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What's stopping us?: Barriers to creativity and innovation in schooling across Europe

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Introduction

Theoretical definitions of creativity influence how and to what extent it is valued pedagogically and hence the usefulness awarded to innovation in the classroom. If it is seen as a realm for young geniuses, removed from the everyday of learning situations, then creativity becomes an elite affair and not the remit of most teachers. Similarly, if pedagogic innovation in teaching is something that requires an enormous infrastructure of new technological tools, then its absence can be blamed on the lack of such tools. A democratic view of creativity as something that can be nurtured to greater or lesser extents in all humans and that enhances both learning and life-skills, however, is, of late, a more common claim in discussions of this topic. Classroom practices, however, do not always remain in synch with the latest debates in any given field. This chapter articulates practical insights from research carried out by the authors for the Institute of Prospective Technological Studies (henceforward IPTS) in Seville on Creativity and Innovation in compulsory education across Europe. In particular, the expert perspectives – of high school inspectors, government education advisors, teacher trainers and academics, with a specialisation in teaching with new technologies, creative learning or innovative teaching – complemented research on teacher perspectives and curriculum documents carried out on behalf of IPTS by other teams of researchers. While that research involved large-scale self-reporting surveys of teachers in European schools and comparative textual analysis of available national and regional documentation involving references to creativity, the expert perspectives collected for our part of the study identify and contextualise the political and philosophical underpinnings of widespread pedagogic beliefs and practices with regard to creativity and innovation in schools. For instance, findings from the survey of curriculum documents note the general dearth of references to creativity outside the context of the Arts curriculum, and the gradual linking of innovation in more recent documents to new media technologies. Interviews with expert stakeholders delved into these perceived gaps and the changes as well as into the role such documents might be said to have on the actual class-room practices of teachers, children and young people. The data generated, thus, systematically describe and debate factors seen to structure, support, hinder or

block pedagogic innovation and educational creativity in policy and practice. In this context, our chapter draws on the views of these targeted educational stakeholders in order to reflect on the systemic (governmental, political) and contextual (economic, cultural) or historical (regional, national) and individual (local, school-specific) barriers to implementing innovative methods in the teaching and evaluation of creativity in formal schooling. It is therefore framed around two key research questions: 1) What are the links between educational policies on Creativity and Innovation and educational practices according to educational stakeholders? And 2) What conditions are viewed as barriers to creative learning and innovative teaching by expert stakeholders? Following this discussion we outline suggestions for increasing creativity in schools across Europe which arise from the theoretical orientation of our work and from the material and systemic barriers identified.

A rhetorical approach to practices of creativity

Since the terms 'creative learning' and 'innovative teaching' are at the heart of our study, it is worth revisiting how these terms might be defined. The heuristic definitions with which we started out are as follows:

> Creative learning is ... any learning which involves understanding and new awareness, which allows the learner to go beyond notional acquisition, and focuses on thinking skills. It is based on learner empowerment and centeredness. The creative experience is seen as opposite to the reproductive experience. Innovation is the application of such a process or product in order to benefit a domain or field – in this case, teaching. Therefore, innovative teaching is the process leading to creative learning, the implementation of new methods, tools and contents which could benefit learners and their creative potential. (Ferrari, Cachia & Punie 2009a, iii)

Our work with educational stakeholders and experts was underpinned by a belief in and commitment to the notion that promoting creative learning and innovative teaching is essential (Banaji and Burn 2007/2010; Ferrari, Cachia and Punie 2009a; Pope 2005) and must go far beyond the promotion of the arts in education. Sometimes viewed as vital for economic recovery and growth or as a counterbalance to social inequality, the wider benefits of creativity have more recently been theorised as a series of overlapping 'rhetorics', some of which have particular

resonance for teaching and learning. These include themes such as 'play and creativity' in reference to the enduring claim that childhood play is the origin of adult problem-solving and creative thought; 'ubiquitous and ethical creativity', that creativity is a skill which supports individuals to have the flexibility to respond to problems and changes in the modern world and one's personal life; 'creativity for social good', that promotes creativity as a means of social regeneration, personal empowerment and reintegration of socially excluded individuals (Banaji and Burn 2007/2010; Banaji 2011). In line with this approach, this chapter provides a critical summary of how educational stakeholders from government, policy, research, the inspectorate, academia and teacher training understand and experience practices of creative learning and innovative teaching in schools in EU member states. First, however, a note on our methodology.

