The LEGO Foundation

Creating Systems

› How can education systems reform to enhance learners' creativity?

CREATIVITY MATTERS NO. 2

"We hope that in some small way – as an advocacy tool, resource or in stimulating debate – this report supports and enables much of the amazing work that is already being done in education systems across the world. We also hope that it inspires others to build, and share, their own creativity reform stories."

John Goodwin,
CEO of the LEGO Foundation

Foreword

Creativity Matters. It matters for countries, economies, employers, parents and learners. Last year, we launched our first report in the Creativity Matters series at the inaugural Africa Play Conference. Creating Creators convened diverse perspectives from across the education spectrum on how we can enhance creativity in today's and tomorrow's education systems. We received a huge amount of positive feedback on this report, in particular from policy-makers who found it a useful tool to share with Ministers, to make the case for the significance and importance of creativity. But making the case for creativity isn't enough.

From our engagement with partners and education systems across the globe, we know there is a wealth of activity and initiative, often at grassroots level. We have heard inspiring stories of administrators, principals, teachers, innovators, civic leaders and students in designing and developing initiatives that enhance creativity skills. We are thrilled to see this happening, and know that this hard work is a critical piece of the puzzle – but isolated programmes and pedagogies are not enough.

From our discussions with policy-makers across the globe, we know that to truly ensure that all learners have the ability to develop their creativity skills, we need to re-imagine learning and reform national education systems. There is an increasing appetite to move beyond intention to action, beyond pilots to scaling up, beyond isolated examples to systemic reform. However, they need access to examples, knowledge and networks to help make reform a reality. An appetite for reform is not enough.

How can education systems reform to enhance learners' creativity skills?

The first question any policy-maker would ask in addressing this question is, 'Has it been tried elsewhere?' Policy-makers have told us that they are grappling with this very issue and want to learn from others, but face a scarcity of role models. They want to learn about various aspects of reform efforts: what led to the decision to reform? What were the political conditions, evidence, processes, approaches and barriers? Who were the stakeholders and influencers? Critically, they want to understand not just what has worked, but what hasn't, and why. However, to date, few countries have actually attempted meaningful reform of public policy and practice to develop this critical skill at the national level. It is too complex, politically sensitive, laden with risk, takes time, and often extends over political cycles, reducing the incentive for sustained effort.

Nevertheless, some have had the courage and foresight to look beyond these challenges, and have dared to try. These early adopters have demonstrated initiative, leadership and innovation, building, testing and learning their way in addressing this critical need for their nations' learners.

In this, the second publication in the Creativity Matters series, **Creating Systems – how can education systems reform to enhance learners' creativity skills?**, we present a collection of interviews with policy-makers from five pioneering education systems (in Australia (Victoria state), Japan, Thailand, Scotland and Wales) on how they have attempted to reform their public education systems to enhance learners' creativity skills. Conducted in autumn 2019, the interviews bring together policy-makers with first-hand experience of working within government on the reform in question, to offer their diverse reflections, insights and learnings. Our interviewees have been graceful with their insights, humble on their achievements, and generous with their lessons.

We hope that this report can be used as:

An advocacy tool in making the case for reform, and showing that it can be done (albeit with challenges) and that there are resources available to assist

A resource, providing both insight and inspiration for those who are considering or leading education reforms within their education systems

A springboard for debate and further research, and as encouragement to others to also share their lessons

Systems reform to enhance learners' creativity skills is a relatively unexplored topic, and these interviews are in no way a comprehensive effort to understand the full breadth of reform efforts in this space. Nor are they intended to describe best practice – every system is unique and evolving. Nevertheless, they do provide a forum for important lessons to be shared, thus equipping education reformers, policy-makers, advocates and practitioners with a deeper understanding of what has happened elsewhere.

"... to truly ensure that all learners have the ability to develop their creativity skills, we need to re-imagine learning and reform national education systems ..."

This report is the second in a series of the LEGO Foundation publications on the importance of creativity in education systems. The Creativity Matters series aims to highlight not just why creativity matters, but how education systems can best adapt and re-imagine learning to equip today's and tomorrow's learners with creative skills, mindsets and confidence.

We at the LEGO Foundation are keen to bring our insight, experience and voice to the table – shining the spotlight on the importance of better understanding and promoting creativity both within and outside the classroom. We believe that all children have the potential to be creative – a potential that can be nurtured over time. Indeed, we believe that the purpose of education is to help realise the potential of each child to become creative, engaged, and lifelong learners. With a deep understanding of the transformative power of play, we also believe that when children learn through play, they are given the best opportunity to fulfil their potential, and that learning through play is a key solution to the creativity challenge. Indeed, as reflected in the interviews, an approach focused on learning through play is often seen by policy-makers to be a critical component in delivering successful creativity reform.

Making the case for creativity, effective isolated programmes and pedagogies, and an appetite for reform are not enough if we are to collectively deliver transformative change in today's education systems to equip learners with the skills they need. As you will read in these pages, political will, partnerships, shared language, evidence, lesson-sharing, and international engagement all have huge roles in making creativity reform happen in national systems.

We hope that in some small way – as an advocacy tool, resource or in stimulating debate – this report supports and enables much of the amazing work that is already being done in education systems across the world. We also hope that it inspires others to build, and share, their own creativity reform stories.

I would like to thank our contributors and their colleagues for their valuable contribution to this debate.

John Goodwin,
CEO of the LEGO Foundation
March 2020

Key lessons

The following 10 lessons that emerged from the interviews provide insights into some of the components of successful systemic reform to develop creativity skills.

Learning through play is often an important factor in supporting creativity

- Learning through play is a creative activity. Learning through play enables creativity skills to develop and is a solution to the creativity crisis.
- A learning through play approach is often implicit in the resources and the activities developed by teachers. These examples show a range of ways that teachers incorporated a learning through play approach into the classroom to promote creativity.

Effective advocacy is critical in generating and maintaining buy-in for reform

- Advocacy to engage and empower stakeholders can help create the political space for education reform to enhance creativity skills.
- Civil society and partner organisations can and should hold a leadership role in this space, helping ensure the sustainability of reform efforts and accountability towards commitments made.

Partnerships across and outside government will strengthen and support reform

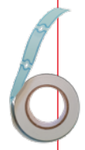
- Governments can't do this alone. System change can only be achieved through partnership, and partnerships are a key factor of successful and sustainable reforms.
- This can include partnerships with a range of ministries and from external sectors such as the arts, creative and business sectors, and civil society. These partners can help to co-design new approaches, embed creativity skills in the education system, and demonstrate the role of creativity in society.

A shared understanding, language and definitions of creativity will assist large-scale adoption

- There is a challenge with a lack of a shared understanding of the term 'creativity' which is a barrier to educators fully exploring, discussing and planning for its development in schools.
- In these examples, governments took practical steps to develop a common language and shared understanding of creativity to enable a clear and consistent approach. They needed to commit time and resources to ensure there was buy-in from the range of stakeholders involved – including teachers, ministers and civil servants.

International organisations can support reform

- Organisations such as the OECD can provide the technical support, mandate and systemic focus needed to orient reform.
- International organisations can provide high-level buy-in, reform strategy and process towards delivery, accountability and technical assistance to deliver the reforms needed, even through changes in leadership.



Teachers and local leaders play a key role in any reform

- Teachers are a critical stakeholder of any education reform. It is important to dedicate sufficient time and quality resources to build teachers' expertise and buy-in around reform. Professional development is needed across the teaching spectrum, for example to build an understanding of key concepts, and to ensure teachers are equipped to develop new lessons and to conduct qualitative assessments. Schools will be at different stages of implementation, and will require different levels and types of support.
- Local leadership, innovation and exemplar schools should be celebrated and encouraged, and there should be opportunities for cross-learning between schools and teachers. Strong programmes often emerged where the local education department and schools were actively involved as a programme lead or contributing partner.

A clearly articulated curriculum will guide students and teachers

- Providing a clear curriculum where creative skill development is explicitly incorporated, is essential to support teachers to plan, teach, monitor and assess the learning achievements of students. It also enables students to understand the required knowledge and skills that they are working towards.
- These examples highlight that education systems often provide a clear curriculum framework from which schools and teachers have flexibility to be innovative and creative in the way they implement the curriculum and design lessons.

Governments have a strong rationale to focus on creativity

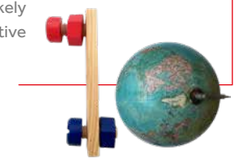
- Education reform is often in response to country and global analysis that shows that creativity is one of the top skills needed by employers, particularly as nations look towards the needs of the 21st-century labour market. Governments can draw insights from business and civil society to learn more about these needs and to support their reform efforts.
- Creativity is equally important for children's well-being, to help them to be inspired, to understand the meaning of learning outside exams, and for a prosperous future.

A whole-school approach is important

- A whole-school approach can raise quality and standards across the entire school and enable sustainable change.
- A whole-school approach is cohesive, collective and collaborative action in and by a school community that has been strategically constructed to improve student learning, behaviour and well-being, and the conditions that support these.

Assessment is crucial, but can be a challenge

- Assessment is an important step to ensure that creativity skills are recognised, articulated and valued and as an important tool to promote learning and to support any education reform. Assessment should be pupil focused and include a range of assessment tools that practitioners are trained to use. Education systems should use a range of formative and qualitative assessments and these should be linked to entrance into higher education pathway requirements, such as university or vocational training.
- It is important to recognise that the impact of any reform to enhance creativity skills is likely to be a long-term task. Assessing too early, assessing the wrong types of criteria or developing the wrong measures and indicators are likely to result in negative results.



Australia

Promoting formative assessment to progress student learning

Dr David Howes

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Context

Why is creativity important in your country?

