CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION

21st Century Learning and Teaching: **Innovative Learning Environments**

1. Introduction

In recent decades, OECD economies have experienced a rapid transformation from industrial to knowledge-based systems in which lifelong learning and innovation are central. At the same time, many of today's schools still operate as they did at the beginning of the last century and are not encouraging the deep learning and skills that underlie innovative activity.

For both the individual and society, the successful management of learning is essential. Individuals who become self-directed learners are able to acquire expert knowledge in various fields, to change careers, and to endow their lives with creativity and variety. Developing these capacities is not only important for a successful economy, but also for effective community and social engagement, participatory democracy and for living fulfilling and meaningful lives. Thus, society cannot risk leaving the acquisition of learning to chance.

How can individuals be helped to achieve their fullest potential? How can today's schools be transformed so as to create environments that result in the type of teaching and learning that makes individuals lifelong learners and prepares them for the 21st Century?

2. Our Focus

Our project will focus on teaching and learning at the micro-level as opposed to educational policies, management or organisational structures. This is based on the fundamental belief that the most fruitful area in which to search for new approaches to learning within the education system calls for close attention to the nature of learning itself.

Our work aims to serve the educational reform agenda by generating evidence from the learning sciences and providing innovative examples from the field which invite questions about transforming teaching and learning practices in today's schools. The specific aims of the project are to:

- Analyse and synthesize current international research findings on learning, teaching and learning environments
- Identify and analyse examples of innovative learning environments from all over the world
- Engage with the community of policy reformers, innovators and learning scientists to discuss how to better use these findings to make OECD education systems learning-driven

3 The Project

The project will include three different types of activities.

Analytical Work

The common image of a teacher standing in front of a class, providing information to students sitting passively at their desk is simply archaic, according to contemporary scientific views of the learning process. But what exactly do we know? While traditional education has emphasised memorization and the mastery of text, research on learning has shown that people construct new knowledge and understandings based on what they already know and believe. The importance of allowing students to take control of their own learning and, thereby, become active learners who are able to understand complex subject matter, is another major finding of the learning sciences. This can be achieved by taking meta-cognitive as well as motivational and affective factors in learning into account. In general, learning must be seen as a social, cultural, intrapersonal and, most of all, active process.

While there is no universal best teaching practice, general principles of teaching and learning – that can enhance our understanding of the teaching-learning process – unquestionably exist. The goal of the analytical strand of the project is to provide evidence on the cognitive, affective, social, motivational and developmental factors that

constitute the learning process. These key research findings will be synthesized in order to use this knowledge to redesign classrooms and other learning environments so that students learn more deeply and effectively.
Outcome: Research-Based Report on Learning Principles (2008 Q4 -2009 Q1)

Empirical Work

When looking into the field, a great deal of innovative educational initiatives can be found all around the world. The learning sciences provide support for core features of many of these innovative learning environments: their instructional methodology focusing on experience and reflection, their integrated curriculum, and their focus on independent and customised learning combined with formative assessment. There is sound evidence that a deep conceptual understanding of complex concepts is best achieved in settings that involve learners and other people in the community in activities in which knowledge is being applied. In this regard, existing innovative learning environments are ahead of mainstream education and can serve as meaningful examples for the renewal of learning environments in schools around the globe.

The empirical strand of the project will identify concrete exemples of the innovative learning environments that already exist in OECD countries as well as in non-member countries. There will be a first compilation of cases from which a subset will be selected for case study analysis. The field work teams will include researchers, local experts, policy makers and Secretariat staff.
Outcome: Report on Innovative Cases (2009 Q4)

Policy Implications

The third component of the project will focus on making the bridge between research and practice, on the one hand, and on policy-makers' needs on the other. Throughout the project, we will engage with the community of policy makers and innovators to identify and discuss the implications of the results from the analytical and empirical work. The outcomes will be connected to policy experiences in different countries and to already-existing policy approaches that foster effective learning environments and respond to key challenges such as high drop-out rates.

In addition to the concrete activities that will be carried out, the project will provide a platform for different stakeholders – countries, foundations, researchers, innovators and practitioners – to engage in a dialogue about the possibility for change in today's schools. This dialogue will not only take place at the conferences throughout the project to discuss the outcomes of the different activities, but also through the project's website. This website will provide a database of the cases covered by the empirical work of the project and will connect innovative learning environments from all around the world.
Outcome: Conferences and a short report with policy implications

Box 1. The Met Centre

The Metropolitan Regional Career & Technical (MET) Center is a network of six small high schools in Providence, Rhode Island, USA. In 1996 it was founded by 'The Big Picture Company', a non-profit educational change organisation whose mission is to catalyse vital changes in American education.

There are 700 students in the MET Center. The student population is ethnically diverse and half of the students come from low-income families. The staff at the MET comes from diverse fields. MET aims to teach students empirical reasoning, quantitative reasoning, communication, social reasoning and personal qualities. MET addresses the whole learner, including the student's physical, mental and emotional well-being. Students are organised into advisories: groups of 15 individuals in the same grade level and led by an advisor, who stays with them for all four years of high school. Students are also paired with adult mentors who share their career interests. This is because school based learning is blended with outside experiences through an internship programme. For each student, a challenging and personalised learning plan is developed every quarter by the students themselves, their advisors and their parents. Instead of multiple choice tests and exams, each student defends his work in exhibitions each quarter in front of advisors, parents, mentors and peers. Instead of grades, students receive quarterly narratives from their advisors, in which the advisor describes the student's academic and personal growth in detail. There are no standard fixed-time classes.

