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INNOVATIVE PEDAGOGIES IN SCHOOL EDUCATION POLICY AND RESEARCH REVIEW DENMARK

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This report was compiled and written as input to a study on *Tools and policy pointers for mainstreaming innovative pedagogies and school organisation practices: barriers and solutions*, carried out by the Public Policy and Management Institute (PPMI) in Vilnius for the European Commission, DG EAC. In the present version the report has been slightly simplified and shortened.

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Policy review

Innovation context

1. *How is innovation defined in policy discussions on school education in your country? How are innovative pedagogies and school organisational practices defined in national/regional policy documents?*

In Danish education policy the concept of innovation in school education is strongly linked to a general government policy of innovation as a way to improve Danish competitiveness and welfare under the conditions of a globalised world economy. This policy was first developed by the so-called 'Globalisation Council' which was established by the government in 2005 and presented its conclusions the following year (Danish Government 2006). The Globalisation Council was composed of top-level decision-makers from government (including the prime minister), from the private sector and from the public sector, especially education. The Council laid out the following four general objectives for Danish national competitiveness.

- World top level education (for instance pupils in primary and lower secondary school should be top performers in reading, mathematics, science and English).
- Denmark as a top performing knowledge society (research should constitute a significant part of GDP, research should be innovative and be used in new products and services)
- Denmark as a top performing entrepreneurial society (high level of business start-ups and growth based on these)
- Denmark as a top performing innovative society (Danish companies and public institutions should be top performers in innovation, on a par with the best OECD countries) (Danish Government 2006, p. 8).

Later governments have more or less followed this understanding of the role of innovation. This is reflected in the Danish national innovation strategy launched in 2012. Here innovation is defined in the following way:

"Innovation is a central driver of growth and job creation. Innovation is knowledge and ideas translated into products and processes, which create commercial and societal value. Innovation often encompasses organisational development, education, testing, marketing, and design across professions and sectors.

In enterprises innovation prevails. Innovation policy on the other hand needs to become more specific and measurable. The ambition with the innovation strategy is therefore to create better framework conditions for more innovation in Denmark focusing on growth and job creation." (Danish Government 2012, p 4)

Later in the document it is emphasized that competencies in the form of innovative individuals is a key to innovation and that the innovation strategy must ensure a close links between research, education, and innovation in enterprises. In order to do this the strategy focuses on three areas:

1. "Demand for solutions to specific societal challenges must be given higher priority in the public innovation policy.
2. More knowledge is to be translated to value: Focus on mutual knowledge exchange between enterprises and knowledge institutions and more efficient innovation schemes.
3. Education is to increase the innovation capacity: A change of culture in the educational system focusing more on innovation" (p 8).

It can be seen that in this strategic context innovation in education is mainly a question of shaping innovative individuals whose competence can contribute to the competitiveness of Danish economy and society. It should be noted, however, that concepts of innovative pedagogy used in different parts and levels of the education system are often broader and more open. The following quotation from a report on innovative teaching in vocational education may serve as example:

“Working with innovation in teaching poses demands on pedagogical practice – a practice incorporating the concepts of creativity and innovation. Innovation demands new modes of thinking. Learning related to the development of competencies for innovation draw on many well-known methods and forms of work, for instance brain-storming, feedback, reflection, casework and project work. What is new is that these types of work are organised in a systematic structure directing the processes of learning” (Ministry of Education 2011, section 3).

2. *What are the overall goals of national/regional policies regarding innovative education?*

The overall national policy goals for this are also stated in the 2012 innovation strategy. As noted above education is one of the three main areas of the strategy. The goals for education are specified as follows:

“The ability of students to think creatively, act innovatively, and develop many facets of their personalities should be strengthened in primary school. Involving themselves in the opportunities of society and the workplace should be seen as an attractive option. In upper secondary education, the focus on innovation should develop the ability of students to be innovative and problem-solvers. This should be achieved partly through specific innovation subjects and fields of study and partly through new forms of teaching and examination, which contribute to developing a more innovative way of thinking. Innovation within upper secondary school and vocational education programmes should largely be a natural part of student culture and competencies. Students in vocational education programmes should also develop their ability to create specific solutions in relation to their relevant business fields”. (Danish Government 2012, p. 26).

