate inequity in education. On the other hand, carefully planned assessment interventions that are well aligned with learning goals and place students at the centre of the process have strong potential to raise achievement and reduce disparities.

22. Tensions may arise when an assessment is being used for both formative and summative purposes. Assessment systems that are useful for formative and monitoring purposes usually lose much of their credibility when high stakes for students, teachers or schools are attached to them. This is because the unintended negative effects of high-stakes assessment, such as curriculum narrowing or excessive test preparation, are likely to prevail over the intended positive effects. There are risks in using a single test for too many purposes, in particular where the information ideally required in each case is not the same.

23. A key governance challenge for countries is to develop a clear vision and strategy for assessment where different formative and summative assessment approaches, developed nationally and locally, each serve a clearly defined purposes and the format of the assessment is aligned to these particular purposes. Clear communication about the primary purpose of an assessment tool is vital to ensure that assessment results are used in an effective way. It is important to communicate clearly about the kinds of evidence that different types of assessment can and cannot provide.

**Box 1. New Zealand, Norway and the Netherlands: Ensuring that assessment results are used to improve student learning**

**New Zealand: Clear communication about assessment purposes**

The New Zealand Ministry of Education *Position Paper on Assessment* (2010) provides a formal statement of its vision for assessment. It describes what the assessment landscape should look like if assessment is to be used effectively to promote system-wide improvement within, and across, all layers of the schooling system. The paper places assessment firmly at the heart of effective teaching and learning. The key principles highlighted and explained in the paper are: the student is at the centre; the curriculum underpins assessment; building assessment capability is crucial to achieving improvement; an assessment capable system is an accountable system; a range of evidence drawn from multiple sources potentially enables a more accurate response; and effective assessment is reliant on quality interactions and relationships. To support effective assessment practice at the school level, the Ministry of Education is also currently conducting an exercise which maps existing student assessment tools. The purpose is to align some of the assessment tools to the National Standards and provide an Assessment Resource Map to help school professionals select the appropriate assessment tool to fit their purpose.

Source: Nusche, D., et al. (2012), doi: 10.1787/9789264116917-en.

**Norway: A strategy for building teachers' formative assessment capacities**

In Norway, a statutory requirement has been introduced for schools to implement assessment for learning. To support teachers in fulfilling the requirements for formative assessment, the Directorate for Education and Training has created a website on assessment for learning providing a range of materials and tools including questions for reflection, films, assessment tools and literature, and also examples of different ways to document formative assessment practice. At the same time, there has been a developing awareness that teachers have not traditionally received training in formative assessment and that there was very little expertise available nationally for school leaders to draw on to provide support. To address this, the Ministry of Education and Research and the Directorate for Education and Training in Norway identified formative assessment as a priority area for education policy and professional development and launched a range of support programmes and learning networks at the regional, local

and school level. For example, the *Assessment for Learning* programme (2010-14) is organised in learning networks at the local and regional level, where practitioners can exchange experience and create spaces for common reflection on effective practice. Participating municipalities and counties employ a formative assessment contact person who will assist in running the project locally. These contact persons attend *Assessment for Learning* workshops run by the Directorate. The programme also provides online resources including tools and videos on how to enact effective formative assessment in the classroom.

Source: Nusche, D., et al. (2011), doi: 10.1787/9789264117006-en.

**Netherlands: An external tool to support formative assessment in schools**

Since the mid-eighties primary schools started to make use of a pupil monitoring system, the LVS (*Leerling Volg Systeem)* developed by the Central Institute for Test Development (Cito). Later on pupil monitoring systems were also implemented in secondary schools and currently every secondary school has a pupil monitoring system. The Cito pupil monitoring system (LVS) for primary education is a consistent set of nationally standardised tests for longitudinal assessment of a pupil's achievement throughout primary education, as well as a system for manual or automated registration of pupil progress. The LVS covers Language, (including decoding and reading comprehension), Arithmetic, World Orientation (Geography, History, Biology), Social-emotional development, English, Science and Technology. It is purchased by schools at their own cost and initiative. The primary objective of the LVS is the formative assessment of student achievement and individual students' mastery of key subject matter areas in relation to their year level. Item Response Theory is used to vertically equate students' scores in the LVS tests, which allow for a calculation of student growth trajectories in primary school. Since 2003, the LVS also contains computer-based tests, some of which are adaptive. The following presentation formats are made available on the basis of the LVS:

- The *pupil report* is a graph in which the pupil's progress is visible throughout the years. Data available in the national surveys are used as a frame of reference, based on percentiles, so that the position of an individual pupil with regards to five reference groups (25% highest scoring pupils, just above average, just below average, far below average, and 10% lowest scoring pupils) is immediately visible from the corresponding graph.
- For children with special education needs, and who visit special education schools, an *alternative pupil report* is made available. This report also shows at what level a pupil is functioning and how to interpret the results of the pupil compared to children of the same age who attend mainstream primary education.
- The *group survey* contains the results of all the pupils from a group over a number of years in a table. For each pupil the scale of ability score at the successive measuring moments is shown along with the level score.

Source: OECD (2013), doi: 10.1787/9789264190658-en.

## Raising the profile of school self-evaluation

24. Raising the profile of school self-evaluation is of key importance to school improvement and quality assurance and needs to be consolidated in school systems.

25. Growing evidence and understanding indicate the important link between effective school self-evaluation and school improvement actions. The vast majority of OECD education systems have introduced requirements for schools to conduct self-evaluation, although these vary significantly in nature. The main objectives are:

- To signal that schools are best placed to analyse their own contexts, performance and areas for improvement;
- To allow a regular assessment of the effectiveness of structures and processes in place in schools and the quality of student learning outcomes;

- To engage the school community in the process of self-evaluation, so that it owns the process and makes use of the results to continually strive for improvement in teaching and learning at the school.

26. Different approaches stimulate a culture of school self-evaluation. This may involve introducing requirements for schools that promote strategic planning, for example, the drawing up of 4 to 5 year strategic plan and regular updates of school progress on this plan, or the development of annual school reports about their achievements, challenges and strategies for improvement. External school evaluations can bring greater depth and breadth to self-evaluations in schools by providing relevant benchmark information, comparative data from other schools or new and challenging ideas that might help the school to expand its evaluation, interpret its own data and assess its quality. In systems with external school evaluation mechanisms, these can be adapted to promote the reinforcement of school self-evaluation practices. Other systems may need to introduce a degree of externality to promote more effective school self-evaluation.

***Relevant contextual factors***

27. Several important contextual factors underlay decisions on how to raise the profile of school self-evaluation, including notably the degree of school autonomy within the system and the leadership structures at schools. There has been a general trend towards greater levels of school autonomy and several systems have introduced specific regulations to underline the school's responsibility for the quality of its educational provision. Different school systems have different levels of maturity of evaluation cultures at the school level. In many countries, school self-evaluation activities have been initiated by individual schools or school groups, e.g. in Australia, Canada, Germany and England, United Kingdom. The OECD Review revealed that, even within systems with a comparatively mature school evaluation culture, there is significant variation among schools in self-evaluation capacity. There does appear to be steady political support to raise the profile of school self-evaluation. For example, in the European Union countries, there has been broad political support to encourage school self-evaluation since 2001. Other important factors include whether or not there is an established mechanism for external school evaluation, e.g. a School Review Body or a School Inspectorate, and whether there are objective school performance measures available for all schools within the system, e.g. results from national assessments and/or examinations.

***Key elements of successful reform***

28. Key elements in promoting effective self-evaluation in schools include: ensuring that self-evaluation activities focus on the quality of teaching and learning; prioritising building capacity and establishing resources for self-evaluation; promoting a common understanding of school quality and offering supporting tools to schools; and ensuring a degree of externality to challenge the validity of self-evaluation results.

*Ensure a focus on the quality of teaching and learning*

29. Effective school self-evaluation contributes towards school improvement and is not simply an exercise in compliancy. The quality of teaching is central to the quality of student's learning and the key variable which a school can influence. It follows that any reform to raise the profile of self-evaluation should ensure that evaluation activities focus on the quality of teaching and learning and their relationship to student learning experiences and outcomes. This requires a culture of openness and reflection around what happens during the teaching and learning process, including classroom observation. It is also an important way to signal that self-evaluation should actively involve and relate to the work of all school staff members.

*Prioritise building capacity and establish resources for self-evaluation*

30. There needs to be an explicit recognition that the process of self-evaluation is hugely dependent on school leadership's capacity to stimulate engagement, to mobilise resources and to ensure appropriate training and support to staff. The drawing up of national and/or professional school principal and deputy principal competency profiles should clarify the importance of the school self-evaluation process, including classroom observation in the school principal's role. School leaders will benefit from training in the techniques of observing and assessing teaching and learning and giving developmental feedback. Consideration can also be given to the resourcing of structures to strengthen school principals' capacity to implement effective self-evaluation processes, for example, by creating new evaluation roles within the school for different staff, e.g. establishing specific teams responsible for school improvement or data analysis. It is essential to ensure that all members of the school with evaluation responsibilities have the necessary skills in class observation, interviewing, data gathering, analysis and interpretation of results which both ensure validity and reliability in the evaluation process and which allow the results of evaluation to be understood.

*Promote a common understanding of school quality and offer supporting tools to schools*

31. The use of clear reference standards and criteria is an important element in conducting an effective self-evaluation. The development of an agreed set of national criteria for school quality, for example, in a school quality framework, can provide an important guiding reference for school self-evaluation. A national school quality framework may draw on much international research that points to the characteristics of effective schools, together with evidence on effective strategies gathered at national and local levels. Schools can use this framework to draw up their own criteria to evaluate their teaching and learning quality, and in turn, to set strategic development goals. It is also important to periodically review the school quality framework in light of practical experience, school evaluation results and more recent research.

32. Schools can also benefit from the offer of self-evaluation resources and tools that have been approved (and maybe developed) at the national level as reliable and broad-based supports. Among other tools, stakeholder surveys can be used by schools to seek feedback from the broader school community on their perceptions of the school's teaching and learning quality. School information management systems can make regular school reporting activities more efficient and can be optimised with additional analytical programmes to allow flexibility for schools to monitor and analyse key results.

*Ensure a degree of externality to challenge the validity of results*

33. A strong focus on self-evaluation holds the basic premise that schools are best placed to analyse their own contexts, performance and areas for improvement. The provision of a comparable evidence base to all schools allows a critical reflection of where each school stands in comparison to other schools. All countries collect information from schools on a regular basis as part of compliancy reporting systems and this can be used to compile benchmark information on key indicators. Similarly, the trend towards administering national assessments offers an opportunity to feedback comparable performance data to schools in core areas. Benchmarked data are useful for schools, but many countries could capitalise more on technology to improve the relevance of results to instructional practice, by providing faster feedback and tailored analytical packages. Where there is a strong evidence base for school evaluation and an established mechanism for external school evaluation, external evaluators can focus on how a school conducts its self-evaluation and uses the results to improve student learning or could even collaborate with the school to validate its self-evaluation and improvement plan.

### *Processes for effective implementation*

34. The implementation of school self-evaluation activities should ensure engagement of the school staff and students so as not to remain an exercise for the school leadership team. There is considerable recognition of the importance of fully engaging all members of the school community in the self-evaluation process. However, there is also evidence that this requires high levels of trust and strong commitment from the school community. As noted above, this implies recognising the key role that school leaders play in implementing an effective self-evaluation culture. However, it also calls upon other important actors in the school community, for example school governors, who may have important roles to play in self-evaluation, but may also largely comprise a group of volunteers with limited evaluation capacity.

35. Implementing an effective way to challenge the results of self-evaluation activities requires a strategic approach. External school evaluators would need to update their skills to be able to validate school self-evaluation and even to work collaboratively with schools on their school self-evaluations. This would require adequate retraining of external evaluators and a strategic planning of the required intensity and frequency of external evaluations. Introducing a system of external school evaluation would require significant resources and a commitment to build adequate capacity among evaluators.