The Victorian Government is committed to building an education system that provides every student with the knowledge, capabilities and attributes that will see them thrive throughout their lives, and to have the skills that industry needs, and that employers expect.

Responding effectively to environmental, social and economic challenges requires young people to be creative, innovative, enterprising and adaptable, with the motivation, confidence and skills to use critical and creative thinking (CCT) purposefully. The capacity for CCT is an essential element of developing successful, confident and innovative members of the community.

Young people require explicit support to develop the breadth and depth of their thinking. Explicit attention to, and application of, CCT skills will enable students to develop an increasingly sophisticated understanding of the processes they can employ whenever they encounter both the familiar and unfamiliar, thus building their capacity to manage their thinking in future endeavours.

What was the status of creativity skills development in your education system before the initiative?

This initiative was designed to strengthen the teaching of CCT in a new curriculum implemented in Victoria from 2017.

The curriculum taught in Victorian schools from 2005 to 2016 was known as the Victorian Essential Learning Standards (VELS; later AusVELS).

VELS was based on the premise that any curriculum has three essential components that help students meet the demands of the contemporary, globalised world:

- the processes of physical, personal and social development and growth
- the branches of learning reflected in the traditional disciplines
- the interdisciplinary capacities needed for effective functioning within and beyond school.

VELS differed from traditional curricula by including knowledge and skills in the areas of physical, social and personal learning, and interdisciplinary capacities. It acknowledged skills that are transferable across all areas of study, such as thinking and communication. This was the first time 'thinking processes' had been included in the curriculum, and as a result schools were required to teach it. The 'thinking processes' curriculum covered three strands:

- reasoning, processing and inquiry
- creativity
- reflection, evaluation and metacognition.

AusVELS was the Foundation to Year 10 curriculum from 2013 to 2016. AusVELS incorporated the Australian Curriculum F-10 for English, mathematics, history and science within the VELS curriculum framework. The thinking processes curriculum was maintained in AusVELS.

In 2009, work recommenced on a national curriculum coordinated by the Australian Curriculum, Assessment and Reporting Authority (ACARA).

The third iteration of national goals of schooling were agreed and set out in the 2008 Melbourne Declaration. This reinforced the importance of general capabilities that underpin flexible and analytical thinking, a capacity to work with others and an ability to move across subject disciplines to develop new expertise.

Why did your government choose to do this? What evidence, political incentives and interests converged to cause the government to take action?

In September 2015, the Victorian Government announced a $10.8 billion (about €6.6 billion) investment across the education portfolios to make Victoria 'the Education State', with the aim of improving outcomes for children, young people and adult learners. This investment articulated the importance of developing the whole child, and supporting them to develop and achieve their best. Targets were identified in relation to:

- learning for life
- happy, healthy and resilient kids
- supporting more students to stay in education
- overcoming disadvantage
- building pride in schools.

The Education State will improve outcomes for all students, regardless of their start in life, promoting foundational learning domains such as reading, mathematics and science, alongside other important areas, such as critical thinking, the arts, physical education and resilience.

An Education State Learning for Life target was set for 25% more Year 10 students to develop excellence in CCT skills by 2025. Other Learning for Life targets related to students achieving excellence in reading, maths, science and the arts.

A new curriculum, known as the Victorian Curriculum F-10, was released as part of the Education State announcement. All government and Catholic schools were required to implement the curriculum from the beginning of 2017. The Victorian Curriculum F-10 incorporates the Australian Curriculum and reflects Victorian priorities and standards.

The Victorian Curriculum F-10:

- represents the curriculum as a continuum of learning (not years of learning), meaning schools have the flexibility to differentiate their teaching and learning activities to meet students' needs
- describes four capabilities (including CCT) and eight learning areas, each of which have content descriptions and achievement standards, so that schools can teach, assess and report on student learning.

The CCT component includes a set of discrete knowledge and skills that are taught explicitly. It is expected that the skills and knowledge defined in the capabilities will be developed, practised, deployed and demonstrated by students in and through their learning across the curriculum.

The initiative

What was your role in relation to the initiative?

I was the Curriculum Division, Executive Director at the VCAA when the Victorian Curriculum was released. The VCAA is responsible for the curriculum and assessment for the early years, the primary and secondary compulsory schooling years and senior secondary levels.

What was the ambition or expected results?

The ambition is for students in Victoria to develop their critical and creative thinking skills to the highest level. To reach this ambition, we developed:

- a CCT curriculum explaining what content should be taught, and achievement standards describing what students should be able to understand and do as their learning progresses, thus enabling teachers to plan, explicitly teach, monitor, assess and report on the learning achievement of every student
- on-demand assessment tasks that support teachers in gathering and using data to decide what to teach next, and to enable specific, timely and constructive feedback to students
- high-quality formative assessments to support teachers in working with their students to set high expectations, gather evidence of learning and track growth
- targets for students developing excellence in CCT and a process for measuring state-wide performance.

What were the results achieved?

An Education State benchmarking exercise has been undertaken for the past two years. The 2018 data shows that 22.4% of Year 10 students reached the highest level of achievement in CCT. Data will continue to be collected annually to track achievement. Schools are still refining their teaching and learning plans, and the on-demand CCT assessment tasks have not been released for use by all schools at this stage. This is planned for later in 2020.

How was this achieved?

The VCAA has provided professional learning opportunities, facilitated by specialist teachers and VCAA staff, to support schools to become familiar with the CCT curriculum. The specialist teachers are practising teachers who have been supported by VCAA staff to:

- develop a deeper understanding of the CCT curriculum continuum
- create teaching and learning activities that can be differentiated to meet the needs of individual students and the local context
- promote formative assessment to progress student learning.

The specialist teachers trialled teaching materials and assessment approaches in their classrooms and then shared their learnings with other teachers. Peer-to-peer education is recognised as a valuable professional learning model.

The VCAA has 27 empirically validated CCT assessment tasks that will be freely available online for all Victorian schools. These tasks cover the three strands from the CCT element of the Victorian Curriculum F-10: questions and possibilities, reasoning and metacognition. The CCT tasks are suitable for students in Prep to Year 10. Students are given a range of stimulus material and asked questions exploring CCT knowledge, skills and understanding, as described in the curriculum continuum. These tasks are designed to give teachers valid and reliable data to plan teaching and learning activities, give feedback to students and progress their learning in CCT.

The CCT assessment tasks have not been released for use by all schools at this stage, but the tasks have been used by a number of trial schools to support a psychometric calibration exercise. When this is completed, the suite of tasks will be freely available to all schools in Victoria. The VCAA has commissioned the development of another 30 CCT assessment tasks to give schools more resources in the future.

To what extent did play factor in the initiative and contribute to the outcomes?

Play was not a key consideration in this project. The effort to make the tasks engaging was intentional, but they were not intended to do 'play'.

What enabled or hindered the initiative?

The Victorian Curriculum F-10 monitoring report 2018 indicated that the vast majority of schools had implemented the CCT curriculum, although this may have taken slightly longer compared to the traditional disciplines because schools are using a range of approaches, such as creating new interdisciplinary subjects or supporting teachers to integrate the teaching of capabilities with existing learning areas. The CCT curriculum implementation rates were slightly higher in primary schools than secondary schools. While acknowledging the work involved, schools have reported that the Victorian Curriculum F-10 is accessible and understandable and they are still building their knowledge in relation to assessing student learning against the achievement standards in the curriculum.

"The ambition is for students in Victoria to develop their critical and creative thinking skills to the highest level."

Additional funding was provided by government to support training CCT specialist teachers and for these teachers to deliver professional learning. Funds were also supplied to schools to enable teachers to be released to attend professional learning.

Which stakeholders were engaged with and why?

There was widespread consultation undertaken when the Victorian Curriculum F-10 was being developed. This included teachers, school leaders, sector representatives and professional associations. It was important for stakeholders to understand how the new curriculum would build on the previous 'thinking processes' curriculum, sending a strong message about the ongoing commitment to CCT while also acknowledging scope for improvement.

The development of the CCT assessment tasks has also involved teachers, students and academics with expertise in assessment and CCT. It has been important to get feedback from the people who will be directly involved in using the assessment tasks.

Lessons

What were the key learnings from this experience?

- Victorian schools have a lot of flexibility in the way they implement the CCT curriculum. Whilst appreciating this flexibility, they also want access to examples to act as a starting point for both whole-school planning and the development of classroom teaching and learning programmes.
- Teachers need to develop a deep understanding of the knowledge and skills specified in the curriculum continuum. The more teachers refer to the curriculum and use it in their planning, the easier it becomes to implement differentiated, high-quality teaching and learning programmes to progress student learning.
- Curriculum and assessment are inextricably linked, so it is essential that valid and reliable formative assessment tasks aligned to the CCT curriculum are developed and made available to schools to promote student learning.
- The inclusion of the CCT curriculum into another learning area does not take anything from that learning area: rather it supports students to delve deeper.
- It is important to position CCT in the same way as every other curriculum. There are discrete CCT knowledge and skills to be taught and learned, and schools are required to progress students' learning and report on this progress. The CCT curriculum needs to include achievements standards that describe learning progression and to support teachers to plan for and track progress. Like every other curriculum, the CCT curriculum includes content descriptions and achievement standards.
- The new CCT curriculum builds on the VELS 'thinking processes' curriculum. The curriculum construct has been refined and the learning continuum continues to describe high standards for student achievement. The curriculum makes it clear to schools what we are trying to develop in all young people. The continuation of CCT from one curriculum construct to the next sends a message to schools that this is a core component for preparing young people for their future and is not a 'passing fad'.
- Schools are at different stages in the implementation of the CCT curriculum. They require different levels and types of support, and this has resourcing implications.
- Teachers need professional learning, so that they feel they have the expertise to teach the CCT curriculum and progress student learning. There is a need for CCT to be included in undergraduate training.
- The leadership of the school needs to be supported as much as the teachers in the school. Setting an education target has raised the profile of CCT, and it is important to support schools to set high expectations for all students regardless of their starting point. Schools need to develop whole-school plans that articulate a guaranteed and viable curriculum for all young people.