Goals for higher education are also stated, but they are left out here. It can be seen that many types of innovative teaching and learning are seen as relevant to developing creative mindsets needed for renewal and competitiveness in economy and society. The importance of links between schools, workplaces and other parts of society are emphasized.

The government innovation strategy also includes a long list of more concrete policy goals. Those aimed at specific parts of the education system will be mentioned later, but two transversal goals are relevant here. They are that government intends to:

“19. Increase practice elements at all education levels to support innovation. Students should have the opportunity to pursue and obtain credits for practice elements such as internships, dissertations produced in collaboration with enterprises and other collaboration with stakeholders. (...)

20. Support innovation in the education of teachers and educators. When engaging students, more teachers and educators should have the instruments to organize and develop teaching which promotes innovation (...) Entrepreneurship and innovation are also included in the competence statement of objectives for subjects under the new teacher-training programme” (Danish Government 2012, p 27).

	<p>A further general goal is education for entrepreneurship. Denmark also has a national strategy for this, launched in 2009, before the 2012 innovation strategy but after the 2006 strategy for Denmark in the global economy. The ‘Strategy for Education and Training in Entrepreneurship’ (Danish Ministry of Education et al 2009) a framework for educating and training the future Danish entrepreneurial business managers and employees, who according to government’s intentions will help to create Denmark’s future competitiveness. The strategy document defines entrepreneurship as processes of innovation for commercial purposes or value creation in a broader sense. It is noted that the value creation does not need to be financial in nature; but still starting one’s own business and putting it into operation is mentioned as a key example. The general goals are the following:</p> <ul style="list-style-type: none"> • “Give pupils and students an introduction to entrepreneurial thinking. • To develop pupils’ and students’ knowledge of entrepreneurship. • To develop the ability of pupils and students to act entrepreneurially” (Danish Ministry of Education et al 2009, p 5). <p>The goals apply for a six-year period (from 2009). The plan operates with three ways of working towards the goals. The first is to use the usual means of education policy and management to integrate and strengthen entrepreneurship education in all parts of the education system, for instance as special school subjects (see examples elsewhere in this report). The second is to create a ‘Foundation for Entrepreneurship’ with a yearly grant of 25 million DKK (3.36 million EUR) to support development and implementation activities in entrepreneurship education. The third is to establish close partnership between four ministries that share responsibility for entrepreneurial education, the Ministry of Culture, the Ministry of Science, Technology and Innovation, the Ministry of Education and the Ministry of Economic and Business Affairs.</p>
<p>3. <i>Are there any recent or on-going reforms of the national school education system at least broadly aiming to promote innovation in schools? What is their specific focus and approach to supporting innovation?</i></p>	<p>The reform of the Danish Folkeskole (the unified primary and lower secondary school) can partly be said to promote education. The reform was passed (after difficult negotiations) in 2013 and implemented in 2014. Some of its elements can be said to be innovative, especially the fact that children and young people in school should have a longer and more coordinated school day, including teaching but also play, physical activity and assistance for homework. Teachers and day-care educators should collaborate on this, and collaboration should also involve voluntary associations like sports clubs. Further elements of the reform will be mentioned below.</p>

Promotion and mainstreaming of innovative school education at the system level

4. Teaching innovation and entrepreneurship

The 2009 Strategy for Education and Training in Entrepreneurship stated the intention of government to put entrepreneurship on the timetable in the Danish Folkeskole (primary and lower secondary education) as well as in general and vocational upper secondary education. Among the objectives stated in the strategy was that young people in upper secondary education must be able to choose entrepreneurship subjects as far as possible and that particularly talented young people should have the opportunity to take part in talent development programmes with a view to developing their own projects or enterprises (Danish Ministry of Science, Technology and Innovation et al 2009, p 7). This has been followed up in later policy and legislation. The 2012 innovation strategy further stated that innovation and entrepreneurship was to be strengthened in vocational education (Danish Government 2012, p 27).

