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Why Education Matters

THE IMPORTANCE OF EDUCATION TO IRELAND'S ECONOMY AND SOCIETY

Edited by Fintan O'Toole

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Why education matters

Fintan O'Toole, Editor

Education is awkward. It may use technology but it can't be automated. It may draw on remote resources but it can't be outsourced. Like any process, it can be made more efficient, but it does not allow for shortcuts: it is an intensive human interaction, an interpersonal relationship – often unfolding over many years. It can, and does, aim to apply universal standards, but it can't itself be standardised: every child and young person is a developing individual with complex needs that change all the time. It has an end product but it is more about the process than the product and the end is never really the end: a good education is a mere preparation for a lifelong journey. It has to be done by people who are themselves highly educated – and highly motivated. It is very hard to do well.

In all of this, education is not quite like other organised, public activities. It is not like a business, which does its best to meet a market demand and dies when the market changes. The nature of education may change but the need for it is always present. It is not a commodity, however much some people try to reduce it to one. It is primarily a human right – because it is also a human necessity. Everybody in every culture has to learn how to be a fully engaged, productive and creative member of his or her society.

But if education isn't like a business, it's not much like other social services either. Other social services aim to reduce the thing they deal with – ideally, indeed, to eliminate it. A health service dreams of eradicating sickness; public housing policy hopes to end homelessness; labour services would love to wipe out unemployment. It might have been said a century ago that education is indeed like this – that it aims to eliminate ignorance. But we now know that ignorance is infinite because knowledge expands and changes all the time.

Education as a public good is unique – the more of it the State supplies, the more demand it creates. Get a child through primary school and she'll want to go on to second level. Get her successfully through that and she'll want to go on to some kind of third level education. Get her through a career in formal education and a lifetime of learning opens up.

In that sense, education is a public policy nightmare. It demands expensive resources and the more you feed it, the hungrier it gets. Except, of course, that there is an equal and opposite truth about education. It is true that the more you invest in education now, the more you will have to do so in the future. But there's another paradox too: the less you invest in education, the more you impoverish yourself. With educational investment, there are two kinds of cost – the cost of doing it and the far bigger cost of not doing it. The first of these costs may be rising over time in developed societies, but the second is rising even faster. Bad education, both at the individual and collective level, is becoming a disastrously expensive business. As Andreas Schleicher puts it in his essay in this volume "the social and economic cost of low educational performance has risen very substantially." We are in a world where merely maintaining educational standards would represent a serious failure for a country in Ireland's position – in Kevin Marshall's phrase "Given the speed of technological and educational progress, to stand still is to fall further behind".

It is not at all an exaggeration to say that no developed society can hope to thrive in the coming decades without a high-functioning education system. It is not enough even to maintain current levels of educational attainment – they must rise all the time. Catherine Day puts it bluntly: "Spending on education needs to be seen for what it is: an investment in growth, employment and competitiveness. If we want to have world-class education and training systems, we need to invest in them." One might add, indeed, that spending on education is not just an investment in economic development, it is also an investment in things that are less tangible but no less indispensible to a thriving society: confidence, creativity, equality, solidarity, civility.

This is, for Ireland now, a very awkward reality. The overwhelming narrative of Irish public life is one of retrenchment and withdrawal, of the need to cut public spending and drastically reduce the level of public debt. The slogan that hangs over all public activity is "doing more with less". There is, undoubtedly, a level up to which is a realistic expectation. Every system can be made more efficient. Irish education can certainly set clearer goals and focus more sharply on the nature and quality of the learning it wants to encourage. But there is, after a certain point, a reality that less is not more – more is.

It would be lovely, for example, if there were a simple correlation between a more efficient focus on the goals we want to achieve in Irish education on the one side and cost reduction on the other. It would be a grand thing if the kind of aims that Brigid McManus and Damini Kumar set out here – improving basic numeracy and literacy, moving away from rote learning to the development of critical thinking and creative problem solving – could be achieved with fewer resources. But the reality is that standardised rote learning may be more "efficient" in narrow terms than pupil-centred active learning. What we have now is in its basic outlines, a Model T Ford production line system. We need to move to a sophisticated system of custom building. In crude terms, that better system would actually be less "efficient" – less determined by sheer numbers, less standardised, less precise in the way it measures outcomes. A high-class educational ethic encourages flexibility, exploration, experiment, individual innovation

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and what Kumar calls "risk taking, learning from mistakes" and even "encouraging failure" – qualities that are less easy to measure and control.

And instead of doing more with less, the reality on the ground is too often that teachers are doing an awful lot with virtually nothing – in dealing with the crucial issues of students' mental health, for example, Tony Bates points out that "Teachers, who were happy to go the extra mile for these students, spoke of their instinctive goodwill turning to frustration and helplessness when they reached beyond the walls of their school and tried to access specialist community mental health services." The question here is not whether teachers are prepared to put in extra effort, it is whether, if they do, they will be able to get for their students the supports they need. Too often the answer is simply that they can't – existing services are radically inadequate even before they are asked to do "more with less".

So Ireland's educational imperatives are very awkward ones at a time when the dominant impulse is to reduce public investment as a whole. But they're also awkward in another sense – they pose a challenge for a dominant rhetoric in which public service is regarded as a shameful, even parasitic, existence. Eamon Stack points in his essay here to an inescapable truth about education: "The available evidence from some of the best education systems, suggests that the main driver of the variation in student learning in schools is the quality of teaching." Given a choice between slum schools with brilliant, highly-motivated teachers and palatial schools with bad, demotivated teachers, any parent would instinctively send their child to the former. It is not a choice anyone should have to make, of course, but it is does dramatise the obvious truth that the educational experience of any child or young adult will be overwhelming determined by their relationships with their teachers. Bright, kind, creative, encouraging, energetic, ambitious teachers are the primary assets of an educational system.

At the moment, those teachers are too often caught in an impossible contradiction. They hear two things in public discourse. One is that they must do more, that they must be more accountable, that they must lead a revolution in learning – all of which is true. But the other is that they are a dead weight, a mere drain on the public finances, public servants who are, by definition, a burden on the real economy where real workers and innovators create real wealth. It is a fatally mixed message. The long term of cost of destroying confidence in the worth of good teaching would be fearful in any case. It is much higher when you're facing into an era in which those same teachers will have to be confident, creative and – let us remember – increasingly autonomous. A move away from standardised rote learning requires us to trust in the capacity and judgment of the individual teacher in the classroom. It demands that teaching becomes, in Sheila Drudy's formulation here, "increasingly complex and demanding", with teachers seeing themselves as "knowledgeable, inquiry-oriented professionals. It demands, as Kevin Marshall writes, that teachers both receive and engage with "continuous training and supportive assessment to cope with the demands of the changing educational landscape". That simply can't be achieved if we're holding that same teacher in contempt.

Nor can it be achieved without adding new resources. Anyone reading the moving account here by Roddy Doyle and Sean Love of their development of the Fighting Words centre and the way it has inspired so many pupils to embrace the joy of writing and creativity will see how it could be a model for new kinds of learning in other disciplines as well. But there's simply not enough of it – as they point out, even the present demand in this one area is such

that four such centres could operate on a regular basis. The response to this one private (but public-spirited) initiative has generated a new need, a hunger that had not previously been felt. Since Fighting Words can be taken as an example of where the education system as a whole needs to go, it throws down a profound challenge. This energy and imagination don't come from nowhere and they can't be sustained without training, time, physical spaces and basic resources.

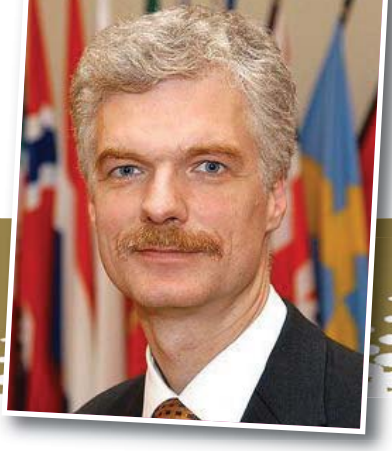
So why should we make that investment in a period of so-called austerity? Aside from the negative consequences of not doing so, there are at least three positive arguments for facing this challenge. Firstly, the vision for change outlined by all the contributors to this journal may seem daunting, but at its core there is something joyful: our society has the potential to make education an even more pleasurable, enriching and sustaining experience for millions of children and young people. There, surely, is the possibility so badly needed by a country whose collective pride has taken such a hammering. Making this transition successfully would give us something to be proud of.

Secondly, the need to change the way we teach and learn is not unique to Ireland. It is one of the defining challenges of the early 21st century. Ireland has the opportunity, if it makes good choices and generates the right kind of collective energy, not just to adapt to change, but to lead it. Other small countries have shown, often in very difficult times, that they can use educational innovation to leap ahead, often within a remarkably short period of time. Why should Ireland imagine that it can take a lead in this field? Well, perhaps simply because it has to – ours is, demographically speaking, a remarkably young country. Children are one of the things we have an awful lot of. This creates great pressure, but it also creates a great opening – we have the material for change right in front of us.

Finally, investment in education is the best response to an emerging rift between the young and the old. The present crisis has created a tension between the generations, based, rightly or wrongly, on the belief that the old messed up the society and the young will have to pay for it. It is a crude paradigm but it is not without some element of truth. The generation that now holds most influence over public policy has left its children with a great deal of debt. The best way to repay that debt is to give every one of them the chance to be creative, inventive, confident and smart – smarter, we might dare to hope, than us.

"Ireland has the opportunity, if it makes good choices and generates the right kind of collective energy, not just to adapt to change, but to lead it."

Is the sky the limit to educational improvement?



Andreas Schleicher

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A changing world

The world is rapidly becoming a different place, and the challenges to individuals and societies imposed by globalisation and modernisation are widely acknowledged. Increasingly diverse and interconnected populations, rapid technological change in the workplace and in everyday life, and the instantaneous availability of vast amounts of information represent but a few of these new demands. In this globalised world, individuals and countries that invest heavily in education benefit socially and economically from that choice, and increasingly so. Among the 30 OECD countries with the largest expansion of college education over the last decades, most still see rising earnings differentials for college graduates, suggesting that an increase in knowledge workers does not lead to a decrease in their pay as is the case for low-skilled workers. The other player in the globalisation process is technological development, but this too depends on education, not just because tomorrow's knowledge workers and innovators require high levels of education, but also because a highly-educated workforce is a pre-requisite for adopting and absorbing new technologies and increasing productivity. But education reaches well beyond the economic dimensions. It is the key to enable individuals to live in, and contribute to, a multi-faceted and sustainable world as active and responsible citizens and to appreciate and build on different values, beliefs and cultures.

In a purely quantitative sense, education has done rather well. With three exceptions, OECD countries have seen rapidly rising numbers of better qualified people, with an average 40% increase in college graduation rates over the last decade. Ireland, where education has expanded more rapidly than OECD countries on average, is a case in point.

But in a fast-changing world, producing more of the same education will not suffice to address the challenges of the future.

Changing demands on education systems

A generation ago, teachers could expect that what they taught would last for the lifetime of their students. Today, schools need to prepare students for more rapid economic and social change than ever before, for jobs that have not yet been created, to use technologies that have not yet been invented, and to solve problems that we don't yet know will arise. Education also has a key role to play to foster sustainable values.

The dilemma for educators is that routine cognitive skills, the skills that are easiest to teach and easiest to test, are also the skills that are easiest to digitise, automate and outsource. Educational success is no longer about reproducing content knowledge, but about

extrapolating from what we know and applying that knowledge in novel situations. Here the most recent PISA results signal important challenges for Ireland, most notably in reading literacy where Ireland lost significant ground over the last decade. While no one would question that Irish students have technically learned to read, PISA shows that a significant share of 15-year-olds are insufficiently equipped to use reading for learning by demonstrating their capacity to identify, understand, interpret, create and communicate knowledge and use written materials associated with varying situations in novel contexts.

The international achievement gap is imposing on the Irish economy an invisible yet recurring economic loss that is even greater than the output shortfall in the recent economic crisis. A study carried out by the OECD in collaboration with Stanford University suggests that a modest goal of having Ireland boost its average PISA scores by 25 points over the next 20 years – far less than the most rapidly improving education systems in the OECD achieved between 2000 and 2009 – could imply a gain of over 350 billion Euro for the Irish economy over the lifetime of the generation born in 2010.

Responding to the challenges

How can education systems respond to these challenges? Performance on international comparisons cannot simply be tied to money, which accounts for less than a quarter of the observed performance variation.

Looking beyond financial resources, PISA suggests that schools and countries where students work in a climate characterised by high performance expectations and the readiness to invest effort, those that have good teacher-student relations and high teacher morale tend to achieve better results. Many countries have pursued a shift in public and governmental concern away from the mere control over the resources and content of education towards a focus on outcomes. This has driven efforts to articulate the expectations that societies have in relation to learning outcomes and to translate these expectations into educational goals and standards. Ambitious educational standards have influenced many of the top performing education systems in important ways, helping them to establish rigorous, focused and coherent content at all grade levels; reduce overlap in curricula across grades; reduce variation in implemented curricula across classrooms; facilitate co-ordination of various policy drivers ranging from curricula to teacher training; and reduce inequity across socio-economic groups.

Coupled with this trend have been efforts to devolve responsibility to the frontline, enabling schools to become the driver of educational improvement. In Finland strategic thinking and planning now takes place at every level of the system. Every school discusses what the national vision along with desired standards might mean for them, and every decision is made at the level of those most able to implement it in practice.

Many of the high performing systems also construct effective interventions at the level of the school, providing schools that do not yet succeed with effective support systems. Some countries go even further and intervene at the level of the individual student, developing processes and structures within the school that are able to identify whenever a student is starting to fall behind, and intervening to improve that student's performance. And importantly, such personalisation in these countries is in terms of flexible learning pathways through the education system rather than in terms of individualised goals or institutional

tracking, which PISA shows to lower performance expectations for students and to provide easy ways for teachers and schools to defer problems rather than solving them. Intervention and support do not mean applying pre-packaged interventions in mechanical sequence; instead, they are about diagnosing problems and tailoring solutions accordingly.

Third, many high performing systems share a commitment to professionalised teaching, in ways that imply that teachers are on a par with other professions in terms of diagnosis, the application of evidence-based practices, and professional pride. They pay great attention to how the pool is established from which they recruit their teachers; how they recruit; how they select their staff; the kind of initial training their recruits get before they present themselves for employment; how they mentor new recruits and induct them into their service; what kind of continuing training they get; how their compensation is structured; how they reward their best performers and how they improve the performance of those who are struggling; and, how they provide opportunities for the best performers to acquire more status and responsibility.

External accountability systems are an essential part of this, but they are not enough. Among OECD countries, we find countless tests and reforms that have resulted in giving schools more money or taking money away from them, developing greater prescription on school standards or less prescription, making classes larger or smaller, often without measurable effects. Instead, devolved decision-making needs to go hand in hand with intelligent accountability. This means moving beyond approaches to external accountability towards building capacity and confidence for professional accountability. Networks of schools can stimulate and spread innovation as well as collaborate to provide curriculum diversity, extended services and professional support. Success with this will require multi-layered assessment systems that coherently extend from students to schools to regions and nations, and which do not operate in a vacuum but are part of a comprehensive set of instruments that extend to instructional material as well as teacher training. Such assessments recognise that successful learning is as much about the process as it is about facts and figures, and they do not just produce school marks but try to provide a window into students' understandings and the conceptual strategies a student uses to solve a problem, with dynamic task contexts in which prior actions may stimulate unpredictable reactions that in turn influence subsequent strategies and options. They do not take learning time away from students, but try to enhance the learning of students, of teachers, of school administrators and policy makers, through building frameworks for lateral accountability. That means generating information that can be acted upon and that provides productive and usable feedback for all intended users, so that teachers understand what assessment reveals about students' thinking, and school administrators and policymakers obtain the information they need to create better opportunities for student learning.