**Box 2. Luxembourg and Northern Ireland, United Kingdom: Raising the profile of school self-evaluation**

**Luxembourg: introducing requirements for school development planning**

In Luxembourg, there has been little formal tradition of school evaluation. There is no external school evaluation mechanism, only a system of annual compliancy reporting. In 2009, there was a major strategy to stimulate a culture of regular school self-evaluation. A specific Agency for School Quality Development (ADQS) was established within the Ministry and a regulation was introduced for providers of "fundamental education" (ISCED 0 and 1) to conduct a school development planning exercise, initially on a 4 year planning cycle, but this was revised to a 3 year plan in 2013. This was introduced within the context of a reform to focus fundamental education on students' competency development in four key stages and was accompanied by the introduction of national student assessments in one of these key stages (Cycle 3) and also in lower secondary education. Each school introduced new organisational structures and teams that also assumed roles within the school development planning process. The ADQS closely followed schools in their development planning and by the end of 2011 all fundamental schools had developed a 4 year plan. A major focus from the ADQS has been to help schools with analysing data and it offers feedback from national assessments, other assessment tools, as well as advice and analytical expertise. Each year the school team should evaluate its implementation of the school development plan. This implies reviewing the achievement of annual school objectives and adapting those to be implemented in the following year. Building on the experience of implementing development planning, the ADQS worked on the development of a school quality evaluation framework and a methodological guidance with examples of evaluation tools that schools can choose to use.

Source: Shewbridge, C., et al. (2012), doi: 10.1787/9789264116801-en.

**Northern Ireland, United Kingdom: using external school evaluation to stimulate more effective self-evaluation**

In Northern Ireland, there is an established culture of school evaluation. An Education and Training Inspectorate within the Department of Education conducts regular school inspections using a school quality inspection framework that it publishes and promotes for schools to use. Schools have been legally required to conduct school development planning since 1998 and benefit from analytical software and information systems developed by school supporting bodies and also receive tailored packages of benchmarked data compiled by the Department of Education. Evaluation evidence from the Education and Training Inspectorate shows a high sophistication of school self-evaluation activities in a good proportion of schools, but underdeveloped practices in others. In this context, the Department of Education has introduced recent policies to further raise the profile of school self-evaluation. In 2010, a revision to school development planning requirements specifies areas for self-evaluation. Policies also emphasise the school's responsibility for its improvement and the strong expectation that self-evaluation is underpinned by evidence. At the same time, school self-evaluation plays an increasingly important role in external school evaluation: the school's approach to school development planning is examined as part of external school evaluation; and a more proportionate approach to school inspection is being gradually introduced. The school inspection process is also used to actively

build evaluation capacity among school leadership. Each year there is a competitive recruitment process open to all school principals and other senior school staff to participate in external school evaluation as a member of a school inspection team. The selected candidates join a maximum of two individual school inspections in any given year as "Associate Assessors". They are trained by the Education and Training Inspectorate on external evaluation procedures and performance indicators. Together with their participation in inspections of other schools, this provides professional development for monitoring, evaluating and improving educational provision in their own schools.

Source: Shewbridge, C., et al. (2014), doi: 10.1787/9789264207707-en.

## Taking a comprehensive approach to education system evaluation

36. Education system evaluation should take a comprehensive approach, so that the whole breadth of national education goals is monitored. System evaluation refers to approaches to monitor and evaluate the performance of the education system as a whole, but also the performance of sub-national education systems.

37. Education system evaluation has a heightened role to play in the evaluation and assessment framework as there is increased emphasis on evidence-based policy making and greater public accountability requirements. While national education goals may be comprehensive and broad, national monitoring systems may be rather limited in the information they offer. Typically, countries use many different components to evaluate their education system (e.g. educational research, national assessments, indicator frameworks, international surveys), but these have been established at different times and may evolve to adapt to different needs with little co-ordination among them. The challenge is to design a comprehensive approach to education system evaluation which integrates its different components in a coherent way.

38. Given the importance of student learning objectives as a reference for policy development and implementation, a number of OECD education systems have developed comprehensive frameworks for education system evaluation. This ensures system evaluation results provide a broad informative basis for policy development as they consider the whole range of student learning objectives. The main objectives behind such reforms are:

- To provide comprehensive accountability information to the public on quality and equity in the education system and feedback on reforms to the education system;
- To help focus stakeholders on the major goals and challenges in the education system as a whole; and
- To meaningfully inform policy planning and policy development so educational processes and outcomes are improved.

39. In most OECD countries, monitoring systems have been developed to meet the demand for regular information on outcomes at different stages of the education system, typically via large-scale national standardised assessments and international student surveys, but also via thematic evaluations of samples of schools as part of external school evaluation. The growing importance of performance data has generated a great deal of research and analysis of student outcomes. Alongside, most OECD countries have invested in indicator frameworks, bringing together demographic, administrative and contextual data collected from individual schools. Some countries have also established agencies dedicated to evaluation and assessment in recognition of the need for adequate capacity, specialised expertise and independent analysis. Furthermore, countries are increasingly engaging in planning cycles whereby policy priorities and targets for improvement are set and progress towards these is regularly monitored and evaluated.

***Relevant contextual factors***

40. Several general trends have increased the focus on education system evaluation within the evaluation and assessment framework. There is an increasing recognition within OECD countries of the need to use evidence to inform policies to improve educational processes and outcomes within the education system. There has also been growing demand to provide accountability information to the public on the performance of the education system, as part of the drive to measure outcomes for accountability in the public sector and as a result of greater pressure by more educated parents. This has been accompanied by a stronger role, in some countries, of market-type mechanisms which require the availability of high-quality information for parental and student decisions. In addition, with challenging financial circumstances in some countries, there is a growing imperative to scrutinise the use of public resources.

***Key elements of successful reform***

41. The key elements of successful reform to evaluate the school system include: ensuring a broad concept of education system evaluation; going beyond measurement in educational evaluation; and mapping out the available information for education system evaluation against education system objectives.

*Ensure a broad concept of education system evaluation*

42. A comprehensive approach to education system evaluation requires conceiving it broadly to include the wide range of system level information which permits a good understanding of how well the whole range of student learning objectives are being achieved. A strategic approach to system level evaluation would benefit from clear national objectives, priorities and targets so progress against these can be assessed. System evaluation should include a varied set of components such as broad measures of student outcomes (in particular, specifically designed national assessments, longitudinal research and surveys, and international assessments); a system-level indicator framework with basic demographic, administrative and contextual information; information systems to share and disseminate system-level information; and research and analysis to inform planning and policy development, including the evaluation of specific programmes and policies. In addition, system evaluation needs to place significant emphasis on student progress with the monitoring of both student results over time and progress of particular student cohorts. Another important priority is to ensure collection of adequate contextual information to make comparisons meaningful in the light of differing contexts and to effectively monitor equity. In addition, system level evaluation should include the production of an annual report with an assessment of whether or not the education system is achieving its objectives.

*Go beyond measurement in educational evaluation*

43. An imperative is to develop measures of performance that are broad enough to capture the whole range of student learning objectives. Although it is not always possible to devise indicators and measures of good quality across all the objectives of the education system, policy making at the system level needs to be informed by high-quality data and evidence, and not driven by the availability of such information. Qualitative studies as well as secondary analysis of the available measures and indicators are essential information to take into account in policy development and implementation. Qualitative approaches include the narrative provided by external school evaluation reports, key stakeholder feedback on broader outcomes (e.g. school climate, student engagement, views on the implementation of school reforms), and qualitative appraisal of teachers and school leaders. The qualitative aspects can feed into the policy debate by providing evidence on a broader set of student learning outcomes, as well as help shed light on some of the factors associated with student learning outcomes.

*Map out the available information for education system evaluation against education system objectives*

44. A systematic review of the availability of information in a meaningful and nationally agreed education system evaluation framework should be done based on the mapping out of key objectives for the education system, followed by a set of goals to be realised. The next stage should be a systematic identification of available measures, plus where measures are available a technical note on their validity and/or limitations for interpretation. This analysis will provide information on key gaps in data availability and also in limitations of existing measures. This will be the foundation of strategies to prioritise further measurement development and/or refinement according to the national political priorities and long-term goals. This exercise will also remind all stakeholders of the full spectrum of national priorities and goals and clearly show that not all of these are currently measured. As a result, a final step is to ensure the development of qualitative analysis in priority areas for which there are currently no measures and to feed the results of this analysis into the policy making process.

***Processes for effective implementation***

45. The effective implementation of a comprehensive approach to education system evaluation requires policy coherence, credibility of execution, high technical and analytical capacity, a strategic approach, transparent reporting, and a valuable use of results. Coherence with a comprehensive approach to education system evaluation requires a commitment to evidence-based policy making. The rationale to establish such an approach builds on the principle of using the results of system evaluation to improve the knowledge base on which policy makers and practitioners draw to improve their practices. This involves a strategic approach to research, analysis and evaluation, and information management activities in view of supporting the provision of evidence-based policy advice.

46. Credibility of system evaluation activities facilitates effective implementation. This requires sufficient technical capacity to undertake education system evaluation and a well-defined distribution of responsibilities. A way to raise credibility for evaluation activities is to give a clear mandate to a technically-autonomous national body responsible for education system evaluation with the necessary distance from political decision making to conduct rigorous and reliable analyses of data. A national body can confront the education authorities where necessary and be impartial in its conclusions about the education system. This can provide a fresh and constructive external point of view informing the national debate.

47. An additional important implementation aspect is ensuring that education stakeholders value the results from education system evaluation. This requires effectively communicating results from system evaluation to encourage their use by different stakeholders. While countries often collect large amounts of data and statistics at the system level, there is frequently significant untapped potential for integrating and using the available data. Great care is needed in ensuring adequate accessibility of system evaluation results, clarifying the interpretability of the results, establishing protocols to share data among stakeholders, providing clear and timely reporting of results to different audiences, articulating key messages on the major results, and offering opportunities for discussion.

**Box 3. Netherlands and Australia: Taking a comprehensive approach to education system evaluation**

**Netherlands: broad qualitative and quantitative evidence base for policy making**

In the Netherlands, there is a comprehensive approach to education system evaluation with: the collection of a broad range of evidence using an education indicator framework, qualitative research and data collection instruments specifically designed to monitor outcomes at the system level; sophisticated reporting systems; and analytical capacity within the Ministry of Education, Culture and Science to optimise the use of results of system evaluation.

To monitor the quality of educational outcomes there is an established strategic approach with a long tradition of ***longitudinal research programmes***. The Cohort Survey School Careers (COOL) comprises achievement testing of students in language and mathematics/arithmetic in primary (Years 2, 5 and 8), general secondary (third year) and vocational education (second year); recording data on students' progress throughout the school programme (class repetition, drop out, transfer to another school type, and examination results); and the collection of school background data. These are complemented by ***sample-based student assessments*** to monitor a broad set of outcomes, identify and report trends in student achievement and provide information for policy makers, educational practitioners and the general public. The Periodical Survey of Education (PPON) has been administered in different disciplines since 1987 typically to Year 8 students and, in some cases, Year 4 students, to provide robust measures of changes over time. It monitors skills in Dutch and mathematics on a five-year cycle. Other curriculum areas that are monitored in the PPON include world orientation (social science), history, geography, biology, English, visual arts, music and physical education. In addition, the Annual Survey of Educational Levels (JPON) was introduced in 2008 to specifically monitor progress on the roll out of the Ministry for Education, Culture and Science's quality agenda "Schools for Tomorrow" and on student mastery of Dutch language and mathematics in primary education (Years 4 and 8). The design of JPON aims to provide more regular and timely feedback on a narrower area corresponding to the national reform agenda in primary education.

System evaluation information goes beyond quantitative measures and includes ***contextualised qualitative analysis***. The Inspectorate of Education undertakes qualitative analysis on the basis of individual school evaluations, which is published in its annual report on the state of education in the Netherlands and in thematic reports. In addition the Ministry and independent research groups engage in secondary analysis of student performance and contextual data. The Education Council also undertakes studies that add considerably to the knowledge base which informs policy development, through the involvement of top expertise in the country and the account of the most relevant empirical research. Furthermore, the ***monitoring of the impact of given policy initiatives or educational programmes*** is an integral part of system evaluation, following a long tradition in the country. These are often promoted by the Ministry of Education, Culture and Science and involve in-depth analyses of the effectiveness of specific educational programmes or the assessment of progress with the implementation of education reforms.

An important backing for education system evaluation has been the establishment by the Ministry of Education of a "Knowledge Directorate" to support an evidence-based approach to policy development. It acts as a clearing house of scientific research and reflects the importance attributed to evidence-based policy making in the Netherlands. This is supported by regular reporting on the education system with statistical and analytical reports, plus education data portals, run by the Ministry in collaboration with the National Bureau of Statistics (CBS).

Source: OECD (2013), doi: 10.1787/9789264190658-en.