Sample and methodology

While we did not set out to find educational experts with a remit only for creativity and innovation in education, but looked more broadly at teacher trainers and schools inspectors who could discuss their observations in the field, overwhelmingly, our experts framed creativity as being about much more than the Arts in education; and most conceptualised creativity and innovation holistically in relation to cross-curricular skills, problem solving, intellectual divergence and reflexivity. Our methodology for identifying such educational stakeholders was built on work already undertaken in this field (Banaji and Burn 2007; Banaji 2008). A range of different strategies were utilised to take account of the different groups of stakeholders involved and, where possible, to triangulate the perspectives received. These included: an extensive review of current and ongoing work at national and international level in the intersecting fields of education practice, education policy, teacher training, creativity and innovation. Evidence used to select experts for the study of European schools included recent research reports, conference papers, ongoing projects in this area, website profiles, peer-reviewed journal articles and policy briefings; the use of intermediary individuals and organizations including our funders, IPTS. We also received advice from European Schoolnet whose membership includes all Ministries of the constituent countries in the European Union and whose work focuses on developing learning for schools, teachers and pupils across Europe (see http://www.eun.org/web/guest/home). We also included many experts with a remit for teacher inservice training, educational research and continuing professional development (CPD). Unsurprisingly, many respondents did not have the time to take part; others were not comfortable with giving interviews in English or were uneasy

about providing their 'perceptions' about creativity and innovation in schooling rather than providing factual data. On these grounds, 27 contacted experts declined to participate. The research team digitally recorded interviews carried out either via skype or telephone and documented interviews with 81 educational stakeholders. At least three experts were interviewed from 23 countries and at least 2 each from the remaining 4. Interviews lasted between 40 and 75 minutes and were analysed thematically.

At the outset of the project we developed a series of broad questions on curricula, policies, pedagogies, resources, tools, digital technologies, assessment strategies and barriers to innovation and creativity for stakeholders. There are, however, broader and better-known national factors mentioned by expert interviewees that inform our perspective but are not discussed extensively here. For instance, alongside analyses of the role and relevance of Creativity and Innovation in compulsory education and teacher training within *national* education systems, insights about the histories, contexts and implementation of the education systems in the 27 member states were also discussed by the 81 experts. Regional cultural and linguistic traditions, histories of occupation or dictatorship, regime changes, the inevitable influence of different political parties on educational structures are all named repeatedly by interviewees as affecting the context in which policies are made and curricula written. While we hope to explore elsewhere the connections between such factors and daily practices in classrooms, it is inappropriate to do so here given the need for brevity.

Any data based on talk and summaries of talk, as well as opinion, translation and relative knowledge has to be viewed within a qualitative interpretative framework (Denzin and Lincoln 2000; Kvale 1995) but with a constant analytical orientation towards triangulation (Miles and Huberman, 1984). One of our priorities was to ensure the robustness of the data generated. Expert interviewees themselves emphasised four different levels of certainty about aspects of the perspectives and information contributed. The overall levels of certainty expressed fall into the following four categories: 1) personal opinions/knowledge of these expert interviewees, supported by personal or anecdotal evidence; 2) professional opinions/knowledge based on extensive work-life experience and research of classrooms, curricula, teachers, policy, teaching and/or inspections; 3) professional opinions/knowledge based on their own research or that of others that they have read and/or worked with and 4) 'examples' based on textual evidence such as websites, reports, curricular documents or books that they can refer us to and/or send us. Notably, each of these four levels depends on a) the self-reflexivity of the experts concerned b)