In conclusion

In one way, the most recent PISA results make disappointing reading for Ireland. But they also indicate a way forward. They show that strong performance is possible. Whether in Asia (e.g., Japan and Korea), in Europe (e.g., Finland) or in North America (Canada), many countries display strong overall performance and, equally important, show that poor performance in school does not automatically follow from a disadvantaged socio-economic background, even if social background is an important challenge everywhere. Furthermore, some countries show that success can become a consistent and predictable educational outcome, with very little

performance variation across schools. Perhaps most importantly, many countries demonstrate that rapid progress can be achieved within less than a decade.

In the past when economies only needed a small slice of well-educated workers it was sufficient, and perhaps efficient, for governments to invest a large sum into a small elite to lead the country. But the social and economic cost of low educational performance has risen very substantially and PISA shows that the best performing education systems now get all young people to leave school with strong foundation skills.

When one could still assume that what is learned in school will last for a lifetime, teaching content and routine cognitive skills was at the centre of education. Today, where individuals can access content on Google, where routine cognitive skills are being digitised or outsourced, and where jobs are changing rapidly, education systems need to enable people to become lifelong learners, to manage complex ways of thinking and complex ways of working that computers can't take over easily.

That requires a very different calibre of teachers. When teaching was about explaining prefabricated content, school systems could tolerate low teacher quality. And when teacher quality was low, governments tended to tell their teachers exactly what to do and exactly how they wanted it done, using prescriptive methods of administrative control and accountability. What we see in the most advanced systems now is that they have made teaching a profession of high-level knowledge workers, and that, not higher salaries, is what makes teaching so attractive in countries as different as Finland, Japan or Singapore.

But people who see themselves as candidates for the professions are not attracted by schools organised like an assembly line, with teachers working as interchangeable widgets. That is why international comparisons show a very different work organisation in high performing

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systems, with the status, professional autonomy, and the high-quality education that go with professional work, with effective systems of teacher evaluation and with differentiated career paths for teachers.

This is why high performing education systems tend to create a "knowledge rich" education system, in which teachers and school principals act as partners and have the authority to act, the necessary information to do so, and access to effective support systems to assist them in implementing change. What distinguishes the top-performer Finland is that it places the emphasis on building various ways in which networks of schools stimulate and spread innovation as well as collaborate to provide curriculum diversity, extended services and professional support. It fosters strong approaches to leadership and a variety of system leadership roles that help to reduce between-school variation through system-wide networking and to build lateral accountability. It has moved from "hit and miss" policies to establishing universal high standards; from uniformity to embracing diversity; from a focus on provision to a focus on outcomes; from managing inputs and a bureaucratic approach to education towards devolving responsibilities and enabling outcomes; and, from talking about equity to delivering equity. It is a system where schools no longer receive prefabricated wisdom but take initiatives on the basis of data and best practice.

Addressing the challenges will become ever-more important as the best education systems, not simply national standards, will increasingly become the yardstick to success. The world has become indifferent to tradition and past reputations, unforgiving to frailty, and ignorant to custom or practice. Success will go to those individuals and nations which are swift to adapt, slow to complain and open to change. The task for educators and policy makers is to ensure that countries rise to this challenge.

Challenges for second-level education

Brigid McManus

Brigid McManus is the Chairperson of the National Council for Curriculum and Assessment (NCCA), and former Secretary-General at the Department of Education and Skills.

"To provide high-quality education, which will:

- Enable individuals to achieve their full potential and to participate fully as members of society, and
- Contribute to Ireland's social, cultural and economic development."

It is difficult to disagree with the high-level objective set out in the Department of Education and Skills' mission statement, quoted above. How it should be interpreted and implemented in the education system, in particular at second-level, is a matter of contention. Virtually everyone agrees that system reform is needed if we are to improve the learning experiences of our second-level students and the outcomes they achieve. But too often differences about the changes to be made or concerns about potential risks and downsides of particular changes impede the delivery of much-needed reform.

As Secretary-General of the Department of Education and Skills I engaged with individuals and organisations across the education sector and beyond. I found that those involved - students, parents, teachers, school leaders, employers, further and higher education institutions - shared similar concerns in relation to the second-level system:

- Students are not developing sufficiently the range of skills that enable them to engage deeply with active learning and provide a robust foundation for further development both at third level and in the workplace.
- Students don't have adequate opportunities to develop important social and life skills.
- Rote learning dominates at the expense of critical thinking.
- Too many students have poor literacy and numeracy skills.
- The focus on and the nature of State examinations and the related points entry system for higher education overly impact on teaching and learning.

Similar concerns were expressed by interested groups and individuals during the NCCA's consultation (NCCA, 2011) on the reform of the junior cycle and at the NCCA/HEA conference (NCCA/HEA, 2011) on the transition from second to third-level education in Ireland.

Concerns about the second–level experience are borne out by research. The longitudinal study conducted by the ESRI for the NCCA (Smyth, 2009) demonstrates:

- student difficulty in transitioning from primary education;
- the disengagement of some students that starts in second year of post-primary school; and,

- the influence of the State examinations in focusing teaching and learning in certain years on rehearsing questions and answers for certificate examinations.

Though there are limitations to the methodologies underpinning the OECD's PISA cross-country assessments, the falls in the literacy and mathematical achievements of 15 year-olds reported in the 2009 cycle of PISA (Perkins, 2012) indicate a worrying decline in student achievement. Not only were the results disappointing, but the PISA assessments also revealed that Irish students had the highest number of unfinished questions, indicating problems in relation to student engagement and the ability to tackle more complex material. This latter issue had manifested itself previously. PISA assessments over the years indicate that Irish students have more difficulty with the higher–order thinking and problem-solving aspects of mathematical competence, an issue that has given rise to the current Project Maths reforms. The Teaching and Learning International Survey (TALIS) (Gilleece et al., 2009) indicates that, more than any other country, teachers focus on what the study refers to as "structuring practice" (how learning is structured and organised) rather than on student-oriented practice or enhanced learning activities.

Given the need for reform what are the key issues we need to focus on?

1. We need to shift the focus from content-driven learning and develop more learner engagement with, and ability to apply, content. This implies a number of changes. We have to ensure that we place much more emphasis on developing students' skills and less emphasis on asking students to acquire and repeat large amounts of knowledge and facts. This means we have to change curricula so that adequate time is given to the development of students' literacy and skills such as communication, problem-solving, managing information and teamwork in all subjects. To create the necessary space needed means less subject content, fewer subjects to be covered and a move to cross-curricular learning. Undoubtedly, this will generate heated debates. The Project Maths debate on content and technique versus problem-solving and application is one example. The debate about compulsory subjects is another. We need to recognise that it is not feasible to say we need to change, shift the focus, do new things, reduce pressure on students so as to allow deeper learning, and still do everything we did before in the way we did before. Reform involves some trade-offs.

2. We need to take a fundamentally different approach to assessment, particularly in the junior cycle where a terminal examination/qualification is not required for the vast majority of students.

One of the defining features of a high-quality assessment system is that assessment takes place as close as possible to the point of learning and is integrated into the process of learning. Assessment should be part of the everyday work of teachers and students. Unlike the practice in most European countries and high-performing systems such as Finland, in Ireland the external examination has been the dominant feature of assessment at second level. The nature of external examination limits the forms of assessment and the range of skills that can be assessed. The dominance of external examinations has meant that other elements of assessment - elements proven to support better learning for more students - are underdeveloped. When the Intermediate Certificate examination represented the end-of-schooling examination for many students, the need for a fully externally administered examination was arguable. However, this is no longer the case as the vast majority of students

continue on in to senior cycle. It would be more advantageous for junior cycle students to experience a range of school-based assessment approaches. Focussing on a process of:

- generating evidence of learning;
- sharing feedback;
- planning next steps; and, in some instances,
- sharing assessment outcomes beyond student and teacher,

would bring the best of international practice into Ireland's assessment practice.

While the strengths of transparency and consistency of our State examinations are highly valued, we need to recognise that if we want to

- assess across a broader range of skills,
- encourage innovation, and
- have assessment that enhances the process of learning in schools,

we may need to accept greater variability in assessment at what is, after all, a mid-point measurement of progress in second-level education. Is it really a major issue if our assessment system in a low stakes examination doesn't guarantee the exact same result to the nearest mark to a student in Galway as to another student in Cork for an equivalent project or piece of work if the price of constructing that certainty is to limit the beneficial effect of wide-ranging assessment for student development?

We need to continue to develop alternative/additional assessment components for the Leaving Certificate examination and consider how any over-predictability can be reduced. Building assessment methods that recognise the technological environment in which our students will live and work is also a challenge.

3. Schools need more flexibility to choose and design school programmes tailored to the needs of their students and their community.

Schools already make some choices about the subjects they offer in junior cycle and about how they organise the school timetable. However curriculum is centrally determined to a greater extent than in many other countries. School communities select from this. They do not have scope to develop curriculum at local level or to respond to curricular needs in customised ways. A greater role in planning, reviewing and developing curriculum would facilitate local innovation and help schools focus on the learning outcomes for students. This is not an argument for a completely different curriculum in each school but for an ability to tailor programmes in a more flexible way than currently and introduce some short courses that may be specific to a school alongside nationally determined curriculum.

4. We need to ensure coherence across the different education sectors and put effort into ensuring the transition points from primary to second-level education and from second-level education to further or higher education facilitate the development of learning rather than creating hurdles and discontinuities.

This is not just a matter for second-level education - which is sometimes given all the blame for issues that need to be addressed also in primary and higher education - but the content and organisation of learning in second-level needs to address this challenge. For example, if

the first year programme in second-level was explicitly designed to provide a bridge from primary to second-level this should mitigate some of the adverse academic achievement and social impacts of the transition.

5. The backwash effect of the "points" system for entry to higher education on teaching and learning in the second-level system must be reduced.

While keeping the link between Leaving Certificate and entry to higher education, actions could be taken that would lessen the impact of competition for higher education places on the approach to the Leaving Certificate examination and thus on teaching and learning. Reducing the number of very specifically denominated courses with a small number of places in favour of more generic first-year entry to business, arts, etc. with choice of specialisation after entry would help reduce pressure. Graduate-entry only to certain professional training courses could be examined further. The grading structure introduced in the Leaving Certificate in 1992 to facilitate selection for higher education introduces a level of granularity in the assessment system not found elsewhere and reducing the number of points on the scale is another possible measure. The potential of such a change to impact on classroom practice is being examined and the NCCA is currently collecting feedback from teachers on this. In their comments on classroom practice in this context many teachers noted the tensions between the public, student and parental expectations of what was required of teachers in Leaving Certificate classes and their own views about what constitutes good teaching. There is an important role for parents and others in supporting the changed approach needed if the undue emphasis on practicing and preparing for external examinations is to be reduced. It has also been suggested that mathematics and English should have to be included in the calculation of points for all courses and the implications of this are being considered. Alternative/additional tests for entry might reduce the pressure on the Leaving Certificate but, depending on form chosen, other potentially adverse impacts on teaching and learning could arise from students focusing on preparing and practicing for these entry tests.

Reform of this magnitude and achieving real change to the way teaching and learning happens takes considerable time and effort. If it is to happen effectively, it will need to be supported and led by those in leadership positions in schools. It will require supporting measures for teachers and school leadership to help build professional capacity. Materials and tools tailored to the Irish context will need to be developed particularly in areas such as assessment and local curriculum design. The Minister for Education and Skills has undertaken to provide the resources necessary for the new junior cycle.

Significant reforms are being rolled out in initial teacher education. The Teaching Council's work in setting and enhancing professional standards is developing. Ensuring strengthened initial and ongoing teacher education provision will be important work in the next few years given the key role of teacher quality in driving good education outcomes. Other issues that impact on teacher quality and performance, such as monitoring teacher performance in schools and second-level teacher careers, will also need attention. High-performing schools and education systems require excellent leadership. The time may be opportune for an in-depth review of the recruitment, employment, qualification, professional development, support and mobility of school principals, drawing on international best practice.

The challenges are immense but it is an exciting time for second-level education. It is a time when we can make a difference. It will challenge teachers, school leaders, schools and national organisations. We are good at incremental change in Ireland but the scale of the challenge requires more than incremental change. We sometimes find it hard to let go of what is familiar but real reform is not possible unless we do. It would be very easy for debate about the type of change to be delivered and the fear of losing some of the familiar elements of our curriculum and assessment system to stymie any change at all. This is a time when the "do nothing" option cannot be on the table. The price that would be paid in individual capacity to participate in a fast-changing world and national capacity to compete in a globalised economy far outweigh the risks of change.

> *Reform of this magnitude and achieving real change to the way teaching and learning happens takes considerable time and effort. If it is to happen effectively, it will need to be supported and led by those in leadership positions in schools. It will require supporting measures for teachers and school leadership to help build professional capacity. Materials and tools tailored to the Irish context will need to be developed particularly in areas such as assessment and local curriculum design.*

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Education at the heart of the EU's growth strategy

Catherine Day

Catherine Day is Secretary-General of the European Commission

The European Union (EU) is currently dealing with the worst crisis in its history, which has wiped out years of progress and exposed many weaknesses in Europe's economy. The EU and its member states are working together on both short- and long-term solutions, to help us to emerge stronger from the crisis and turn the EU into a smart, sustainable and inclusive economy, delivering high levels of employment, productivity and social cohesion. We call this strategy *Europe 2020* and it sets out to make the EU a "highly competitive social market economy" by 2020, by developing an economy based on knowledge and innovation, with a strong emphasis on lifelong learning. At the heart of this work is the conviction that economic and social progress go hand in hand and that education is a key driver of economic and social development.

Europe 2020 and education

When it comes to education and training, the challenges are huge. At present, 78 million EU citizens (or one-third of the EU's citizens who are of working age) have either low education and training qualifications or none at all. A quarter of all pupils have poor reading skills and one in seven young people leave education and training systems too early, often without any qualifications. Less than one in three people aged 25-34 have a university degree, compared to 40% in the US and over 50% in Japan. We are failing to produce people with the qualifications to match labour market needs.

As part of *Europe 2020*, good quality education and training, successful labour market integration and increased mobility for young people have been identified as key to unleashing the potential of young people and achieving the *Europe 2020* objectives.

EU benchmarks for education to be achieved by 2020

1. At least 95% of children between four and the age at which they start compulsory primary education should participate in early childhood education.
2. The share of early school leavers should be less than 10%.
3. The share of low-achieving 15 year-olds in reading, mathematics and science should be less than 15%.
4. The share of 30-34 year-olds who have completed third-level education should be at least 40%.
5. At least 15% of adults should be involved in lifelong learning.

6. At least 20% of higher education graduates, and 6% of young people holding a vocational training qualification, should be facilitated to study or to train abroad.