**Australia: Clear framework for reporting key performance measures**

Education system evaluation is a priority for the Australian Government and includes ***public reporting*** of the progress and performance of Australian schooling at the core. The rationale is to allow the public to evaluate the system and the Government's performance. Such ***commitment to transparency*** has seen significant developments at the national level over a relatively short period and increased collaboration among the states and territories and government and non-government sectors.

The focus on public reporting is supported by clear standard frameworks both for reporting **key performance measures** and for **general government sector reporting**. In December 2008 Ministers agreed that public reporting on Australian schools would: support improving performance and school outcomes; be both locally and nationally relevant; and be timely, consistent and comparable. *The Measurement Framework for Schooling in Australia* is the basis for reporting on the progress of the education system, and it

- Outlines the data collection and reporting responsibilities of school systems and sectors across the country;
- Details national key performance measures for schooling,
- Outlines the annual assessment and reporting cycle, and
- Underpins the ***National Report on Schooling in Australia*** released by Education Ministers.

The *Measurement Framework for Schooling in Australia 2012* clearly presents the agreed measures and their source for each of the priority areas: literacy, numeracy, science literacy, civics and citizenship, information and

communication technologies (ICT) literacy, vocational education and training (VET) in schools, student participation, student attainment and student attendance. In 2008, the framework was enhanced by the inclusion of comparable measures from the National Assessment Program – Literacy and Numeracy (NAPLAN).

The framework was reviewed and in late 2010 was further refined to incorporate the full suite of agreed national key performance measures as related to general government sector reporting. These include ***progress measures*** and ***key targets*** set by the Council of Australian Governments (COAG) in its National Productivity Agenda, where education features prominently. In 2008, COAG set six indicative progress measures (e.g. proportion of children enrolled in and attending school; literacy and numeracy achievement of Year 3, 5, 7 and 9 students in national testing) and three major targets for schooling including an increased proportion of young Australians attaining senior secondary education and two targets to reduce the performance gap of Indigenous students. The *Measurement Framework for Schooling in Australia* is ***reviewed every three years*** by the Australian Curriculum, Assessment and Reporting Authority.

Source: Santiago, P., et al. (2011), doi: 10.1787/9789264116672-en.

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## CHAPTER 7. GROWING AND SUSTAINING INNOVATIVE LEARNING ENVIRONMENTS[4]

48. For 21st century educational change, both innovation and learning are central, particularly with the concern that traditional educational approaches may not be delivering 21st century competences for learners. Developing innovative learning environments can address this challenge.

49. Innovative learning environments refer to arrangements for learning and teaching that introduce forward-looking insights about learning and innovation. Addressing these as learning environments rather than using the unit "school" and "classroom" can ensure a focus on making learning central to policy and reform. Major challenges and tensions surround the endeavour to reform schools in the direction of 21st century learning and include:

- Influencing actual change in learning: Policy making instruments are well removed from the on the ground teaching and learning where change has to take place for progress to be made.
- Informing the debate with simple terms and messages: The mixed messages that inform debate risk to confuse the direction of desirable change. For instance, widespread support for developing collaboration and community as compared with the parallel emphasis on promoting autonomy.
- Recognising the complexity of contemporary education systems: Governance and leadership frameworks tend to be closely focused on formal schools and systems when increasingly learning takes place in a wide variety of non-formal ways and settings, including through social media.
- Perceiving improvement and innovation as contrasting goals: A common perception that improvement and innovation are contrasting goals when instead innovation should be viewed as an essential ingredient of improvement in 21st century learning systems.

Drawing from the OECD/CERI "Innovative Learning Environments" (ILE)[1] project, this chapter analyses and identifies the elements and policy strategies for putting learning at the centre. To do so, it introduces **four key elements of innovative learning environments** and follows with a series of policy approaches that have been defined as policy approaches for policy makers to effective to grow and sustain contemporary schools and learning environments: : creation, context, complexity, communication, communities, collaboration, capacities, conditions, climates, coherence and consolidation. Country examples of how these processes are being promoted in education systems across the world are also included.

### Key elements of innovative learning environments

50. According to the OECD work on *Innovative Learning Environments,* 21st century schools and learning environments should strive to:

- Be informed by research-based learning principles through all their work, organisation and strategies.

[1] The OECD/CERI Innovative Learning Environment project gathered 125 examples from 29 systems in 23 countries and carried out detailed case study research on 40 of those cases. This chapter draws on the strategies and initiatives submitted to the OECD in the current phase of ILE work OECD. http://www.oecd.org/edu/ceri/innovativelearningenvironments.htm

- Innovate the elements and dynamics of the "pedagogical core".

- Become "formative organisations" through strong learning leadership, evaluation and feedback, and corresponding design strategies.

- Open up to partnerships, including with other schools and learning environments, to grow professional capital and to sustain renewal and dynamism.

51. The **learning principles** are the guiding values of learning environments while the three other key areas are the fundamental layers: the "pedagogical core", learning leadership, and partnerships.

***Being informed by research-based learning principles***

52. To make learning central, key research-based learning principles have been developed that can guide the work, organisation and strategies of learning environments. These principles can serve as criteria for whole systems or reforms that seek to base themselves on evidence of what makes young people learn best. They depend on accepting two main objectives: 1) the aim of schooling is to create environments in which young people are engaged in effective learning and 2) the strategies for such engagement should best be founded on research about how young people learn best.

53. The research-based "learning principles" state that, in order to be most effective, schools and other learning environments should:

- Make learning central, encourage engagement, and be where learners come to understand themselves as learners.

- Ensure that learning is social and often collaborative.

- Be highly attuned to learners' motivations and the importance of emotions.

- Be acutely sensitive to individual differences including in prior knowledge.

- Be demanding for each learner but without excessive overload.

- Use assessments consistent with these aims, with strong emphasis on formative feedback.

- Promote horizontal connectedness across learning activities and subjects, in- and out-of-school (Dumont et al., 2010).

54. These principles embody both commitments to learning and to doing those things demonstrated through decades of research to enhance it. They imply structured well-designed learning environments using sophisticated mixes of pedagogical repertoires. Such principles can be translated into more familiar educational terms: "learning-centred", "profoundly personalised", "inclusive", and "social".

55. In most contexts, implementing these research-based learning principles can imply significant change if they are to be embedded in daily practice, and still more in the practice of whole learning environments. Such principles imply significant innovation in that many schools and systems will need to change, some radically, in order to put them into practice. In addition learning environments should aim to integrate *all* the principles rather than a selected few. If schools strive to foster learner engagement and formative assessment, for instance, but seek to do so while ignoring individual differences or the

importance of emotions for effective learning, then the overall impact will necessarily be significantly diminished.

***Innovating the "pedagogical core"***

56. At the heart of each learning environment is the "pedagogical core" which includes four core elements and the different ways in which these relate in dynamic interaction:

- *Learners* (who?): Who the *learners* are in any school may be a given of geographical proximity but the profile of learners may also be innovated. For example, inviting parents or other family members in to become students or when learners are brought together from a distance, sometimes from around the world, using communication technologies.

- *Educators* (with whom?): Who the *educators* are may be a source of innovation as different experts, adults, family or community members, and students themselves, work with the teachers or as teachers join forces across schools and even over large distances to share a class or project.

- *Content* (what?): Many approaches may be taken to innovating *content*, even within existing curriculum guidelines, such as emphasising 21st century competences including social learning; making connections through inter-disciplinary approaches; giving emphasis to specific areas such as language learning or sustainability.

- *Resources* (with what?): There are numerous means to innovate *resources,* extending the reach of the learning environment through digital resources as well as redesigning facilities and learning spaces. (Many detailed examples based on 40 international case studies are found in OECD, 2013a.)

57. Rethinking and innovating each of these core elements – each one by themselves and especially all four together – is to address the deepest core of any learning environment. The core elements are interconnected dynamically to each other. They are related through pedagogy in terms of how teachers and learners interact through particular content and using different resources – hence, the name the "pedagogical core". Other organisational dynamics that relate these elements occur in the traditional and ingrained organisational structures that have been devised largely for organisational convenience to simplify control and accountability rather than optimise learning engagement or outcomes. For instance, the predominant role of the single teacher working alone largely invisible to all but her class, in front of fixed class sizes of young people of the same age/grade, using standardised timetable structures. They represent an "industrial" (not "post-industrial) response to educating very large numbers of young people in mass school systems.

58. Four dimensions where schools are innovating these core structures and dynamics are:

- Different mixes of *pedagogy* that engage learners and realise personalisation through good teaching – pedagogies for active learning and deepening understanding and for enhancing problem-solving and team work, while challenging each individual learner.

- Different ways that *educators* work together in the service of these pedagogies, sometimes alone but often collaboratively with others, breaking with undue reliance on the single teacher/single classroom model in more complex organisational and professional arrangements.

- Rethinking how *learners* work together at different times, re-examining single age/grade practices and how students are grouped so as to optimise the learning of all students.

- More flexible use of *learning time*, to ensure, for instance, that deep learning is possible and to personalise timetables.

59. Innovative schools are introducing more complex mixed practices and pedagogies to achieve ambitious learning goals. Much of the educational discussion is over-simplified to artificial contrasts – knowledge vs. skills, direct teaching vs. inquiry-based approaches – when instead each has its place. The choices are about how to mix practices to suit the learners, aims, and context in which the innovation lies in rejecting the standardisation of so much schooling practice (see also OECD, 2012).

***Becoming "formative organisations"- Learning leadership and the formative cycle***

60. Innovative learning environments are "formative organisations" in which learning at the centre is strengthen over time through strong learning leadership, evaluation and feedback, and corresponding design strategies. Leadership is essential to ensure the continuous formative cycle of the organisation or learning environment and feedback, reflect and strategically use evaluation and feedback. Teacher engagement and professional learning are key aspects of the design and implementation process, as are the learners themselves. The learners themselves should be privileged and influential players.

61. For learning to become and remain the core business of schools, leadership is essential and critical for reform and innovation. Whether at the school and learning environment (micro) levels or the broader system (meso) level, leadership influences the direction and outcomes of learning environments. Creating and sustaining environments that are conducive to good learning requires learning leadership with strong visions and corresponding strategies intensely focused on learning via shared, collaborative activity, not just the "heroic" principal. Such leadership will extend beyond the school in contemporary learning environments embedded in a rich web of networks and partnerships.

62. In addition, formative feedback should be integral to individual classes and should permeate the organisation as a whole. This involves rich information about the learning taking place where it is constantly fed back to the different stakeholders and revised into strategies for learning and further innovation. This requires strong processes of self-evaluation and the constant endeavour of sharing knowledge about learning, whether through using learning logs and portfolios, collaborative teaching and professional observation, research, or the focused application of information systems and student data management. "Information richness" about learning strategies, students, and learning outcomes will quickly become overload unless that information is converted into meaningful evaluative knowledge and acted upon by the learning leadership and others.

***Opening up partnerships to extend capacity and horizons***

63. The contemporary learning environment needs to develop strong connections with partners so as to extend its boundaries, resources and learning spaces. Such extensions should include parents and families, not as passive supporters of schools but as active partners, stakeholders and actors in the educational process. Partnerships should include local community bodies, businesses, and cultural institutions including museums and libraries. Partners drawn from higher education are critical for extending the learning horizons of both students and staff and offering additional expertise in the constant process of development. As important as any of these partnerships are those with other schools and learning environments through networks and professional learning.

64. Creating wider partnerships should be a constant endeavour of the 21st century learning environment, overcoming the limitations of isolation in order to acquire the expertise, knowledge partners, and the synergies that come from working in partnership with others. Partners extend the educational workforce, the resources and sites for learning. Working with partners is a form of "capital investment" -

the social, intellectual, and professional capital on which a thriving learning organisation depends (Hargreaves and Fullan, 2012). This is even more critical in circumstances of scarce resources, when more is expected to be done with less. It is also about meeting one of the key "learning principles" outlined above – promoting 'horizontal connectedness', including connections between the worlds of education and the broader social worlds beyond school boundaries.

## Policy strategies to grow and sustain innovative learning environments

65. It is one thing to identify features of innovative, powerful schools and learning environments; it is another to implement these on a wider scale. For the nature of 21st century educational change rather than "scaling-up", innovative learning environments reform refers to "growing and sustaining" in order to capture the complexity of contemporary learning systems and to engage those most involved in teaching and learning on the ground. "Growing and sustaining" ILE reform is about helping to create ever denser clusters of 21st learning practice so that critical masses of practice and change may be reached, and recognising that in contemporary learning systems formal institutional provision is only one part of the whole. The appropriate processes of implementation for fostering and sustaining innovative learning environments are identified in this section as a series of **C's**: creation, context, complexity, communication, communities, collaboration, capacities, conditions, climates, coherence and consolidation.