What could have been done differently?

It is now apparent that it would have been beneficial to have more resources available and for a longer period to teach and learn the CCT curriculum before the introduction of the assessment tasks. Similarly, it would have been beneficial to have had networks of teachers established for a longer period prior to the introduction of the tasks.

Looking ahead

What advice do you have for education policy-makers who want to create their own version of what you attempted in your country, or who have similar ambitions?

- Providing a clearly articulated curriculum is essential to support students to develop CCT knowledge and skills. Treating the CCT curriculum in exactly the same way as every other curriculum area sends a clear message to schools that CCT is equal to the other curriculum areas and teaching CCT should be taken as seriously as teaching English and maths.
- Develop and share high-quality teaching and learning resources to stimulate and support teachers to become both confident and excited about teaching CCT.
- CCT needs to be taught in and through the learning areas. CCT does not take away from the time spent on teaching the traditional disciplines: rather it supports students to go deeper in their understanding of the learning area. CCT is not competing with the disciplines – it is enhancing the learning.
- Assessment is essential to progress student learning. Teachers need to be supported to gather valid data about what students can currently say, make, write or do, and then use this data to make decisions about differentiating for individual needs in their classroom. The saying, 'What is assessed is valued' is a motivator for providing high-quality, formative assessment tasks, but in truth what is more important is to support teachers to see the value of gathering assessment data to promote learning.
- Teachers need support to select the best pedagogical approaches to use when teaching specific components of the curriculum. Signature pedagogies for teaching CCT are emerging. In addition, teachers need to be aware of strategies to support students to transfer their learnings in CCT to another classroom, discipline or time.

How can civil society help support this?

Education think tanks, universities and technical and further education institutions (TFEIs), and employers need to continue stressing the importance of CCT skills in everyday life and work environments, reinforcing the importance of including these skills in the curriculum. We need to ensure that all young people are given the opportunity to develop CCT knowledge and skills and can deploy these when confronted with new and unfamiliar situations. Undergraduate courses also need to be developed to support teachers to explicitly teach CCT.

What is the role of assessment (e.g. of creative thinking skills) in education reform?

As described earlier, formative assessment is a critical component of curriculum implementation in Victoria. If teachers are asked to explicitly teach CCT knowledge and skills, they need to be able to collect evidence of student learning so they can make decisions about what to teach next. It is essential that teachers can gather and use valid and reliable data to progress learning. Teachers need to use the achievement standards in the curriculum to track progress. Giving specific, timely and constructive feedback to students is a core component of the assessment process. Students also need to know what they are working towards.

"Providing a clearly articulated curriculum is essential to support students to develop critical and creative thinking knowledge and skills."

Japan

Fostering creativity through integrated studies

Shun Shirai
Deputy Director General

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About the contributor: Shun Shirai is Deputy Director General at the National Center for University Entrance Examination in Japan. He joined the Ministry of Education, Culture, Sports, Science and Technology in 2000 and has experienced a variety of roles across primary, secondary and tertiary education. In recent years, he has spent time working on the areas around curricula and competencies. Between 2015 and 2016, he was seconded to the OECD as an education analyst and engaged in curricula analysis as well as developing the competencies framework. Between 2017 and 2018, back at Japan's ministry, he was responsible for designing and implementing the new curricula for primary and secondary schools.

Context

Why is creativity important in your country?

When Japan's Basic Act of Education was revised in 2006, creativity was included as one of the goals of education, alongside rich humanity, respect for human dignity, truth and justice, and public citizenship. Article 2 of the Act specifically references 'developing individuals' abilities, cultivating creativity, [and] fostering a spirit of autonomy and independence by respecting the value of the individual'.

According to the most recent report on curriculum reform published by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), creativity is important for Japan because we will face a lot of challenges such as the depletion of resources and destruction of the environment, and will need creative ways to address these issues. Thus, students who will play key roles in the future should acquire thinking skills, including creative thinking (MEXT, 2017).

In the written curriculum, creativity is explicitly mentioned as a goal of arts subjects only, but the supplementary materials often refer to creativity. For example, the curriculum guidebook on mathematics states that it is important to foster the basis of creativity through mathematical reasoning and problem-solving (MEXT, 2018).

What was the status of creativity skills development in your education system before the initiative?

Creativity has been recognised as a competency that should be fostered through the entire curriculum, alongside national language, mathematics, social studies, natural science, P.E., and music and arts. Japan believes that creativity cannot be fostered by single or short/mid-term initiatives but instead by multi- or long-term initiatives. It is a long-term challenge and all of the subjects and educational activities should be responsible for fostering creativity.

In 1999, MEXT revised the curricula for primary and secondary schools, and introduced Interdisciplinary Study (IS). The aim of IS, which included creativity, was to:

> foster competencies to better-solve problems by identifying problems, tackling, thinking and making judgment about the problems. To acquire the way of learning and thinking – how to collect information, research, summarise, make reports, present and discuss. To foster the attitude to proactively and creatively engage in solving problems and making inquiries....
>
> **MEXT, 1998**

The idea of IS was quite new at the time as it included the concepts of inquiry-based learning, authentic learning, project-based learning and active learning, which are now prevalent in many countries. IS, known as 'yutori education' (relaxed education) in Japan, was considered to be a key method to foster creativity as, without textbooks or standard pedagogies, students would be expected to identify problems and find solutions for themselves.

Why did your government choose to do this? What evidence, political incentives and interests converged to cause the government to take action?

After the Second World War, the demand for higher education rapidly increased in Japan. The percentage of people who received higher education was only 7.9% in 1955, but rapidly increased to 27.2% in 1975. The strong demand for higher education caused a so-called 'exam war', which was thought to deprive students of opportunities to enjoy their lives or explore each discipline in depth (MEXT, 1985).

In the 1980s and 1990s, the government responded to these concerns and attempted to change the 'test-oriented' education to 'authentic learning' by connecting subject disciplines and real-life issues so that students would be able to understand the meaning of learning beyond passing entrance exams (MEXT, 1998). One of these reforms included the introduction of IS.

The initiative

What was your role in relation to the initiative?

I was responsible for curriculum-related issues as a whole, including the interpretation of curricula and implementation, and as Director of Curriculum Planning was particularly engaged in 2017/18 in redesigning the curriculum for primary, lower and upper secondary schools. The 2017/18 curriculum redesign is based on the experiences and studies of past curriculum reforms, especially the 1999/00 and 2009/10 revisions.

During the 2017/18 curriculum redesign, the name IS for upper secondary schools was changed to 'Interdisciplinary inquiry-based studies'. This change emphasised that IS can be fulfilled when students proactively engage in their activities through inquiry.

In addition, Interdisciplinary Studies across Math and Science (IS-MS) was introduced in secondary schools as a kind of spin-off from IS. The idea behind its introduction was to respond to the need for science, technology, engineering and mathematics (STEM) and artificial intelligence (AI) education.

What was the ambition or expected results?

The original idea of IS was to connect subject disciplines with real-life issues so that students better understand each discipline as well as enhance their cognitive skills, including those of creativity (MEXT, 1998).

IS was also expected to improve teachers' pedagogical skills because it gave them greater freedom to design IS lessons. Traditionally in Japan, there has been an abundance of supporting teaching materials which were quite influential for teachers because they provided almost everything, from the interpretation of curricula to pedagogical guidance, to assessment methods. However, this eventually deprived teachers of the opportunity to design new lessons, whereas for IS, there were neither teaching materials nor pedagogical guidance.

What were the results achieved?

When MEXT announced the introduction of IS in the revised curriculum in 1999, there was already severe criticism against the entire education system because of reductions in curriculum content. In line with these perceptions, it was also thought in some quarters that the 1999 curriculum would produce a decline in students' achievements because it supported a change from test-oriented education to authentic learning.

Criticism of the 1999 curriculum was eventually confirmed by the PISA 2003 and PISA 2006 results, which ranked Japan's literacy scores in the middle of the OECD countries. This caused a so-called 'PISA shock', despite the fact that Japan was one of the top performers in maths and science.

However, a closer look at the OECD report shows that in reality, students were enhancing their cognitive skills, including creativity:

> student performance on tasks requiring open-ended, higher-order thinking skills – those that are of increasing importance in modern knowledge-based economies – have improved since the reform.
>
> **OECD, 2012**

In some cases, teachers' pedagogical skills improved as IS gave them the impetus to create their own curriculum and to 'think outside the box'. However, many teachers could not appropriately respond to what the IS curriculum expected of them because they were not aware of their roles in this kind of student-centred learning model and confused about what they should teach (Bjork, 2009). The report by the OECD describes the situation as follows:

> ...since the rapid implementation of the programme with limited time and room for building capacity at the frontline left many teachers stranded in their new freedom. In particular, the inquiry-based, student-centred model of learning that the reform was promoting left many teachers uncertain about their role as educators. Scholars have often noted that Japanese teachers minimise their contribution to learning activities so that students assume more responsibility for their own learning; but this overlooks that even when Japanese teachers act as facilitators in the classroom, they typically follow a detailed plan of how learning activities should unfold. These issues seem not to have been taken into account when the reforms were designed.
>
> **OECD, 2012**

In the early stages, MEXT struggled to implement IS. It took some time to change the mindset of teachers and build their capacity so that they were prepared to teach the new IS subjects. Since then 20 years have passed, and IS has gained more support from teachers, especially at primary schools where children are relatively free from exams.