their specific professional and disciplinary contexts and c) their overt or implicit ideological perspectives. Interviewees move between these levels when talking about subjects most familiar to them and those less so in relation to our topic guide. Additionally, our expert interviewees often qualified statements by explaining that they *could not* speak for and about all schools, all teachers, all colleagues or for a whole region or country. In this context, we have to reiterate a longstanding methodological warning – these interview summaries must be viewed as insights and perspectives about trends and circumstances to guide further research and not as positivist accounts of specific national education systems. Further, there are degrees of accuracy even within experts' accounts: professional and personal opinions and knowledge are inflected by the interviewees' degree of association with particular education systems. However, we have an equal number of cases where expert interviewees with 'insider' perspectives on the systems and institutions they discuss are highly observant and critical. It is imperative that the testimonies of the experts in this chapter are received within this complex context. Most of them, while having been teachers, do not currently spend every day in a classroom. Often they have regular contact with teachers but not with parents or children, while others visit schools every day. Our chapter, in summarising such expert talk, presents a selective snapshot of education systems, policies and national or local educational practices in relation to innovation and creativity. The high levels of consonance in knowledge and opinions of our experts in relation to national patterns and international compulsory education policy, teacher training, curriculum development, classroom pedagogy, assessment, educational ICT use, creative learning and innovative teaching suggest that collecting data from expert stakeholders in a careful, systematic and rigorous manner as undertaken here can yield sharp, pertinent insights.

Barriers to Creativity and Innovation in European Schools and Teacher Training

This section of our chapter gives a broad sweep across Europe showing the scope and predominance of particular characteristics of education systems or barriers to creativity and innovation which emerged in the interviews with educational stakeholders. It is worth noting that most of the countries appeared to have educational systems which were to some degree changing, often as a result of policy-driven changes to curricula and pedagogic ethos (Vanderline et al 2008; Koustourakis 2007; Ringarp and Rothland 2010). Nevertheless, as we will discuss, the introduction of new tools – which might have encouraged new practices – does not necessarily mean a transformation in educational practices. In analysing the barriers described to us by

experts in our sample, we have attempted to categorise these based on their systemic or contextual features and to separate out those that are highly specific to given national contexts from those that arise time and time again in different countries in all parts of Europe. Our starting point, then, will be with the curriculum and related education policy contexts.

Curriculum, politics and policy

Dozens of experts across teacher training, inspectorates and research/academia told us that education policies emphasising written summative examinations inhibit teacher innovation and reduce the possibility of student creativity. The importance of achieving examination qualifications militates against risk-taking in learning situations and not just against teachers' capacity or interest. Further, centralised government initiatives which encourage competition between schools – particularly the practice of using 'school league tables' based on examination performance and of publishing data about individual student performance in public examinations and apparent teacher performance – are seen to inhibit schools from developing an atmosphere of innovation, critical thinking and developmental risk-taking conducive to student creativity (Ball 2003, Nichol and McLellan 2008). Additionally, government policies which frame all teaching as target-driven and use the inspectorate to 'control' or 'punish' teachers who do not meet targets are seen as being completely opposed to a spirit of active innovation and change. The issue of teacher agency drew an almost overwhelming response from our 81 experts, with only four experts abstaining from comment and one uniformly suggesting that systemic factors have nothing to do with teacher innovation and creative teaching. We offer a flavour of the kinds of things we were told with regard to motivation, time, training, pay, status and daily routines:

> "Teachers are treated with extreme disrespect as a profession. They are not supported and are so poorly paid that teachers might starve to death. 100 Euros is the average wage. Most teachers have to do other jobs as well, meaning that there is simply no time to innovate. Nor are they supported by the government... Ministers make comments such as 'today even kids know more than our teachers' (referring to children 'using keyboards' proficiently) but they refer to superficial knowledge and devalue innovative methods and dedicated persistent efforts on the part of educators." (Expert Interview, Bulgaria)

> "Teachers are so poorly paid that they cannot survive financially on their salaries. There is a lot of crime against teachers, particularly violence is on the increase. They suffer from this low status and are often humiliated publicly, so you could say their motivations to innovate and be creative are extremely low." (Expert Interview, Hungary).

> "Although the status of teachers has improved slightly since the 1980s when they were all thought to be in it 'just for the two months holidays', Austrian teachers are still poorly paid in general. A first year teaching graduate starts with between 800 and 1000 Euros, which is hard to live on. There is little incentive for innovation in the system. Teachers get ***nothing*** for teaching better, improving their pedagogic practice etc. They may have personal satisfaction, but no systemic reward." (Expert Interview, Austria, original emphasis).