66. In looking at diverse strategies to grow innovative powerful learning around the world, some general concerns arise. Contexts and conditions vary so widely, especially in the international context, that "what works" recipes are not meaningful. Much depends on how policies are interpreted and implemented in practice: broad categories such as networking or assessment policies or teacher professional development drives cover such a wide range of practices that may be very effective or instead make very little difference. They also depend on how such approaches are combined in systemic ways rather than treating policies as isolated practices or single bullets. The examples and strategies are illustrative not prescriptive.

67. Moreover, in creating conducive conditions for innovative learning systems to flourish there is clearly a support and facilitation role for government, and for making connections with the many different partners involved. But there is also a clear leadership role to be played as well. The strategies discussed in this chapter depend on government design and leadership. Ministries and system agencies provide the legitimacy and the system-wide perspective to push new directions. In the language of "top down" and "bottom up", both are needed and often in combination. If these are to result in culture shift and be sustained across changes of administration, it may be important to ensure that the learning leadership provided by government are not through highly politicised, trumpeted schemes but in piece by piece change that over time can help alter education's DNA.

### *Culture change*

68. Several of the strategies emphasise the importance of creating culture change in schools as both much more important than surface change but also much more difficult to realise. The Victorian NWR reform in Australia, for instance, refers to "changing the 'mind-set' of schools to aspire to major improvement, changing the instructional practices of the school leaders and teachers and system providing intense and step-by-step support." The system-wide renovation in Slovenia (see Box 1) began from the understanding that past reforms had been excessively top down so that there was insufficient ownership of them by the local actors who matter. The need for new kinds of knowledge and new kinds of schools as learning communities amounted to a veritable culture change, in particular in accepting the importance of being more collaborative and connected. In this case, training in moderation skills was needed given the lack of experience with collaboration. The KwaZulu Natal initiative in South Africa like the Innova Schools Network in Peru, both participating in OECD/ILE are clear that it is a culture change to move to

more active modes of teaching and learning from traditional methods that are failing far too many students in those systems.

**Box 4. Slovenia: Renovation through school development teams**

The general aim has been to gain the following two sustainable effects:

1. To stimulate didactic innovations by individual teachers and interdisciplinary teams in order to develop higher-order thinking and competences.

2. To introduce and sustain such change through strategic planning and thoughtful implementation and coordination across whole schools.

At the beginning, the main focus was on the first of these aims but this has tended to shift to the second.

The reform combines different approaches and instruments, such as direct promotion, provision of incentives, network creation, knowledge management, leadership strategies and other professional development capacity building, creating new forms of expertise and change management, and more general drives to create climates favourable to innovative learning. It involves different groups and elements: learning professionals; the students; concepts of change management, of learning and teaching, and of knowledge; materials, facilities, and technologies to be organised and combined in many different ways. It developed an institute of change agents, research and professional development network programmes, and networking.

The whole process has lasted for around 10 years but its main features were designed and implemented in the first three years. 10 schools were part of this initial pilot phase, but it then spread to all Gymnasia (over 70 schools), and it is now being extended to primary schools.

Over time, more and more activities have been put in the hands of schools themselves: when people are not included they do not feel the changes and innovations as their own. The most important transforming idea was that of co-design with teachers in which they come to take lead responsibility drawing on national materials and support.

### *Clarifying focus*

69. Several of the systems emphasise a clear focus specific objectives. Both British Columbia and New Zealand report a relentless recourse to learning evidence to ensure that network innovation activity is disciplined and focused, encouraging accountability and speeding the transfer of knowledge around schools and systems. On focus, trying to cover everything all at once risks disjointed diffusion of effort and missing all targets in the process. Several systems report how choices needed to be made to ensure focus while avoiding narrow goal-setting that blinkers wider innovation. Many networks, for instance, choose improving "writing" as a core focus for attention in improvement but seen as the vehicle through which many wider innovations can be built. Similarly, the French Belgian initiative "Decolage!", involving 260 schools and 53 psycho- social centres, is strongly focused on reducing grade repetition in the very early years of schooling as the strategic means for consolidating a much wider set of changes related to classroom practice and under-achievement.

70. Many of the innovation strategies aim to address mainstream goals, such as low educational achievement and enhancing quality. Conventional approaches have failed to dent such stubborn and persistent problems as continued low achievement among the same groups of students, within this context in some cases, innovating learning environments is seen not just as a means to these widely-shared equity and quality goals, but as an end in itself. Strengthening the focus on learning is also an explicit goal, which aims to make schools more learning-centred and enable students to accomplish deep learning rather than superficial mastery. Some have a strong future focus: both Thuringia and Spain, for example, are working to spread new content around 21st c skills and futures literacy.

***Capacity creation – knowledge, professional learning, and collaboration***

71. Knowledge creation and mediation are central features of many of the strategies to innovate learning environments, and to grow and sustain them. Many different ways are used to share knowledge and to capture the learning that is continually taking place through the innovation.

72. As a cornerstone of the reform, several strategies generate knowledge about the learning that is taking place and acting on that knowledge. The New Zealand Learning and Change Networks has network participants engage at the outset in deep learning for up to six months: to identify the priority learning challenge, to map the current situation around the achievement challenge, and to assess the learning, teaching leadership and family support practices (see Box 2). In Victoria, the Western Metropolitan Region has been designed around rigorous performance analysis, a unified leadership focused on building commitment and capacity, training and practice in evidence-based classroom techniques, and the provision of additional resources and support.

73. A research component is often critical to understand how the strategy is working and to create the materials to strengthen and sustain teacher education and leadership professional development. Research and observation have been 'drivers of change' in the Catalonia/Jaume Bofill Foundation strategy to promote innovative learning leadership (Jolonch, Martinez and Badia, 2013). The LEGO Education ICT programme in Peru, which is equipping 20,000 primary schools, has been based on research in 3 phases – experimental design evaluation of new pedagogy, followed by surveys of principals and others and more qualitative evaluation. Such research informs an understanding of implementation, not just what works in ideal conditions.

74. Schools and projects participating in innovation programmes with additional funding may be required as a condition of their participation (as in the "experimental" schools chosen by the Experiments and Entrepreneurship Division of the Ministry of Education or the Finnish "On the Move!" coordination projects) to write up their approaches and materials into handbooks to be shared with others.

75. The creation of expert knowledge and converting that into forms and formats may require specialist institutes to become an integral part of the reform strategy. In the case of the Austrian NMS Reform this was achieved through the creation of the National Centre for Learning Schools (CLS) (see Box 3). Extensive evaluation is integral to the Austrian reform, such as mixing large national quantitative and smaller qualitative research, and incorporating the results into the qualification programme and into specially-developed protocols for evaluation. Similarly, in Slovenia, the National Education Institute has been crucial to the reform – in partnership with the Ministry and the consortia of gymnasia. In South Australia, the innovations are linked to a local university where honours students provide research to feedback into the innovation process.

**Box 5. New Zealand: The Learning and Change Network Strategy**

The Learning and Change Network strategy seeks to learn from a period of widespread experimentation to bring together schools, kura, communities, professional providers and ministry officials to achieve targets for learner achievement (including near universal achievement of NCEA Level 2 qualifications by 18-year-olds by 2021). Learning and Change Networks are addressing the three big agenda items of schooling improvement, blended learning, and cultural responsiveness as a whole instead of creating projects that deal with those agendas separately as so often happens.

Design work on the strategy commenced in October 2011 and five pilot networks representing 45 schools/kura were established. The strategy went live in October 2012 and now around 60 networks have been established involving up to one fifth of NZ schools/kura, with an average size of just over 8 schools per network. All learners are included with a particular focus on priority groups - Māori, Pasifika, those from lower socio-economic groups, and with

special education needs, and their families, teachers, school and community leaders.

Among its distinctive features are:

- A tight and highly-developed methodology for ensuring a strong focus on learning and learning change, including very explicit tools, procedures, support, and facilitation.
- An explicit and prominent focus on engaging parents, families and communities and on learners themselves in the learning and education; these not just as relationships to foster as good in themselves but as they are strategic stakeholders in determining learning outcomes.
- A developed applied theory of making professional learning communities and networks work so as to achieve outcomes that individual schools and teachers cannot readily do by themselves.
- An elaborated set of structures and management arrangements that puts the onus for action and change on the networks and their members, while embedding these in regional and national structures of support.
- A central role is given to evaluation, generating learning evidence at school, network, regional and system levels.
- A strong connection to international experience and networks

76. In strategies to spread innovative learning environments, professional learning goes hand-in-hand with knowledge as it needs to be used and disseminated. The CIEL programme in British Columbia, Canada immerses participants in research knowledge about leadership and learning that is deep and context-based with a strong focus on inquiry. Part of this is direct engagement with the OECD/ILE learning principles. The creation of the *lerndesigner* change agents as part of the NMS Reform in Austria involved equally the organisation of *lernateliers* where these new actors in educational innovation come together for professional learning and exchange (see Box 3). The recognition and expertise that comes with such deep learning has strengthened the reform effort throughout.

77. Organisational routines that have at their core the aim of keeping learning at the centre of all school activity by changing organisational cultures of teachers and schools through collaboration, the observation of others and student, and professional learning represent promising strategies to be promoted. They include approaches such as Lesson Study and Learning Study associated particularly with Japan and Hong Kong, including the "kernel routines":

> When chosen purposefully and implemented well, new organisational routines can function as powerful instruments for transforming school practice... Rather than attempting to drive out current practices, the kernel routine recruits and "re-purposes" the familiar ways of doing things… [with] clear articulation of the steps in the routine, the rationale for these steps, and the requirements of each one. This calls for training procedures and a set of tools and artefacts for performing the routine (p. 293).

78. The Victorian WMR 'School Improvement at Scale' strategy also used "learning walk" routines for professional learning and culture change. Policy strategies to promote such organisational cultures will naturally revolve around promoting professional learning in these different methods and approaches and facilitating communities of practice that are actively applying them.

79. Networks and professional learning communities are thus a widespread feature of strategies for growing and sustaining innovative learning. By their nature, they are based on voluntary and motivated

engagement rather than obligation. While this may seem ephemeral compared with the solidity of well-defined educational structures, this is becoming the natural form of collective action in contemporary learning systems. Growth in network participation is a simple indicator of growth and sustenance: the British Columbia networks of Inquiry and Innovation, for instance, began with 34 schools and is now upward of 500 schools. But, as stressed above, this is not to endorse networking or the accumulation of network partners for the sake of it. At its most effective, networking involves focused and disciplined activity promoting good learning and teaching.

80. Establishing the climate and means for effective networking is important to developing networks and professional learning communities. One obvious way in which this can be done is to support the establishment of online platforms for teacher learning and networking, as discussed next. There is a policy role in relation to coherence and alignment as discussed further below: of ensuring that incentives and governance requirements are at the least not negating the demands of professionals to work and learn together across sites and institutions. And, there is a leadership role in promoting directions that can only be realised through collaboration and offering support to underpin networking activity.

***Communication technologies and platforms***

81. For growing and sustaining them at scale: in the 21st century it is obvious that digital communication should be prominent in any strategy that seeks to overcome the limits of time, place and resources to share knowledge and to build communities of practice at scale. Technology contributes to all the different components, relationships, partnerships, and principles that are integral to innovative learning environments, whether through innovating the pedagogical core, facilitating the learning leadership and formative organisation cycle, or to extending capacity through rich networks of partnership.

82. Platforms and digital communications have become an integral element of any strategy to grow and sustain innovative learning environments. They include:

- The French innovation platform *Respire*, organised by the National Ministry of Education, has gathered more than 2500 innovations and the platform hosts communities of practice. It is organised around four guiding principles: informality, personalisation, open source, and cooperation. It thus facilitates factors that already have an existence - the digital use of social networks, a strategy for change, and a community of practice.

- The 'Mother Tongue Theme Site' has been running since 2001 and is coordinated and managed by the Swedish National Agency for Education. In 2003, it won the award for the Best Global Website for "the most innovative multi-lingual and multi-cultural site in Europe". 100 teachers and school leaders contribute to the site with unique content in 45 different languages, and the website has three parts: general information, online resources, and language rooms. It is actively linked to professional development activities – conferences, seminars and training courses.

- The Finnish National Board of Education launched a new portal as an open service at the end of 2012 to facilitate the spread of innovation and good practices. Learning environments is one of the themes included in the portal.