The EU now has a *Strategic Framework for European Cooperation in Education and Training*, which includes a set of common objectives to be achieved by 2020. These objectives, agreed with the EU member states, include benchmarks, the establishment of a monitoring system and the implementation of a system for the exchange of best practice.

The political determination to ensure that national education systems pull their full weight is shown by the acceptance at national level of the EU's "country-specific recommendations", which provide guidance for individual member states on how to pursue national reforms. For example, in 2011, 16 member states received recommendations on issues related to education, training, lifelong learning and skills. The manner in which these recommendations are acted upon by member states will be assessed by the European Commission on an ongoing basis.

Modern and efficient education and training systems across the EU

It is now easier for students in the EU to move between member states and across educational sectors. The *Strategic Framework for European Cooperation in Education and Training* has increased transparency in relation to qualifications, through tools such as the *European framework for key competences* (i.e. skills) and the *European Qualifications Framework*. Ireland was the first country to establish its own national qualifications framework, which is fully compatible with what was decided at European level.

The goal of modernising and improving education and training systems will remain high on the EU agenda. If current trends continue, the EU is set to fall short of the headline target on early school leavers (see above) - in 2010, the rate was 14.1%. The EU risks not reaching its target of at least 40% attaining third-level qualifications - in 2010 the share amounted to 33.6%.

It is worth noting that Ireland is performing well overall. The early school leaving (ESL) rate of 10.5% is almost 4% lower than the EU average and is nearly at the EU headline target of 10%. Ireland has already achieved a high rate of third level education for 30-34 year olds (joint first in the EU at 49.9% in 2010), which is well above the EU headline target of 40%.

Language learning in schools

Irish students are certainly in a privileged situation, as English has come to dominate interaction on a global level. However, as more and more companies and organisations are established and have operations in more than one EU member state, the importance of being able to communicate effectively in the language of another EU member state has become a much-sought after asset. Studies show that students who develop their language skills enhance their employability and their competitive edge in the labour market. Competence in at least one other language in addition to English is seen as critical for business success in Ireland, in other EU member states and globally. Investment in language learning is crucial if Irish students are to avail of the opportunities which exist in the EU and beyond. Sadly, Irish students are not generally comparing well with their EU counterparts in this area. A 2010 Eurostat report shows that only a tiny proportion of primary school students in Ireland are

exposed to foreign languages in any meaningful way. In this regard, Ireland is not performing well.

Furthermore, Ireland is the only EU member state in which it is not compulsory to learn a foreign language, although most secondary school students in Ireland do so in practice. The 2010 Eurostat report shows that by the time students reach the senior cycle in secondary school, 19% have dropped the foreign language and only 8.4% are learning more than one language. In contrast, in almost every other EU member state (except the UK at 51% and Spain at 5%), the figure for students who have dropped their foreign language by the time they reach the senior cycle is at or below 2.2%.

What next?

Spending on education needs to be seen for what it is: an investment in growth, employment and competitiveness. If we want to have world-class education and training systems, we need to invest in them.

Using this as our starting point, we can draw a number of conclusions for the future:

1. Public spending on education and training needs to be efficient and effective, for example:
   - Policies need to target those pupils within the education system who are clearly at risk of future problems. Low-achieving pupils need to be supported as soon as problems emerge. At present, about 20% of all pupils show a worryingly low level of achievement in basic areas, such as reading and mathematics. In view of the continued trend in the labour market requiring ever higher levels of knowledge and competences, these children may find it hard to get a job and suffer from lack of employability throughout their lives.
   - Youth and structural unemployment needs to be addressed as early as possible, before it becomes visible in the labour market.
   - Quality education needs to be ensured as early as possible, i.e., during early childhood.
2. Education and training systems need to be in line with labour market realities (the skills required in the labour market of the day) – a key task of education and training systems is to equip young people with the right skills for a smooth transition into working life.
3. The review and adjustment of education and training systems is first and foremost the responsibility of member states. However, there is a strong role for the EU in providing support (analysis, financial support, etc.), proposing a set of key objectives on which the member states can agree (Europe 2020) and facilitating the exchange of best practice.
   - It is clear, for example, that the country-analyses carried out by the European Commission and consequent recommendations have become a key tool for the detection of deficiencies such as skills bottlenecks, and should help member states in fine-tuning their education and training systems.
   - EU financial instruments such as the Lifelong Learning Programme, the 'Erasmus for All' programme (recently proposed by the European Commission) and the Structural Funds will serve to underpin the implementation of Europe 2020 objectives.

Europeans are worried about their future and their children's future. Improving the quality of our education and training is now more important than ever. One of the ways to restore confidence is to ensure that we fully realise the potential of our human capital and that education and training systems are geared to deliver the knowledge and skills needed in a globalised labour market. The European Commission is working with Ireland and other member states, to turn this into a reality.

> *Spending on education needs to be seen for what it is: an investment in growth, employment and competitiveness. If we want to have world-class education and training systems, we need to invest in them.*

Developmental welfare requires quality, standards and accountability in Irish education

Edna Jordan and Dr Rory O'Donnell

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Introduction

In a 2002 strategic overview, the National Economic and Social Council (NESC) sought to re-frame the analysis and debate on Ireland's system of social protection. Having reviewed the broad evolution of economic performance and social protection, it outlined the idea of a 'developmental welfare state'. This idea was subsequently elaborated in a major study of Irish social policy, *The Developmental Welfare State*, adopted by NESC in 2005. Identifying the limits of long-standing debates on the merits of rival welfare 'models', NESC proposed an alternative conceptual framework and reform programme. At the heart of this is the idea that each welfare system consists of three spheres of activity: income supports (via welfare transfers and tax), the provision of services, and innovative measures to identify and address new needs. The question is: how effectively do these three elements address risks and social disadvantages, support participation, and identify and tackle unmet needs? The *developmental welfare* state is a way of reforming each of these elements, and linking them more closely, in ways suited to Ireland's unusual economic and social situation. 'Its character would derive from the approach taken in each of these spheres and the integration of them in ways that are developmental for individuals, families, communities, and the economy' (NESC, 2005: xvii).

A central argument was that a radical development of services is the single most important route to improving social protection in Ireland over the coming years. These include education, health care, child development and care, eldercare, housing, transport and employment services. Improved services have a triple logic, both social and economic: supporting people in employment, redressing the marginal position of socially disadvantaged groups and affording autonomy and respect to people with disabilities and in institutional care. While such services may be provided by the state or other organisations, there is a strong case for the vast majority of the population using the same set of services. This requires reversing the gradual residualisation of publicly-provided services and the associated dualism between public and private services. To achieve this, and to meet the diversity and complexity of individual needs, services will have to be more tailored. Reflecting both service quality and funding, the report argued for a system of 'tailored universalism'.

Developments in the system of quality, standards and accountability in past 15 years

As in other human services, there have been considerable developments designed to assure quality and accountability in Irish education. Since the commencement of the Education Act

1998 there have been a number of key pieces of legislation and the establishment of specialist agencies all of which are designed to support schools and the Department of Education and Skills (DES) in promoting quality education and standards in schools. These developments provide, at the very least, the scaffolding for the development of a quality framework for schools.

Overall responsibility for education policy and for the administration of the education system in Ireland lies within the Department of Education and Skills (DES). The responsibility for the achievement of quality in the Irish school system lies with a number of DES sections/divisions including the Qualifications, Curriculum and Assessment Policy Unit, the Teacher Education Section, the Schools Division/School Governance Section, the Inspectorate Division, school boards of management, and principals and teachers. The Teaching Council, established in 2006 under the Teaching Council Act (2001), is responsible for the achievement of quality in the teaching profession. Similarly, the work done by the National Council for Curriculum and Assessment in the evaluation, design and development of primary and post-primary curriculum content, guidelines and assessment tools contributes to the quality of the teaching and learning in schools.

There have been considerable institutional developments with respect of the school system over the last fifteen years or so. External oversight, through the system of Whole School Evaluations (WSE), and unannounced incidental inspections, has been introduced to primary and post-primary schools in the last decade in response to concerns about the accountability of the schools system (Mathews, 2010). Accountability concerns have also motivated changes in the function of Boards of Management which now have a role in relation to performance of individual teachers including the power to suspend or dismiss underperforming teachers. A Teaching Council has been established and is now empowered to assess the qualifications of teachers through its powers of accreditation for teacher education programmes and its capacity to review the knowledge and skills required for teaching. A National Literacy and Numeracy Strategy has been formulated to address concerns that these fundamental skills are declining. Thanks to this Strategy, the DES is committed to an ambitious programme of helping schools to benchmark themselves against their equivalents and to set targets for improvement. Reform of the curriculum has also been high on the political agenda as anxieties have been expressed about how well education in the school system prepares students for self-directed learning and critical thinking. These developments demonstrate that a focus on 'outcomes' is becoming a more integral feature of the work of the various actors in Irish schools.

How convincing is the current system of quality assurance, accountability and continuous improvement?

At one level, this is an impressive stock of developments and could signal real change in the system of schooling. A reasonable assumption might be that the priority now should be to ensure that these changes are bedded down so that they might have a real effect on teaching practice. However, as we discuss further below, what is less clear and less convincing is the ability of the system of monitoring to diagnose and address problems in the core activity—teaching and learning.

Overall, when we view developments in Irish education through the lens of quality and

regulatory models and thinking we find an encouraging, but circuitous, pattern. A range of significant steps have been taken that move the system towards a greater focus on evaluation, standards and accountability. But these initiatives and institutional changes have, in some respects, circled around the core arena, teaching and learning. The central argument of two recent studies (NESC, 2012a & NESC, 2012b) is that these valuable methods and processes now need to be carried right into the critical zone of teaching practice, assessment, individual learning experience, peer review across teachers and schools, all supported by a more developed national data and standards framework.

There still remains some way to go in building a system of quality and continuous improvement within teaching and schooling. This is because, notwithstanding the many developments described in these reports, there are some critical pieces missing, of which two are especially important: (1) the general absence of a culture and discipline of reflective practice within schools based upon relatively objective evidence rather than subjective impressions and (2) the absence of a provision of a national data and standards framework which provides a secure basis for judgment about quality and improvement. The first is absolutely dependent on the second whilst the second is redundant without the first. Processes of internal review within classrooms and schools need some external standards of quality and performance as a yardstick for benchmarking. And external standards of excellence are of limited use if they are not used to impel deeper, diagnostic enquiry into why certain problems of teaching and learning are manifesting themselves and how they might be ameliorated.

Our central argument is that these two further steps—first, ensuring that assessment of practice is embedded within "every teacher's professional business" (Department of Education & Skills, 2010: 17) and, second, relating this to a national system of data and standards—should not be viewed as a supplemental extra to all the positive institutional developments of the past decade. Rather, they are essential if the potential of all of the new practices and bodies is to be realised.

While the literacy and numeracy strategy might help to provide a focus to the activities of those bodies responsible for schooling, it should be recognised that large-scale, standards-based assessments have certain limitations. One is that they "do not provide the detailed information needed to diagnose the specific sources of student difficulty" (Looney, 2011: 15). A further problem with national standardised tests is that feedback on this kind of testing is not delivered in sufficient time to prompt improvements in pupils' performance.

Consequently, an enhanced national data system needs to be combined with more systematic 'formative' assessments which provide on-going information that can assist adjustment and improvement. Referring to this notion of formative assessment, the literacy and numeracy strategy designates it as *Assessment for Learning* (AfL), whereby a teacher uses evidence from assessment on an ongoing basis to inform teaching and learning. The Inspectorate has pointed out that there is significant scope to develop both summative and formative assessment within Irish schools. Based on an aggregate review of the findings of the incidental inspection process, they have pointed out that there is a weakness within schools in terms of the monitoring of student learning and how information arising from this kind of review can be used to set learning targets and exercises (Department of Education & Skills, 2010: 17).

Building on the distinction between formative and summative assessment, the NCCA has also

pointed out the need for some sort of mechanism or forum which would facilitate the formative use of standardised assessment and link it to changes in teachers' practices and improvements in the learning of students: to bring this about teachers need *"a process by which they can analyse the data, link the information to their own teaching, and test the links using parallel, but different, evidence from others in professional learning teams"* (National Council for Curriculum and Assessment, 2011: 37, italics in original). Formative assessment should be used not only to stimulate positive changes in student performance but also in teachers' practice, which is not the norm in most OECD countries (Looney, 2011). Effective teacher appraisal systems could indicate good teaching and assessment practices and identify areas for improvement. Feedback and appraisal leading to enhanced teaching performance have been one of the most significant innovations introduced in the approach taken to educational reforms in Victoria, Australia.

> *A range of significant steps have been taken that move the system towards a greater focus on evaluation, standards and accountability. But these initiatives and institutional changes have, in some respects, circled around the core arena, teaching and learning.*

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Quality and accountability in our post-primary schools

Eamon Stack

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I was very pleased to have been invited by Fintan O'Toole, the guest editor of this publication, to write an article on how best to measure quality, performance and accountability in our post-primary schools in the years ahead. My objective, in this article, is to stimulate discussion on how to improve quality and accountability in our schools rather than presenting a historical analysis. During my time as Chief Inspector, I provided strategic direction to the work of the Inspectorate which related to developing and expanding inspection/evaluation in schools, incorporating Whole School Evaluation and Subject Inspection.

Between June, 2006 and December, 2010 over 3,100 reports were published which dealt with aspects of the quality of educational provision in post-primary schools. While there is an effective national external evaluation system at present, I believe that additional methods of evaluating the quality of provision are needed in our schools especially now in the context of an increasing public awareness of standards, performance and accountability in most public services.

The world is changing rapidly, our society is changing and, to be realistic, we need to focus more than ever on ensuring that the next generation of Irish young people are very innovative, competent, self-confident and independent learners with outstanding communication and inter-personal skills. In order to ensure that the young people of Ireland can be highly regarded in Europe and the rest of the world, our schools and teachers need to continue to improve further the quality of post-primary education. Much of this needs to be addressed on a cross-curricular way, throughout a school.

Many aspects of the Irish educational system have served us well up to now. Down through the years, Irish people have had a deep commitment to learning and schooling. At post-primary level, the high school completion rates, the large number of students who go on to third level, and the success of our graduates at home and abroad, are clear indicators that show our educational system compares favourably enough with educational systems in many leading developed countries.

But we should not be complacent. There are, for example, issues now about the standards of literacy and numeracy of many students in our schools. For example, many pupils at primary level continue to experience difficulties in the development of problem-solving skills. National assessments suggest that, at primary level, there has not been an improvement in standards in mathematics in the past decade and in English reading in the past 20 years, despite the introduction of a revised curriculum and increased resource provision. At post-primary level,

21% of students sat mathematics at higher level for the Leaving Cert in 2012. The challenge of increasing this percentage must be ongoing in all post-primary schools.

The OECD Programme for International Student Assessment (PISA) survey is an internationally standardised assessment administered to 15-year olds in schools and the tests are typically administered to between 4,500 and 10,000 students in each country. The results of the OECD's PISA 2009 tests showed a decline in the reading and mathematics scores of students in Ireland compared to previous PISA tests. It is disappointing to see Ireland moving from among the above average performing countries to among the average performing countries in reading, and from among the average performing countries to among the below average performing countries in mathematics.