The MET is not just a school but also a community centre where community members are involved in the daily workings of the school. In addition, parents are involved in the development of their children's learning plan and in assessing their child's work. A health centre is also part of the MET.

The MET Center has been very successful: on average, 98 % of the graduates are accepted to college, the graduation rate is 94 % (the city's average is 54 %) and the attendance rate is 92.1 % (the city's average is 80 %). According to the 'Rhode Island's School Accountability for Learning and Teaching Surveys', the MET has consistently ranked among the state's top high schools for parent involvement, school climate, and quality of instruction.

www.metcenter.org

4. Examples of Innovative Learning Environments

During the development of the project proposal, as well as during its "exploratory phase" (2006-07), several innovative learning environments were identified in all OECD countries and in some non-member countries. Many of them are highly innovative learning communities and are found in both urban and rural areas. Some are specialised schools (technology, sports, arts), while other are community centres that appear to achieve better results than traditional schooling.

The following case (see Box 1) contains information about one such innovative learning environment, which can be contrasted with traditional forms of schooling. It may not be the most prototypical, nor will it necessarily be included in the list to be generated by the project. However, it illustrates what innovative learning environments can look like in practice and what will be the focus of the empirical strand.

5 Why to get involved?

This project offers a number of benefits for the participating countries/regions and institutions. Among the most relevant are the following:

- Involvement in an international initiative to develop a new education paradigm based on learning research and innovations, with a strong, practical focus on educational policy making and practice;
- Participation in the collection of evidence which will provide strong analytical insights on learning environments;
- Access to international and comparative analyses to complement what countries/regions do in their own systems.;
- Linkage to similar work in progress of the national/regional research teams, innovators in other OECD countries, which offers opportunities for networking and dissemination, thus enhancing the value of already ongoing work;
- Increased impact of national initiatives and research work via the broad dissemination of CERI's publications, in English and French languages, in both printed and digital formats in all OECD countries and non-member economies. We also aim at translating the publication into other languages.

6. How to get involved

The successful implementation of the *p*roject will depend on the active participation of countries/regions, institutions and foundations concerned with improving today's schools as well as that of researchers, innovators and practitioners. Each of these stakeholders is encouraged to enrich the work of the project by sharing their own perspective.

There will be two different kinds of networks for the participating stakeholders. An "Expert Group" will be created to guide the implementation of the project. This group, which will be composed of the various stakeholders, will be especially concerned with developing the knowledge base and steering the case study work. The second "Network of Participants" will be much larger and will include all of the different stakeholders. This network will get together several times throughout the project in conferences to discuss the outcomes of the different phases of the project.

More specifically, the different groups of stakeholders are invited to play a specific role in the project:

… as a country/region

The active involvement of as many countries/regions as possible from the outset is essential for our project. All countries are invited to participate in the project while the

implementation of the work will be facilitated by certain countries who will take a lead role.

The participation of all countries may include proposing potential cases; the identifying researchers, innovaters and practitioners who might play a wider role in the project; supporting at least one case study in that country; and participating in different meetings, seminars and conferences – in particular, those exploring the policy implications and lessons drawn from both the analytical and the field work.

Those countries that would like to play a lead role, will host certain events, such as advisory group meetings or conferences, and contribute to the international overhead costs of the project, both at OECD/CERI and with the international experts involved. (See Section 8: Opportunities for co-operation and funding for more details)

… as an institution or foundation

Institutions and foundations sharing our belief that today's education system is not prepared for a knowledge society, and pursuing the same goal of transforming today's schools into communities of thinking and learning, are invited to become part of our network on innovative learning environments. We welcome them to share their expertise with us and to support the project. (See Section 8: Opportunities for co-operation and funding for more details)

… as an individual expert

Are you a researcher occupied with the analysis of teaching and learning? Are you an innovator who promotes new and exciting learning environments for the 21st century? Are you a practitioner organising your classroom, school or learning centre differently from "traditional" practice? Then our project might be of interest for you and you might be of interest to us! There are several ways to participate in the project. Researchers can share their expert knowledge through participating in meetings or providing an expert paper for the project's research synthesis on learning principles. The expertise of innovators and practitioners is very welcome as part of our larger network on learning environments. Providing interesting cases and initiatives from the field is another way of getting actively involved.

7. Calendar of Activities

2008

- Expert meeting to discuss the project design
- Launch meeting with the participating countries
- Commissioning of expert papers
- First compilation of larger number of potential cases
- Piloting of the case studies
- Expert meeting to discuss the results of the pilot and the expert papers
- Finishing the research-based report on learning principles (*analytical strand*)

2009

- Conference with participating countries to disseminate and discuss the results of the research-based report publication (*analytical strand*)
- Finalising the case studies protocols (with the feedback of the piloting face)
- Selection of the cases
- Training of case study teams
- Case study field work
- Expert meeting and participant countries meeting to discuss the results of the case studies
- Writing the report on innovative cases (*empirical strand*)

2010

- Conference to discuss the report on innovative cases
- Expert meeting and participant countries meeting to discuss the policy implications
- Production of paper on policy implications (*policy implications strand*)
- Final International Conference to discuss the implications for policy and disseminate all results of the project