- The *Enlaces* programme organised by the Chilean Ministry of Education has developed on-line resources on quality and innovative pedagogical practices, and provides syntheses and associated teacher resources.

- The KwaZulu Natal initiative in South Africa implemented ICT in Education using child-centred teaching and learning. As well as installing adequate hardware, a key element is the 'lesson box'

(an accessible electronic storage device loaded with relevant teaching and learner support), backed by teacher professional development and the establishment of communities of practice for teachers in mathematics, science and languages.

***Change agents***

83. Many of the strategies involve the creation through policy initiatives of specific change agents, who are able to exercise influence at the local level and help to sustain the drive to innovation. Austria's *lerndesigners* in the NMS reforms (see Box 3) is a new teacher leadership role, seen as complementary to the leadership of principals and senior managers, not replacing it. This is not only an individual role, but one which involves networking and learning through periodic *lernateliers*, which are able to make the *lerndesigners* effective change agents. In Conafe, Mexico the Itinerant Pedagogical Advisors have been created specifically as coaches and advisors to communities and teachers where existing educational resources are weak. School coordinators in the Curricular Integration of Key Competences project in Spain became the leaders of this strategy in each school as did the leaders in Slovenia's **"**Renovation through School Development Teams" (see Box 1). Norway created a cadre of "Advisory Teams" aimed at supporting school owners and leaders in problematic areas of achievement and quality.

84. The examples are by no means identical – some are about advisers to principals, others are teacher leaders, others are specific learning coaches and consultants – while sharing the feature of being newly-created roles to meet needs that call for specialist knowledge and functioning. There may be tensions and trade-offs in the degree of formalisation of such roles: the greater the formalisation the greater their recognition and the tighter the processes yet at the risk of reducing local flexibility and of increasing resistance. It may be that roles need time to be formalised and embedded rather than introduced wholesale from the beginning.

**Box 6. Austria: The Change Agent Initiative, "Lerndesigners", in lower secondary school reform**

The Austrian school reform initiative "New Secondary School" (NMS) began in 2008 in 67 pilot schools and has since led to a mandated school reform for the whole sector to be completed in phases by 2018. The initial goal of the NMS pilot was to foster innovative learning environments and increase equity in the lower secondary sector. An external consultant group was hired from the start to guide the pilot phase, which initiated and implemented networks and communities of practice at all system levels. The focus was on school principals and Lerndesigners - a teacher leadership role, new for Austria, to act as change agents and provide leverage for school reform. The rationale was clear and focused: school reform must happen at the school level and change agents require networking and communities of practice.

Each NMS school designates a member of the teaching staff to be the Lerndesigner, who attends national and regional network meetings and qualification programmes (Lernateliers) as well as local networking events. To strengthen the role and foster innovation, school principals were also invited to a national network meeting each semester to address their own leadership issues and develop shared leadership with the new Lerndesigners as a change strategy on the school level.

A specific lerndesigner qualification jointly organised by the national centre responsible for national lernateliers and the Pedagogic High Schools responsible for the regional lernateliers. It takes two years to acquire around 6 areas: mindfulness of learning, difference and diversity, competence orientation, 'backwards design' curriculum development, differentiated instruction, and assessment.

In April 2012, the NMS was mandated by the Austrian Parliament and a new phase of reform implementation began with the 2012/13 school year. To sustain positive change and foster learning environments which are equitable and challenging for all NMS lower secondary pupils, a National Center for Learning Schools (CLS) was established. The primary objectives of the CLS are to:

- Sustain and foster school networks and communities of practice.
- Develop change agents through qualification programs, symposia and networking.
- Integrate findings from current learning research in the NMS environment to development strategies.
- Disseminate next practice insights and examples online and in print.
- Support change processes in teacher education to meet the goals of the NMS.
- Exploit system-wide synergy potentials.
- Provide support for policy and program development.

***Coherence and alignment***

85. The coherence and alignment of different parts of education systems is a common objective to ensure that policy directions in one part of the system are not nullifying those in another and, better still, are reinforcing each other. A clear example is offered in the field of evaluation and assessment: "A critical aspect in the effectiveness of the evaluation and assessment framework is its proper alignment with educational goals and student learning objectives" (OECD, 2013c: 23). This system-wide alignment reflects the sixth ILE learning principle directed at school- and system-level reform and applies to strategies and innovate learning as to other areas of schooling change. However, the goal of "alignment" suggests processes that are linear and mechanical and thus do not fit with contemporary complex learning systems (Looney, 2011). The broader notion of "coherence" may be preferred.

86. Strategies suggest a number of ways to work towards greater coherence. One is from Finland, in which the national core curricula are used as the means to spread and elaborate innovative learning environments projects. The curricula thereby inform the reform process and help provision of curriculum support materials, not only avoiding incoherence and duplication but positively reinforcing each other. Another example is about ensuring that the innovation uses system-wide standards so as to avoid establishing competing (and confusing) benchmarks (e.g. the British Columbia Networks of Inquiry and Innovation which are grounded in BC standards of performance).

87. The issue is not just one of coherence but of avoiding unnecessary competition (and hence confusion) between any one initiative and others that may be competing for the limited time and attention of those involved. The Austrian NMS reform has been deliberately linked to other initiatives so as to avoid competition, and similarly the New Zealand note emphasises the importance of removing competition with other initiatives aimed at accelerated learning. At the least, it means a readiness to integrate or even remove those initiatives that are causing "clutter" as and when they become redundant rather than continually adding yet more on top. More fundamentally, it emphasises the importance of adopting a holistic approach, so as not to treat the three large NZ agenda items of school improvement, blended learning, and cultural responsiveness in separate silos each with their own associated initiatives.

88. Resourcing may be an issue in these circumstances. Innovation initiatives must often function on small budgets, and the examples submitted to ILE are no exception. This calls for ingenuity to coordinate with other programmes (such as for funding technology or team teaching) or linking with national even international funding streams (both Hungary and Slovenia refer to European development funds). Yet, creatively connecting to other initiatives may provide much needed support but with possible risks of blurring focus.

***Consolidation: scale and time***

89. Growing innovative learning environments based on sound knowledge and professional commitment cannot be achieved at scale overnight. "Growing and sustaining" ILE reform require scale where pilots grow and sustain, and time for implementing, for change and for scale. Several of the featured strategies describe how they were implemented through pilots. The Austrian NMS Reform began in 2008 with 67 pilot schools, before later being mandated and system-wide completion foreseen for 2018. The Teacher Education Programme on Early Numeracy and Literacy in the former Yugoslav Republic of Macedonia went through a careful review and preparation phase in 2008-2009 before full implementation. The New Zealand "Learning and Change Network" programme began in five pilot networks representing 45 schools/kura while now it has reached 20% of NZ schools. The Thüringen "Development of Inclusive and Innovative Learning Environments" programme in Germany began in 40 "start-up" schools with the view that they should become reference schools for those who will join the programme at a later stage.

90. In some cases, as in the Victoria WMR reform, there was agreement at the beginning that change had to be region-wide, not just evident in pilot or volunteer locations. With the Slovenian "Renovation through School Development Teams" programme, it had originally been planned to begin as a pilot but half the schools wanted in immediately and it was overtaken by demand.

91. These examples represent pilots in a genuine sense. But often the term is used to refer not to genuine leading experiments to be built on over the longer-term but to relatively small-scale initiatives that unlikely will ever lead to wider adoption or change. A very common experience is for funded programme innovations to last only for as long as the additional funding is available and for practice to slip back to business as usual once this has dried up. There is the well-known "Hawthorne Effect" whereby the experience of the reference pilots is unrepresentative and hence an inaccurate guide to potential adoption by others simply because of the additional spotlight and support the pilot has received. Without a commitment to sustain the change, "pilots" become ends in themselves. As expressed by one of the System Notes submitted to the ILE project, "it is much easier to start something than to sustain it".

92. It is a known feature of strategies for educational innovation and change that they necessarily take time to put into effect, no matter what the urgency shown. The Swedish "Mother Tongue Theme Site", for instance, started with 4 languages in 2001 and has reached materials in 45 languages and over 10000 web pages over a decade later. The Slovenian Renovation programme has been a 10-year process. Even those strategies that reported relatively swift progress – for example, the 2-3 years for the sustained work with networks in British Columbia, Canada to show results or the 5 years for the Victorian WMR strategy – can be viewed as slow by the timetables of political cycles.

93. The importance of time is partly a matter of the processes involved in moving beyond the early innovators to reach a critical mass of practitioners. It is also a matter of the phases of learning and implementation that need to be passed through in order to embed the learning strategies in systems and institutions. This is formalised in the New Zealand "Learning and Change Network" strategy (see Box X) into four phases of development; (i) establishing infrastructure to operate as a network, (ii) profiling the current learning environment to understand student achievement challenges and agree on change priorities, (ii) implementing a plan to address the change priorities, and (iv) sustaining useful changes and agreeing on next steps. The strategy in Victoria (Australia) to make a significant difference to outcomes in the Western Metropolitan Region was also designed around four big phases: initiation; early implementation; relentless implementation; deepening learning. Only by reaching the final phase can the benefits of the change fully be seen. This also warns against looking to evaluate programmes early when no time has elapsed for change properly to embed; the results of such evaluations are bound to be disappointing.

94. A feature of the Austrian NMS strategy is its awareness of the different "generations" that have passed through the qualification cycles as *lerndesigners*. Instead of assuming that the already-qualified earlier generations had become active and expert and no longer in need of attention, networking and professional development opportunities were established for them as well in order to keep them engaged in the reform process. It is an impressive example where sustaining as well as creating the change has featured in programme design.

95. A perennial problem in educational reform is that the timetables involved in making school-level educational change are not matched by the political timetables of government programmes and funding. Rather than build on the foundations laid in a previous administration, the temptation is always present to scrap existing initiatives and start afresh. One means of mitigating the obviously negative impact of mismatched political and educational change cycles is to unhitch innovations too closely from association with particular government programmes. The more that government is only one partner among several, the less vulnerable are programmes to being wound up when administrations or personalities change. The British Columbia innovators refer to this as establishing "third spaces" in the endeavour to step out of politically-charged environments towards more professional dialogue.

**Box 7. Finland: The Innolukio Case**

One example of a learning environment initiative that has grown from a small local initiative to a nationwide venture is Innolukio ("innovative general upper secondary school"). The main focus is on entrepreneurship.

*"Innolukio learning environment encourages upper secondary school students towards creative thinking and provides them with the knowledge and skills that are required in future work tasks. The essential goal of the project is to create a connection between upper secondary school students, businesses and universities, while utilising the creativity of the students as a national resource. The Innolukio concept encompasses, for example, inspirational videos, weekly exercises, the Innolukio competition and other learning materials that support creativity. The learning environment is free-of-charge to upper secondary schools and their students. Students are primarily intended to engage in the activities during their free-time, but teachers can freely use the materials for teaching purposes."* (http://innolukio.fi/fi/english/)

The initiative started in a single school in a small town in the Northern Finland (Ylievieska). Several years later, at the beginning of the 2012-2013 year, the network included 320 upper secondary schools and 110,000 students. Innolukio has already started to generate new local solutions, and the long-term goal is to get all Finnish upper secondary schools involved.

The partners involved include the Finnish National Board of Education, the Ministry of Employment and Economy, the Trade Union of Education in Finland, the Association of Finnish Local and Regional Authorities, Aalto University, University of Oulu, the Federation of Finnish Technology Industries, the Economic Information Office, Nokia Corporation and Microsoft Corporation.

There are several factors contributing to its success. Some are related to learning environments, but other factors include the focus on entrepreneurship education, which is widely accepted as important including among policy makers, the active use of advocates and the successful management of publicity.

## Conclusions

96. The processes to grow and sustain innovative learning environment reform are driven by the key elements process from the OECD/CERI Innovative Learning Environment research and framework. The key elements of ILEs include: integrating principles derived from a close research-based understanding of learning; innovating the pedagogical core; engaging in learning leadership and creating formative learning organisations; and extending capacity through partnerships. This can be applied both by schools and learning environments and by wider networks (the "meso" level) and by systems (the macro level).

97. The process of "growing and sustaining" ILE reform may be summed up around a series of **C's**: creation, context, complexity, communication, communities, collaboration, capacities, conditions, climates, coherence and consolidation. The complexity of contemporary learning systems, and need to engage those most involved in teaching and learning on the ground, mean that top-down mandating is inappropriate and even common policy metaphors such as "levers", "alignment" and "scale-up" are inadequate and excessively mechanistic for the nature of 21st century educational change.