"... teachers' pedagogical skills improved as Interdisciplinary Study gave them the impetus to create their own curriculum and to 'think outside the box' ..."

How was this achieved?

During the implementation process, local education boards, together with the guidance provided by the curriculum specialist from MEXT, played key roles. Especially significant were the roles of Shido-shuji (supervisors for teachers who are specialists in each subject, including IS, who are selected from good teachers) because they advised and supported teachers at various stages, including in developing lesson plans.

The network of people who are engaging in IS has gradually expanded, putting MEXT staff and Shido-shuji at its centre, as well as researchers, business people, people working for non-profit organisations, and people from communities. The network helped the development of IS, and it has created, uniquely, the opportunity to collaborate with people from different backgrounds. Collaboration with a variety of people is the basis of innovation and creativity.

To what extent did play factor in the initiative and contribute to the outcomes?

Although play is not explicitly included in the initiative, the freedom of IS meant teachers have the discretion to include play. For example, old toys that were used by elderly people when they were children become the actual learning materials to help pupils understand the lives of past generations and to compare them with their own.

What enabled or hindered the initiative?

The introduction of IS was hindered by some external factors. In 1999, for example, some researchers found that university students' achievement levels had dropped, and suggested that some students were unable to perform basic mathematical calculations. Alongside the 'PISA shock' of the 2004 and 2006 OECD reports, this resulted in negative views of IS, on the grounds that it did not explicitly foster either literacy or numeracy, unlike traditional subjects such as maths and language. People who had received a traditional education regarded IS as disorganised and undisciplined, and deficient in rigour and coherence.

However, positive outcomes were evidenced in OECD's 2012 PISA report. It reported improvements in teacher–student relations coincided with the period of yutori education, and stated unequivocally that: 'Contrary to suggestions that the quality of education declined over the same period, PISA 2009 results do not show evidence of such a decline' (OECD, 2012). As Japan's PISA ranking has improved, criticism against IS has gradually calmed down.

The reform could have benefited from more time and resources to help support buy-in and to build the capacity of teachers. Teachers needed additional support to ensure that they understood IS and felt confident and equipped to manage the inquiry-based and student-centred model of learning.

Which stakeholders were engaged with and why?

Communities were one of the first groups to engage and support IS activities, not least because learning about one's community is one of the topics that is encouraged in the IS curriculum. People and organisations who are tackling social issues such as environment, social welfare and international communication are also usually very supportive of IS activities.

MEXT has developed a network so that schools can link with organisations that have expertise in topics such as environmental protection and international communication. Each organisation willing to support IS activities is expected to register its network through the internet, and then schools can find partners via the portal site operated by MEXT. A growing number of companies and organisations are supportive of the IS initiative. For example, at upper secondary level, universities, colleges and research institutions are engaging in IS through real-life research topics, such as the spread of infectious diseases and traffic congestion analysis.

Lessons

What were the key learnings from this experience?

- Creativity has been recognised as a competency that should be fostered throughout the entire curriculum, alongside language, mathematics, social studies, natural sciences, physical education, music and the arts.
- Creativity cannot be fostered by single or short- or mid-term initiatives, but only by multi- or long-term initiatives. It is a long-term challenge and all of the subjects and educational activities should be responsible for fostering creativity.
- Creativity is a skill which is difficult to measure, and therefore there is a tendency that people disregard it, despite its importance. This is especially true in Japan, where tests and entrance exams are highly valued. In many cases, creativity can only be implicitly or indirectly measured, for example by solving complex mathematical problems.
- Teachers need to be trained in providing good qualitative assessments, focusing on what each individual student does.
- Attitudes need to change. In the past, even though students (and teachers) tried hard with IS activities, their efforts have not been highly regarded by universities and colleges, as they usually place greater value on test scores when making admission decisions.

What could have been done differently?

Before IS was officially introduced, MEXT conducted some experiential studies. MEXT could have prepared better supporting materials and training based on these studies, to help build the capacity of teachers and to prepare for smooth implementation. Teachers are usually well trained to assess students, but the training is related to traditional subjects for which assessment criteria are relatively clear and backed by established exams and tests and abundant teaching materials. In the case of IS, many teachers are not equipped to assess students without adequate training or materials.

MEXT should have spent more time and effort making potential stakeholders fully understand the aim of IS and what is expected of each stakeholder.

Looking ahead

What advice do you have for education policy-makers who want to create their own version of what you attempted in your country, or who have similar ambitions?

- Ensure that active learning is stipulated in the overarching approach to education and align this with entrance exams.
- While every teacher understands the importance of inter-disciplinary studies, in reality, it is difficult to introduce this concept. The biggest obstacle is that the system is geared around specific subjects, such as maths and social studies. In Japan, teachers need to receive a teaching licence to teach each subject after completing their pre-service training, and teachers are recruited based on their chosen subjects. At present, there is no licence for IS and so recruitment does not target IS specialists.
- However, in the 20 years since its introduction, IS is gaining ground. Thanks to the efforts of curriculum specialists at MEXT and Shido-shuji, we can now find leading IS teachers in each prefecture and municipality, and seminars, training sessions and symposiums focused on IS are now held. Even teachers who once prioritised traditional subjects participate in these opportunities.
- There are other encouraging signs. 'Active learning', which is closely aligned with the IS concept, is stipulated in the new curricula. Japan is changing its university entrance examinations so that the previous exclusive focus on scores and test results is being modified by the introduction of more diverse aspects of applicants, including consideration of students' detailed school reports (MEXT 2016). This means that students' engagement in IS activities and also teachers' assessment of IS could be taken into consideration when universities and colleges make admission decisions.

How can civil society help support this?

Because of the inter-disciplinary nature of IS, parents, alumni, communities, universities and companies can play an important role in its development. They can help students apply what they have learned from the perspective of their own experience or expertise, and provide advice on identifying problems or issues that are worth exploring. Such partners can be reached using the MEXT network-matching site.

What is the role of assessment (e.g. of creative thinking skills) in education reform?

Assessment is key to foster competencies, including creativity. In the case of Japan, assessment is currently done from four different viewpoints:

- interest, motivation and attitude
- knowledge and understanding
- skills
- thinking, making judgements and expression.

However, unlike traditional subjects, in the case of IS, there is no single objective and therefore assessment takes a lot of time and effort for teachers, and teachers need to be well trained in order to assess creativity.

Recently, students have been encouraged to develop an online portfolio to record their activities in more detail. This helps teachers provide appropriate support for students and provides more discursive materials on which universities and colleges can base their admission decisions.

"Creativity is a skill which is difficult to measure, and therefore there is a tendency that people disregard it, despite its importance."

Scotland

Developing a shared language and understanding of creativity

Gayle Gorman
Chief Executive and Her Majesty's Chief Inspector of Education

Education Scotland

About the contributor: Gayle Gorman is Chief Executive and Her Majesty's Chief Inspector of Education at Education Scotland. She previously held the role of Regional Improvement Lead for the Northern Alliance Improvement Collaborative. Earlier appointments are her role as Director of Education and Children's Services with Aberdeen City Council, Director of Learning at Cambridgeshire County Council and National Senior Director at the National Strategies for England. In her early career, she was a primary teacher and later an Ofsted Inspector, and led a range of projects within the Department for Education. Gayle is also chair and trustee of the Gordon Cook Foundation.

Context

Why is creativity important in your country?

Creativity has a high profile in Scottish education. It is key to developing skills for learning, life and work and is a core component of the Curriculum for Excellence (Scotland's curriculum for ages 3–18). A strong emphasis is placed on higher order skills and the belief that creativity will help children and young people not just to understand the world, but to be sufficiently equipped to influence its shape.

Creativity features prominently in Scottish Government policy, in Education Scotland's values and in support material and literature about the Curriculum for Excellence. This is supported by an ambitious, high-level, cross-departmental and inter-agency Creative Learning Plan.

> We as a country value creativity. It brings greater opportunities to both individuals and society, makes learning more satisfying and enhances wellbeing. We know that creativity is vital in the world of work, with greater opportunities for those who bring a creative approach. The country as a whole stands to benefit significantly from the great wealth of creative talent that our people can bring to bear.
>
> **Ministerial foreword, Creative Learning Plan, 2013**

What was the status of creativity skills development in your education system before the initiative?

Whilst creativity was intrinsic to the Curriculum for Excellence (CfE) and related national advice, which was implemented in schools from 2010, it was not made explicit and was often seen as the 'missing piece'. As in other jurisdictions, there was a lack of understanding, language and definitions around creativity that prevented educators from identifying, exploring and discussing it with the depth it deserved.

"There was a lack of understanding, language and definitions around creativity which stopped educators from identifying, exploring and discussing it with the richness it deserved."

In order to support local authorities in building capacity for creativity, a Creative Learning Network Fund was launched to support local authorities to build capacity for creativity. This joint fund was established in 2009 and is central to the strategic partnership agreement between Creative Scotland and Education Scotland. At the outset, much professional dialogue focused on whether there was a difference between creativity and the arts. Since then, a huge distance has been travelled and we now have a shared language and common understanding around creativity.

A national review of creativity in Scotland's schools was carried out in 2012/13. The subsequent report, **Creativity Across Learning** (Education Scotland, 2013), defined more clearly what is meant by creativity in the context of the CfE, and made clear distinctions between creative teaching, creative learning and creativity skills. Its definition of creativity is:

> a process which generates ideas that have value to the individual. It involves looking at familiar things with a fresh eye, examining problems with an open mind, making connections, learning from mistakes and using imagination to explore new possibilities.
>
> **Education Scotland, 2013**

Creativity Across Learning concluded that although most education leaders and staff agree that children need to develop creativity skills, generally the profile of creativity as a discrete concept was too low, with insufficient planning for its development in schools and pre-school centres.