It is important for everyone to understand that the words literacy and numeracy should mean much more than reading, writing and arithmetic. The recently published Department of Education and Skills Strategy document, *Literacy and Numeracy for Learning and Life*, defines literacy as "the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media, and digital media". This definition includes not just reading but the skills of speaking and listening as well as communication, using not only traditional writing and print but also digital media. Rather than the traditional understanding of numeracy as just ability in number skills, numeracy also includes the use of mathematical understanding and skills to solve problems and meet the demands of day-to-day living.

Literacy and numeracy are not just important in their own right but also in helping to equip our young people with the skills and attitudes that prepare them for their current and future learning and workplace environments and in their personal lives. This is one example of the need for a cross-curricular approach, within a school, to address a learning issue. So, improving student literacy and numeracy should be an integral part of the objectives of every teacher of every subject in every classroom. A question for every teacher is: how can I incorporate literacy and numeracy aims and objectives into my teaching on a weekly basis?

One of the eleven education objectives in the Government's *Programme for National Recovery 2011 – 2016* is particularly relevant in this context. Under the heading, "Empowering Schools to Improve Standards", it states that greater freedom and autonomy will be given to school principals and boards to raise educational standards and that schools will be required, with the support of the Inspectorate, to draw up five-year development plans for their schools and individual teachers. That is worthy of serious consideration by post-primary principals and teachers in each of our 728 post-primary schools. Such plans should, of course, focus on how specific student learning outcomes are to be improved by each school and by each teacher.

As a first step, I suggest that principals and teachers, in their schools, begin with the clear objective of raising educational standards in each classroom. To achieve this, the focus now needs to be very much on the main purpose of schooling – learning. So in the midst of a plethora of policy documents, legislative requirements, public pressure, and so on, the focus on learning sometimes get lost.

The available evidence from the some of the best education systems suggests that the main driver of the variation in student learning in schools is the quality of teaching. Within schools,

the greatest importance should be attached to how change is reflected in the quality and practice of teaching and learning. Individual teachers have to maintain high expectations, a shared sense of purpose, and, above all, a collective belief in their ability to make a difference to the learning outcomes of students. This means that each school finds ways to improve, and change, fundamentally in certain cases, what happens in some classrooms. The most important question for every school relating to quality education provision is: What can be done to help classrooms become more effective learning centres for all students?

In general, it is difficult to improve what is not measured. Some say, if it's not broken, why try to fix it? Regardless of how good it is, we should always strive for improvement in the interest of ourselves and our students now and in the future. The Government's *Programme for National Recovery* states, under the heading "Improving Outcomes", that its aim is to position Ireland in the top ten performing countries in PISA. It then goes on to refer to the introduction of a new system of self-evaluation that will require all schools to evaluate their own performance year-on-year and publish information across a wide range of criteria. In most of the best performing education systems, as the school system improves, the task of monitoring has also moved from external evaluation to internal evaluation. In other words, evaluation moves from an exclusive external type of evaluation, such as Whole School Evaluations and Subject Inspections to school self-evaluation with occasional external reviews. In May 2003, *Looking at our School* was published by the Inspectorate of the Department of Education and Skills to assist the school community to begin to review and evaluate the work of their own schools. In its introduction, I wrote: "the quality in schools is a matter for all concerned with, and involved in, the education of our children."

If school self-evaluation is the way forward, what is involved? Effective school self-evaluation is a collaborative process of internal school review whereby the principal and teachers, in consultation with the board of management, parents and students, engage in reflective enquiry on the teaching and learning in the classrooms of their school. Its purpose is really threefold: (i) to gather evidence and information to enable a school to identify accurately how things are working including what is working well and where improvements are needed; (ii) to report on the school self-evaluation processes used; and, (iii) to develop, publish and implement a clear improvement plan.

School self-evaluation will need to be an evidence-based process with judgements being made about aspects of the work of the school with a view to bringing about improvements in students' learning. Effective school self-evaluation should focus on making significant difference to the quality of teaching in the school and to the learning outcomes of the students. This form of school based accountability will contribute, in a significant way, to improving the quality of schooling at post-primary level in Ireland.

Judging progress and improvements in the learning outcomes of students will require answers to be found, in each school, to comparative questions such as: (a) How do our students' achievements generally compare with their achievements since entering this school? (b) How do our students' achievements, in literacy and numeracy compare with their achievements this time last year? and, (c) How do the achievements of this year's students, in the State examinations, compare with the State examination achievements of students in this school over the last three years?

In order for an accountability process to be complete, a school should, at the end of the self-evaluation process, be able to provide clear written statements indicating if the school has significant strengths; strengths outweigh weaknesses; or, weaknesses outweigh strengths. Such statements should inform a published school self-evaluation report and a school's improvement plan.

Some recent visits I made to schools, on the invitation of the principals, to speak to the teaching staffs on how a school might begin the process of self-evaluation have indicated to me that the process of school self-evaluation has already begun in a number of post-primary schools. In conclusion, while I acknowledge that our post-primary education has served us well in the past, PISA results, among other things, are pointing out some challenges that need to be addressed. I suggest that school self-evaluation (SSE) is the way forward to assist and guide a school, and its teachers, to achieve significant improvements in the post-primary education provided to their students.

> *The most important question for every school relating to quality education provision is: What can be done to help classrooms become more effective learning centres for all students?*

Digitising the education landscape

Mary Lou Nolan

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Education has the power and potential to significantly enhance the welfare of individuals, their families, and their communities. However the capabilities and capacities required to live, work and participate successfully in the 21st century are different from previous generations. There is an urgent need for change in current education systems so that they can best serve their student populations for life and economic sustainability in the 21st century.

Technology in the classroom does not just improve the way children learn; it allows teachers and students to do things they have never done before. It enables a level of personalisation, engagement, and student-centred learning that was virtually impossible to achieve before. It also helps level the playing field by giving all students an opportunity to become proficient in the use of tools they will need to succeed in the 21st century.

This vision of education transformation, embraces new forms of teaching and learning that support the development of those skills and the use of collaborative technologies to support such teaching and learning practices. It does not seek to replace cornerstones of education reform of recent years – standards, accountability, workforce capability – but to adapt and build on them.

Technology is introducing new tools for the teaching and learning process - but can be exploited much further to transform the education process. It can help education institutions teach a broader curriculum to a greater number of students, cost effectively, with increased understanding of what they are learning, thus providing greater social cohesion without additional burden on the tax-payer.

When pupil-teacher ratios are on the increase, schools can make better use of resources by supplementing traditional classroom methods with electronically delivered education. The teacher can be attending to one individual or group while others work on-line; this makes it possible to cater for different educational levels and learning styles without anyone feeling left out. Research shows that computers in the classroom also promote effective collaboration between students - if there is good interactive content and students are given fulfilling tasks.

Access to real, live data enables students to make learning more meaningful - or "authentic" - and to have a greater choice about where and when they learn. Education can move to a more learner-centric approach.

Smart use of technology allows students to work with teachers, other students and experts in other establishments than their own, across borders, through facilities like online video

conferencing and using the internet to access latest information and e-mail exchange. With these methods a teacher can bring in a specialist on a particular subject to fill in the gaps in the school's local knowledge. Multimedia presentation methods such as video on demand can supplement conventional teaching whenever needed.

The full integration of technology into teaching will require a systematic and balanced approach that goes beyond just acquiring computer hardware and using limited technology skills. Digitising education equally involves the integration of technology as a subject on our schools' curriculum. Attention should be given to introducing children to computer science skills from an early age and nurturing natural aptitudes that exist in this area. Computer programming should be taught as an option in schools alongside maths, economics or French. Including ICT as a core subject on the national curriculum is opening the door to the future for Ireland's young people.

The following are some steps to systematically integrate technology into teaching, learning and curriculum development:

Align technology plans with school's vision and goals
Review the challenges and goals that the technology integration is intended to address and remind all stakeholders of these goals as you plan and prioritise work. Also use these goals to set policies around the use of technology in the classroom.

Pilot the implementation
Successful technology integration requires a well-planned, phased approach that starts with piloting the technology in a small group before deploying it to a larger group. Identify a pilot group of teachers to test the technology. Make sure these teacher-leaders have the support of their principals and peers. Include students in evaluating the pilot study as well. Document what works and what does not work, and refine strategies and techniques before expanding the project.

Phase in technology
Once you have resolved issues identified in the pilot phase, develop a plan to phase in technology. The phase-in might require three months or a few years. The purpose of a phased approach is to minimise the burden on IT resources, school administrators, teachers, and others; ensure that adequate resources are available to support the technology integration; and promote a positive user experience.

Provide professional development
Synchronise professional development with the technology phase-in. This approach helps ensure that teachers are not overwhelmed by too much training within a short period, and helps narrow the gap between the time when training occurs and the arrival of classroom technology. Develop and disseminate best practices, tips, and ready-made lessons that incorporate technology. Include special education instructors in professional development so that everyone on staff is moving toward the changes.

Provide adequate support for using technology meaningfully
Support is essential to encourage adoption. If teachers and students experience downtime or failure without appropriate support, they will abandon the technology. Encourage school leaders to continually clarify expectations about technology use, monitor teacher progress,

and model support by using technology in their own work. Ensure professional development is available from technology vendors and that their hotlines are working. Create professional learning communities for users to share tips and solve problems. Provide regular opportunities for teachers to report challenges and successes.

Provide adequate support for maintenance and troubleshooting
Ensure that the school's technology support team is adequately trained and prepared to support the technology, and arrange ongoing proactive maintenance to prevent problems from occurring. Provide "help desk" services (see www.ncte.ie for advice on technical support) and a "frequently asked questions" (FAQ) website so that teachers and administrators have ready access to solutions when technology is not working.

Measure and document success
Whether you use surveys, data, or interim assessments to gather information, make sure you develop and implement steps for measuring the effectiveness of the technology integration. As early as possible, identify measurable indicators of success. Continually document these indicators - as well as challenges and how they are addressed - over time. Use this information to determine what works best and refine practices, as well as to inform stakeholders such as administrators, parents, the community, and the school board about technology's impact.

Tips for Success:

- Invite input from all stakeholders.
- Begin with teachers who are eager to use the technology.
- Use technology as an essential component of the educational process.
- Clearly communicate and enforce expectations.
- Encourage input from students.
- Consider allowing use of handheld devices when appropriate.
- Ensure accountability for achieving goals.
- Allow teachers to proceed at their own pace.
- Celebrate all successes, no matter how small.

Education and technology go hand in hand. Using the full power of video and mobility, we can collaborate to create and share knowledge as well as develop new ways of teaching and learning. We must innovate and develop new modes of learning, both formal and informal that meet the demands of being a knowledge driven society and safeguard Ireland's reputation for educational excellence.

> *"The full integration of technology into teaching will require a systematic and balanced approach that goes beyond just acquiring computer hardware and using limited technology skills."*

Improving second level education

Dr Selina McCoy, Dr Emer Smyth

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1. Introduction

Education plays a central role in developing human capital and thus is crucial to our long term economic prosperity and, in particular, to our recovery over the coming decade. It matters too because it is a strong predictor of adult life chances, influencing access to, and quality of, employment, income levels and even health. Increasingly, cross national surveys (such as the PISA studies of 15 year olds conducted by the OECD) have been used by countries to compare themselves against international benchmarks. Such data have been used not only as a source of information on different educational systems but as a basis for policy prescription, but there are difficulties in doing so. Firstly, there is a difficulty in achieving true comparability across countries because of fundamental differences in language and culture, and in the types of skills and competencies developed in different schooling systems. Secondly, questions have been raised as to whether and how such data can be used to bring about the improvement of national educational systems. Commentators make an important distinction between approaches which are based on 'policy borrowing' and those based on 'policy learning'. A policy borrowing approach looks for a unique, transferable example of 'best practice' and seeks to 'transplant' elements of that system into another country. However, this approach fails to take account of the complex ways in which education systems are embedded in broader historical, cultural, social and economic circumstances. In contrast, a 'policy learning' approach uses international evidence not for a 'quick fix' solution but to inform thinking about policy development in the specific national context, looking at how 'good' rather than 'best' practice varies by context, time and place.

2. What works?

There is now a large body of research which shows how policy and practice at the school level can make a substantive impact on student outcomes. This research identifies 'drivers' or 'levers' of improvement and this paper outlines some of the ways in which evidence might inform policy development in these domains.

2.1 School effects

There is also a large body of robust research which shows that 'schools matter', that is, what happens within the school can make a difference to how students fare, even taking account of student characteristics on entry to the school. A number of studies have pointed to the

characteristics of 'effective' primary and second level schools, including high (but realistic) teacher expectations, staff commitment and involvement, student involvement, an orderly environment, and parental involvement. In Ireland, research has indicated significant differences between schools in a range of student outcomes, including achievement, attendance, early school leaving, subject take up and personal social development, taking account of differences in student intake. Junior and Leaving Certificate achievement are found to be higher in schools with a more positive disciplinary climate, less negative teacher student interaction, a more flexible approach to subject choice, greater student involvement and higher teacher expectations, all else being equal. In particular, two aspects of school organisation and process are worth highlighting: ability grouping and school climate (measured in terms of the quality of teacher student relationships).

2.1.1 Ability grouping

Streaming involves allocating students to a class group on the basis of their assessed achievement; students generally take all of their subjects within this streamed class and lower stream classes generally study subjects at foundation or ordinary level. Typically, students allocated to lower streams experience very different learning processes, with lower academic demands and less emphasis on the kinds of discussion-based approaches which facilitate achievement. As a result of being labelled in this way, many students develop very negative views of their own abilities. While the use of streaming in Ireland has declined since the 1980s, it is now more highly concentrated in schools serving disadvantaged populations. Research in Ireland consistently shows significant under-performance among those allocated to lower stream classes with no grade advantage accruing to those in higher stream classes.

2.1.2 The social climate of the school

There is a strong body of evidence that supportive teacher-student relationships have positive effects on student academic and social emotional outcomes, and are key to an effectively managed classroom. In the Irish context, research indicates that the quality of student-teacher relations has a significant effect on a range of student outcomes, including academic performance, early school leaving, academic self image (that is, how students view their own capacity to cope with schoolwork) and planned post-school pathways. Students who experience negative interaction with their teachers (that is, those who are frequently 'given out to' or reprimanded) achieve lower exam grades, are more likely to drop out of school and are less likely to intend to go on to higher education, all else being equal. More negative disciplinary climates are found in schools serving disadvantaged populations and in larger classes.

2.2 Teacher effects

A large number of research studies have indicated that student outcomes, especially academic achievement, vary according to their teacher. In second-level schools, it is difficult to disentangle the effect of individual teachers as students are taught by many different teachers. Many studies have pointed to considerable variation in academic achievement levels across different subjects within second-level schools. It is likely that the relative importance of teacher, classroom and school effects varies across schools, reflecting differences in school structure, the use of ability grouping and the degree of teacher autonomy. It can be concluded therefore that both schools and teachers matter in shaping student outcomes within second-level education.

2.2.1 Teacher characteristics

How teachers matter has been the subject of debate: "Although there is general agreement that teachers make a difference, there is a lack of consensus about which aspects of teachers matter most" (Palardy and Rumberger, 2008). Studies have looked at the impact of teacher characteristics and/or at instructional practices. Internationally findings on the effect of teacher qualifications are inconsistent. There has been no Irish research to date on the effect of teacher qualifications on second-level student outcomes, although there has been recent media debate on the extent to which mathematics teachers have relevant specialist qualifications. As with teacher qualifications, findings on the impact of teacher experience (number of years teaching) tend to be mixed. Other factors such as being positive about professional practice and support (professional identity), and feelings of self efficacy, are found to be associated with teacher effectiveness.