Following the 2013 school reform Innovation and entrepreneurship has been introduced as a transversal theme in the 'folkeskole'. This means that it is not a school subject in itself but a theme that should be present in the teaching of all the school subjects. It is noted that innovation and entrepreneurship is expected to be a core element of the subject 'craft and design', which was introduced by the reform. Through teaching related to innovation and entrepreneurship students are expected to gain knowledge and skills that enable them to transform knowledge to products of value for others. This is to be achieved through varied and practice-related pedagogies emphasizing students' ability to create, develop, communicate and collaborate. This has been made clear in the national curricula for all school subjects (source: Danish Ministry of Education home page).

Other Innovative elements in the 2013 school reform

The school reform introduced some innovative elements that were less directly connected to the general goal of producing innovative competencies, but more a question of establishing more versatile and satisfying learning environments.

A main element was a longer school day. Concretely, it meant extending the school day to approximately 30 hours for pre-school to form level 3, 33 hours for form levels 4 to 6 and 35 hours for form levels 7 to 9. The teaching includes subject-divided lessons as well as additional time for assisted learning to supplement and support the subject-divided lessons. This may be in the form of varied and differentiated learning techniques, exercises, in-depth study and practice in homework cafés and other assisted learning activities (Danish Ministry of Education 2014a, p 7)

Another element is more physical exercise and activity. Physical exercise and activity must be included to an extent corresponding to approximately 45 minutes during each school day. (Danish Ministry of Education 2014a, p 9). Physical exercise and activity may be in the form of physical education as a subject or it may be part of the assisted learning, in the form of short periods of physical activity such as a morning run, ball games or similar. It can also be longer lasting activities, e.g. in cooperation with local associations such as sports clubs og cultural centres

Talent development in secondary education

One of the elements of the 2012 national innovation strategy is support initiatives for talented students. The strategy focuses especially on development of a 'talent culture' in higher education, a culture that should include academic excellence as well as creative and innovative talents. But the strategy also says that a 'broad and systematic talent effort within secondary education should also be ensured, for example through cooperation with universities or enterprises'. As one of the means to promote the talent culture the strategy prescribes innovation competitions for students in primary and secondary education. It is argued that this will sharpen students' ability to translate ideas to solutions through design and innovation (Danish Government 2012, p. 28). Recommendations for supporting talent development across the educational system has also been presented by a working group commissioned by the Minister of Education (Arbejdsgruppen til talentudvikling i uddannelsessystemet 2011).

Innovation as a teaching subject in general upper secondary education

In general upper secondary education (stx or the 'gymnasium') innovation was established as a school subject already in 2006. This is not a mandatory subject, but can be elected by students. Subjects in this type of schooling can have three levels, with A as the highest (also demanding most lessons), and innovation can be chosen at either level B or level C. The goal of the subject is to "improve students' ability to work systematically and creatively with generation of ideas in new as well as existing enterprises and in public and private organisations. Further the goal is for students to develop ability to act commercially and to take risks..." (Danish Ministry of Education 2010). The subject has had much political backing but has not been a very popular choice among the students.

Innovation as a teaching subject in general upper secondary vocational education

Innovation is also a subject in upper secondary vocational education. It is an elective subject, offered within the category of 'Vocational subjects 3'. The objective is that the student develops competence to work innovatively in relevant processes of work. The student is to learn about innovation through practical projects (Danish Ministry of Education 2014b, appendix 26). The subject is offered at two levels, each equivalent to one week of study. Among the more specific objectives are that students should learn to distinguish between innovation and development and between different types of innovation; be able to use innovation tools in a practical assignment; test own ideas or suggestions for change of working processes.

The 2014 vocational education reform

Both the 2009 strategy for entrepreneurship education and the 2012 innovation strategy state that the entrepreneurial elements of upper secondary vocational education will be strengthened. However, this element is hard to find in the reform of vocational education decided in 2014 (Danish Ministry of Education 2014c). The main concern of the reform is to improve the number of young people enrolled in vocational education and to reduce the high drop-out levels.

Are any of the above listed initiatives mandatory?