Why did your government choose to do this? What evidence, political incentives and interests converged to cause the government to take action?

Scotland's CfE empowers schools and practitioners with 'permission to be creative'. Its development and implementation have run in parallel with a period during which Scotland has been rapidly reframing its economic future. The economic downturn increased attention on the need for innovation within the workforce, based on high levels of knowledge and skills as the means of establishing a thriving economy. Global competition will be fierce in the future, particularly in industries subject to rapid change and technological development.

The skills aspect of CfE was strengthened in June 2014 through the Scottish Government's youth employment strategy (2014). Since then, there has been increasing focus on meta-skills, the 'timeless, higher order skills that support the development of additional skills and promote success in whatever context the future brings' (Skills Development Scotland, 2018).

Alongside the implementation of CfE, the Creative Learning Partnership (CLP) was formed, with the aim of putting creativity at the heart of learning in Scotland. This partnership brought together eight national bodies – Creative Scotland, Education Scotland, Scottish Government, College Development Network, Association of Directors of Education in Scotland, Skills Development Scotland, General Teaching Council for Scotland and Scottish Qualification Authority – and resulted in the publication Scotland's Creative Learning Plan (Creative Scotland, 2013), which projects a bold, ambitious vision for a more creative nation that can thrive in a world of constant change and uncertainty. The plan encourages policy-makers and practitioners to use creativity to benefit learners in all contexts for learning.

The initiative

What was your role in relation to the initiative?

Education Scotland's 2013 Curriculum Impact Report, **Creativity Across Learning**, was developed alongside the national Plan. It informed the Plan, particularly in providing clear definitions of creativity in learning, creative teaching and creativity skills. Along with Creative Scotland, Education Scotland has been a lead partner in implementing the Creative Learning Plan since its inception, taking the lead for creativity in learning, teaching, assessment and achievement in 2015, with Skills Development Scotland taking the lead for creativity in employability. On the ground, the Creative Learning Networks (CLNs) are the key delivery mechanisms for local authorities across Scotland.

Education Scotland manages the Creative Learning Network Fund on behalf of the partnership and leads on a professional development programme for the national network of local authority creative learning leads. We take a lead role in facilitating the Creative Learning Steering Group and in organising events to bring the partnership together, such as May 2019's Creativity Summit.

What was the ambition or expected results?

The vision set out in Scotland's Creative Learning Plan is ambitious and remains unchanged, with the understanding that the impact will be long term. It is possible, however, to track key moments in the progress of the plan's implementation. For example, an external evaluation report (Consilium, 2015) recommended that the Partnership Strategic Group focus on the following areas:

- supporting employability by developing young people's creativity skills
- embedding an assessment of creativity within the inspection process
- developing whole-school approaches to creativity.

All three recommendations have been adopted and are at varying stages of implementation.

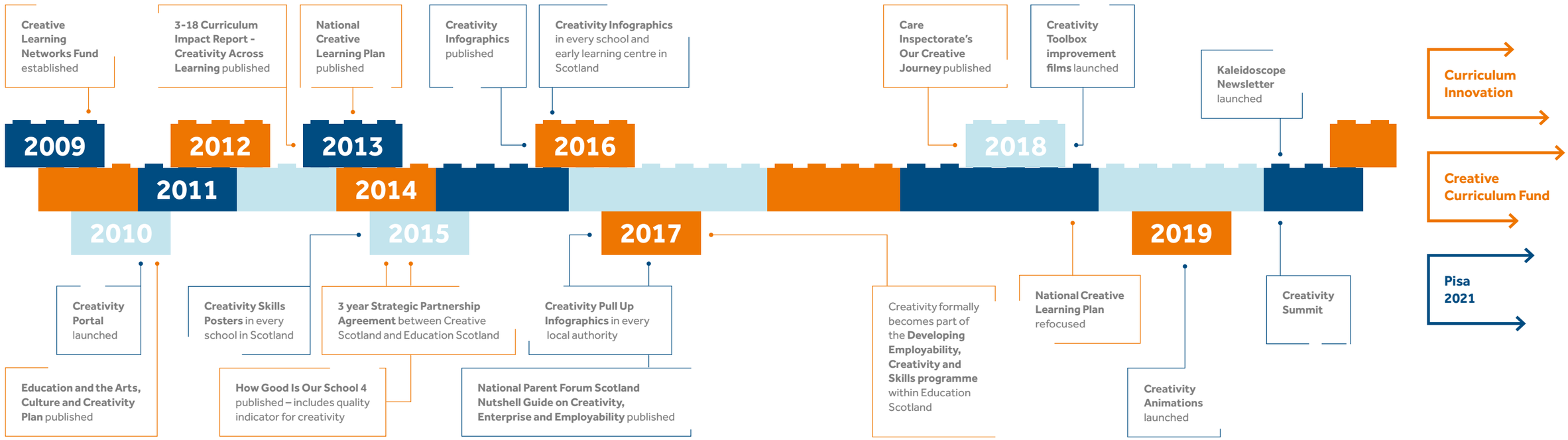
What were the results achieved?

To date, our work has contributed to the development of a common language and shared understanding of creativity and creativity skills across Scotland and to the number of schools including creativity as a school improvement priority. This has been achieved through the introduction of:

"Play and a playful approach have been integral to our initiative and permeate much of the work developed with teachers and learners."

- a quality indicator for creativity skills and references to creativity throughout the self-evaluation framework 'How Good is Our School?', which is used by schools and inspectors when evaluating schools
- creativity skills posters, distributed to every school and early years establishment in Scotland
- creativity infographics, published on the National Improvement Hub and distributed to local authorities
- a National Parent Forum Scotland (NPFS) Nutshell Guide on Creativity, Enterprise and Employability (NPFS, 2017)
- annual national events targeted at local authority partners with strategic responsibilities, focusing on how creativity can support improvements in areas of specific need, including employability, closing the poverty-related attainment gap, and curriculum innovation.

Scotland's Creativity Across Learning Journey by Education Scotland



In May 2019, we held a creativity summit, bringing together original and new CLP organisations for a progress update and to re-ignite debate and increase momentum. Partner updates highlighted how much the original partners have embedded creativity in their work:

- Creativity is embedded in the General Teaching Council for Scotland's new Professional Standard for Teachers – it is now an expectation that all practitioners will use creative approaches in their teaching.
- Scottish Qualifications Agency is developing 'next generation qualifications', which place creativity skills amongst the common core skills.
- Skills Development Scotland actively promotes creativity skills and the creative industries through its programmes supporting young people's career pathways, specifically My World of Work, My Kid's Career and Skills 4.0 (Skills Development Scotland, 2018).
- Creative Scotland's Creative Learning Review resulted in a clear definition of creative learning for the creative and cultural sector.

How was this achieved?

After the publication of **Creativity Across Learning** in 2013, it became evident that we needed to make key messages more accessible to leaders, practitioners and learners. In recognising this, we have used one consistent intended outcome for the Creative Learning Network Fund since 2015, which is: **Creativity skills are recognised, articulated and valued by leaders, practitioners and learners.**

Education Scotland's creativity team produced resources for CLN leads to use in order to more easily communicate the language of creativity and creativity skills. The resources, now housed at the National Improvement Hub, range from infographics of the four core creativity skills, to animations communicating themes such as how creativity skills support employment and learning, and how they can be assessed.

The adoption of two clear themes (creativity and employability, and creativity and learning, teaching, assessment and achievement) has led to a consistent approach across Scotland, with all participating local authorities making the intended outcome, and either or both of the themes, core to their creativity capacity-building work.

To what extent did play factor in the initiative and contribute to the outcomes?

Play has not been a specific focus of our initiative, but it is implicit in the resources we have developed, specifically the Creativity Toybox videos, designed to develop creativity skills.

Play and a playful approach have been integral to our initiative and permeate much of the work developed with teachers and learners. For example, Orkney's CLN delivered a play-based learning project for early learners and their families in partnership with the Pier Arts Centre.

Across Scotland, there is a growing enthusiasm to embed play-based learning across all stages. To help meet this demand, a toolkit is being developed by Education Scotland to support this in the early years and beyond.

What enabled or hindered the initiative?

The first two years of the Plan and the Partnership were evaluated by Consilium, an external evaluation agency, who concluded that the workstreams had been too complex and many of the intended impacts impossible to measure after only two years.

The original four workstreams were too detailed and the associated reporting structure was overly bureaucratic. Consilium's recommendation to simplify the approach was adopted, resulting in clearer focus and improved communication of the key themes.

This revised focus has allowed us to more easily illustrate the power of creativity in contexts such as attainment, achievement, progression and career paths for children and young people. We have seen increasing confidence and clarity in leaders' and practitioners' understanding and communication of creativity and creativity skills, and increased recognition and valuing of creativity at the strategic level across local authorities.

Which stakeholders were engaged with and why?

The initiative aimed to engage with education leaders, practitioners and learners across Scotland through the work of each of the original CLP organisations.

Lessons

What were the key learnings from this experience?

- ✚ The endorsement of the Creative Learning Plan by three Scottish Government ministers (Cabinet Secretary for Education and Lifelong Learning, Cabinet Secretary for Culture and External Affairs, and Minister for Learning, Science and Scotland's Languages) was unique and fundamental to its successful launch.
- ✚ The need for strong, clear, consistent messaging is absolutely paramount. When Education Scotland was writing the Curriculum Impact Report, the US educationalist Eric Booth advised that there is a 'linguistic barrier' around the word 'creativity' and to get over this, we needed to arrive at three or four 'core attributes' in order to quickly explain to people what we meant. This resulted in the creation of our four core 'creativity skills' – **curiosity, open-mindedness, imagination and problem solving** – which have proved fundamental in communicating the importance of creativity skills to all educators, whatever their subject specialism.
- ✚ We needed a clear, shared definition of creativity, which was provided in the national report **Creativity Across Learning** (Education Scotland, 2013).

