



**innovation happens**

**classrooms as sites of change**

# Innovation happens: Classrooms as site of change

Schools have been the subject of endless improvement agendas from the incremental and emergent to the radical and revolutionary. The language of school change has had much to do with coordinating, planning and disseminating but there is another language perhaps closer to teachers and students in classrooms that has more to do with imagining, exploring and creating. This *language of innovation* is familiar to teachers in schools and educational settings who, faced with *the immediate impact of social and economic change on a daily basis often have to be, and can be, highly innovative in this context.* (NCCA, 2009, p. 9a).

This short paper is a companion to the video of the same name available online at: [www.vimeo.com/19255558](http://www.vimeo.com/19255558). It was informed by discussions by the National Council for Curriculum and Assessment (NCCA) about the role of innovation in education following publication of the *Report of the Innovation Taskforce* (Government of Ireland, 2010) and a desire to put schools back in the picture. We think this is important when we consider that the leaders of tomorrow are sitting in the classrooms of today.

The video presents six ideas about innovation in education; each begins with a question to you, the viewer/reader.

## Idea 1

### **Innovation is not just about the economy**

*When was the last time you heard about innovation... not just in conversations about our economy but also about our culture and society?*

The report of the Task Force on Innovation (Government of Ireland, 2010) begins with a definition of innovation as *investment to produce and apply new knowledge* (OECD, 2009) and it urges us to place innovation at the heart of Ireland's enterprise policy. The report then sets out the road map for *Innovation Ireland*, towards making Ireland a global leader in innovation. Education, the report says, has a key role to play. The Higher Education sector in particular is seen as the fuel for that journey, driving research and new knowledge and producing the graduates equipped with the skills and working from the mindset to lead this new phase of Ireland's economic and social development. Schools are not missing from the road map, but you have to look hard to find them.

Schools have been the subject of a growing chorus for change and improvement from the business sector in recent years, with calls for a greater emphasis on problem solving and innovation—two commonly identified drivers of economic recovery. But innovation is not just about the economy and schools are not only to serve the economy but to enable children become the people they have the potential to be. Discussions about our economy may lay claim to innovation but innovation is also key to discourse about who we are and the type of society we value and wish to create.

## **Idea 2**

### **To really understand innovation, we need to think about the opposite of it**

*When was the last time you thought about things that hold us back... that fill the space between innovation and us?*

To innovate requires a willingness to take risks. It can lead to failure. But if innovation is seen as an iterative and ongoing process rather than a one-off activity, we can learn a lot from our setbacks. The consequences of *failing to innovate* are far more serious—an outdated education system that becomes irrelevant to learners (Futurelab, 2008). To really understand innovation, we need to think about its converse. In education, the opposite of innovation is inertia. In the course of the NCCA's work, we encounter a number of 'keepers' of inertia. Here are a few:

Many of our change and reform initiatives in the past have focused on 'delivery' models of change where teachers are the objects rather than agents of change. In scenarios like this, schools become places where things are 'implemented' rather than researched and explored and little account is taken of the particular features of the school and how those who work and learn in it might organise things differently.

*You can read more about this in our paper *Leading and Supporting Change in Schools* (NCCA, 2009a). This paper argues for seeing teachers and schools as more than mere tools in other people's purposes and ... seeing new change initiatives as part of an existing flow of change that shapes schools and those who work and learn in them.*

In all of NCCA's deliberations over the past ten years about developing curriculum, assessment teaching and learning post-primary schools (and even in primary schools) one issue arises again and again as a significant keeper of inertia in the school system - the points system. Innovative schools and innovative students need a better way. If we need

smarter graduates from university, we may need to think about smarter mechanisms for getting in there in the first place!

And then there is fragmentation or initiative overload where layer upon layer of 'stuff' gets added to the curriculum and the work of schools without an overall shared sense of direction.

*You can read more about this in our overview of Curriculum Overload in Primary Schools (NCCA, 2010a). This paper notes that in an increasingly layered, content-laden curriculum, key aims for children's learning and development in primary schools can become lost, or at best, difficult to find. It argues that taking practical measures to reduce overload requires us to return to key questions about what we want of our primary schools today and what kind of curriculum is likely to achieve those aims.*

In our work leading and supporting change in schools, innovation is a participative, social and democratic endeavour. It is concerned with risk-taking, adventuring, careering, failing, being open to criticism and making sense of and using these experiences to imagine and to develop different and better ways of living, learning and being. The taskforce report notes that these skills are *much sought-after by employers in innovative industries and businesses for their contribution to a more flexible and multi-skilled person* (p. 31) and it recommends that curriculum developments at primary and post-primary levels which aim to develop these generic qualities should be resourced (p. 25). We agree! Under-resourcing can be one of the most effective 'keepers' of inertia in any system.