> "Teachers are always under pressure from performative regimes and while there might be a valuing of creativity on paper, they get the mixed message that creativity is actually only the icing on the top that can be added when they have ticked all the other performative boxes in relation to traditional examination and assessment outcomes as defined by the goverment and inspectorate – a distinct ***forked tongue*** discourse." (Expert interview, England, original emphasis).

These extended quotes highlight the systemic curtailment (low pay, disrespect, humiliation, violence, hypocrisy) suffered by teachers that experts in our sample viewed as the central and most enduring barrier to creative learning and innovative teaching across Europe.

This barrier is arguably the result of broader policy dynamics that are currently shaping the global educational landscape, where "new" criteria of professionalism are emerging from local and supra-national debates about teaching. These debates have been, to a degree, spurred by findings from large scale comparisons of student performance between countries, which illustrated how the quality of teachers is a crucial factor influencing the overall performance of an education system (OECD, 2009, 2010). The impact of these discussions is being felt as much on research agendas in academic circles, as on the ways schools in some countries (e.g. in the UK) are being evaluated and re-organised. As a result, practitioners on the ground are currently caught in the middle of a political struggle, between calls for transformation and innovation and more conservative forces upholding the importance of traditional instruction to increase "quality teaching" in key subject areas, (UK DfE, 2010).

It was noted that some countries are planning to follow England in implementing this kind of approach to 'quality assurance' and this is seen across the board as a very negative move for innovation and creativity. As one expert put it, teachers feel "disappointed and frustrated" because they are asked to perform many "irrelevant tasks", which are detached from their teaching duties. This reduces the time and energy that could be dedicated to fostering creativity. In tandem, content-heavy and overloaded curricula, which leave little time for thoughtful discussion and critical processes or innovative approaches are widespread across many of the countries in this study, particularly in Western, Southern, Central and Eastern Europe, though less so in Northern Europe/Scandinavian countries. We were also told of many excellent and innovative classroom practices that occur in all countries, but usually initiated and sustained only by the most confident, critical and experimental teachers or by those who do not depend solely on their jobs for income. In some countries these happen to be the teachers who have been in the profession over a decade and who are less apprehensive about being seen to resist top-down initiatives that are not conducive to creativity. In other cases these are open-minded teachers, young or more mature, who are willing to concede space to children's perspectives in the classroom and who do not fear a loss of control.

Disconnect between policy and practice

Clearly, whilst 'creativity' as a buzz word is popular in the educational discourse at a policy level in some countries, in most cases it is still seen as something to be done in traditional arts subjects. A rhetorical view of creativity as limited to the arts or practical subjects spans both policy and practitioner contexts. This was identified by at least a third of experts interviewed as deeply problematic, as one explained:

> "Basically in France creativity is only associated with the arts and maybe advertising. But a scientist would not consider himself creative. "(Expert interview, France)

In fact, it was pointed out to us that this belief in creativity as an arts-linked phenomenon is even enshrined in some curricula and policy documents. National curricula rarely seem to provide any guidance as what to do in order to achieve creativity in subjects other than arts, like mathematics. This issue is compounded at the classroom level, as many teachers also identify creativity solely with literature, drawing, painting and drama, struggling to recognise it and foster it in other

subjects. Similarly, many of our interviewees confirmed that there are persistent views of creativity as something produced by 'geniuses' and hence of little concern to the broader population of school children who must be educated for 'the real world':

> "Imagination is not valued in most Belgian high schools in the French Region. The system in general is too traditionalist ... Teaching in an elitist manner has widened the gap between the affluent students and those from other socioeconomic groups over the span of school life – PISA suggests that teaching in Belgium increases class differences – children are just pushed to do more of what they already do well, in this sense vocational education has failed." (Expert interview, Belgium)

So, there is still little concern for creativity as a 'process' involved in everyone's lives beyond the arts. This issue leads quite naturally away from policy contexts towards the pedagogic issues which form barriers to innovation and especially to children's creative learning.