2.2.2 Teaching methods

Overall, there is some consensus that certain kinds of teaching approaches enhance student outcomes; all of these elements emphasise the active engagement and interaction of the learner, although this may occur in different contexts (including whole-class teaching). These include the following elements:

- Goal setting: the teacher setting clear goals for the lesson at the outset;
- Classroom focus: a less disruptive and more focused classroom fosters more time on task;
- Challenging material: an emphasis on providing challenging material to students, using higher order (open) rather than procedural (or factual) questioning and discussion;
- Active engagement: the active engagement of students in practical investigation;
- Group work: cooperative learning and peer tutoring through small groupwork;
- Formative assessment: the use of assessment for learning;
- Expectations: teacher expectations have a strong impact on student learning.

2.3 Curriculum and assessment

In Ireland, potential reform of junior and senior cycle education has been on the agenda for some time. Research clearly indicates that the current Junior and Leaving Certificate models tend to narrow the range of student learning experiences and to focus both teachers and students on 'covering the course'. The Junior Cycle Framework being introduced from 2014 will represent a very significant shift in educational policy and practice. It promises, inter alia, an emphasis on the kinds of active teaching and learning methods second-level students find engaging and much more flexibility at the school level to engage in course design. The success of the reform will ultimately depend on the extent to which principals and teachers are supported in acquiring the skills to develop their practice in this way. Its impact on the skills and competencies young people acquire will also depend on the degree to which similar changes are brought about within senior cycle education.

3. Conclusions and implications for policy

We can potentially learn a lot from what other educational systems have 'got right' and from the measures that have not succeeded. However, it is vital that, in drawing on such evidence, we do not fall into the trap of advocating 'policy borrowing'. The nature and structure of

national educational systems reflect a multiplicity of historical, social, cultural and economic factors, making it impossible to 'transplant' certain measures from one country to the other. We can, however, usefully engage in 'policy learning', by reflecting on existing international research and policy development through the specific lens of the Irish educational system and its societal context.

This paper has presented evidence on aspects of schooling which can enhance student outcomes, not only academic achievement but engagement, retention and social and personal development. There is robust research which shows that rigid forms of ability grouping (streaming) have a significant and large negative impact on student achievement for those allocated to lower stream classes. There is evidence too that the nature of the school climate significantly influences a range of student outcomes. Furthermore, students see care and respect on the part of teachers as key to effective teaching and learning in the classroom. Finally, providing active and engaging teaching and learning in the classroom is vital for student achievement. Effective investment in teacher education, both initial and continuous, is therefore a priority for resource allocation.

The full paper 'Improving Second Level Education: Using Evidence for Policy Development' (2011), Emer Smyth, Selina McCoy, ESRI Renewal Series Paper 5, is available from www.esri.ie

"The nature and structure of national educational systems reflect a multiplicity of historical, social, cultural and economic factors, making it impossible to 'transplant' certain measures from one country to the other. We can, however, usefully engage in 'policy learning'."

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Deepening the conversation around youth mental health

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To date, in Ireland, we have known very little about young people and their mental health. We know, for example, that one in five of them, at any given point in time, is distressed to a significant degree. However, we know very little about what contributes to their distress and what helps them to face and overcome their difficulties.

In May 2012, Headstrong, in collaboration with the UCD School of Psychology, published research called *My World Survey*. The purpose of *My World Survey* (MWS) was to establish a national youth mental health database in Ireland to deepen our understanding of youth mental health. This database - the first of its kind in Ireland - is focused on 12-25 year olds, and based on complete data from 14,300 young people.

This data produced in this survey is unique in that it is based on a suite of measures that focused on both positive (e.g. optimism, resilience, social support) and negative (e.g. depression, alcohol usage, self-harm) domains in a young person's life. By relating these measures to their overall mood and behaviour, we have been able to identify critical "protective" factors that enable young people to cope with the challenges they face, and also the "risk" factors that compound whatever distress they encounter in their development.

This study found that levels of psychological distress were generally found to increase with school years. Younger adolescents were shown to have more positive levels of well-being including higher levels of self-esteem, resilience, life satisfaction and optimism compared to older adolescents, consistent with the international literature. Older adolescents reported higher levels of difficulties and lower levels of positive well-being compared to younger adolescents. Problem drinking, substance use and behavioural problems were shown to increase across the school year. By sixth year, more than a third of adolescents were classified as engaging in problem drinking behaviour.

All young people are likely to experience distress at some stage in their development. What was interesting in the MWS data was that it showed how the presence of "One Good Adult" was associated with the likelihood of the young person being able to face their difficulties rather than turning away and trying to avoid them. The presence of such a person in their lives was related to the development of their self-esteem, their sense of belonging, and how they coped or didn't cope with difficulties. The absence of "One Good Adult" was significantly related to their level of depression, suicide and self-harm. When a young person reports very high level of support from a special adult when in need, the level of support they perceive from their family and friends is significantly above the average, and in particular, significantly

higher than a person with very low levels. Therefore, the presence of "One Good Adult" promotes a young person's connectedness with family and friends.

When consideration is given to the environment within which young people live in (in particular the 12-18 year olds), the school environment is one of the most primary aspects of a young person's life. The role of guidance counsellors and teachers as mentors is pivotal in this environment. In light of the research which has been outlined in MWS, the influence of "One Good Adult" cannot be understated or undervalued.

Based on the data from the emerging themes, MWS indicates that, by asking a young person a number of key screening questions, we may be able to determine their mental health status. These questions include the following:

- Have you had any serious problems in the past year that you felt you needed professional help with?
- Do you have a special adult who is there when you are in need?
- When you have problems, do you talk about them with anyone?
- Do you enjoy your family life?
- Do you cope well with problems?
- Have you ever been bullied?
- Do you feel angry a lot?

Young people who report agreeing with some or all of the above statements are highly likely to be experiencing mental health difficulties. This is where the role of schools and teachers, not just as educators, but as those who are in a position to provide positive mentoring support to young people, is essential. Schools, service providers and other professionals working with young people who need to identify those at risk for mental health problems should consider asking these very simple questions as an initial screening for a young person's mental health status. Young people who do not feel connected or bonded to those around them are more vulnerable in experiencing mental health difficulties. A teacher or guidance counsellor can make the difference by stepping across the classroom and reaching out a hand of friendship and, more importantly, a listening ear to a young person experiencing difficulties. The level of difficulty and the type of support that a teacher can provide, of course, is something to be considered seriously. However, in many cases, it is important to realise that issues faced by young people can perhaps be resolved by simply listening to them and offering genuine sympathy, advice and time.

There is a view abroad that the Department of Education and Skills has been slow to update its approach to supporting the mental health of people throughout the second-level education system. This view has sometimes rubbed off on teachers whose role in supporting the mental health of the majority of our nation's young people tends to be highly undervalued as a result*.

From our experience across the country in carrying out MWS it became very clear to me that teachers are playing a critical role in supporting young people, many of whom are facing significant challenges. Teachers, who were happy to go the extra mile for these students, spoke of their instinctive goodwill turning to frustration and helplessness when they reached beyond the walls of their school and tried to access specialist community mental health services.

The lack of a link between schools and the Child and Adolescent Mental Health Services poses challenges for teachers and at-risk students. Teachers may be reluctant to get involved with a troubled student, because they are fearful, as one principal put it, of "opening a can of worms".

Some schools have "care committees" which meet weekly to discuss at-risk students and to support teachers who are personally supporting those students. Many teachers know they can access the support of their guidance counsellor, but this invaluable resource is now threatened and needs to be protected, for the benefit of both students and teachers.

What schools need is a menu of options to support a young person, depending on his or her level of need. These will range from natural peer and teacher support that they encounter daily, to SPHE teaching that introduces them to basic ideas about how to develop and take care of their mental health and their interpersonal relationships. On other occasions a student may have need of more one-to-one support with the guidance counsellor or perhaps a NEPS psychologist. When a young person is exhibiting high levels of distress or when she or he is felt to be at risk of behaving in a destructive manner, referral to the local Child and Adolescent Mental Health Services is indicated.

In an ideal world all of these services should be knitted together within some form of care committee, under the leadership of the school principal. Without such integration of support services, young people can get lost between the cracks and teachers can end up carrying more than their appropriate share of responsibility. Sadly, we hear reports of system fragmentation everywhere. But there are also schools that have drawn together the critical supports needed by students into one coordinated jigsaw. Several of these "Jigsaw schools" initiatives, supported by Headstrong, are currently being evaluated and undoubtedly will have much to teach us into the future (see Headstrong.ie for regular updates).

Each of us holds a key role in the lives of young people. We are all potential "Good Adults" in the lives of those young people we know in our families, our communities, our schools and youth services. Many of us may not appreciate the power we have in influencing a young person's self-belief and how they learn from us the fundamental skills they need to live. The findings of MWS highlight how all young people, especially those who are not coping with their lives, need our support, now more than ever.

*Since this article was submitted, the Department of Education and Skills has issued Guidelines for Mental Health Promotion and Sucide Prevention to all second-level schools.

> *From our experience across the country in carrying out MWS it became very clear to me that teachers are playing a critical role in supporting young people, many of whom are facing significant challenges*

What is good teaching? What makes a good teacher?

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What is good teaching? Research and policy on good teaching

There is a very substantial literature on what constitutes good teaching. Research indicates a move from 'transmission' or teacher-centred approaches, where the teacher provides information and knowledge, to 'active' or pupil-centred approaches to learning in which pupils are active participants in the process of acquiring knowledge (OECD, 2009). At second level in Ireland the movement towards pupil-centred, active learning is evident but some difficulties remain. The dominance of traditional subject divisions, the extensive reliance on terminal examinations as the dominant form of assessment in public examinations, the role of the regular Leaving Certificate in the transfer to higher education and the labour market, and the stratification of the school system itself into hierarchical social class and academic categories all raise challenges (Drudy, 2011). In the international research conducted for the TALIS report (OECD, 2009) countries were ranked by the relative frequency with which they engaged in structuring teaching practices (e.g., summary of earlier lessons, homework review, checking the exercise book, questioning), student-oriented teaching practices (e.g., group work, self-evaluation, student participation in planning) and enhanced activities (e.g., project work, essay writing, product making, debating). For example, teachers in Denmark adopted the different practices to a fairly similar degree, while teachers in Ireland used structuring teaching practices much more than they did either student-oriented practices or enhanced activities and scored highest on structuring practices and lowest on enhanced activities (ibid.: 97). As Conway et al. (2009, 1.1; 1.7) put it, based on a review of research in nine countries, teachers now need the opportunity to become knowledgeable, inquiry-oriented professionals, attentive to problems of practice and resourceful in identifying means of gathering appropriate evidence in order to foster a culture of knowledge generation and sharing in schools, at a time when their role is becoming increasingly complex and demanding.

Internationally, it is claimed (Cheng and Mok, 2008), that we are seeing a paradigm shift towards a new form of learning. This paradigm shift, as described, involves a combination of a number of the elements of active learning and multiple intelligences (see below), combined with an emphasis on globalisation and future orientation. In this 'third wave', the nature of learning is a process of students developing contextualised multiple intelligences for sustainable and multiple developments in meeting the future challenges in an era of globalisation. The effectiveness of the classroom for third wave learning depends heavily on whether the classroom is an unbounded learning environment that can facilitate students' sustainable learning and contextualised multiple intelligences development (Cheng and Mok, 2008:382).

For more than a quarter of a century there have been a variety of critiques of the uses and abuses of measures to test intelligence (see Lynch, 1987; Drudy and Lynch, 1993). The work of Howard Gardner (1983) on the concept of multiple intelligences has been enormously influential in education and has resulted in a range of innovative approaches to teaching and learning. These innovations have extended from pre-school education and education for children with disabilities (Rettig, 2005), through to primary education and achievement in mathematics (Douglas et al., 2008) and on to secondary education (Sulaiman et al., 2011). Innovations based on multiple intelligences theory have also been found to be valuable in teaching and learning at third level (Shearer, 2009; Baki -Miri , 2010). The theory of multiple intelligences has, of course, had its critics, notably from the area of neuroscience (Waterhouse, 2006), though Gardner and his colleagues have counter-criticised (Gardner and Moran, 2006). In Ireland, Gardner's theories have had a substantial influence in teaching and learning in primary and second-level schools through a funded research project on multiple intelligences, curriculum and assessment (Hyland and McCarthy, 2009). The evidence from this project shows that MI-focused teaching and learning have led to greater involvement by students in their own learning, increased motivation on the part of students and teachers, and a more inclusive learning environment (ibid., 216).

There have been debates on the nature and number of capabilities or 'competences' that teachers should have (Tuning Education Subject Area Group, 2009; GTCNI, 2007). The concept of competences is in widespread use (although many prefer the term 'capabilities'). Research conducted by the Tuning Education Subject Area Group (2009) in 15 European countries found that the top five (from a list of twenty-five) competences or exemplars of good teaching which teachers should acquire in initial teacher education (ITE) are:

1. knowledge of the subject/subjects to be taught;
2. the ability to create a climate conducive to learning;
3. commitment to learners' progress and achievement;
4. the ability to communicate effectively with groups and individuals;
5. the ability to recognise and respond to the diversity of learners and the complexities of the learning process.

In similar vein, a study in the United States (Schulte et al., 2008) identified top competences as being: being knowledgeable, patient and caring; being understanding; teaching well; communicating effectively; disciplining and motivating. Less frequently researched and emphasised are what has sometimes been referred to as the 'emotional geographies' of teaching (Hargreaves, 2001). Day and Gu (2007) point out that managing the emotional arenas of classroom life is fundamental to effective teaching, and a sense of positive professional identity is dependent upon teachers' belief that they can do so effectively. Analyses of teacher-student relations have identified the affective domain, or caring about children, as fundamental to teacher professional identity (Barber, 2002). A frequently observed feature of teachers' motivation is an orientation to social justice. This, too, is related to an orientation towards care and to the moral dimensions of teaching (Smulyan, 2004a and 2004b; Santoro, 2011). Research in Ireland has demonstrated that both male and female student teachers were more strongly oriented to caring or altruistic values than others (Drudy et al., 2005). A study of entrants to second-level teaching (Clarke, 2009) found that an interest in working with young people, as well as love of subject and making a worthwhile contribution to society

were strong motivators in the decision to become teachers. Thus an ethic of care is an integral element of quality in teaching and in teacher education and should be incorporated into definitions of good teaching (Hebson, Earnshaw and Marchington, 2007). As regards ICT, it is generally accepted that the use of relevant ICT resources as pedagogical tools facilitates student learning (Ertmer and Ottenbreit-Leftwich, 2010), although further research on the exact impact of the use of ICT remains to be done (Andrews et al., 2007). Teacher education is a fundamental requirement for the effective use of ICT (Haydn and Barton, 2007; Ertmer and Ottenbreit-Leftwich, 2010).