### **Idea 3**

#### **Our world today challenges us to find better solutions to more complex problems**

*When was the last time you tried to find solutions for problems that didn't seem to exist before?*

Our world today challenges all of us to innovate to find better solutions to more complex problems. Schools are not alone in reflecting these challenges but they are often a singular focus of exhaustive scrutiny in the perennial quest to identify the *proper* roles schools, teachers and students should play in responding to local, national and even global changes in our society and culture. In the last century, technological innovations and their potential for transform schools have dominated much of educational change research and literature. From Thomas Edison's predictions in 1913 that it would be possible to teach all human knowledge with the motion picture and that *books will soon be obsolete in the schools*

(Saettler, 1968, p. 98), the promise of educational change and reform has been renewed with each new classroom innovation.

However, educational change literature in recent years is characterised by an awareness that innovations alone don't transform schools, that processes of change in schools are far more human than technological. We've seen a shift in focus from the innovations themselves to the complex interaction between these and teacher's goals, needs and methods of teaching, the characteristics of learners and the school context. Concern for students' wellbeing and their experiences managing this 'connectivity' and their place in a multi-media world has increased with greater focus on students, their lives and their education today.

Commentators have noted that in this *change of age* we are experiencing there are no rule books to help us along our way, so the next big challenge for schools involves experimenting with workable solutions (Greene 2010). Certain skills and competencies have been identified as key to the process of finding good solutions in an increasingly complex world. For example, twenty-first century literacies have been described as the *new coin of the realm* with their focus on critical thinking and problem solving, communication, collaboration, and creativity and innovation and attempts to fuse these 4Cs with the traditional 3Rs (Kay, Partnership for 21<sup>st</sup> century skills, 2010). We come back to this discussion in the last idea which focuses on developing dispositions in the early years. Today's world also challenges us question the extent to which the world around us could and/or should be reflected to a greater extent in our curriculum and classrooms; including for example, languages not currently available to most students such as Chinese and advances in sciences and technology.

#### **Idea 4**

##### **School classrooms and early childhood settings are *already* sites of innovation**

*When was the last time you heard about ... innovation... happening... in real classrooms and early years settings?*

Early childhood settings and school classrooms are sites of innovation practice where 21<sup>st</sup> century skills are being nurtured, debated and developed. Building on our tradition and strengths in the school sector, Ireland's global leadership in innovation should include leading on Innovative Schools. Our work with schools is already showing the potential of Ireland's unique combination of a high quality teaching force, good relationships between teachers and students, a strong sense of care and commitment in our schools, and an openness to the new and different.

In recent years, the site of learning and teaching (in classrooms and schools) has become key to the curriculum development and improvement process. Across a range of initiatives, we have placed a high value on the role of *teachers as generators of real knowledge about what works in teaching and learning* (NCCA, 2009a, p. 11). Our work in the learning site has brought teachers and their schools, as centres of innovation, closer to the process of policy development in curriculum and assessment. In this way, schools contribute to a growing body of evidence and experience about what works in different contexts and why. At the same time, this way of working has allowed NCCA to pose key questions to the system, to draw attention to the complexity of those questions and the need for multiple, customized solutions, and then to facilitate, encourage and support collaboration among those working on the challenges to find innovative solutions.

*Aistear: the **Early Years** Curriculum Framework celebrates children learning about their world through rich play. Play enables children to fill roles and exist in situations, environments and even worlds outside their own lives. The NCCA is working with infant teachers to gather examples of teachers introducing and using play as a teaching and learning methodology across the infant curriculum.*

*In the **Assessment** strand of the Primary School Network, teachers have engaged with and explored different assessment practices and solutions in their own classrooms. Their initial concerns— Am I doing it right?—have been replaced by their willingness to try out and adapt a range of assessment methods and to share their experiences (trials and triumphs) with colleagues at cluster meetings and seminar workshops.*

*In the **Language** strand of the Primary School Network, the NCCA has been working with teachers to gather examples of how to document children's progress in Gaeilge. Teachers have been willing to try new directions to help children become more active agents in their own learning; children in turn have responded to that challenge and welcomed the opportunity to be creative.*

*In **Project Maths**, teachers and students in 24 schools have led the way in a radical shake-up of how mathematics is taught, learned and assessed in all post-primary schools. Teachers have applied new approaches in their classrooms, used problem-based approaches to assessment and given feedback on the implications of working in this way for syllabus and examination design.*

*In the **Science Assessment** initiative, a network of teachers worked with NCCA to showcase ways in which science process skills can be assessed in Irish schools. Innovative science assessment kits were designed to overcome problems with system reliability. Students were asked to apply their knowledge and understanding of science in a variety of contexts outside of the syllabus content.*

*In the **Key Skills Network**, we have learned that when key skills are the focus of planning for teaching, then teaching becomes more learner-centred. Teachers find the key skills framework – with the elements and learning outcomes a useful planning tool on which they can ‘hang’ a variety of teaching approaches. More importantly, when teachers hand over the responsibility for learning through the key skills to their senior cycle students, students can be innovative in how they monitor their own progress and use the key skills.*