What could have been done differently?

If we had started out with simpler themes instead of four all-encompassing workstreams, we would have made life easier for ourselves, spent less time reporting, and possibly made faster progress.

Our approach with the Creative Learning Network Fund has always been to keep the intended outcomes sufficiently high level to allow local authorities to create programmes in response to local context and need. This has helped us to make local gains, but the variety of approaches taken by local authorities has made it more difficult for us to evidence impact nationally. However, we stand by this approach, which is in keeping with Scotland's current focus on increased local leadership in education, and we continue to improve our approaches to evaluation.

Over the years, we have learned that the strongest CLN programmes were where the local education department was actively involved in planning and delivering programmes, whether as programme lead or contributing partner. This usually meant that access to schools, headteacher meetings and local authority managers was easier. (Since 2017, we have made it a condition of funding that programmes must involve active partnership with education services.)

How could you have been assisted to achieve a better outcome?

More consistent support in the form of advocacy from senior colleagues across the partner organisations would have been helpful. With frequently changing personnel attending strategic group meetings in the early days, this was difficult to achieve.

At a time when local authorities have been working in a climate of uncertainty and financial insecurity, it has sometimes been challenging for CLN leads to provide a leadership role in championing and advocating creativity across learning in their local context. It has therefore been essential for us to maintain a strong national lead to maintain momentum, and encourage an ambitious and challenging shared sense of purpose and direction. It is hard to see how we could have done things differently. The political and financial climate has inevitably been an influencing factor, but policy and funding alone are not the answer to achieving better outcomes. The progress we have made has come about through gradual, incremental shifts. In our aim for culture change, impact has to be long term.

However, one thing that would have helped this progress from the start would have been for policy and funding streams to be delivered in entirely innovative ways. For example, national funding could have been linked to outcomes that encouraged flexibility and innovation locally in achieving creativity outcomes. More recently, shifts in education policy over the past two years towards empowerment and collaboration, with more funding decision being made locally by schools and partners, together with greater teacher agency, are helping to promote such flexibility. We would also like to see a commitment from Scottish Government, not to create a discrete policy for creativity, but to include a creativity perspective in all new education-related policies.

Looking ahead

What advice do you have for education policy-makers who want to create their own version of what you attempted in your country, or who have similar ambitions?

Our ambitious vision is about system change, and this can only be achieved through partnership. The unique partnership between Ministers, Scottish Government and Scotland's key national learning bodies is absolutely fundamental to the progress we have made so far.

Development of a shared definition of creativity is critical, as is a shared language and understanding around creativity and its role across every aspect of learning, teaching and continuous improvement. Without this, the myths and misconceptions that can surround creativity may persist and educators may see creativity as being something their subject or role does not include.

How can civil society help support this?

Partnerships with community organisations, employers and cultural partners are of fundamental importance in embedding creativity skills in the education system.

Scotland has a number of trailblazing schools that are taking innovative approaches to curriculum design. Rather than allowing timetabling or external targets to drive teaching and learning, these schools place learners, their interests and passions at the centre, and work with employers and local partners to support children and young people to develop their skills and take steps towards achieving their ambitions. Our next steps need to be to help all schools to be bold and imaginative in their vision of what is possible, so that innovative curricula are the norm rather than the exception.

Scottish Government's recent education reform means that Education Scotland now has regional teams working in close partnership with Scotland's six Regional Improvement Collaboratives. This is enabling us to work even more closely with educators and with partners across the wider education ecosystem. In addition, a new culture strategy, published February 2020, promotes further the importance of creativity. Education will have a vital role to play in taking forward this new strategy – not only in broadening horizons and shaping perceptions of culture, but also supporting the development of creativity skills to ensure greater innovation in leadership and teacher agency, and of course the growth of our children and young people's talent.

Alongside this, we are exploring the links that social media affords to share understanding and recognition of the need for, and power of, creative approaches across so many areas of learning, employment and well-being. For example, Twitter is allowing us to make connections and share ideas across these areas in ways that were not previously possible, leading to exciting connections and new ways of working. We need to encourage partners, employers, parents and learners to become more active in occupying these spaces so that collectively, we can drive forward the transformational change that education needs.

What is the role of assessment (e.g. of creative thinking skills) in education reform?

One of the key benefits of assessing creative thinking skills is that it brings those skills to the forefront of educators' awareness. This is an important step in ensuring that creativity skills are recognised, articulated and valued by practitioners, learners and in wider society.

"Partnerships with community organisations, employers and cultural partners are of fundamental importance in embedding creativity skills in the education system."

Thailand

The role of international collaboration

Kraiyos Patrawart
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About the contributor: Dr Kraiyos Patrawart is the Deputy Managing Director at the Equitable Education Fund (EEF), an independently managed public fund for equitable education and human development in Thailand. He is also Director of the Research Institute at EEF, which develops innovative research and technology for equitable education and human development. Between 2017 and 2019, Kraiyos was a member of the Independent Committee on Education Reform (ICER), appointed by the Royal Thai Government to help draft a number of key education reform laws and policy recommendations to the cabinet in multiple education reform areas. Kraiyos obtained his PhD in Economics from the University of London and his MSc in Economics at the University of Warwick. He has also held posts at the Quality Learning Foundation and the Harvard Institute for Qualitative Social Science.

Context

Why is creativity important in your country?

The only feasible scenario to move out from the middle-income trap, during this technological disruptive world, is for our students and our workforce to develop the needed 21st century skills which cannot be replaced by automation and AI in the future. Thailand's 20 Year National Reform Strategy has set the deadline for Thailand to make this transition as 2037. The government has consolidated all governmental and non-governmental organisations (NGOs) to set their strategic plans to achieve this national goal.

Creativity has been consistently ranked as the top skill most in demand in the labour market in Thailand and globally. Therefore, it is one of the most important skills for the Thai current and upcoming workforce for the future of jobs and for the sustainable growth of the nation.

What was the status of creativity skills development in your education system before the initiative?

Creativity has long been recognised in Thai society as a critically important skill to advance education and economic systems. Particularly, with the richness of natural resources, culture and history of the Kingdom of Thailand, being able to creatively utilize these national treasures can lead to greater prosperity. Consequently, creativity has been identified as the desired learning outcome in a number of areas of the curriculum and in lesson plans. Several innovative initiatives were started by the private sector and NGOs to promote creative-based learning or that highlighted creativity in its learning processes and outcomes. Nevertheless, before participating in the OECD programme, there was no widely recognised common language or tool to describe creativity, and no consensus on how to effectively measure and develop creativity skills. The OECD's project has helped to bring together key agencies and actors in this field to make significant progress in these areas and to prepare for future policy recommendations.

Why did your government choose to do this? What evidence, political incentives and interests converged to cause the government to take action?

The Thai government has recognised the urgent need for education systems to evolve and to prepare for the challenges of the 21st-century labour market and disruptive technologies. Rising graduate unemployment and ongoing dissatisfaction from domestic and international corporations on the comparatively declining competitiveness of Thailand[1] are also significant contributing factors to raising government awareness and urgency for education sector reform. Therefore, when the opportunity emerged for Thailand to engage in the OECD programme to develop tools to promote and measure creativity with 10 other countries across the world, the Thai government not only saw an opportunity to learn from the OECD and other countries, but also an opportunity to learn from the results from Thailand, to understand which policies and reforms have the potential for policy reform.

"Creativity is one of the most important skills for the Thai current and upcoming workforce for the future of jobs and for the sustainable growth of the nation."

The initiative

What was your role in relation to the initiative?

As part of the reform strategy to improve the quality of human capital in Thailand, and in response to the growing demand for creativity skills, the EEF has been working with key stakeholders, including the Ministry of Education (MoE) and leading universities in Thailand that have participated in the OECD programme on creativity and critical thinking for the past three years. The EEF and MoE have a common goal to bring the experience and materials from this OECD programme to scale nationally by 2020.

What was the ambition or expected results?

In the medium term (three to five years), we want to see two reforms at the national and school levels:

- At the national level, we want to see the new 2020 national curriculum reform adopt the competency-based curriculum and assessment as an instrumental part of national education reform. This will incorporate the common language and the findings of the OECD creativity and critical thinking programme into the education process and the curriculum.
- At school level, we want to scale the OECD programme to between five and ten schools in each of Thailand's 225 education districts, with the aim of demonstrating to other schools how pedagogical activities and formative assessment align with the new national curriculum, in order to advocate for and spread adoption across the education sector.

In the long term of the next ten years, we want to see systematic changes in the classroom and students' core competencies. For example, we expect teachers to master and regularly use the competency-based approach to facilitate learning in the classroom and not to focus on memorisation as in the past. We also look

1 Evidenced, for example, in the Global Competitiveness Report (World Economic Forum (WEF), 2018) and World Competitiveness Yearbook (International Institute for Management Development (IIMD), 2019).

forward to seeing positive feedback from employers on the performance of new graduates from the Thai education system that respond to their expectations for cognitive and non-cognitive skills.

What were the results achieved?

Between 2015 and 2017, we conducted two rounds of research in 100–200 schools across Thailand, and have the results of data analysis for 50–100 schools compared to another 50–100 schools in the control group. Analysis from the OECD and the University of Paris has indicated a positive outcome of the intervention in both primary and lower-secondary schools in Thailand, especially in the non-cognitive results of creativity tests. Thai students have shown progress, specifically in divergent thinking in mathematics and science. This result can also be observed in children with low socio-economic backgrounds. However, for convergent thinking, the intervention has not thus far produced significant progress. These research findings are consistent across the two rounds of studies.