Another important dimension of teaching that has been strongly emphasised in international debates is the importance of research and evidence-based teaching. This approach has been influenced by the Finnish experience, and in particular their approach to teaching and teacher education. This has attracted great attention throughout Europe and further afield – augmented by the high performance of their 15-year-olds on international tests. Apart from the fact that Finland consistently spent a higher proportion of its GDP on education than did Ireland from the early-1990s to the mid-2000s (OECD, 2011), the Finns adopted education policies based on equity, flexibility, creativity, teacher professionalism and a high trust culture of schools and teachers; good leadership; and a lot of resources invested in teacher education. Teachers graduate from initial teacher education at Masters level. Particular emphasis is placed on research- and evidence-based teaching and teacher education (Wikman, 2009). Research programmes have been identified as platforms for teachers' and teacher educators' continuous education (Niemi, 2008). At time of writing the results of a major study of U.S. teachers, students and classrooms, funded by the Gates foundation, has just been published and will no doubt generate great debate (see www.metproject.org).

In Ireland the Teaching Council has set out a code of professional conduct for teaching which, in effect, defines its view of good teaching and includes standards of teaching, knowledge, skill and competence (Teaching Council, 2012). This is the most definitive code to date on policy relating to teaching in Ireland and is accompanied by the development of the Council's statutory role in relation to the review and accreditation of teacher education programmes and its development of policies on induction, probation and continuing professional development (CPD). The code is based upon Irish and international research and policy and on a widespread consultative process. Its statement on what it deems to be good professional practice gives a clear indication of what is expected of registered teachers. The Teaching Council presents the role of the teacher as 'to educate' and asserts that the code is underpinned by the ethical values of respect, care, integrity and trust. Teachers should be caring, fair and committed to pupils and to equality, inclusion and respecting/accommodating diversity. They should seek to develop positive relationships with pupils, colleagues, parents, school management and others. Teachers should demonstrate professional integrity and honesty in all aspects of their work. In their professional conduct they should uphold the reputation of their profession and ensure that all communication (including electronic communication) is appropriate. The maintenance of a high standard of practice relating to student learning is required, in addition to a focus on the holistic development of pupils, high expectations, an emphasis on active and differentiated learning, informed professional judgement based on pupil development, learning theory, pedagogy, curriculum development, ethical practice, policy and legislation, together with an openness to constructive feedback. The code also places an emphasis on professional development (including maintaining their professional knowledge to ensure it is current, as well as critical reflection and evaluation of

their own professional practice), collegiality and collaboration (Teaching Council, 2012, pp. 5-8).

What makes a good teacher? The role of teacher education and CPD

A number of key European policy documents over the last decade have argued that teacher education is central to good teaching and to the knowledge economy (Drudy, 2008). These policy documents envisage that teaching should be a high status, high reward, well-qualified profession in which every teacher should have the opportunity to continue their studies to the highest level. This requires a form of teacher education which is reflective, analytical and critical and would be on a par with advanced studies in any of the professions. The analytical, research-based work of teacher educators would, it is envisaged, be conducted in partnership and collaboration with schools and other stakeholders. In Ireland, there have been ongoing reviews of initial teacher education (ITE) and a development of a framework for induction and continuing professional development (CPD) by the Teaching Council. These, and the recent government decision to extend the duration of initial teacher education, are very welcome developments. National and international comparisons suggest that CPD should be a condition of on-going registration. This is the case in other professions, and is the case in the teaching profession in quite a number of other countries (Clynes, 2009).

In its review of teaching and teacher education in 25 countries, the OECD suggested that raising teacher quality and standards is perhaps the policy direction most likely to lead to substantial gains in school performance (OECD, 2005: 23). The European Commission has recently highlighted the quality of teaching and teacher education as a key factor in securing the quality of education and improving the educational attainment of young people (Commission of the European Communities, 2007).

In the United States one of the most distinguished educational researchers and policy formulators, Darling-Hammond (2000), has argued that policy investments in the quality of teachers are related to improvements in student performance. However, she asserts that if classrooms are to be filled with teachers who can teach ambitious skills to all learners, the solution must lie in large part with strong, universal teacher education. The old transmission teaching model (which succeeded for some but left many more behind) is not adequate for a knowledge-based society that increases the cognitive requirements of most employment and of life in general (Darling-Hammond, 2006, pp. 5-9). Interestingly, other evidence from the United States shows that the greater the proportion of teachers in a high school with a Masters degree, the lower the English remediation need by that school's students in college, and that this effect is stronger for those students who attend high schools with larger minority student populations (Howell, 2011).

In the Netherlands research indicates that the most important predictor of student teachers' self-efficacy and professional orientation seems to be the extent to which the student teachers feel prepared for the teaching profession during teacher education (Schepens et al., 2009). In Scotland, Sosu et al. (2010) have highlighted the importance of initial teacher education in developing attitudes to inclusion, although this is one of the most complex and difficult areas which newly-qualified teachers must master and for which there is on-going need for support during induction (Killeavy and Murphy, 2008) and during continuing professional development (Schleicher, 2011). The recent Programme for Government (2011) demonstrates an awareness

of the importance of teacher education insofar as it says that a priority in education would be to recruit, train and support the highest calibre of teachers (p. 38).

As regards findings on CPD in Ireland, data from a survey conducted for the TALIS report (and also analysed by Schleicher, 2011) show that Irish teachers participated in relevant activities for an average of just 5.6 days of CPD over an 18 month period compared to an average of 15.3 days for all of the countries surveyed (OECD, 2009; Schleicher 2011). Just 11.4% of Irish teachers had participated in qualification-bearing programmes, compared to the international average of 24.5%. Yet the Irish teachers who did participate in award-bearing programmes were proportionately more likely (92.5% compared to the 87.2% TALIS average) to report that such programmes had a moderate or high impact on their development as teachers (OECD, 2009, pp. 80-86; Schleicher 2011, pp. 90-96). In a recent article Sugrue points to a need for more school based CPD but also that school-university partnerships have considerable potential for capacity-building and the accreditation of professional development in systematic and sustainable ways (Sugrue, 2011).

The provision of certified CPD courses is a very important dimension of the national CPD repertoire. Their purposes are different to short-term support programmes, but they are vital to underpin developments, giving the depth of understanding, the critical consciousness, the research awareness and the informed skills to sustain progress in schools and as a contribution to other CPD progammes. It is the latter element of critical inquiry and research which most clearly differentiates the award-bearing form of CPD from other forms of provision. The unique contribution of the universities and colleges of education lies in the training and capacity building of teachers as researchers both in relation to their own practice and to the school and educational systems (Drudy and Coolahan, 2002).

Concluding reflections

In sum, then, there is an on-going shift to active, pupil-centred forms of teaching and learning. With economic, demographic, social and curricular changes there are increasing complexities and challenges facing teachers. A wide range of skills is now needed, especially if changes to curriculum and pupil outcomes are to be effected. There is increasing emphasis at national and international policy levels on research and evidence-based teaching. Teacher education is now accepted as extremely important in making substantial gains in pupil performance. A recently announced extension of time for ITE programmes is very welcome. This offers the opportunity not only of extended practical experience in schools but also of expanding and enhancing the inquiry/research dimension of teacher education. As regards CPD, there are strong arguments for making it a condition of continuing registration, as is the case with other professions and in many other countries. The duration of Irish teachers' involvement with CPD is considerably lower than that in other countries. However, there is evidence that those who engage with CPD, especially certified CPD, feel it has a very beneficial impact on their teaching. There is also some evidence of improved pupil performance when there is a high proportion of teachers in a school with Masters qualifications.

In spite of the above evidence and policy development, there is now the danger of considerable damage to teacher education arising from the recent austerity measures in the 2012 Budget (Department of Education and Skills, 2011). These remove the allowances attaching to Masters and Doctoral qualifications for new entrants to the profession, in addition to proposed

substantial cuts in the money for continuing professional development. The allowances provided an incentive to teachers undertaking certified CPD – important when one considers the lower proportion of Irish teachers taking advanced qualifications in comparison to their international colleagues – and indeed, the substantially lower number of days of all kinds of CPD taken by Irish teachers. What this points to is a substantial policy contradiction both at European level (from where our budgets are now controlled in large measure) and at national level where the goals include building a knowledge society, and recruiting, training and supporting the highest calibre teachers. These admirable objectives still need to be incentivised. Arrangements under the Croke Park Agreement offer potential for enhanced CPD. However, certified CPD - up to Masters and Doctoral levels - also needs support. This is critically important to the profession and to the system.

> *With economic, demographic, social and curricular changes there are increasing complexities and challenges facing teachers. A wide range of skills is now needed, especially if changes to curriculum and pupil outcomes are to be effected."*

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Creating lifelong learning cultures in our schools

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Introduction

There is widespread agreement that the industrial model of education is outdated for the 21st century. This model was designed to prepare children to work in traditional, labour intensive industries and has long outgrown its purpose. Today, we live in a rapidly changing global technological world and our education system needs to change significantly in order to meet these new challenges.

Transforming existing educational systems is a global challenge and one that many countries are engaging with in an effort to remain competitive. For example, President Obama stressed the need to overhaul the American education system as an economic imperative that can't wait. Similarly, the Australian government unveiled a $14.7 million investment that will provide infrastructure funding so each of Australia 9,540 schools can meet the needs of 21st century students and teachers.

However, a reality remains; changing an educational system is a lengthy and challenging proposition, one which requires thoughtfulness and perseverance. It ultimately relies on a vision of learning for all our children coupled with the necessary supports for our teachers to deliver on the vision. In Ireland today, our harsh economic reality adds to the complexity of the challenge.

Background to the Innovative School Programme (ISP)

In January 2007 Microsoft Corporation launched the Innovative School Programme. The ISP is dedicated to supporting the educational transformation measures of governments and other stakeholders across the world. The ISP connects schools with expertise, research and, most importantly, a community of their peers as they begin major initiatives to bring about 21st century learning environments.

Parts of the application process required schools to consider two questions:

1. If you could design and build a school from the ground up, using research-driven learning principles and best in class technology, what would you create?; and
2. The school as we know it today is essentially a product of the 19th century. Lots of good things came of out of the 19th century, but most of them were abandoned, apart from schools – discuss.

After a rigorous selection process, 12 schools from an application pool of 200 were selected to take part in the programme. Schools were drawn from all over the world, with one Irish

school joining the ISP: Dunshaughlin Community School, part of Meath VEC. The then Principal Seamus Ryan, sat beside Bill Gates at the press conference in Edinburgh when the ISP was launched. Throughout the following two years, schools formed a network and worked on variety of projects. Most importantly, they began sharing ideas, insights and strategies to aid their schools in responding to the needs of their learners. Today, the ISP has grown to over 170 schools across the world.

What have we learnt from this programme?

Innovation lies at the heart of a transformation process that is agile, adaptable and in tune with young people's lives outside of the classroom and their future career goals. However, a key question is, what kind of innovation are we talking about and, more fundamentally, how should it be implemented?

In working with the schools, we aimed to coordinate changes so that they complement rather than compete with one another. A useful framework for thinking about systems innovation is based on the work of Knapp, Copland and Talbert (2003). In essence, the intersection of (1) teaching, learning and assessment, (2) building capacity, (3) leadership and culture of innovation and (4) learning environment are the elements which provide a framework to create a culture of lifelong learning – the "Innovative Framework".

As we know, below the surface of successful schools is a system of connections and interrelationships that enable transformation in a focused and coordinated way. However, many innovative attempts to introduce student-centered, problem-based learning, and technology-rich learning environments have not succeeded because they collided with existing outdated assessment practices, or because the appropriate level of professional development was not in place for teachers.

The Innovation Framework begins by asking four key questions which lie at the heart of creating a culture of life-long learning in any school:

1. How a curriculum should be designed, and how should students be assessed?

In a number of countries, school curricula and instruction are mostly didactic based on subject-based knowledge transmission and large amounts of rote learning. This ignores many skills that are increasingly necessary for life and work and often fails to engage students. Of course, schools implement and work according to national standards and other learning requirements, but they can also consider more effective teaching and learning strategies and encourage student-centered learning and assessment processes.

Many innovative schools actively engage students in their learning and in the co-design of the learning process. There are a variety of ways of doing this including the use of student councils, utilising students as researchers within schools and promoting online student feedback on the quality of teaching and learning. Technology skills are crucial in the 21st century skill set, but technology should play a more significant role in the transformation of learning practices. High-level ICT integration increases the possibility of personalising learning processes, making learning accessible to students anytime and anywhere.

2. How can teacher professional development be identified, delivered and measured?

Ongoing teacher professional development is paramount in supporting student achievement. Research suggests that true professional development involves the establishment of a

professional community focused on learning (Hargreaves and Stone-Johnson, 2009). In an environment where the expectation is continuous learning through supportive feedback, teachers can develop and practice the 21st century skills they want students to develop. At the heart of these are social skills and the development of measurements to assess their use.

Teachers need continuous training and supportive assessment to cope with the demands of the changing educational landscape. One approach used is for schools to develop their own models for training and apply these consistently. Professional development includes peer-to-peer coaching and mentoring not only for newly-hired teachers, but as ongoing practice for all teachers. As with other areas of reform, technologies offer opportunities to transform teaching and support teacher learning.

3. How can schools develop a culture that is conducive to innovation?

At the heart of the innovative process is a school culture that is dynamic, forward-looking and empowered. In Michael Fullan's book, *The Six Secrets of Change* (2011) one of the elements of successful change is understanding that learning is the work. As he says, "Learning is not workshops and courses and strategic retreats. It is not school improvement plans or individual leadership development. These are inputs. Rather, learning is developing the organization, day after day, within the culture."

An innovative school is not one person's creation but rather the product of enabling the whole school to help design new processes and procedures. This requires successful management of relationships at all levels across the school and beyond to include parents, community, and other stakeholders.

A particular focus is on leadership development, preparing administrators to be instructional leaders, supporting a distributed group of leaders rather than a select few, and devising plans for developing leaders and leadership skills at all levels. These leaders are responsible for promoting a school-wide learning community that keeps all stakeholders working together on the common goal of improving student learning. In addition to the development of individuals, a culture of innovation depends on organisational development and management. Another way to facilitate innovation is changing school structures such as facilities, programs and use of time. Finally, providing time during the school day for staff collaboration and school networking can enable effective change.

4. How can schools use technology for management, learning and communication?

One dimension to consider is the design of physical spaces for rich and diverse educational experiences, including space for oral discussion, project work (creations in art, science, etc.) and performance. Learning opportunities can be extended by considering virtual spaces for simulations, role-playing and networking.

Furthermore, as with all areas of reform, technologies are key to transforming the learning environment. Too often technology is "bolted on" and not integral to enhancing and assessing learning within schools. Schools need access to technology for all students and teachers in order to support anytime anywhere learning, personalisation and 21st century skills. The learning environment can be developed so that it supports learning in and out of school through such options as community involvement and workplace internships, and by involving community members as mentors and coaches. In this way, education is unconstrained by time and place.

Conclusion

The role of an Innovation Framework described above can help schools address the necessary questions and help them frame solutions that meet the needs of their schools in developing a culture of life-long learning. Harnessing a passion for technology and applying it to learning will, as Bill Gates said in *The Road Ahead*, "empower people of all ages both inside and outside the classroom, to learn more easily, enjoyably and successfully than ever before."