Government policies which have invested large one-off amounts of funding in new technological hardware, with little resourcing left over for software, upkeep, upgrading, e-learning strategies or training of teachers in innovative pedagogies, driven in some cases by the European Union, act as a notable and perhaps counterintuitive *new* barrier to innovation in schools. For instance, teachers feel that they have to use ICT in lessons otherwise they may be branded 'old-fashioned' or 'technophobic', even where the technology is slow, does not work, wastes time, does exactly the same thing that they could do previously do without digital technologies or involves repetition on their part of time and effort. This problem is compounded in some cases by local area or school policies which restrict access to the internet or to a significant numbers of websites; and reduce the opportunities for innovative use of ICTs for learning and creativity.

Pedagogy

Some aspects of pedagogy have less to do with individual teachers' styles and patterns than with institutional factors such as managerial ethos, space, timetabling and fear of particular tools or technologies. In line with existing research on the influence of school environment and ethos on pedagogic practice (Fuller and Clarke 1994; Hallam and Ireson 1999), most of the experts in our study noted that authoritarian institutions in their countries, particularly where there is a strong

ethos of control as well as a hierarchical relationship between students and teachers and managers are less likely to develop innovative teaching or creative learning methods. Even in environments where schools themselves are not run in this manner, frequent punitive inspections of teachers' pedagogic practices as well as situations where observation/evaluation of teachers' classroom practice took place were cited as equally destructive to innovation and creativity. There is, however, no necessary connection between de facto autonomy at a mundane level and innovation in teachers' practice; for instance teachers in Italy are said to work with high levels of autonomy, which often verges on isolation, still following established and traditional patterns of practice.

Institutional strategies which put children into class groups or subject groups based on assumptions about their similar 'ability levels' – also known as 'streaming' and 'setting', respectively – were seen as supporting poor classroom practice that prevents both overall personal development of individual children and social class mobility across a locality. A range of experts from academia and teacher training explained further that such practices tend to emphasise a single set of narrow, target-driven outcomes that do not take account of creativity, imagination, collective learning and emotional or cultural development. In this sense, it was not surprising that several expert interviewees were also sceptical of systems where children were 'pushed' rather too early into specialisms or 'vocations'.

Unsurprisingly, 90% of the expert interviewees at one point or another engaged with the ways in which teachers and classrooms play a role in nurturing or stifling students' creative learning and making. Interestingly, rather than focusing only on teachers as pedagogues, many of our experts commented on the positioning of teachers within systems, institutional constraints and embedded values. Frequently, our interviewees also described a lack of *differentiation* in methods and a 'one size fits all' approach as inhibiting to students with divergent perspectives.

The passing on from generation to generation through training and mentoring of disciplinarian classroom environments, where divergence or failure to conform is punished, form one of the most poignant and controversial barriers to critical thinking and problem-solving approaches. In some traditions and environments, particularly reported by inspectors and teacher mentors or trainers who have moved across areas and school districts, some teachers' fear of losing control of the discipline in classes – linked to a lack of confidence in their own classroom management skills – discourages active learning approaches more widely than attempts to nurture creativity. Even plain talking and listening tasks tend to be absent in the classroom. Educational styles

which emphasise 'transmission' modes of learning – where the teacher stands at the front of the class and talks from notes or reads from a text book and students sit silently and listen or write notes – were one of the most frequently mentioned barriers across all categories of expert interviewees. Examples of such practices ranged from closed, teacher-centric questions, and exercises requiring the copying of basic factual information, repetition and rote learning.

On the one hand, underpinning these practices, interviewees drew attention to a perceived dualist framework, one which sees some knowledge as 'good' and some knowledge as 'bad', and so prevents children from engaging with wider questions of philosophy and political importance in the work they are doing. This was particularly the case in relation to the gathering of information, where we were told of classrooms where children were sent off to bring back information about a specific topic, for instance in science or history, and if they returned with something that was relevant but tangential to the 'expected answer' or that raised questions about the question or critiqued the framework or paradigm underlying the question, were told to delete or forget about it, rather than being allowed to share this knowledge with their fellow pupils. Additionally, in some countries, political and pedagogic or religious conformism has been valued in pupils and manifested in the rewards given for the reproduction of traditional knowledge. In such circumstances the difficulty of getting teachers and pupils to think divergently and creatively are manifest. Further, a diffuse and often unsubstantiated fear of risk and harm was mentioned repeatedly as a major barrier to allowing particularly primary age children to develop critical and individual thinking and creativity. On the other hand, in the absence of realistic time provision or monetary incentivesin more than half the EU countries sampled, increasing demands on teachers' time reportedly leaves them with neither the space nor the energy to be creative themselves, which then hinders how far they can nurture their students' creativity.