The policies and developments described here show how national innovation strategies are developed as part of general government policy. The principles and measures described in

these national strategies are then gradually transformed into legislation or other specific measures to be implemented by government agencies and educational institutions.

Promotion and mainstreaming of innovative school education at school/institutional level

- 5 In the Danish context policies at this level mainly take the form of national frameworks and in many cases funding for development programmes that either prepare or follow up general government policies and legislation.

It is difficult to distinguish between programmes aiming at the school/institutional level and at the classroom level. The units involved in development and experiment activities are most often schools, but the projects are often related to individual subjects and types of teaching in the classroom. I have chosen to present these programmes in this section.

Local innovation activities as part of the 2013 school reform

Some of the elements of the 2013 school reform demand and support innovative activities in schools and municipal school systems. Especially two elements can be mentioned, the open school and learning consultants.

The principle of the open school means that schools must be more open towards the surrounding community. To achieve this collaboration with local sports clubs, cultural centres, municipal music and arts schools and other associations is to be established at the municipal level. Besides supporting the subjects and general objectives of the Folkeskole, the aim of this collaboration is to ensure local social and cultural cohesion.

As part of the school reform a national corps of approximately 40 learning consultants has been established by the Ministry of Education. The consultants offer municipalities and schools advice on quality development, for instance guidance on best use of the longer school day.

Development programmes in primary and lower secondary education (the Folkeskole)

The two most important development programmes in recent years are the New Nordic School programme and the A.P. Møller programme.

New Nordic School was a development programme initiated by the government (led by the Social Democratic Party) that took office in the fall of 2011. The programme had two main objectives: to prepare a general reform of the 'Folkeskole' along the lines envisaged by government (eventually leading to the 2013 reform) and to carry out development projects with a strong methodological

design that could generate valid knowledge for further policy and practice. The name 'New Nordic School' refers to the Scandinavian educational tradition and the idea was to let development happen through the expertise of practitioners and through knowledge-sharing between the schools. The projects covered a variety of topics, including a longer and more varied school day, collaboration between schools and local organisations, new use of IT and in-service education for teachers. The institutions had to work together with at least two fellow institutions in networks during the process (Andreasen et al 2013). The programme was funded in part by the state, in part by municipalities. In the fall of 2012 350 schools and pre-school institutions applied to participate in the programme, and 200 of them were selected for funding. The programme was halted by the new government that took over in the fall of 2015.

In 2014 the private A.P. Møller foundation (based on the Mærsk shipping company and named after its founder) announced that it will donate one billion DKK (approximately 134 million EUR) for projects focused on in-service training for school teachers in order to meet the challenges of the 2013 school reform. Funding is awarded after rounds application over a 4-6 year period. During the first two years 94 projects have been funded. They cover a broad variety of the pedagogical and curricular tasks of the Folkeskole.

Development and experiments in general upper secondary education

In general upper secondary education a plan for experiments and development in this sector has been running from 2013. Different topics are laid out for development each year and on this basis schools can apply for approval of and support for projects. Among the topics covered are transmission from lower secondary education (at the Folkeskole) to upper secondary education; uses of information technology; evaluation of teaching and internationalisation.

One of the topics of the development programme has been teaching and pedagogy to increase the demand on students' independence and endurance. This has involved developing teaching sequences and tasks that spur students to work out innovative solutions to problems in and across the different school subjects, and also to develop criteria for assessing innovative competencies.

Another topic has been talent development. The objective here has been to establish frameworks allowing talented students to unfold their talent. Talent is understood both as cognitive/academic excellence and as creativity in real-life innovation and collaboration; but in fact the academic dimension seems to dominate, because the promotion of talent is linked to brief study periods or internships at higher education institutions.

References

Information about these projects is almost exclusively available in Danish, and generally on official home pages rather than in specific publications.