98. To make desirable change resides in helping to set conditions and create climates. It is about helping to grow capacities and foster collaboration. It is about encouraging learning-focused networks and communities of practice. It is also about enhancing coherence particularly to ensure that accountability demands do not work against the kind of innovative improvements described in this chapter. The conclusions of the British Columbia network group (see Box 5), confirms the need to avoid excessively bureaucratic approaches and control. But equally this should not be understood as letting each do what they want, with much talking but little action, without focus or procedures.

99. In creating conducive conditions for innovative learning systems to flourish there is clearly a support and facilitation role for government, and for making connections with the many different partners involved. But there is also a clear leadership role to be played as well. Many of the strategies discussed in this chapter have depended on government design and leadership. Ministries and system agencies provide the legitimacy and the system-wide perspective to push new directions. In the language of "top down" and "bottom up", both are needed and often in combination. If these are to result in culture shift and be sustained across changes of administration, it may be important to ensure that the learning leadership provided by government are not through highly politicised, trumpeted schemes but in piece by piece change that over time can help alter education's DNA.

**Box 8. British Columbia, Canada: Negative factors in initiatives to promote inquiry, networking and innovative practice**

- Overly tight centralised control – overly bureaucratic mechanisms for participation and reporting reduce commitment and effectiveness, whether that comes from the school district, the Ministry, or a professional association.
- Too narrow a perspective – such as when networks are bounded within a school district, so that existing district norms can work against openness to new learning. Bringing together different types of schools tends to enhance the learning and understandings of all.
- Lack of focus on results – simply pursuing a question of interest, without any expectation that the new knowledge will lead to a change in results for learners, lacks accountability and is hard to sustain.
- Mandatory participation – mandates often lead to resistance even if the proposed action has merit. Long-lasting change takes place by engaging teachers' hearts and minds and this cannot be done by fiat.

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# CHAPTER 8. EDUCATION UNION PARTNERSHIPS IN EDUCATION POLICY REFORMS[5]

Competent and motivated teachers are one of the most important ingredients of a thriving education system. Without their implementation efforts in the classroom, education reforms cannot be expected to be effective. In many OECD countries, teachers are organised within active unions, and teachers constitute one of the largest occupational groups in countries' workforce. To conduct reforms in education, building consensus on reform objectives and actively engaging stakeholders, especially teachers' unions can lead to success (OECD, 2010). Yet, up until recently research has tended to miss the contributions that teacher unions make towards teacher quality and professional development (Bascia, 2009).

Understanding the role and potential of teacher unions for improving education is essential for the health of countries' education systems. This chapter presents an overview of teacher unions' contributions and engagement with governments on development and implementation of education and training policies in different areas, and for possibilities to engage in discussions about specific issues in education. It draws on a survey conducted by the OECD's Trade Union Advisory Committee (TUAC)[2] among its member organisations in 2013.

The 2013 TUAC survey presents an encouraging picture of union involvement in most OECD countries, particularly on teacher and skills policies. Teachers unions are currently engaged on issues, such as working conditions, pay, equality issues and curriculum, both for education and training policies. Most unions indicate partial engagement in policy development and implementation. International fora, such as the International Summits on the Teaching Profession, help to foster collaboration between governments and unions. However, there remains room for improvement concerning the stabilisation and institutionalisation of union-government dialogue.

## An overview of teacher unions and their engagement with governments

While union membership, with the exception of the Canadian provinces, is almost always voluntary, teachers in OECD countries are highly unionised. In fact, whereas union membership levels are declining in some other sectors, teacher union membership has remained stable in many countries, despite the economic crisis (Carter, Stevenson and Passy, 2010). Education International (EI), which represents around 30 million teachers and education workers in 170 countries, is the largest global union federation.

While the numbers point to teachers' commitment to unions and shaping policymaking, they do not reveal the issues they want their unions to engage in and the best ways for unions to intervene. In this context, Bascia (2008) finds that teachers' expectations focus on occupational advocacy (improving working conditions); economic sufficiency (improvements in compensation); participation in decision-making; professional development and learning; and articulating and promoting a positive professional identity.

[2] TUAC is an international trade union organisation which serves as an interface for trade unions with the OECD and has consultative status with the OECD and its various committees. In education, TUAC conducted a snapshot survey with Education International in 2013 to provide more information on the level and intensity of engagement teacher unions have with their governments. This section draws from the TUAC/EI snapshot survey exercise. http://www.tuac.org/en/public/index.phtml

100. The first two expectations correspond to the common understanding of union advocacy. The latter three are less well explored, yet evidence (see below) shows that it is these areas of activity which raise the levels of teacher self-efficacy and confidence. It is also these areas which, while being areas of fertile discussions with employers and governments, need more awareness and development.

101. Research on teacher leadership indicates teachers' will to participate in professional decision-making and education reforms' connections to teacher self-efficacy (Frost, 2011; MacBeath, 2012). Several countries maintain close formal relations with their teacher unions. This is for example the case in Sweden, where teacher unions are regularly consulted, as well as expected to give their opinion on proposed legislation. In Alberta (Canada), the state's teacher union collaborates with the government on several projects; this includes formal membership in advisory boards and direct involvement in teacher certification (Bascia and Osmond, 2013). A study commissioned by Education International also proposed other dimensions to be incorporated in education policy, including support for teachers leading in the development of professional practice, and the creation and transfer of professional knowledge (Bangs and Frost, 2012). Current areas of engagement for teacher unions include working conditions, teacher training and teaching standards.

- There is a growing discussion about how **teachers' working conditions**, including teacher appraisal, can be reshaped by teacher unions in partnership with governments to respond to teachers' professional needs (Figazzolo 2013; OECD, 2013). In Ontario, for example, the teacher union commissioned a report to fulfil this task, which covered all aspects of teachers' working conditions (Leithwood 2006).

- A number of teacher unions in OECD countries have, or intend to, become providers of high quality **professional development** for their members and also provide professional sites for their members to network and share practice. Examples include the United States, Canada, Australia, Norway and the UK (Bangs and MacBeath, 2012; Bangs and Frost, 2012).

- Teaching unions may also assume leadership roles in **setting teaching standards**, one example being the National Board for Professional Teaching Standards in the United States which certifies American teachers.

102. The evidence points to a growing realisation in a number of countries that strong teacher unions can be a vital component of a successful education system (OECD, 2011). However, as the case study of a recent social partnership between teacher unions and the English government showed, it is essential that all unions are involved in discussions if the relationship is to be open and flexible (Carter, Stevenson and Passy, 2010). In addition, constructive teacher union-governmental relationships can be fragile and need constant attention (Bascia and Osmond, 2013).

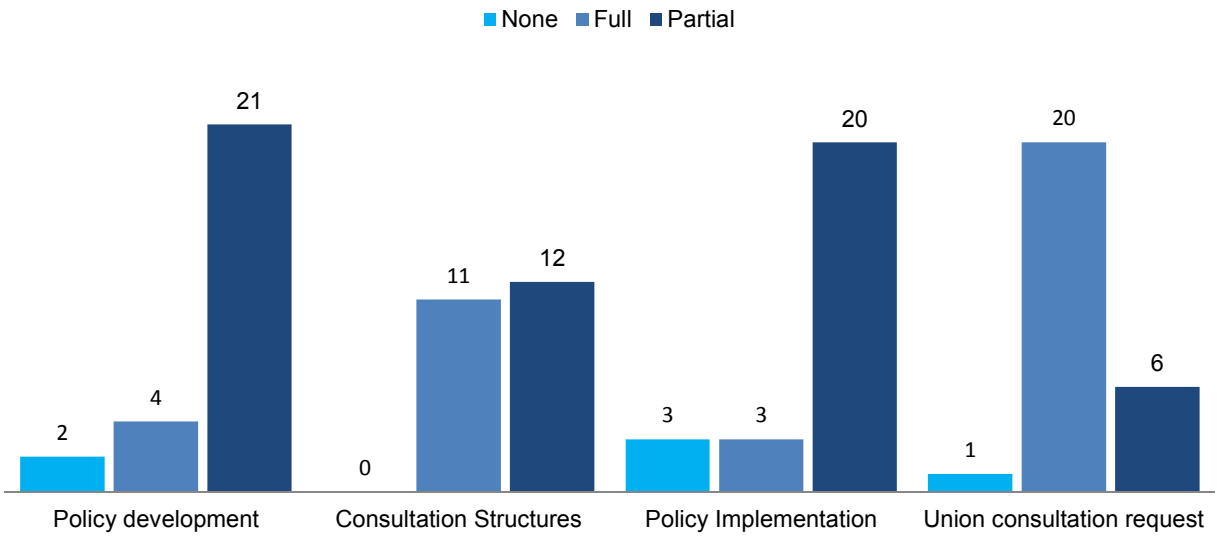
103. The existence of formal or informal arrangements or institutions in place to support collaboration between governments and teacher unions is key to success in social dialogue. To this end, there is a range of institutional practices which depend on the country context, history and traditions. On the international front, one of the most significant global developments in furthering collaboration between teachers unions and governments on teacher policy is the creation of the International Summits on the Teaching Profession in 2011, jointly organised by Education International, the OECD and the host government, and bringing together teacher union leaders and ministers of education. Themes include teacher quality, teaching and leadership, teacher evaluation, and in 2014, inclusion and equity in highly devolved systems (Asia Society, 2011, 2012, 2013). As part of the summits, delegations jointly agree on objectives for aspects of their teacher policies in the coming year.

## Priorities and approaches for teacher union engagement with governments

104. The evidence points to the importance of governments engaging teacher unions on the development of education and skills policies. A recent snapshot survey by Education International and TUAC conducted in 2013 sought to provide more information on the level and intensity of engagement teacher unions have with their governments. Questions addressed education as well as training policies. Results are based on the responses of 24 unions from 19 countries with different memberships (from education at all levels to non-formal education sectors, adult education and school management).

105. The large majority of respondents indicated that they partially engage with governments on the development and implementation of education policies (Figure 1). Small minorities reported full or no engagement. Overall, unions considered themselves to be slightly more engaged in policy development than in implementation.

**Figure 1. Unions Education Policy Engagement with Governments**

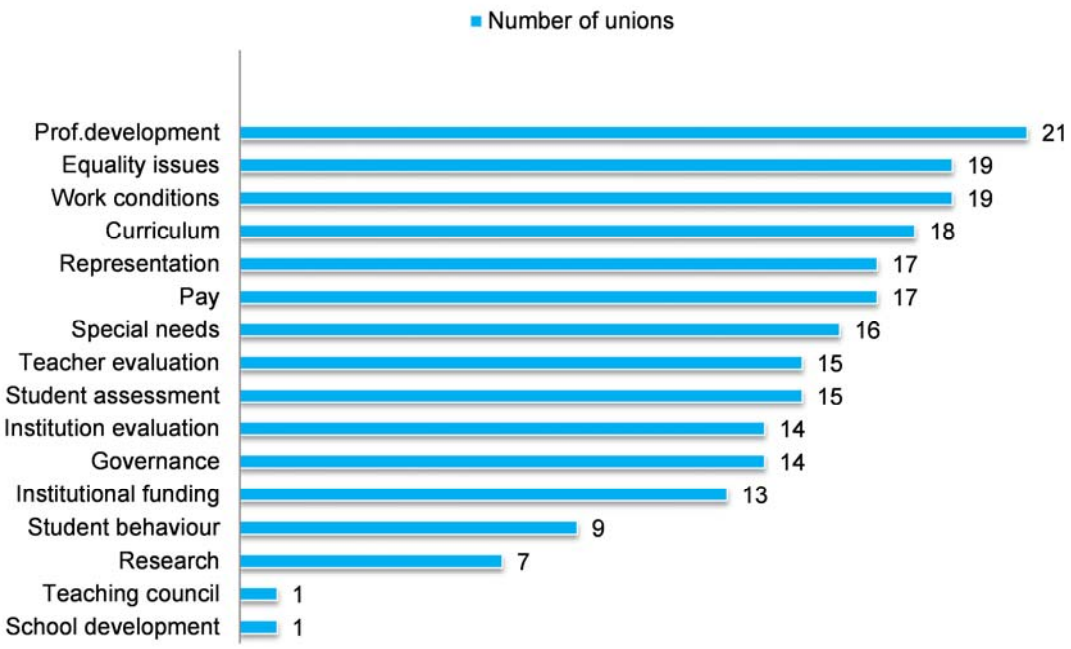



Source: Education International and TUAC (2013), Survey of Trade Unions' Engagement with Governments on Education and Training.