An opportunity currently exists for Ireland to reverse the findings of the recent PISA report, and to become an exemplar in the provision of education for all our children. Given the speed of technological and educational progress, to stand still is to fall further behind. This opportunity needs to be grasped if present deficiencies are not to result in Ireland joining the ranks of the 'left behinds' – with the result that the nation's traditional pre-eminence in education is eroded. Our children's future is too important to allow that to happen.

> *Technology skills are crucial in the 21st century skill set, but technology should play a more significant role in the transformation of learning practices. High-level ICT integration increases the possibility of personalising learning processes, making learning accessible to students anytime and anywhere.*

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What's the story? Developing students' creative capacities

Roddy Doyle and Sean Love

Roddy Doyle and Sean Love are co-founders of Fighting Words, a free creative writing centre in Dublin's north inner city – www.fightingwords.ie.

We opened a creative writing centre in Dublin's north inner city in January 2009. We called it Fighting Words – a temporary name that immediately felt like a good idea. We didn't conduct extensive market research to see if it was wanted. Nor did we seek to align it to the formal education system. We took our line from 'Shoeless' Joe Jackson, in the movie, Field of Dreams: 'If you build it, they will come.'

We wanted to address the absence of outlets for children and young adults in Dublin to engage with creative writing, and the lack of space for creative writing in the school curriculum. It seemed daft, in a country that prides itself in being a land of writers, that there was so little time for writing.

But we did wonder if anyone would be interested, or if we'd find the volunteers we needed to provide the service. We needn't have worried. From the very beginning, the interest has been colossal. Since January 2009, we have hosted over 35,000 students – mainly children and young adults – in free creative writing workshops and courses. Most of the students come with their schools, but we also host sessions with a wide range of special needs groups and with individual teenagers outside of school time. We are constantly booked out a year ahead.

All our courses are free. Our tutors and mentors are all volunteers. We have more than 500 of them. All our volunteers are subject to interview, reference checking, Garda vetting and training. Our training is very straightforward: we make the volunteers do what they'll be making the children do. They either love it, or they don't come back.

We had our own inspiration. We'd visited 826 Valencia in San Francisco, a writing centre established by the author Dave Eggers. We'd loved what we'd seen being done there, the way little kids were invited to write, and the way monosyllabic teenagers, some with very little English, were persuaded to write thousands of their own words, in English.

Our primary school model is close to that used by 826 Valencia. Children sit in front of a big screen and write a story, together. They watch the story grow as they see the words they've chosen appear on the screen. They change their minds, and see the consequences. They don't have to worry about spelling or punctuation – yet. At some point, a cliffhanger – a good place to stop and draw breath – the 'together' part of the writing stops, and the children go to tables to write their own endings to the stories. The writing is at its core, but each session is a little piece of theatre – with illustrations, magic doors and a cranky editor who refuses to believe that children are able to write good stories. Three and half years in, no story has ever been repeated.

Our secondary school work is our own invention. We'd seen that the big screen worked with young children and wondered if the screen could work with teenagers, and even adults. About three weeks after we opened, a group of young women came to us. They were taking part in a back-to-work scheme; they were all early school-leavers. They wanted to write a story, they said, but they didn't know how. They had a plan – four friends in their early 20s, living at home in their different houses; the excitement of their lives, and the difficulties – alcoholic parents, absent parents, grandmother with Alzheimer's, depression, unemployment. But they didn't know how to go about it. In the few weeks we'd been open we'd seen the impact of the screen, the excitement it created, the fun and, in many cases, the temporary removal of the fear and anxiety that the physical act of writing can awaken or reawaken. So we asked two of the young women to imagine themselves as two of the characters, and to talk – just talk – to each other. They didn't want to stand, so they sat with their friends in front of the screen and they started to talk. A typist tried to keep up with them. They were funny, and quickly began to enjoy themselves. After a minute or so, they stopped, and read what had gone up on the screen as they'd talked. They loved it.

"It's like real talking," said one.

They loved that, the fact that their spoken words were good enough to go up on a screen, or page. Almost immediately, they began to edit what was there.

"I don't like that," said one.

She stood up and walked over to the screen and pointed at a line of dialogue.

"I wouldn't say that," she said.

She'd decided that they could come up with something better. It didn't matter what had actually been said; fiction could be an improvement. They began to change the dialogue, to put the fictional women in a location. They decided whether to write in the past or present tense; they experimented with the verbs before they finally decided. They rejected some lines, they changed their minds – they were writing.

So our secondary school work always starts with the screen. The screen, and the handing over of some of the more worrying, crippling parts of the process – spelling, punctuation – and the sight of their own words going up there, the simplicity of it, allowed them to get straight to the core of the thing, the story and the words that make the story.

Writing is a solitary occupation – eventually. But we've witnessed it, again and again, over the last three years: if the writing starts as a collective exercise, a bit of fun, almost a piece of theatre, by the time the writers go to the tables and start to write by themselves, they produce better, more confident work. They've seen what they can do, the simple things that can make a good line brilliant, and they're keen to give it a go themselves.

We start with a small piece of role play. We have different situations for different groups, depending on age and gender. We keep it simple: two characters. Two girls talking, one of whom fancies the other's brother; this always works with young women of 15 and older. Two friends, one of whom has just won two tickets for a gig, the other assuming he or she is getting it, but isn't: this one always works. There was one unforgettable session when two 15-year-old boys became the two friends and, inside a minute, one of them, the lad with the tickets and the power, shouted at the other: "You stole my girlfriend." A great line, and they knew it. Everyone knew it. They couldn't wait to get to the tables, to start their own versions, to get

their own characters to that line, and past it. Two friends outside the principal's office; one of them has broken a window and has accused the other of aiding and abetting. This one works with younger boys – and girls. Actually, the damage that girls can do to school premises and equipment has been a revelation. The dialogue goes up, then questions like, 'Why are they there?' 'Where was the window?' 'What are their names?' 'How long do they wait?' produce answers and ideas, and contradictions that have to be dealt with, and better ideas, the deletion of lines, the insertion of other lines. Writing, in other words.

Quite soon after we opened, often at the suggestion of volunteers, we started to run courses on other forms of creative writing, including film scripts, plays, graphic novels, radio drama, journalism, songwriting and film animation.

We have, to date, published four anthologies of short stories, a graphic novel, and two special supplements of new writing with the Irish Times. We have developed creative partnerships for teenagers with The Abbey Theatre, Brown Bag films, Yellow Asylum films, Hugh Lane Gallery, IMMA, Storyful, Athena media and with hundreds of individual writers and artists. The point is the interest and demand is manifest from students and from teachers.

Most stakeholders are aware of the limitations of the current curriculum at second level. There has been considerable public discussion, much of it led by teachers, of the ill-preparedness of teenagers arriving at university for critical thinking, creative thinking, independent thinking. We believe that the absence of opportunity to properly engage with creative arts is a significant contributory factor.

It is important we make clear that we are not criticising teachers or schools. We are aware of the huge amount of creative work happening in our schools. Our experience is that teachers are the people best positioned to know what their students most need, and when they are not resourced to provide it themselves, to seek it out from a centre such as Fighting Words.

We believe creative writing is an essential part of every child's education, and given the level of demand for our service from all around the country, we think most teachers and students share that view. Fighting Words is constantly booked out a year ahead, and we could easily fill four centres on a regular basis. It seems to us to be self-evident that we should have our formal education system reflect this interest – this need.

Our proposal is to try a pilot: as the key part of their English course for the junior cycle, why not allow students in first year to choose that they will write a novel, a play or a film script? It can be continuously mentored and assessed over the three years. Of course, teachers will need support and training – but that support can be provided. The expertise is available. 'If you build it, they will come.'

We believe creative writing is an essential part of every child's education, and given the level of demand for our service from all around the country, we think most teachers and students share that view.

Innovation – cultural shift or add-on to schools?

Damini Kumar

Damini Kumar is an international expert in design, creative thinking and innovation. She is the current Director of Design and Creativity at NUI Maynooth.

The world is moving to a new rhythm. To be at the forefront of this new world, Ireland needs to become more creative and innovative. To be creative means to imagine something that didn't exist before and to look for new solutions and forms. To be innovative means to introduce a change which adds value to society and to the economy, and most innovations are new combinations of what is already there.

Creativity is a fundamental dimension of human activity. Creativity is at the heart of culture, design and innovation, but everyone has the right to utilise their creative talent. Everyone is born with creativity and failure to nurture this results in personal creativity being lost throughout the education system. More than ever, Ireland's future depends on the imagination and creativity of its people and fostering more innovative and creative mindsets in the education system at an early age is vital. The economic, environmental and social crises challenge us to find new ways of thinking and acting. Creativity and innovation can move society forward toward prosperity.

The Irish second-level education system needs to encourage practical experience alongside theoretical knowledge. Teaching needs to incorporate learning-by-doing rather than just knowledge transmission. Creative problem solving is one of those things that you can learn – but one critical factor during any problem solving exercises is the ability to be practical.

The current system encourages '"parrot fashion learning" rather than fostering creative problem solving. Parrot fashion learning is used in order to pass exams and students can play the current system and become high achievers on paper but are they able to innovate? This current system is not conducive to a system which encourages innovation. Instead second-level education needs to adopt a different system where lessons involve more practical learning rather than just knowledge transmission.

The school system needs to encourage learning by doing, risk taking, learning from mistakes and failure. Is it better to learn from your mistakes or to never fail at all? Problem solving by learning from your mistakes and failures and constantly improving them helps you create the best possible solution thus innovating. This is applicable to any problem that you want to solve and this process of learning from your mistakes is very powerful. The future generations of students in Ireland need to be able to innovate using the iterative process during which you are continually learning from your mistakes and being practical.

Is this a cultural shift or just something that can be added into the current Irish education system? A cultural shift combined with certain changes within the education system itself

can help create a second-level student that will help Ireland to prosper. In our current western culture, the concept of making mistakes or failing is a very hard concept for people to grasp especially as it is inbuilt in our heads that failure is unacceptable and it is sometimes better to not start something in the first place or to move forwards with an idea that doesn't work well rather than to start again. Design is an iterative process and you must be able to learn from your mistakes and continuously improve on your previous idea. Actually, it is exactly this design process, or design thinking as it is called nowadays, that leads to innovation and value by understanding the needs, emotions, aspirations and abilities of users. Design activities transform ideas into value and link creativity to innovation. A strong emphasis needs to be given to design in education at all levels. Modules on design thinking should be incorporated into all education programmes.

Risk-taking is part of the process and again a cultural mindset shift needs to occur in order for people to be able to take that risk. Educators should be able to change the culture in schools. Does always getting the right answer in class foster an innovative mindset? When a teacher asks a question in the classroom it is more than likely that that question will have a right or wrong answer. If a student puts up their hand and gives an incorrect answer then usually the teacher will continue to ask the question to the remaining students until the correct answer is reached. Does this way of thinking help the student to problem solve? Actually this behaviour is known as the right answer syndrome and it is likely to diminish the student's confidence and creativity so that they are very unlikely to put up their hand again in case another wrong answer is said. Whereas a learning environment where incorrect answers are explored and thought processes are analysed in order to see how this answer was arrived at allows students to make mistakes and is a great way of fostering innovation. Some Scandinavian countries use these methods in the classroom (as early as primary level) and gradually change the mindsets of students, improve confidence and foster more creative and innovative mindsets in the classroom. Educators and the education system need to be trained to encourage this type of learning in class rather than right answer syndrome.

Schools need to be reinvented in partnership with teachers and students so that second-level education prepares students for the learning society. It is critical to retrain teachers and engage parents so that they can contribute to an education system that fosters innovation so it

> *More than ever, Ireland's future depends on the imagination and creativity of its people and fostering more innovative and creative mindsets in the education system at an early age is vital.*

becomes part of the student's mindset which can help us achieve a cultural shift. Also all students should learn how to mix theoretical education with practical experience so that they can further develop this necessary knowledge to help Ireland prosper in the future.

Can anything be done straight away to the current second-level education system to encourage innovation? Firstly barriers should be broken down between the arts and sciences so that graduates in the 21st century have practical problem solving skills in whatever environment they find themselves in during their lives. Students need to have a whole-brained education and can become experts in arts, sciences and mathematics. This divide starts from a very young age and students are placed in a category of being either scientific or artistic and usually have to choose which field to follow. The education system needs to be broad in range and have more cross-discipline educational course activities so that it is conducive to value creation and innovation in the modern world. Thus, the graduate of a creative education befitting the 21st century should have common ground with every expert, from technologists to politicians to artists. Cross-discipline collaboration is a key so that knowledge can be managed, shared and applied to promote innovation across all sectors.

For Ireland to foster innovation and to help the economy we need to not only teach the skills of creative problem solving using design but also to encourage learning by doing, risk taking, learning from mistakes and encourage failure within the education system. Government should support creativity and design related activities within the lifelong learning process and throughout the education system to promote innovation across all sectors.

Education and equality

Fintan O'Toole

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When people talk about what makes a decent society, the argument often comes down to a clash between economic growth on the one side and social justice on the other – as if the two are separate from, or even in conflict, with each other. But they're not – especially not now. After the collapse of a model of the Irish economy that embraced the idea that large-scale inequality is a tolerable, perhaps even necessary, consequence of prosperity, there is a need to think differently.

And in that process of re-thinking, two things are immediately obvious. The first is that Ireland has no hope of long-term recovery unless it becomes one of the best-educated societies in the world. The second is that it has no hope of becoming such a society if it leaves behind a large proportion of its young people. It is not just basic justice that demands a vision of education that has equality at its heart. It is also hard, pragmatic calculation.

Educational inequality starts early. The ESRI *Growing Up in Ireland* study is a large-scale national project, tracking the progress of 18,500 children over seven years. In its first snapshot of nine year-old Irish kids, it found that most of them were broadly happy at school. But it also found something rather striking. Even at this tender age, the scores that these kids were getting for reading and maths were very heavily influenced by their mother's level of education. The kid's scores went down dramatically just as their mother's level of education declined.

A child whose mother is a graduate scored 63 and 78 in maths and vocabulary respectively. If the mother had only lower secondary education, the child scored 45 and 59. In a real sense, these children are being taught, not just by their present teachers, but those who taught – or failed to teach – their mothers (ESRI, 2009).

In other words, even at the age of nine, there are clear winners and losers in the Irish educational system. The reasons why some children are disadvantaged are obvious enough. There is no mystery as to why better-educated parents are more likely to be able to give their children an environment rich in intellectual stimulation and to help them with problems at school. But the children of more poorly educated mothers were also found to have been absent from school more often (7.6 days in the previous year, compared to 5.4 days for those from well-educated households.) They are also more likely to be sick: 76 per cent of nine-year-olds from professional/managerial groups were reported to be "very healthy", compared with 69 per cent of those from semi-skilled/unskilled manual backgrounds. And they are almost three times more likely to be obese: 11 per cent compared to 4 per cent. This suggests that the kids from better-educated backgrounds are also better fed and have more access to sport and play.

Now, if you read current official strategy documents, you will discover that part of the State's plan for recovery is to get more than half of these struggling nine year-olds into third-level education in less than a decade's time. This intention is not driven purely by an altruistic belief in equality, or by the notion that a republic ought not to be able to stomach the idea that the winners and losers in its education system have already been pretty much chosen at the age of nine. It is driven, above all, by collective self-interest.