Teachers also show significant improvement in the amount of time spent on lesson planning and in their positive perspective on creativity and critical thinking. Teachers had more confidence in both themselves and their students that creativity can be developed in the classroom, given the right method and preparation.

How was this achieved?

To initiate this reform using only domestic pressure was not enough to create a systematic and sustainable reform. To move this agenda forward, we needed a joint international collaboration, such as the OECD programme, which has brought together 11 countries around the world to demonstrate that creativity and critical thinking can be measured and developed, as will be required for PISA 2021. More importantly, international agreement on the importance of such skills for the future of jobs and workforce development will prompt policy-makers to act on the reform agenda.

Thanks to the strong support from the MoE for the OECD programme and future scale-up plans in Thailand, two rounds of our fully randomised trial programme were made possible.

To what extent did play factor in the initiative and contribute to the outcomes?

In some experimental classes, both science and maths teachers included playful activities as part of pedagogical activities. For instance, one science

“Thanks to the strong support from the Ministry of Education for the OECD programme and future scale-up plans in Thailand, two rounds of our fully randomised trial programme were made possible.”

teacher allowed students to design and create different kinds of volcano from clay, as well as experimenting with different substances that could create explosive volcanic activities. Students enjoyed the freedom of playful activities and the unlimited possibilities of their experiments, which effectively helped them learn and understand the technical and scientific knowledge aims of the lesson. Afterwards, we identified that students in this particular class had performed significantly better in the creativity test compared to other classes in Thailand and other countries.

What enabled or hindered the initiative?

There were two fundamental obstructions to this reform – the content-based curriculum, and assessment (in the form of the national standardised test: O-NET). Both focus heavily on the content of the curriculum rather than the competency of learners. Most teachers are concerned that no matter how well they have changed the way students learn in their classroom, if the students fail to memorise the content that will be tested, they will fail the exam, which will have negative consequences for them at school and in their career.

Also, the current heavy workloads of teachers prevent them from preparing the classes differently or trying anything new. This means that currently, only a small number of passionate and skilful teachers can participate in this reform and make progress in the Thai education system.

Two specific factors hindered the research in Thailand. First, the fact that we could not administer a one-year-long experiment in both rounds has prevented us from learning about and further researching the long-term impact of the intervention for both students and teachers. Second, randomisation has shortfalls. We randomly selected teachers from small and large schools, high-performing and low-performing schools, and urban and rural schools. Although the results cover a wide representation of the Thai education system, we get both passionate and less enthusiastic teachers and schools in the programme and therefore high- and low-quality pedagogical activities from schools participating in the study.

Which stakeholders were engaged with and why?

The key stakeholder and main investor is the MoE, which has not only invested funding in the programme for three consecutive budget cycles, but also expects to use our findings for scale-up and future policy-making. There has also been interest from academics and civil society, but until the OECD final report is published and circulated, public interest and wider engagement will not be significant, we believe.

Lessons

What were the key learnings from this experience?

- The key learning is the understanding that change in this uncharted territory is the only direction that education systems in the 21st century, anywhere, are headed. Everyone in the education system, from a new or veteran teacher, to the top minister of education, as well as parents and students, must embrace this ‘new normal’ and the emerging perspectives on how to reform the education system. The new education system needs to put the learning of 21st-century skills at the centre of everything, from school management to the decentralisation of budgeting.
- In the past decade, Thailand’s performance in PISA had been consistently below the average of participating countries and sometimes lower than our previous results. Nevertheless, this OECD programme has shown that when teaching and learning have been central, and everyone from top policy-makers to school principals and headteachers have done everything to help, experimental teachers and students have done their very best in this programme and Thai students can perform well among their peers.
- As the future of jobs and society will continue to change at an accelerated pace that we have never imagined before, education reform must place emphasis on creating an agile education system that focuses primarily on preparing our children for the future. The education system should focus and devote resources and attention to how teachers and students can best learn the skills that are needed now, and to how the system can support and empower teachers and schools to be resilient in the face of new challenges on the horizon. That’s how we can be assured that our education system is built to serve the nation and its people.

What could have been done differently?

We would have liked to have found a way to operate one full academic year’s experiment for both rounds of the studies. We also wanted to find a better way of improving teachers’ understanding of critical thinking to see whether we could have produced better results in critical thinking.

"... both science and maths teachers included playful activities as part of pedagogical activities. ... Afterwards, we identified that students in this particular class had performed significantly better in the creativity test compared to other classes in Thailand and other countries."

How could you have been assisted to achieve a better outcome?

We could have been supported by more international experts and received technical assistance to support our local experts on creativity and critical thinking. This assistance could have come from the OECD at the beginning of the programme.

Looking ahead

What advice do you have for education policy-makers who want to create their own version of what you attempted in your country, or who have similar ambitions?

- We strongly recommend that policy-makers get fully behind this kind of programme. It has offered opportunities for technical transfer between international experts and local teams, and a unique opportunity for the team to understand the future of education, which would benefit any planned education reform, anywhere in the world.
- Some policy-makers may see this kind of experimental programme as unclear and not worth the investment of time and budget. However, the policy-makers should have a chance to discuss with the international team of experts from the OECD or other agencies to evaluate thoroughly before making any definite decision.

How can civil society help support this?

Civil society, particularly parental-based civil society, can play a significant role in supporting this education reform. The last thing parents want to happen to their children is to see them fail and unemployed after 12–16 years in the education system. With effective advocacy campaigns, parents can press the government to push this education reform and deliver results for students. Alongside joint initiatives between government and civil society, this will create education reform that is achievable and sustainable.

What is the role of assessment (e.g. of creative thinking skills) in education reform?

Assessment, particularly formative assessment, is a relatively new tool in the education system in Thailand that has yet to be used widely in the classroom. If used effectively with summative assessment, it will improve the teaching and learning processes of both teachers and students. Moreover, these assessment tools create invaluable data and evidence that are useful for evidence-based education reform. In particular, an education reform that focuses on skills development could benefit tremendously from formative assessment, as teachers and students can understand where they are now and how they can improve. If all schools do this systematically, it could create a substantial impact on education reform at the systems level in the future.

Wales

The value of a co-construction approach and partnership

Kirsty Williams
Minister for Education, Welsh Government

Ministry of Education

About the contributor: Kirsty Williams is a Minister for Education in Wales. She has been the Assembly Member for Brecon and Radnorshire since 1999, and was leader of the Welsh Liberal Democrats from 2008 to 2016. She was the first woman to lead a Welsh political party. Kirsty has served as the Welsh Government's Minister for Education since May 2016, leading a national mission of education reform at all levels. She leads the Welsh Government's education programme, which includes reducing infant class sizes, delivering the most equitable and progressive student support system in Europe, and transforming the school curriculum.

Context

Why is creativity important in your country?

In Wales, our national mission for education is about creating a system where the learners are the main focus in everything we do and ensuring that they benefit from excellent teaching and learning – all of this, we know, leads to improved educational improvement.

We are currently on a journey of developing a new curriculum in Wales that meets the needs of all our young people, equipping them with skills for life.

Creativity forms an integral part of our new curriculum, and I strongly believe in its power to enthuse, inspire and raise the aspirations of young people in Wales.

Working with the Arts Council of Wales, we have invested £20 million (about €23.5 million) over the last five years through our Creative Learning through the Arts programme to encourage schools across Wales to become more creative in the way they deliver subjects, and to help them prepare for the new curriculum.

What was the status of creativity skills development in your education system before the initiative?

Before we introduced our Creative Learning through the Arts programme in 2015, there were some great examples of very good arts education provision in Welsh schools, although provision varied across Wales and lacked consistency.

The best examples of innovation and good practice in arts education stemmed predominantly from the leadership qualities shown by a number of our head-teachers.

The Welsh Government decided that this good practice should be championed, understood and spread out from its 'hot spots', and more widely extended from current age groups into secondary schools. Before this, creative skills development was virtually non-existent.

Why did your government choose to do this? What evidence, political incentives and interests converged to cause the government to take action?

A review of the arts in Wales by Professor Dai Smith in 2012, on behalf of the Welsh Government, outlined that as a government, we should enhance the current curriculum to include creativity, alongside literacy and numeracy, as a core theme across all subjects in both primary and secondary education. This review also encouraged us to consider an arts-rich education to be at the core of the whole-school experience for all pupils.

The Welsh Government welcomed and accepted all of the recommendations made in the Arts in Education in the Schools of Wales Review, recognising that the arts have a major role to play in enriching the education of children and young people, and that creativity should be an important element of the curriculum.

Our plans for curriculum development were also a key determining factor in the drive to take forward action. This process was informed by the work of Professor Graham Donaldson, resulting in two important reports, published in 2015 – **Successful Futures and A Curriculum for Wales, a Curriculum for Life.**

The recommendations from the arts review were subsequently considered as we developed our new curriculum, with a key focus being placed on skills such as creativity and innovation, critical thinking and problem-solving, planning and organising, personal effectiveness, and digital literacy, and encouraging creative approaches to learning.

In developing the new curriculum, we also drew on information from the business sector in terms of the skills and knowledge that employers want to see in our young people. This is essential if we are to see learning across all our schools that best prepares our young people for the world of work, and to succeed in their career ambitions.

One of the four purposes of Curriculum for Wales 2022 is developing enterprising, creative contributors who are ready to play a full part in life and work. This means that we will be shifting the balance in how things are taught, with the new curriculum focusing on developing the skills, as well as knowledge, of children and young people, and exposing them to rich and varied experiences, and creating young people who are work-ready and have the skills and attitudes needed to help businesses thrive.

The initiative

What is your role in relation to the initiative?