106. While most unions reported that governments had established arrangements for consultation, half of the respondents felt partially – instead of fully – engaged in these consultation structures. The existence of formal structures seems therefore no guarantee for tangible results. Perspectives sometimes varied between unions in the same country, reflecting the fact that governments may have different relations with unions representing different sectors of the workforce.

107. Unions were also asked to identify areas of education policy which are currently the subject of productive discussions (Figure 2). Almost all respondents mentioned teachers' professional development, followed by working conditions and equity issues. Curriculum issues, pay, support for students with special needs, teacher evaluation, student assessment and institutional evaluation were also mentioned by a majority of unions. One-third reported productive discussions on student behaviour. Issues rarely mentioned were educational research, school development and teaching councils.

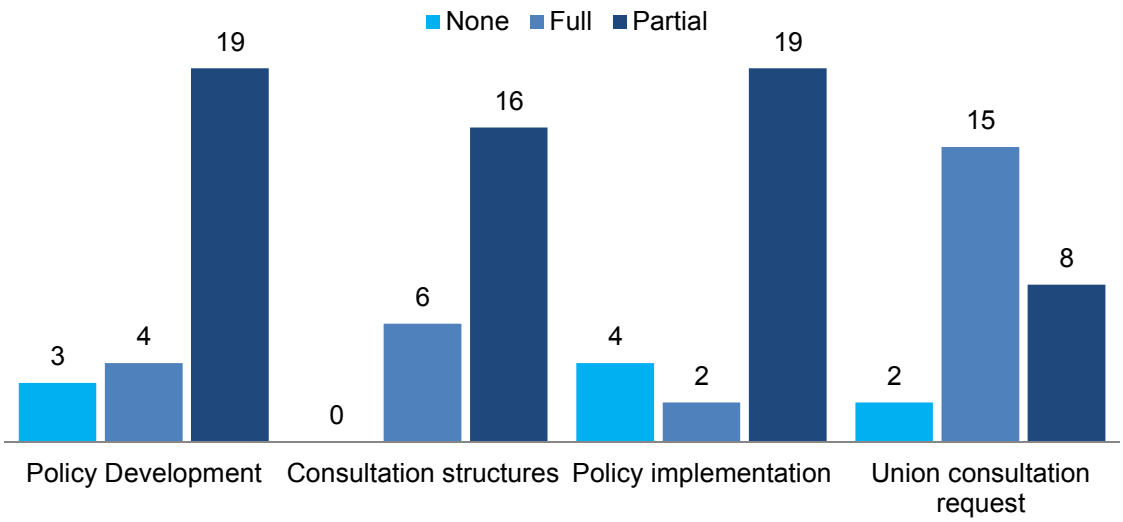
**Figure 2. Union/Government Engagement by Individual Education Policy**




Source: Education International and TUAC (2013), Survey of Trade Unions' Engagement with Governments on Education and Training.

108. Similar questions were asked on training policies (Figure 3). Responses point to differences between engagement on education and training policies. While most respondents indicated that they were partially engaged with governments, there were a greater number reporting full engagement in the development of training policies but also a larger number reporting no engagement. More unions reported no engagement on training policy implementation than those reporting full engagement. Fewer declared they were able to engage governments when they considered it necessary.

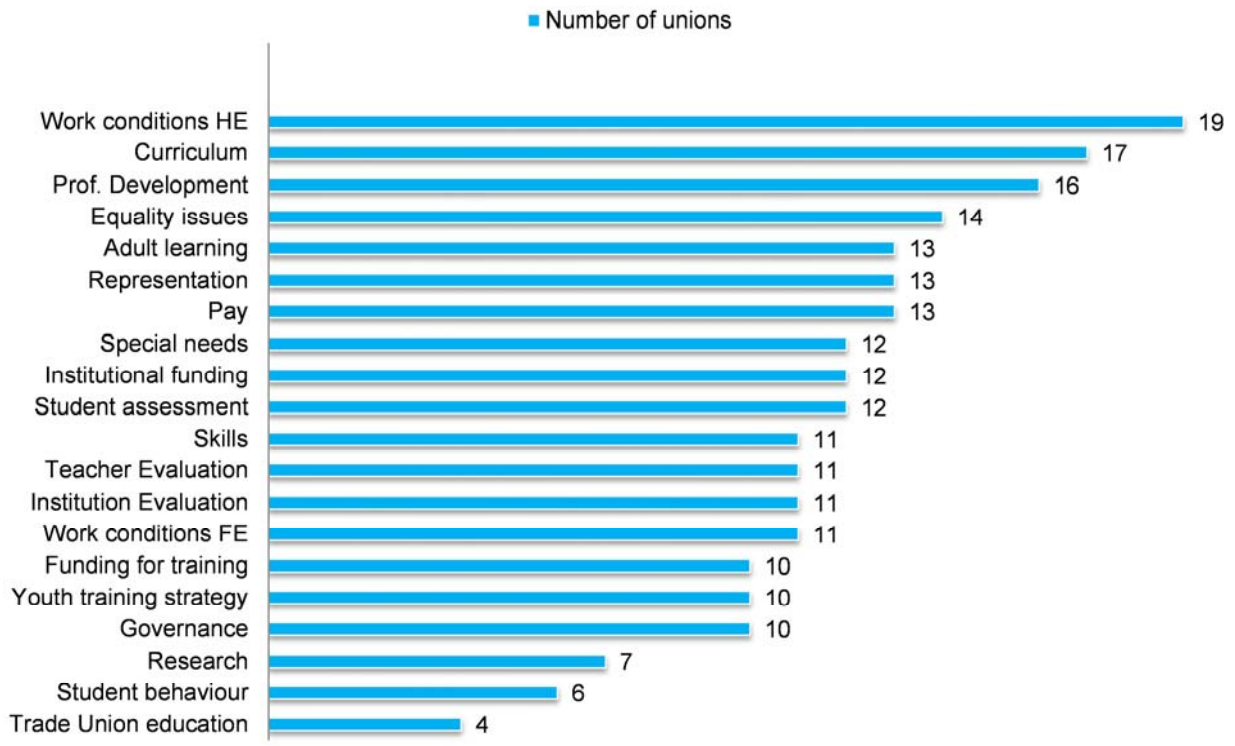
**Figure 3. Unions Education Policy Engagement with Governments**




Source: Education International and TUAC (2013), Survey of Trade Unions' Engagement with Governments on Education and Training.

109. Asked for areas of training policy with ongoing productive discussions, the majority of unions identified the curriculum, followed by professional development, equity issues, pay, adult learning and working conditions. Lower levels of consultation were reported on the Youth Training Strategy and funding for training (Figure 4).

**Figure 4. Union/Government Engagement by Individual Training Policy**




Source: Education International and TUAC (2013), Survey of Trade Unions' Engagement with Governments on Education and Training.

## Conclusion

110. While the TUAC survey presents an encouraging picture of union involvement in most OECD countries, particularly on teacher and skills policies, there remains room for improvement concerning the stabilisation and institutionalisation of union-government dialogue. Examples of existing collaboration of teacher unions and governments across OECD member countries show that there are opportunities for unions to take on the provision of professional development and of spaces for teachers to engage in sharing professional practice and leadership. Governments could play a proactive role by recognising and supporting respective initiatives.

111. Arrangements for a fruitful social dialogue between governments and unions need development efforts, and also need to recognise the importance of pluralism, involving respect for both agreement and disagreement. The continuing impact of the economic crisis emphasises this approach. Education systems are dependent on high-quality teachers and their role in implementing education policies. It is therefore essential that they and their unions are at the centre of policy development, practice and reform.

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# CHAPTER 9. ENSURING CONSTRUCTIVE COOPERATION WITH EMPLOYERS[6]

Many countries today face the challenge of persistently high levels of long-term unemployment, also among youth. At the same time, employers often report that they are unable to find suitably skilled candidates to fill job vacancies. There is thus a need for actions that increase the employability of individuals, thereby boosting innovation, productivity and growth. This is considered key for economic growth as much as it is essential for social cohesion.

Reforming education systems and labour markets is critical to ensure a smooth transition into the labour market. Towards this objective, employers are well positioned to help identify where education and training policies and initiatives can narrow skills gaps. Co-operation among employers, policymakers and education institutions is therefore important for strengthening the employability of individuals and can be beneficial not only to employers and jobseekers, but also to reduce unemployment, strengthen competitiveness and foster inclusive growth for the benefit of economies and societies.

Forging closer linkages between the worlds of education and work is critical to help inform an individual's choice of studies and enhance his/her employability (OECD, 2012). According to the 2013 Business and Industry Advisory Committee (BIAC)[3] survey on employers' organisations' involvement in education, this was consistently identified as a top priority across all levels of education of education (BIAC, 2013). The survey also indicated methods to improve co-operation in education policymaking can take different forms, such as establishing multi-stakeholder foresight systems, providing incentives to education institutions to engage with employers, raising awareness among employers about education trends, and fostering joint initiatives for work-based learning opportunities. The OECD has an important role to play in this endeavour by providing a forum to share and analyse good practices for employer engagement in education policymaking.

## An overview of employers' organisations engaged in education policy making

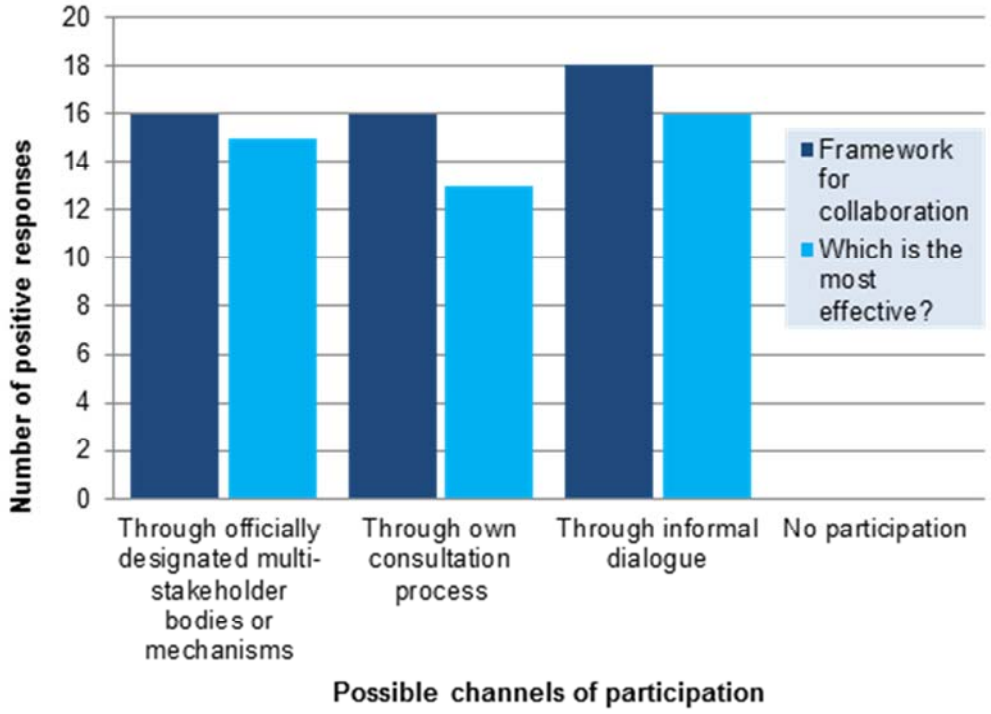
112. Employer engagement in education policymaking can take many channels, including:

- employer-led proactive initiatives, such as roundtables with policymakers and education institutions, but also involvement in VET course design;
- advice to policymakers through various consultation formats, such as official multi-stakeholder bodies or mechanisms of government consultation with business and employers' organisations;
- less formalised forms of dialogue;
- and co-creation and co-decision processes, e.g. in designing vocational training courses or qualification systems.

[3] BIAC is an independent international business association devoted to advising government policymakers at OECD and related fora on the many diversified issues of globalisation and the world economy. In particular to education, BIAC recently conducted the 2013 BIAC Education Committee survey among 28 national employer organisations from 27 countries, most of them OECD members. It addressed the legal framework, organisations' priorities for education policy, major reforms since 2007, examples of successful initiatives, and specific aspects of the education system (BIAC, 2013). http://www.biac.org/

113. Some of these channels are described in the BIAC survey (see Figure 1). It finds that there is a largely even spread between the use of: official multi-stakeholder bodies or mechanisms, employer organisations' internal consultation processes among their respective members, and informal dialogue with policymakers – all of which are considered to be of similar effectiveness. No business organisation indicated that they had no participation in the education policy reform process.