Tools and Technologies

The landscape in terms of materials used in schools is very diverse across Europe and this sometimes gets lost in discussions of young people and new digital technologies for learning. There are, in fact, some interesting entrenched patterns. Text books are still the most highly used teaching resources in compulsory classrooms, closely followed by work-sheets made on computers or downloaded from the internet. Note books, paper, pens, coloured pens, rulers, erasers and pencils as well as art materials and science labs (at secondary level) are still the most widespread tools in compulsory schooling across the EU27. This was not in itself seen as a

barrier to creativity by our interviewees; but the refusal of school districts and/or school leaders to allow children and teachers to use other handheld digital devices ranging from mobile phones to calculators alongside these was discussed as a significant barrier to innovative classroom practices. Nor were digital technological tools the only artefacts whose presence was not as widespread as those interested in fostering creative habits of mind would have liked. The rarity of modern, innovative and critical textbooks customised for different ability levels and language groups was a significant barrier for creativity in several countries. In others it was more the cost of good, challenging, new textbooks which acted as an inhibitor for particular schools. Linking structural and material constraints, several interviewees pointed out that the cost of equipment in subjects such as music and sports is seen as having an adverse upshot for students from lower-socioeconomic backgrounds. Unfortunately, the emphasis on ICTs in some schools has come at the expense of other resources. Questions then arise about the exact nature of the pedagogic interventions occasioned by ICTs and other digital tools in mainstream schooling.

Here too it becomes apparent that the lack of availability of innovative and creative resources online in languages other than English can inhibit even those teachers with the will to use the broader opportunities which digital technologies may provide. Undoubtedly, we were told of practices changing because of the availability of the world wide web – we were told that more homework assignments are based on information searches. However, this in itself is neither innovative nor necessarily creative; and if it is seen as such it can be a barrier as it replaces time for other assignments. In several of the EU27 countries, experts reported government or EU programmes which require schools to buy Interactive White Boards, laptop schemes or Learning Platform Environments. In some cases, the programmes are now over and the money for digital hardware no longer available; the resources are becoming outdated; the training to use the materials is non-existent or is based on school leaders, who send a single teacher to become a 'champion'. Other problematic contingencies include slow internet connections or a complete lack of computers that can handle fast connections. This appeared to be as much of a problem in Western European countries such as Belgium as it was in Southern, Central and Eastern Europe. However, even in schools which have the newest and most modern facilities – such as Interactive White Boards, projectors, laptops and learning platforms, a lack of imagination and training in how to use them innovatively can turn them into 'expensive chalkboards and text books'. An underlying belief that one has to do exactly the same thing with digital technologies as with analogue technologies was signalled by our interviewees as a barrier to any innovative pedagogy. For instance, numerous cases were reported where powerpoint is

used again and again almost 'like turning the pages of a text book' to deliver copious amounts of graphs, charts and written information with no input from students.

This is line with empirical research carried out by one of the authors on teachers' perceptions of the benefits of digital technology (Perrotta, 2012), which suggests that while some teachers appear to be making use of ICTs in diverse and innovative ways, the majority of ICT use is less ambitious in nature, mainly concerned with supporting teachers in the carrying out of practical and procedural tasks such as lesson preparation, presenting and disseminating content, collecting and managing data. Accordingly, for many teachers, ICTs are associated with what could be described as "logistical" benefits rather than "intellectual" benefits. As mentioned, this emphasis on functional learning rather than exploration and participatory culture is being challenged in some schools and by some teachers, but such challenges are not supported either by local or national structures. The will to control, at many different levels, also emerges as a flashpoint stifling creativity with new technologies – from teachers fearing that their pupils will 'get up to no good' online to local authorities and schools tightly controlling which sites schools, teachers and children can visit. These restrictions embody a palpable unwillingness to allow hierarchies to be challenged or individuals to follow their own pathways to learning.