## **Idea 5**

### **Innovation is not just the preserve of Maths, Science, Engineering and Technology**

*When was the last time you heard about innovation happening ... not just in maths, science, engineering and technology but also in other curriculum areas and subjects such as language and the arts?*

Innovation is not just the preserve of Maths, Science, Engineering and Technology. It is for all curriculum areas and subjects. The emphasis placed on building capacity in science, technology, engineering and maths (STEM) in our education system in general, and in our schools in particular, as a key foundation for innovation represents a limited view of the relationship between education and innovation. From the NCCA's work with schools and settings, we see that the dispositions, capacities, knowledge and appetites involved are just as likely to be encountered across a range of areas of learning involving the imaginative, the creative, the anarchic, the artistic, the communicative and so on. None of these are the preserve of specific disciplines or subjects such as mathematics and science. The marginalisation of areas of learning such as the humanities and the arts in discussions about learning lead to definitions of innovation that are utilitarian in purpose, technicist in orientation, and highly reductive in effect. To us, that seems like the opposite of innovation, not at all a smart place to be!

*You can read more about this idea in *Innovation and Identity* (NCCA, 2010b) our paper about some possibilities for junior cycle education in the face of the many*

*challenges facing young people as they find their feet in a complex and uncertain world. You can also hear young people and teachers talk about what they would like to see in a better junior cycle and contribute to a blog on the same issue. The scope of the innovation envisaged in the Junior Cycle developments entails asking what exactly the curriculum is for, and how we might develop it to reflect the vision of the society we want for the future and the kind of people we want to lead and participate in that society.*

## **Idea 6**

### **The Early Years are critically important in nurturing innovation in children**

*Did you ever try to describe what make us innovative? How do we foster this capacity to be innovative in one another? When does this learning begin?*

Innovative individuals demonstrate skills and capacities across a range of learning areas and experiences. The Early Years are critically important in nurturing these dispositions in young children as they grow and develop from birth. One of the hallmarks of *Aistear: the Early Childhood Curriculum Framework* (NCCA, 2009b) is the emphasis it places on nurturing a range of dispositions in young children as they grow and develop from birth to six years. These dispositions include taking an interest, acting on your curiosity, taking responsibility, persevering in the face of difficulty, being playful, and using your initiative to solve problems. These dispositions are the foundations of key competences and skills required for a lifetime of innovation and creativity and for life-long-learning. Arguably it is our youngest children who are most engaged with new experiences and who approach each one as an adventure. Looking to this sector of education practice for innovation ideas and inspiration seems both obvious, and rare.

*Aistear* also promotes a reciprocal relationship between children and adults and it highlights the importance of play as a teaching and learning methodology. Reciprocal relationships and play provide opportunities for and to children to be active agents in their own learning and to have the 'space' to pursue their own interests. Put more simply, *Aistear* highlights the importance of children being allowed and enabled to find answers to their questions about the world around them, and in doing this, to solve their problems - cornerstones of innovative activity. The NCCA's key skills work at upper second level continues this work by ensuring learning experiences afford opportunities for learners to think for themselves critically and creatively, to collaborate and communicate, to process information, to solve problems, to be effective at what they do and to learn reflectively. These developments are part of the



narrative about learning in the 21<sup>st</sup> century; that strives to create opportunities for students to be at the centre of their own learning stories from the very earliest years.

### **A final word**

As we engage with key questions about the purpose and aims of curriculum and assessment in our schools today, we find ourselves also asking about the kinds of innovation we need in early childhood, primary and post-primary education as we enter the second decade of the 21<sup>st</sup> century. Our curriculum reviews of primary, Junior Cycle and Senior Cycle education provide a forum for engaging with those involved in education and others not directly involved on how we can support schools to develop innovative solutions to situated challenges. We see this ongoing dialogue as *an essential aspect of communicating about and puzzling about change and an essential dimension of knowledge management in relation to change* (NCCA, 2009, p. 21).

Through our work with schools and settings and our engagement with research and development in the ongoing process of curriculum improvement, the NCCA is gathering a growing body of evidence and experience about what works in different teaching and learning contexts and why. Arising from this way of working we see that innovation in schools is an iterative and ongoing process, involving trials, setbacks and successes. We see that innovation in classrooms is not about an artefact or a one-off activity or event. It's not something to add to education or to include in a special module. It's not exclusively for one subject or one cohort above another. It is a way of working and a way of learning. The business of innovation is not exclusive to business, it's everyone's business. Practitioners and classroom teachers, students, and school leaders are already charting the *innovation roadmap* (Government of Ireland, 2010) toward tomorrow's society as well as tomorrow's economy.

# Resources

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