**Figure 5. Types of participation in education policy discussions and their perceived effectiveness**



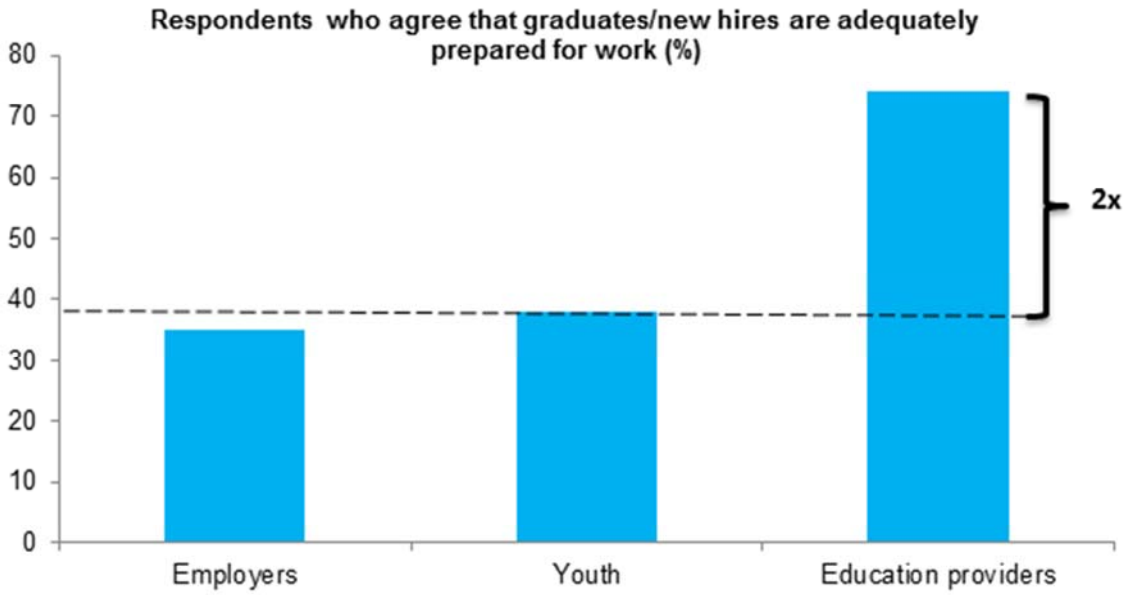

Source: BIAC (2013)

114. Despite the various channels for engagement, their success is mixed, Around 90% of respondents to the BIAC survey indicated that some of their recommendations to their countries' education reform discussions were considered to a sufficient extent, others not. Some respondents reported that their recommendations were only rarely ever considered.

115. Recent research by McKinsey, building on surveys to 5 300 youth, 2 600 employers, and 700 postsecondary-education providers across eight European countries, finds that education providers are twice as likely as employers and youth to rate their graduates as prepared for work, revealing a seeming disconnect between the worlds of education and work (Mourshed, Patel and Suder, 2014; see Figure 2). Furthermore, 27% of employers indicated that they left a vacancy open because they could not recruit anyone with the right skills.

**Figure 6. Perceptions of graduates' employability**

Adapted from Mourshed, Patel and Suder (2014)




Employers: Overall, the entry-level employees we hired in the past year have been adequately prepared by their pre-hire education and/or training.

Youth: Overall, I think I was adequately prepared for an entry-level position in my chosen career field.

Education providers: Overall, graduates from my institution are adequately prepared for entry level positions in their chosen field of study.

116. To reduce this gap, it appears that there is room for progress in strengthening employer engagement in education policy reform. Before exploring the modalities for increasing such an engagement, however, it is important to first understand *why* employer involvement is necessary. This calls for greater understanding of the challenges that companies of differing sizes are facing across sectors and countries, and of their priorities for education.

## Employers' priorities for education reform

117. In a world where globalisation is creating new and shifting markets, changing demands for skills, and different forms of work, hiring a new employee represents one of the most important investment decisions for companies. On top of the many fundamental policy conditions that are required for businesses to sustainably create jobs (BIAC 2014), companies look for employees who hold the particular knowledge, skills and character to meet their specific needs.

118. However, companies are challenged in many sectors and regions to find suitable employees, as many candidates have inadequate proficiency in basic tasks and skills (cf. OECD, 2013a). The demand for skills is increasingly shifting to more sophisticated tasks in technology-rich environments, yet at least 10% of adults on average lack the most elementary computer skills (OECD, 2013a). At the same time, employers in Europe also report a particular shortage of "soft" skills such as communication and work ethic (Mourshed, Patel and Suder, 2014). Skills gaps and mismatches threaten the competitiveness of enterprises, undermine social mobility and contribute to unemployment, as data from the OECD Survey of

Adult Skills (PIAAC) shows that those with low literacy skills are more than twice as likely to be unemployed.

119. In response to these skills gaps, greater priority needs to be given to improving the provision of basic skill levels prior to individuals' entry into the labour market. This entails increasing access for all individuals to high quality, relevant education. Reforming education systems and labour markets to ensure a smooth transition into the labour market is critical.

120. From the results of the BIAC Survey, employers seek action on the following:

- **Review school education curricula to target key labour market and societal needs,** in consultation with employers, taking care to avoid overloading the curricula (see also Chapter 1). Particular attention should be paid to science, technology, engineering and mathematics (STEM) disciplines, for which employer organisations report skills shortages in many countries, including Austria, Belgium, Germany and the United Kingdom (cf. BIAC, 2013; BUSINESSEUROPE, 2011). Other skills also require greater emphasis in curricula, such as literacy and numeracy, and communication and critical thinking. In Turkey, for example, the Turkish Industry and Business Association (TUSIAD) has published secondary education textbooks in various disciplines as a sample for a contemporary curriculum.

- **Strengthen teacher quality and training,** including for vocational and education and training (VET) and school leaders. In order to motivate teachers and raise the quality of teaching and school leadership, actions should be taken to evaluate and incentivise teachers and school leaders (see Chapter 2). OECD data shows, for instance, that large proportions of teachers have never received any external appraisal or feedback (e.g. Italy and Portugal), and in some cases also no internal appraisal (e.g. Italy, Ireland and Spain; OECD, 2013b). One way of incentivising teachers could be through the provision of differential pay systems capable of rewarding teacher excellence.

- **Strengthen VET systems.** This includes encouraging more access into VET systems; improving VET qualification systems; increasing recognition of the need for excellence across all occupations, including VET; and facilitating transitions between VET systems and other levels of education. Employer organisations in many countries (e.g. Australia, Denmark, Hungary, Sweden and Turkey) are proactively working to improve VET systems (BIAC, 2013; see also Chapter 1).

- **Encourage smarter investment in education that yields the largest economic and social benefits** – for example, in improving access and quality in early childhood education and care, preventing drop-out and integrating immigrants (BIAC, 2010; see also Chapter 1).

- Increase the autonomy of schools (including school leadership), while at the same time improving their accountability through greater evaluation of schools, students and teachers (BIAC, 2010; see also Chapter 2).

- **Improve career guidance for students,** both in schools and higher education (BIAC, 2010; see also Chapter 1). In Japan, for example, the national business organisation Keidanren is working with several universities to offer scholarships for undergraduate and post-graduate students to study abroad for one year. Keidanren provides pre-departure orientation for students, advice on their study plans and future careers, and organises a job fair upon their return in order to help integrate them into the labour market.

121. The abovementioned policy reforms are required in many countries to raise education outcomes and facilitate school-to-work transition, together with labour market reforms to encourage job creation and incentives to work. Complementing these reforms, employer organisations and companies around the world are already implementing many of their own initiatives to help bridge skills gaps, while broader co-operative efforts are also required among employers, policymakers and education institutions to help instigate the necessary reforms to most effectively increase the employability of individuals. By means of an example at the international level, the International Organisation of Employers (IOE) and BIAC, with support from the International Labour Organisation (ILO), established the Global Apprenticeship Network (GAN) in 2013 which seeks to improve the status of apprenticeship programmes, share good practices and develop a network of companies offering apprenticeships.

### Options for private sector engagement in education policy

122. While employer engagement in policymaking helps to maintain a workplace perspective throughout education and training programmes, there is no single model for engaging employers in education and much may depend on country and sector specificities. A range of possible options for co-operation may be considered, such as:

- **Countries could be encouraged to establish high-quality, system-level foresight systems for education policy,** engaging all stakeholders (including employers and employers' organisations) to anticipate skills needs and labour market trends over the medium term. This would help to ensure the labour market relevance of lifelong education and training programmes, although this also calls for making the organisation and operation of education institutions adaptable to meet these changing education needs. One example would be the Finnish Oivallus ("Insight") project (2008-2011), launched by the Confederation of Finnish Industries (EK), which brought together representatives from companies, academics, teachers and other experts, and focused on future competence needs of businesses.

- **Education institutions could be encouraged to foster co-operation with employers,** notably for assessment and quality assurance systems. Steps may include, for example, including budget allocation and explicit mandates for employer dialogue initiatives. In New Zealand, Trades Academies are specifically designed to deliver trades and technology programmes to secondary students based on partnerships between schools, tertiary institutions, industry training organisations and employers.

- **Awareness-raising could be encouraged among employers** on education and training trends, and possibilities for their engagement in education policy. Employer organisations can work with governments to help inform companies of such issues and explain the advantages of their engagement in education policy. BUSINESSHUNGARY and the Hungarian National Association of Entrepreneurs and Employers carried out a multi-year research project which sought to describe the labour market needs of Hungary's regions, based upon questionnaire responses provided by companies and education institutions. Consequently, regional committees for the development of VET were established to address local skills needs.

- Joint initiatives to **help develop work-based learning opportunities** could be pursued through co-operation and trust-building between employers, teachers, researchers and students. This could involve, for example, greater use of alumni networks; closer linkages between education institutions, new start-ups and existing employers; professional development of teachers in various industries and roles; and deeper connections between education, innovation and research activities. In 2008, the Federation of German Employers (BDA) and the Federation of German Industries (BDI) partnered to launch a STEM initiative, resulting in a website platform providing

details of over 1 100 STEM programmes in the private sector throughout the country, and acting as a search engine for students. About 8 000 professionals act as ambassadors of the initiative to mentor students and encourage entering STEM disciplines. While it is not possible to establish a direct causality, the relative percentage of first-year post-secondary students enrolled in STEM disciplines (compared to other disciplines) rose by almost 4% between 2007 and 2011 (BIAC, 2013).

## Conclusions

123. Strengthening mechanisms by which employers, policymakers and education institutions can co-operate to increase the employability of individuals is a policy issue that can generate significant shared benefits for all actors, as well as for economies and societies at large. This co-operation should reinforce the incentives to undertake the sorts of reforms described earlier that are required in education systems and labour markets, by improving their policy design and implementation.

124. Recognising that there are many different forms of co-operation, there is significant potential at the international level to examine conditions for success and to share good practices and lessons learnt in order to build effective employer engagement mechanisms in countries, regions and sectors. Building upon its expertise in educational issues and its established relationship with the business community through BIAC, the OECD is particularly well-placed to make progress in this area.

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[1] This chapter draws heavily on a background paper especially prepared for the purpose of defining this chapter: Skalde and Pont (2013), "Implementing school improvement programmes: Common success factors and the role of context" in EDU/EDPC/RD(2013)5.

[2] This chapter has been drafted by Claire Shewbridge, Deborah Nusche and Paulo Santiago from OECD, building on the OECD review of evaluation and assessment for improving school outcomes. www.oecd.org/edu/evaluationpolicy.

[3] The OECD conducted a 3 year review of policies and practices in 28 countries. The *Synergies for Better Learning: An International Perspective on Evaluation and Assessment* Review (OECD, 2013) generated 25 reports by participating countries, 15 reports by external review teams and an international comparative report. doi: 10.1787/9789264190658-en.

[4] This chapter has been drafted by David Istance, building on the main lessons of the Innovative Learning Environments project at OECD CERI.

[5] This chapter has been drafted by John Bangs, chair of the Education Committee of the OECD Trade Union Advisory Committee (TUAC).

[6] This chapter has been drafted by Jonny Greenhill, from OECDs Business and Industry Advisory Committee (BIAC).