Danish Ministry of Education (2014). *Improving the Public School – overview of reform of standards in the Danish public school (primary and lower secondary education)*. Copenhagen: Danish Ministry of Education

Home page of the learning consultants: <http://www.uvm.dk/Laeringskonsulenterne>

Home page for the New Nordic School programme at the Danish Learning Portal (EMU): http://www.emu.dk/soegning?f%5B0%5D=field_tema%3A28273&f%5B1%5D=field_tags%3A15884

Home page of the AP Møller Foundation school programme:

<http://www.apmollerfonde.dk/folkeskolen.aspx>

Upper secondary development programme: Home page of Danish Ministry of Education:

<http://www.uvm.dk/Uddannelser/Gymnasiale-uddannelser/Forsoeg-og-udvikling/Udviklingsplanens-anden-fase>

Promotion and mainstreaming of innovative school education at classroom level

6. It is difficult to distinguish between programmes aiming at the school/institutional level and at the classroom level. The units involved in development and experiment activities are most often schools, but the projects are often related to individual subjects and types of teaching in the classroom. I have chosen to present these programmes in the previous section. Here I present only a few examples of innovation initiatives linked to the classroom level.

Entrepreneurship and innovation in vocational education

The publication 'Entrepreneurship and innovation in vocational education – advice and hints' brought out by the Ministry of Education in 2011 is an example of material aimed at inspiring teachers in working innovatively. It focuses on the innovation subject in vocational education and conceptual provides background, examples of teaching practice, references and further perspectives for the use of the teacher. For instance the publication outlines four 'pillars' of the creative process:

1. Creative competence, the ability to get new ideas
2. Knowledge as the background for the idea
3. Motivation as the driver for solving a problem or a task
4. Relational competence, the ability to mobilise people and resources for the idea.

Pioneer campaign, upper secondary vocational education

The Pioneer Campaign, started in 2007, was an initiative of the Danish Ministry of Education to inspire and support focuses on innovation and entrepreneurship throughout the entire educational system. The overall objective was that teachers and educators should participate in project sessions to learn to work with idea development, innovation and entrepreneurship in their teaching. As a main part of the activity the ministry published a magazine, which was also available in English. It was partly a news magazine that reported the latest news concerning the Pioneer Campaign but also an inspirational magazine that contains articles to inspire and help teachers, educators and administrators in their pioneering efforts in the world of education.

Review of key research evidence

General overview of national research

General comment: I have found it difficult to get an overview of this. Much educational research is carried out in Denmark, both empirical and theoretical, and some of it also focuses on the result of innovative education initiatives and/or initiatives directed towards improving innovative competencies of students and in society. It is also a general rule that significant legislation and policy initiatives are to be evaluated after a period of time. But both research and evaluations are carried out by many different actors, and as far as I know there are no relevant national summaries of evidence on innovation in education. A recently published overview of Danish educational research (Damvad 2014) contains a mapping of research in about pre-school, primary and secondary education in the years 2009-2013, based mainly on publication databases and a survey. The report identified the following themes as dominant in the research (Damvad 2014 p. 41-42):

- Inclusion and exclusion
- Quality and institutional evaluation in the 'Folkeskole'
- Choice of education, focusing for instance on gender or ethnicity
- Classroom management
- Assessment and testing, for instance the PISA
- Teacher education
- School management

Innovation was also registered as a theme in the survey, but not important enough to make the above list.

Following the launching of the national Danish innovation policy government has also taken steps to document results of this. One result is the establishment of a Centre for Public Innovation. This centre published its first 'Innovation Barometer' in the summer of 2015, presenting the results of a nationwide representative survey among public work-places in Denmark (Center for Offentlig Innovation 2015). It covers innovation in public workplaces, what drives and encourages innovation and how workplaces create an environment for the development of new ideas. In all, 86 pct. of public workplaces introduced an innovation in 2013-14 – 41 pct. introduced a product innovation and 55 pct. a service innovation. The survey differentiates results for the main divisions within the public sector - municipalities, regions and the state; but it does not allow identification of innovations in primary and secondary education.

Because of these limitations, the answers to the questions will be either very general or confined to examples.

Which types of educational innovations in schools were studied, if any?