Assessment

Crucially across this terrain, issues of assessment remain an exceptionally sensitive and political issue in educational systems. Many suggested that assessment and testing regimes as they stand are driving creativity out of the classroom. In tandem, a culture of competition between schools based on their national examination results undermines those teachers who wish to innovate or allow students to work in groups, creating ideas and projects. Nevertheless, in an era of economic austerity, when school districts are having their budgets cut, such competition appears to be increasing rather than decreasing. This returns us to the issue of target setting, which is now entrenched in several European countries' educational culture, as is particularly the case in England. The pressure to set and beat targets is seen to pull school leaders and classroom teachers in two different directions away from creative and innovative teaching. The need to push students to do well in traditional national examinations and to prove that one's students have succeeded in this area is viewed as antithetical to many of the more innovative formative

assessment strategies such as peer-assessment, self-assessment, extended project work and open-ended discussion in class.

The lack of a clear, transferable framework for assessing creativity, competencies, skills and knowledge all together in different subjects and disciplines is clearly problematic, particularly given the strength and resilience of ideas about Standard Assessment Tests. Unfortunately for those interested in working formatively with competencies or skills or in developing problem-solving techniques, the idea that what one should be teaching and testing is a body of knowledge is quite entrenched in policy and practice. Doing student-centred, active, creative activities such as debates, trips, discussions and projects is thus viewed in some education systems and certain schools as a 'risk to outcomes' or as 'a waste of time'. Literacy and numeracy take priority in high stakes exams and they are always assessed in traditional ways, mostly focusing on knowledge acquisition. This is often underpinned by what one interviewee termed a "false nostalgia" about what constitutes good schooling: the persistent calls (especially in times of crisis and economic depression) for the return of a "golden age" in which there was a teacher talking on one side, and a pupil listening silently on the other. This issue is also related to concerns, persistently aired and even fed by the news media , about 'dropping standards' in literacy and numeracy in many EU countries, e.g. in the context of PISA evaluations which have a significant influence on national educational policies. According to one international expert with a broad understanding of European educational systems, we are "at a junction", with some countries putting much greater emphasis on traditional testing of subject knowledge. The same expert also mentioned "interesting tensions" in the way PISA results are being interpreted in different countries. In this respect, it needs to be noted once more that there are sometimes marked variations between countries. However, the overall trend, noted by most of our 81 experts, is that national examination systems make both students and teachers risk averse which can discourage development, and lead teaching and learning to focus on exam content and to encourage 'convergent thinking'. Unfortunately, whilst such assessment methods might be challenged or fresh approaches discussed during Initial Teacher Training (ITT), was in fact the period often thought by many experts in our sample to be responsible for entrenching the most uninnovative views and practices.

Indeed, it was reported that many teacher training documents make virtually no reference to creativity, while others are seen to pay lip service to the concept without any discussion of interrogation of what it might mean for young people and children. Thus, outdated and

outmoded ITT curricula, and conservative and/or traditionalist academics who deliver them, and in particular those passing on a hierarchical and disciplinarian view of the student-teacher relationship, can become entrenched at this stage. The separation of practical and theoretical aspects of the Initial Teacher Training Curriculum, with an emphasis on educational theory or history in a vacuum, with scant attention paid to practical encounters with children in real environments was seen to damage the quality and potential of the teachers produced by the system. Equally, an emphasis on subject-knowledge rather than on pedagogic approaches during ITT courses is a problematic barrier to classroom innovation. A lack of relevant and challenging Inservice training was named as a troubling trend by a number of experts across categories. Indeed, in most of the EU27 experts asserted that the professional development offer is not sustained and strategically targeted to give teachers the confidence to transform their teaching environment. In some cases there are too many aspects of training offered with no common thread. In other countries continuing professional development is erratic and provided by private organisations with little insight into the daily life of a school. It may not be compulsory so many teachers miss out. Lack of funding and lack of time - the lack of budget for bringing in outside cover often means that there is a difficulty in releasing teachers from lessons to go for CPD; it also means that students who are trying to be creative are prevented and 'moved on' to other things.