If Ireland is to have a successful economy in 2020, it will be one in which levels of education are outstandingly high. But, according to the National Skills Strategy, "in the absence of policy change, a significant proportion of Ireland's workforce will remain low-skilled in 2020, with their highest level of educational attainment below upper secondary level (Expert Group on Future Skills Needs, 2009, p. 2). This is because, even in the boom years, Ireland's workforce remained relatively unskilled: in 2004, only 6 out of 27 OECD countries had a worse performance than Ireland in terms of the percentage of the labour force who had attained no more than a lower secondary qualification.

This gap between aspiration and reality was clear, it should be noted, even before the banking crash of 2008 and the consequent loss of investment in education. If anything, the likelihood is that, without a radical change of policy, a large part of the Irish workforce will still be low-skilled in 2020, must be even higher now.

So how is this gap to be closed? This is where the equality issue becomes so urgent. Ireland can upgrade, to some extent, the skills of those who are already highly skilled. But this doesn't solve the problem. To meet its economic goals, the real up-skilling has to come from the obvious place – those who are not currently skilled enough to benefit from a "smart economy". The benchmark set by National Skills Strategy is to have around three-quarters of young people participating in higher education by 2020. To reach that figure, Ireland will have to get over half of its children from poorer socio-economic groups into third-level colleges.

Which raises the obvious question: how likely is this to happen to the nine year-olds who are already so far behind their peers?

Looked at in the most brutally mechanistic way, it is probably true to say that the Ireland of the last 20 years could just about afford to leave behind the equivalent of our nine year-olds. Doing so may have been deeply unjust and shameful, but Ireland could get away with it because the middle and upper classes were extremely good at taking advantage of the new educational opportunities. Social injustice has not prevented Ireland from managing a very real achievement in improving the overall levels of education.

But this is no longer true. What's happening now is that rates of participation among the middle and upper classes are pretty much at saturation point. Children of higher professionals reached what is effectively full participation in 1998 and have maintained that situation ever since. Farming households have participation approaching 90 per cent. About two-thirds of 17-18 year olds from households headed by lower professionals, employers, managers and the self-employed now enter higher education. There are certainly gains to be made in these latter groups, but they will have a limited impact on the overall goals.

A large-scale further expansion of educational attainment, of the kind that Ireland will need in the next decade if it is to have any chance of recovering its status as a world-class economy,

simply can't come from the social groups who are already fully plugged into the system. It has to come from those who have been left behind. In essence, the big challenge in upskilling the Irish population lies with two groups – those who are not currently getting to third level and those older workers who have relatively low skills and levels of education. In other words, Ireland can't close its skills gap unless it closes its social justice gap.

In relation to today's disadvantaged nine year-olds – it is worth noting that even the relatively ambitious official strategy envisages a continuation of large-scale inequality. *The National Plan for Equity of Access to Higher Education* sets the overall target of getting the percentage of school leavers who go on to higher education up from 55 per cent now to 72 per cent in 2020. But its target for the lower socio-economic groups is not 72 per cent. It is "at least 54 per cent." As revolutions go, this is not the storming of the Bastille but a polite knock on the door.

And yet, even this very timid goal is wildly unrealistic if things stay broadly as they are. Consider how far there is to go in order to get every social class in Ireland with a participation rate for higher education of at least 54 per cent. At the moment, three classes are below this figure: the "skilled manual" at 50 per cent; the "semi- and unskilled manual" at 33 per cent and the so-called "non-manual" at 27 per cent. It is reasonable to assume that the children of skilled manual workers will reach the target. But for the other two groups to make it there will have to be a radical change, not just in education policy, but in the nature of Irish society.

The stark fact is that even the very modest targets for more equal participation in higher education are not being met. The HEA's mid-term review of the strategy in 2011 notes that "We have not... achieved the majority of the participation targets set for 2010." In fact, things seem to be going backwards. In 2007-8, 11 per cent of new entrants to third level were from the target "non-manual" group. In 2009-10, the figure was 10 per cent. Likewise, in 2007-8, 11 per cent of new students were from the target semi- or unskilled group. By 2009-10, this had fallen to just 8 per cent. The same story can be told of the targets to increase participation in lifelong learning. In 2006, the percentage of those aged 25 to 64 who were participating in some form of education was 7.3 per cent. In 2010, the latest year for which figures are available, it was exactly the same. To put this in context, the official target for 2013 is 17 per cent. There does not seem to be the slightest chance that it will be reached (HEA, 2010).

Conversely, of course, those groups who are already well established as the winners are further entrenching that position. In the academic year 2008-09 (the latest for which figures are available), the largest socio-economic group for new entrants to both universities and institutes of technology was "employer and manager". In the universities, a full 21 per cent of all new undergraduates came from this small section of society. And this proportion was actually an increase on the previous year. At the country's largest university, UCD, 43 per cent of students came from either fee-paying or grind schools (Irish Times, 2008)

Money, however, is not the only issue. While there are students who would go to third level colleges if they could afford it, there are many others who don't ever get to a point where such a choice really exists. Long-term educational disadvantage is structural. It is shaped by poverty, both financial and cultural, by housing and health care, by long-term unemployment (which, of course, has rapidly increased in recent years) and by the educational levels of parents. No education system on its own can transform all of these conditions. But it can have a damn good try.

The problem of getting currently excluded students into higher education is a Babushka doll. Inside it, there is the problem of secondary school dropouts, inside that there is the problem of primary school failure and inside that there is the problem of early childhood care and education.

This brings us back to our nine year-olds. If they are already at a serious disadvantage, what is the primary school system doing about it? Many teachers make heroic efforts, but by any standards, primary education is woefully under-resourced. The reality is that current levels of commitment to primary education are failing to bridge the gap between the advantaged and the disadvantaged.

And behind primary education, there is early childhood education, a field in which Ireland has an atrocious record. The National Competitiveness Council, looking at the issue from a purely economic point of view, nevertheless noted that "Investing in pre-primary or early childhood education and care is a unique opportunity for public policy to promote social justice and productivity in the economy at the same time" (National Competitiveness Council, 2009).

The unavoidable conclusion is that Ireland has to focus a lot more of its resources – intellectual, organisational and financial – on education and target it a lot more ruthlessly at those who need help most. And unlike other areas, this is not one in which it can be said that better outcomes can be achieved with fewer resources. The Irish education system is already efficient in terms of processing very large numbers of young people at relatively low cost. In this case, less is not more. More is.

An integrated strategy for investment in education and educational equality is not a Utopian demand. It is a basic condition for a functioning economy and a sustainable society. In facing this challenge, there is no choice to be made between prosperity and decency. Ireland can't have one without the other.

> *In essence, the big challenge in upskilling the Irish population lies with two groups – those who are not currently getting to third level and those older workers who have relatively low skills and levels of education. In other words, Ireland can't close its skills gap unless it closes its social justice gap.*

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Supporting high quality teaching

Pat King

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In the globalised economy, education, skills and knowledge are central to economic and social progress. Ireland is no exception in aspiring to be a 'knowledge economy'. We are told education policy is now at the centre of government policy – and not just economic policy. Increasingly, the social outcomes of education are gaining prominence. The OECD's annual education indicators, *Education at a Glance*, provide analyses of the relationships between levels of education and social outcomes such as trust in society, citizenship and the health status of the population. In this regard, the commitment of Irish teachers to providing a holistic education for their students is a major strength in our second-level school system.

In the words of the renowned Finnish educationalist, Pasi Sahlberg, "schools and teachers are being asked to do more than they have done before, but also in a different way." (Sahlberg, 2006, p. 238), Policy objectives such as lifelong learning, the knowledge economy and the smart economy comprehend very profound changes in thinking about the role and purposes of education. Across the world, teachers are being challenged to transform educational outcomes to meet these critical development goals. Their role as transmitters of knowledge – important as this is – is no longer enough. Teachers have to absorb these new objectives into their daily practice in the classrooms. They have to personalise learning to ensure that every student has a chance to learn and to succeed in learning. They have to do this in a digitalised culture, the sociological and cultural impact of which is only beginning to be analysed. Irish teachers are no exception to this global trend.

Teachers are not just central to the societal objective of improving outcomes in education: they are increasingly the focus of improvement efforts themselves. A seminal report by the OECD in 2005, *Teachers Matter*, identified a number of challenges facing OECD countries in terms of maintaining a high quality teaching force. These included: problems of attracting high quality graduates into teaching; the retention of such graduates once in teaching; incentivising further learning and continuing professional development; and maintaining the status of the teaching profession (OECD, 2005). Indeed the subtitle of the report – Attracting, Developing and Retaining Effective Teachers - sums up the concerns of policy makers of the OECD countries:

- the attractiveness of teaching as a career,
- recruiting, selecting and employing teachers,
- developing teachers' knowledge and skills,
- retaining effective teachers in schools.

The ageing of the teaching workforce is compounding these trends: in many OECD or countries, over 40% of the teaching workforce is over 50 years of age (OECD, 2005).

It is sobering to reflect that at the time the OECD report was published, Ireland was seen as somewhat protected from the above concerns. However, the landscape of the teaching profession in Ireland has changed significantly since this report's publication in 2005. Ireland cannot now be considered to be immune to these global trends. Across each of the above concerns, we have worrying indications that all is not well with the profession. Irish teachers are worried about the future of their profession. As teachers are in daily contact with the students who potentially form the next generation of teachers, the enthusiasm and morale of the current teacher workforce are important influences on future teacher supply.

Attractiveness of second-level teaching as a career is in decline

The attractiveness of second-level teaching as a career has been severely undermined due to the increasingly problematic nature of entry into the profession in the first instance and more recently, due to the reductions in salaries and the introduction of an inferior pension scheme for new entrants to teaching. For the last decade and more, less than 10% of new second level teachers annually obtain full-time permanent employment positions in their first year following graduation (Higher Education Authority, 2002; 2006; 2007; 2008; 2009; 2010). The majority are employed on a temporary or contracted hours basis for at least five years. The impact of this on the young teacher who is present in his or her school for less than 10 hours a week, or is employed on short-term contract after short-term contract, moving from one school to the next, cannot be overstated. For the majority of young teachers, the vocational aspect of teaching is key to its initial attractiveness, and yet many young teachers are faced with the paradoxical experience of being unable to make a real connection and commitment to a school community. As one ASTI member remarked at a recent internal ASTI meeting: "New faces come and go from the staffroom, sometimes I don't even get to know their names".

The 2009 OECD TALIS Report stated that just under three-quarters of second-level teachers at Junior Cycle level are in permanent employment compared to a TALIS country average of 85%. Contractual status is closely related to teachers' age with less than one quarter of teachers under 30 years in permanent posts compared to 76% for those over 30. (Shiel, Perkins and Gilleece, 2009).

Cuts in salaries for new entrants to teaching have been devastating. Not only are new teachers receiving less pay for the same work, but the majority of them are not on full time hours so are only receiving fractions of the new reduced salary. The employment conditions of new entrants to teaching can only be described as increasingly precarious. The ASTI has called for the establishment of a panel entry system which would lead to permanency as a necessary first step to provide some form of employment security to new teachers.

Supply of teachers is an important dimension of quality

A number of problems are beginning to emerge in terms of teacher supply which – if unchecked – will impact negatively on quality in the profession. The report of the International Review Panel on the Structure of Initial Teacher Education Provision (Department of Education and Skills, 2012) provides a succinct summary of the issues. The recommendation that Ireland move towards a research-based teacher education with a more systematic focus on linking

theory and practice during the initial preparation of teachers is both timely and necessary. The Report noted that academic standards of entrants to teaching in Ireland are among the highest in the world: "this rich resource should be highly valued" (Department of Education and Skills, 2012 p.19).

However, the Review Panel was surprised and concerned that the issue of teacher supply and demand has not been addressed in Ireland as it has been elsewhere. For example, a teacher workforce planning exercise is carried out annually in the four jurisdictions of the UK to ensure an appropriate supply of teachers covering geographical areas, school types and curriculum specialisms. The consequences of failure to regulate supply and demand for teachers is already evident in the shortages of teachers for certain subjects at second-level and in the use of "out-of-field" teachers in Maths. The ASTI strongly supports the Report's recommendation that a system to regulate supply and demand of new teachers be developed as a matter of urgency. Failure to develop such a system - coupled with a creeping "hours culture" as the employment route for new teachers - will seriously undermine quality in the teaching profession.

Developing teachers' knowledge and skills is a challenge for every education system

Developing teachers' knowledge and skills is a challenge for every education system. The 2009 TALIS Report again provides important information on Irish second-level teachers. In Ireland access to professional development opportunities for second-level teachers is well below that of the other TALIS countries. While Irish teachers report that they would like to undertake more professional development, conflict with work schedule and unavailability of suitable CPD were commonly cited as barriers to participation (Shiel, Perkins and Gilleece, 2009). The Teaching Council is currently developing a framework for teachers' professional development. Its 2011 policy document on Continuum of Teacher Education states that "Continuing professional development (CPD) refers to life-long teacher learning and comprises the full range of educational experiences designed to enrich teachers' professional knowledge, understanding and capabilities throughout their careers." (The Teaching Council, 2011, p. 19). It also defines CPD as both a right and a responsibility of all teachers. (6) A high quality teaching profession can be sustained by lifelong learning. Education policy must support this aspiration in practical terms – at the level of the school and at the level of the individual teacher. In this regard, the abolition of allowances for post-graduate education for teachers is a retrograde step.

The importance of teacher policy

All countries are seeking to improve the quality of education and the capacity of schools to respond better to social and economic challenges and expectations. Ireland is not unique in this regard; reforms to the junior cycle curriculum, the introduction of school self-evaluation, and the Smart Schools initiative are recent examples. While not un-contentious, these changes, and the debates around them, reflect the importance of education in society. One of the damaging features of the discourse on education today is the tendentious suggestion that teachers don't want to change. This suggestion is a disservice to the teaching profession. Teachers want the best for their students and their engagement with education reform is crucial to its success. Reform will not work unless it is supported from the bottom up. Teachers are unlikely to have confidence in change that fails to ascertain or ignores the view of teachers. Grand statements about "transformational reform" that come without detailing investment,

teacher professional development, and other logistics do nothing to convince the classroom practitioner. Planners must listen to what teachers are saying. This challenge is articulated in the important 2011 OECD report, *Building a High Quality Teaching Profession: Lessons from around the World:*

> "[Successful reform] requires those responsible for change to both communicate their views well and involve the stakeholders who are affected. But it also requires teachers to contribute as architects of change, not just implementers". (OECD, 2011, p. 51)

Recently, the ASTI published 'Teachers Voice' - A report on its consultation with teachers on the proposed changes to the junior cycle curriculum. This consultation underlines how important it is to get the teachers "on board" for any reform initiative to work in the classroom.

Teachers are part of the solution to changing the way we do education. Teachers have to be resilient, versatile and innovative to engage and motivate adolescents every working day. Sustaining these qualities is the *real* policy challenge. Inaction on the concerns discussed above – some long established - will undermine the capacity of the profession to meet the pressing challenges facing our schools. A vital first step in this journey is the need to restore a respectful discourse about the contribution of teachers and schools to society.

> *Teachers want the best for their students and their engagement with education reform is crucial to its success. Reform will not work unless it is supported from the bottom up.*

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Why Education Matters

THE IMPORTANCE OF EDUCATION TO IRELAND'S ECONOMY AND SOCIETY

Education policy is more than ever a core strategic dimension of economic and social policy.

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