1.	<p>Different types have been studied. The Damvad report on Danish educational research suggests that innovations in classroom management and innovation and testing could be prominent themes.</p>
2.	<p>Has the impact of educational innovations been researched in your country? What were the outcomes for pupils?</p> <p>I cannot give a general answer to this. The following is an example of a study on the outcomes for students:</p> <p>In 2009-2011 the Ministry of Education established innovative teaching in creative subjects in a number of 'Folkeskoler'. There were four different types of innovation:</p> <ol style="list-style-type: none"> 1. Teaching the subjects music and design for a longer period of schooling than normally 2. Testing a new school subject – craft and design – in the upper grades 3. Having school-leaving examinations in music, art, craft and design 4. Testing an alternative health profile for the physical education subject. <p>The results were evaluated in a study done in collaboration between the Rambøll consultancy and researchers (Rambøll Consultants 2011). Theme two, the new school subject, had the largest effect on the organisation of teaching and on students, leading to more motivation and active participation. Type 1 had no noticeable effect on students, while type 3 (examinations) had some effect.</p>
3.	<p>Based on the existing research in your country, which system, school and classroom level factors facilitate or hinder the implementation of educational innovations in school education?</p> <p>There is little doubt that the kinds of development programmes practiced in Denmark (framework programmes where municipalities and schools are offered supplementary funding to carry out experiments) do facilitate educational experiments. Research on individual cases support this, but there is no general overview.</p> <p>Several factors may hinder or slow down innovation. One is uncoordinated priorities in public education policy, where innovation is encouraged while at the same time schools are expected to improve their achievement on existing parameters. This is clearly a problem in the 2014 school reform (see Andreasen et al 2013). Another is the persistence of traditional teacher practices in educational institutions. Detailed regulation of teacher work 'from above' is not a realistic option (at least not in Denmark) so unless teachers are positively motivated for introducing innovations progress tends to be slow. A third factor is funding. In the development phase educational experiments most often have extra funding, but</p>

	<p>when the innovations are to be mainstreamed this extra funding is no longer available and the innovations may become losers in the internal struggle for resources in educational institutions.</p>
<p>4.</p>	<p>What is the role of non-governmental stakeholders in the promotion and/or mainstreaming of innovations in schools?</p> <p>Private non-profit funds play an increasing role in the initiation of experiments. The A P Møller programme mentioned above is the most prominent example, but there are others.</p>
<p>5.</p>	<p>Based on the existing research in your country, please provide some examples of successful policy initiatives aimed at <u>promoting innovations</u> in schools.</p> <p>The use of ICT in teaching and learning is a field where successive governments have tried to promote and sponsor innovation. ICT is given high priority by more or less all actors and as a result generous funding has been provided. For the last two decades there have been a succession of development programmes aiming at strengthening the technological infrastructure of schools and the use of IT tools in teaching at all levels. Because this has been a broad effort it may be discussed whether it is promotion or mainstreaming, but it has not taken the form of implementing certain tools or principles decided at a central level. One of the latest examples is a programme run by the AAUC consortium consisting of Aarhus University and six university colleges. The projects have focused on IT as such but on the development of an innovative teaching practice with IT as an integral element. It has involved a number of teaching sequences designed by researchers and consultants in collaboration with researchers and research on the implementation of these. The results (Hansen and Bundsgaard 2016) show that the project has made teachers work more targeted on innovating their teaching practice.</p> <p>The use of evidence-based approaches to teaching has been growing in Danish primary and secondary education over the last decade. In the first instance this has not come from state education policy but rather from municipalities and schools who have invested in specific</p>

	<p>tools in order to improve the quality of their work. An example is the so-called LP-model, developed in Norway but promoted widely in Denmark. This is a model for assessing the spaces of learning as basis for a rational planning of teaching, supported by empirical surveys (see Nordahl et al 2012; Ottesen et al 2013). This is an innovation introduced in a relatively limited number of schools and in many cases not continued, but influencing the general approach to school teaching.</p>
<p>6.</p>	<p>Based on the existing research in your country, please provide examples of successful policy initiatives aimed at <u>mainstreaming innovations</u> in schools.</p> <p>Mainstreaming of innovation initiatives has most often happened through legislation. The introduction of innovation and entrepreneurship as school subjects mentioned above are examples of this. Another example is the promotion of physical activity for all students in the Folkeskole. This was the object of development projects, for instance in the New Nordic School programme (se above) and was then introduced as a general demand in the 2014 school reform.</p>