Enablers to creativity and innovation in education

Before concluding, and to provide a sense of the breadth of the field we engage with, it is productive to mention a few of the enablers to innovative teaching and best practices in creative learning which our expert interviewees shared with us. Overwhelmingly, our interviewees felt that the valuing of teachers and the teaching profession through the payment of incremental and sufficient salaries, a combination of theoretical and practice-based teacher-training, continuing professional development and increased autonomy over their time, over assessment methods and over the curriculum was the most crucial enabler for everyday practices of innovative teaching and creative learning. In tandem, a skills-based approach to the curriculum rather than an overloading of content was suggested to have worked wonders in a series of cases. Over three quarters of our interviewees also made reference to what they termed the significance of a 'a supportive wider culture of creativity', which for them was primarily about empowering teachers by giving them the time and skills to teach autonomously without too much curtailment or

testing; but also entails the making of references to creativity much more explicit; and the engaging of both practitioners and the wider public in discussions around this topic via national and local media as well as active consultations. The valuing of independence, debate, divergent thinking, irony and eccentricity both amongst teaching staff and students were among suggestions for making such a culture more resilient, while the training and recruitment of school and curriculum leaderships with an interest in and understanding of the time and motivation for creativity and innovation was seen as a top priority. In cases where both the culture and the leadership are sensitised to the value of innovation and creativity, we encountered some of the very best practices at a national or local level. Amongst these, the assessment and rewarding of collective cross-curricular projects taught by several teachers across extended periods of time and presented to parents at regular intervals (Denmark, Scotland); innovative places and spaces of learning such as open-air schools (Estonia); widespread creative competitions in Mathematics and Science invovling children from many different age-groups and school districts (Austria, Luxembourg) and the respectful valuing of teacher agency and expertise leading to strong and inspiring relationships with school students (Finland, Sweden) really stood out for us. However, in order to spread and sustain such significant enablers and good practices, both research evidence and political will is required; and an engagement with the scale and scope of the barriers is crucial.

Conclusions

The barriers to successful teacher innovation and creative classroom learning practices identified by our experts fall into varying categories in terms of who should and can address them. Long term and entrenched barriers arising from political and economic structures – lack of funding, poor pay for teachers, functionalist summative testing, teacher or school target regimes, orthodox transmission methods of learning, analogue uses of digital technologies and far more – are, however, somehow easier to think about dismantling and moving beyond than those which reside in philosophical or ideological mindsets. Such mind sets are to be found, for instance, in the belief that teachers are simply not able to innovate without digital technologies or that creativity is something which is only of concern to an elite minority of extremely talented students. They are also, of course, ideologically responsible for sustaining the worst practices in the former list of systemic barriers – notably the insistence on assessment of students as individuals for distinct, uninteractive, rote learning or reproducible knowledge-based tasks. The

prevalence of buzz words like 'rigour' and 'transparency' in some education systems serve as synonyms for teaching from the front, learning a received syllabus from a text book and reproducing it in a standardised examination format. So, should we abandon formal schooling altogether as an arena for creativity? Should we cede it to the regimes that be? We feel very strongly, like most of the experts whose views we report in this chapter, that this should not be the case. In order to foster creativity and innovation in formal schooling then, action and argument is needed at several levels concomittently. To fund schools adequately and pay teachers more than a living wage, to reduce working hours and increase specialist support, to train teachers in a reflexive and recursive manner are all crucial ingredients for change. To alter teacher training and secondary education curriculum documents and syllabuses in ways which leave space and time for play, experiment and risk-taking which are still valued in most primary curricula, to value and embed formative assessments and decentre testing, to develop new and collaborative tasks and assessments – these are all steps in the right direction. To convince parents, mainstream media and a broad swathe of teacher trainers of the validity of creative and innovative teaching and learning approaches is a more difficult proposition. But every battle must begin somewhere, and as our experts told us, many of them have been fighting on this front for decades.

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