Our role as a government is to work with the Arts Council of Wales on the programme, reviewing and monitoring its impact, and identifying areas where changes can be made.

To ensure that the impact is monitored effectively, a consistent monitoring method is used across the board, and we keep in regular contact with key partners through steering groups that involve the regional education consortia.

As an integral part of grant-funding arrangements, we review the progress of the programme against its key targets and outputs.

What was the ambition or expected results?

The overriding ambition at the start of the initiative was that, within the education system in Wales, creativity and the arts should become integral elements of the new curriculum.

We have committed significant funding, linked with funding from the Arts Council of Wales, to enhance the curriculum to include creativity, alongside literacy and numeracy, as a core theme across all subjects.

Underlying this was the aim to improve our learners' attainment, especially in literacy, through this creativity-focused approach, and to provide an arts-rich education as a core feature of the whole-school experience of pupils.

This will provide our learners with a wide experience of the arts outside school, as well as interaction with professional artists in the school environment.

What were the results achieved?

The Creative Learning through the Arts programme in Wales:

- engaged with 1,137 schools (42% of schools in Wales)
- involved 622 schools in intensive creative learning projects through the Lead Creative Schools scheme
- provided opportunities for nearly 112,000 pupils to engage in arts and creative learning activities
- enabled over 3,000 teachers to participate in professional development and training linked to developing creative skills
- contracted nearly 1,400 creative professionals to work in schools
- awarded 746 Go and See grants
- appointed 32 arts champions across Wales.

This represents creative engagement on an unprecedented scale in schools in Wales.

Ongoing independent evaluation of the programme indicates that those schools engaging in the programme have seen positive changes in teaching and learning practice, greater levels of attainment, and evidence of improved learner engagement, confidence and collaboration.

How was this achieved?

At its heart, the Creative Learning through the Arts initiative is founded on a strong and positive partnership between the Welsh Government and the Arts Council of Wales, with both parties contributing equal investments of funding.

The programme itself consists of two innovative strands of educational activities:

- The Lead Creative Schools Scheme focuses on improving attainment through creativity. It is an intensive intervention that involves pupils, teachers, creative agents and creative practitioners working together to deliver a creative approach to learning. This scheme has already engaged with over a third of the schools in Wales.
- The All-Wales Arts and Education Offer includes a range of activities designed to increase and improve opportunities for teachers, learners, artists, and arts, cultural and heritage organisations to work together. Examples are regional arts and education networks, local arts champions, the Experiencing the Arts Fund, and creative learning zones.

To what extent did play factor in the initiative and contribute to the outcomes?

Play, as a creative activity, constitutes an important element of the programme. Through play, children practise and consolidate their learning, play with ideas, experiment, take risks, solve problems, and make decisions individually, and in small and large groups.

“First-hand experiences allow our children to develop an understanding of themselves and the world in which they live, with the development of children’s self-image and feelings of self-worth and self-esteem being at the core.”

First-hand experiences allow our children to develop an understanding of themselves and the world in which they live, with the development of children’s self-image and feelings of self-worth and self-esteem being at the core.

A fantastic example of the types of projects that schools undertake as part of the programme would be a primary school using play techniques to teach children about the digestive system, for example by designing and building props and filming backgrounds and special effects in order to create an immersive model.

What enabled or hindered the initiative?

The scope of the programme has been considerable, and a significant number of teachers and creative professionals have seen real benefits by taking part. It is safe to say that in many ways, the programme has been highly successful in building bridges between the education and arts sectors that had not previously existed.

The challenge we face now is to maintain this capacity and ensure a legacy is put in place once the programme has ended.

While a significant number of schools have engaged, there is a risk relating to those schools that have not taken part. That is why we work closely with the Arts Council of Wales to ensure that the programme reaches the maximum number of schools possible.

“Play, as a creative activity, constitutes an important element of the programme.”

Professional development has been a key motivation for engaging in the process, and developing pedagogy is a key programme outcome for teachers.

Creative professionals are valued for their support during the process, and have shown a real willingness to present and discuss experiences and the theory behind creative learning to staff within schools. Additionally, teachers perceive that the activities have had a positive impact on the creative skills of learners.

Which stakeholders were engaged with and why?

The initiative has engaged with teachers, artists and a range of different creative agents from across the cultural sector. Many had worked in schools previously, but the nature of the programme has resulted in these practitioners reporting how creative engagement has transformed and changed their practice.

Their enthusiasm and approach to creativity have enabled strong links to be forged between schools and artists. As a result, the value and role of creative professionals are better understood by teachers and arts practitioners, providing a richer and more relevant experience for pupils and teachers alike.

Lessons

What were the key learnings from this experience?

- Creativity has an important part to play in the new curriculum. We have witnessed first-hand how young people excel when undertaking work that involves creativity. This is supported further by the evidence gathered from the independent evaluation that has been running alongside the programme.
- Another important area of discovery is the value of a co-construction approach. Our partnership with the Arts Council of Wales during the programme has brought relevant areas of knowledge and experience together.
- Equally, the programme has promoted partnership working at the school level, founded on a ‘learning cooperative’ between teachers, creative practitioners and learners.
- In addition to the two years associated with each round of the Lead Creative Schools Scheme, an extra year was added to the first and second rounds for a smaller number of schools, as a development strand to help these schools to deliver a programme of school-to-school support within their area.
- The most recent interim evaluation report has outlined a number of key findings, including that teachers’ views of support and guidance received were very positive, and that the vast majority of teachers who had responded to the evaluation survey had shared their knowledge and practices with others.

What could have been done differently?

While a number of issues were noted around certain elements in the early stages of the programme, we took action to refine and adapt these areas, particularly in relation to the school-to-school working model, where a greater investment was made so that exemplar schools could offer support to new schools.

Issues around the suitability of Welsh-medium provision were raised across some of the networks, and the coordinators experienced some issues in engaging with Welsh-medium schools, but this was quickly resolved.

Small changes were also made to the Go and See and Creative Collaborations elements of the Experiencing the Arts Fund in order to refine and enhance the application process.

I believe that we can proudly say that apart from the small issues mentioned above, the overall delivery model for Lead Creative Schools worked very effectively, and provided our schools with a completely unique and innovative way to learn.

Looking ahead

What advice do you have for education policy-makers who want to create their own version of what you attempted in your country, or who have similar ambitions?

- I passionately believe that we should all take the brave step forward and start to think more broadly about the skills our young people will need to ensure a prosperous future.
- We have learned from our work here in Wales that partnership is key to success, as is recognising the value that external agents bring to the learner experience.
- The OECD has recognised the importance of creativity and has been developing and testing a formative assessment tool to help teachers assess the creative and critical thinking skills of their students and provide concrete examples of progression.
- Wales leapt at the opportunity to participate in the primary and secondary education strand of the project as the 'UK representative'. I believe that the resources made available through this project will be of great value to countries around the world as creativity becomes an ever more important area in the future.
- In terms of future actions, we are aiming to underpin future developments in this area through our new National Approach to Professional Learning (NAPL), a network that will support practitioners through its focus on the further development of the curriculum, setting priorities for professional learning, and delivering a programme of research and evidence-gathering to inform decision making.

How can civil society help support this?

As part of the National Mission in Wales, all parts of Welsh society are responsible for ensuring that every young person has an equal opportunity to reach the highest standards – it is our duty to provide future generations with the skills and knowledge they need to play a full and active role in their communities and wider society.

We believe that our learners should aspire to be the best. In order to achieve this, it is critical that we do everything we can to support them, by setting high expectations, so that we achieve our ambitions for our citizens and for our country.

We are committed to the success and well-being of every learner, regardless of background or personal circumstance. Equity and excellence go hand-in-hand and we cannot have one at the expense of the other.

Geography, deprivation or childhood experiences should not prevent learners from reaching their potential. Our learners will be resilient, imaginative, compassionate and ambitious – they will aim high and achieve their goals.

"The new curriculum for Wales, with its focus on creativity, is also being developed with the key support of civil society."

The new curriculum for Wales, with its focus on creativity, is also being developed with the key support of civil society. It is the product of extensive co-development with the education profession, through a network of pioneer schools, in partnership with regional education consortia, Qualifications Wales, Estyn (the Office of Her Majesty's Inspectorate for Education and Training in Wales), and a range of other stakeholders and experts. Earlier this year, a legal document on the proposals for changes to the curriculum was shared across Wales for people to comment on. The Welsh Government is currently considering this range of opinions, with a view to making appropriate changes on the basis of the feedback provided.

In summary, therefore, civil society plays a key role in the work the Welsh Government is taking forward on this agenda.

What is the role of assessment (e.g. of creative thinking skills) in education reform?

Assessment can support educational reform – this was one of the reasons why Wales decided to participate in the OECD pilot project to develop and test a formative assessment tool for creativity.

Feedback from teachers who have engaged with the project suggests a positive impact on attainment in many cases, while feedback gathered through evaluation forms suggests a general correlation between participation in the programme and improvements in attainment.

Many of the participating schools continue to use the Five Creative Habits of Mind as a tool for pupils and teachers to assess their development and progression in terms of creativity.

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About the LEGO Foundation

The LEGO Foundation aims to inspire and develop the builders of tomorrow; a mission that it shares with the LEGO Group. The LEGO Foundation is dedicated to building a future where learning through play empowers children to become creative, engaged, lifelong learners. Its work is about re-defining play and re-imagining learning. In collaboration with thought leaders, influencers, educators and parents the LEGO Foundation aims to equip, inspire and activate champions for learning through play. Learn more on www.LEGOfoundation.com.

The Creativity Matters series aims to highlight not just why creativity matters, but how education systems can best adapt and reimagine learning to equip today's and tomorrow's learners with creative skills, mindsets and confidence.

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