Availability of evidence and evidence-based policy making

<p>1.</p>	<p>Are there any indicators set in national/regional policies to measure whether the policy goals regarding innovative education in schools have been achieved?</p> <p>In recent years the objectives set in educational reforms have increasingly been linked to quantitative indicators, so that progress towards these objectives may be benchmarked. For instance the 2013 school reform has three overriding objectives: (1) The Folkeskole must challenge all pupils to reach their fullest potential; (2) The Folkeskole must reduce the significance of pupils' social background for academic results; 3) The trust in the Folkeskole and pupil well-being must be enhanced by showing respect for professional knowledge and practice. For all three objective progress after implementation of the reform is followed through indicators (Danish Ministry of Education 2014a).</p> <p>However, policies and initiatives for educational innovation cut across the general Folkeskole objectives the indicators used do not make it possible to and it is not possible to measure this.</p> <p>The Folkeskole is the administrative responsibility of municipalities, and all municipalities are obliged to every second year produce a report on school and education quality. Information on certain themes are mandatory for the quality report; these include grades from exit examinations, results from national tests, results from well-being surveys, status for teacher qualifications and inclusion – but not information about educational innovation.</p>
<p>2.</p>	<p>Have national/regional policy initiatives for promoting innovative pedagogical approaches and school organisational practices at the systemic, school/institutional, and classroom levels been evaluated recently? If yes, please specify when and what was evaluated.</p> <p>Both the 2013 school reform and the 2014 vocational education reform are being evaluated; but very few results from these evaluations have yet been published. The New Nordic School development initiative was scheduled to be evaluated this year, but after the programme was stopped government has cancelled the evaluation.</p>
<p>3.</p>	<p>How is school performance evaluated in your country? What are the evaluation criteria? Do they also include focus on innovative pedagogical approaches and school organisation?</p>

School performance is evaluated on the basis of a number of indicators. Information is updated every year. The precise number and character of indicators varies over time. At the moment the following seven indicators are used:

- Share of students absent from school
- Average grades in school-leaving examinations
- Average grades in school-leaving examinations corrected for socio-economic background of the specific school.
- Survey results on student well-being and social climate in classes
- Students' choice of upper secondary education or labour market status after leaving school
- Share of teaching subjects covered by high-level teacher qualifications
- The composition of the school's students

The indicators are publicly available through a Ministry of Education website:
<https://www.uddannelsesstatistik.dk/grundskolen/overblik?smarturl404=true>

Again, these indicators do not allow measuring innovative pedagogical approaches.

The above applies to the Folkeskole. Schools for general upper secondary education or for vocational education do not have so detailed indicators.

Bibliography:

Andreasen, K. E., Rasmussen, A., & Rasmussen, P. (2013). Hvad er "nyt"? Kommentar til udviklingsprogrammet Ny Nordisk Skole [What is 'new'? Comments on the New Nordic School development programme]. *Dansk Pædagogisk Tidsskrift*, 2013(1), 16-24.

AP Møller Foundation school programme home page: <http://www.apmollerfonde.dk/folkeskolen.aspx>

Arbejdsgruppen til talentudvikling i uddannelsessystemet (2011). *Talentudvikling - evaluering og strategi [Talent development – evaluation and strategy]*. Copenhagen: Danish Ministry of Education.

Center for Offentlig Innovation (2005). *Innovationsbarometeret [The Innovation Barometer]*. Copenhagen: Centre for Public Innovation.

Damvad Consultants (2014) *Kortlægning af forskning i læring i dagtilbud, grundskole og overgange til ungdomsuddannelserne [Mapping research on learning in pre-school, primary and lower secondary school and transitions to upper secondary education]*. Copenhagen: Damvad.

Danish Government (2006). *Progress, Innovation and Cohesion. Strategy for Denmark in the Global Economy – Summary*. Copenhagen: Government Publications.

Danish Government (2012). *Denmark – a nation of solutions. Enhanced cooperation and improved frameworks for innovation in enterprises*. Copenhagen: Ministry of Science, Innovation and Higher Education.

Danish Ministry of Education upper secondary development programme home page:
<http://www.uvm.dk/Uddannelser/Gymnasiale-uddannelser/Forsoeg-og-udvikling/Udviklingsplanens-anden-fase>

Danish Ministry of Science, Technology and Innovation; Danish Ministry of Culture; Danish Ministry of Education and Danish Ministry of Economic and Business Affairs (2009). *Strategy for Education and Training in Entrepreneurship*. Copenhagen: Danish Agency for Science, Technology and Innovation

Danish Ministry of Education (2010) *Public order on STX, appendix 17; innovation as elective subject, level B*.

Danish Ministry of Education (2011) *Iværksætter og innovation i erhvervsuddannelserne – råd og vink. [Entrepreneurship and innovation in vocational education – advice and hints]*. Copenhagen: Undervisningsministeriet.

Danish Ministry of Education (2012). *Pioneer Magazine no. 5*.

[http://eng.uvm.dk/Service/Publications/Publications/English/2010/The-Danish-Pioneer-Magazine-Pionermagasinet-issue-no-5-\(summary\)](http://eng.uvm.dk/Service/Publications/Publications/English/2010/The-Danish-Pioneer-Magazine-Pionermagasinet-issue-no-5-(summary))

Danish Ministry of Education (2014a). *Improving the Public School – overview of reform of standards in the Danish public school (primary and lower secondary education)*. Copenhagen: Danish Ministry of Education

Danish Ministry of Education (2014b). Bekendtgørelse om grundfag, erhvervsfag og erhvervsrettet andetsprogsdansk i erhvervsuddannelserne [Public order on basic subjects, vocational subjects and vocational Danish as a second language in vocational education]. Retsinformation.dk

Danish Ministry of Education (2014c). *Improving Vocational Education and Training – overview of reform of the Danish vocational education system*. Copenhagen: The Danish Ministry of Education
Information about these projects is almost exclusively available in Danish, and generally on official home pages rather than in specific publications.

Hansen, T.I. & Bundsgaard, J. (2016). *Effektmåling af demonstrationsskoleforsøg [Measuring effect of a demonstration experiment]*. Research report. Odense: Læremiddel.DK

Indicators for school quality, Ministry of Education website:

<https://www.uddannelsesstatistik.dk/grundskolen/overblik?smarturl404=true>

Learning Consultants homepage: <http://www.uvm.dk/Laeringskonsulenterne>

Lund, B., Lindfors, E., Dal, M., Sjøvoll, J., Svedberg, G., Jensen, J. B., ... Thordardottir, T. (2011). *Kreativitet, innovasjon og entreprenørskap i utdanningssystemene i Norden: Bakgrunn og begrepsinnhold basert på politisk initiering og strategivalg [Creativity, innovation and entrepreneurship in Nordic educational systems: Background and conceptual content based on political initiation and choice of strategy]*. Nordi council of Ministers: TemaNord.

New Nordic School programme home page at the Danish Learning Portal (EMU):

http://www.emu.dk/soegning?f%5B0%5D=field_tema%3A28273&f%5B1%5D=field_tags%3A15884

Nordahl, T., Aasen, A. M., Sunnevåg, A-K., & Qvortrup, L. (2012). *Resultater af brug af LP-modellen i danske folkeskoler: Evaluering af arbejdet med LP-modellen 2008-2011 [Results of the use of the LP model in Danish schools: Evaluation of work with the LP model 2008-2011]*. (1 ed.) Frederikshavn: Dafolo Forlag A/S.

Ottesen, E., Lund, B., Grams, S., Aas, M., & Prøitz, T. S. (2013). Educational Methods as Commodities within European Education: A Norwegian-Danish case. *European Educational Research Journal*, 12(4), 463-479. 10.2304/eej.2013.12.4.463

Rambøll Consultants (2011). *Forsøg med praktiske/musiske fag i folkeskolen – evaluering [Experiment with practical/musical school subjects – evaluation]*. Copenhagen: Rambøll.