

OECD/CERI

Innovation Systems and Policies in VET: Background document

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Introduction

1. This document provides an overview of the Systemic Innovation strand of the VET project conducted by the OECD Directorate for Education. The VET project is organised in two different strands. The Thematic Review strand, under the responsibility of the ETP Division, involves a review of policy on VET. The second, developed by CERI, focuses on the studies of innovation in VET. The participating countries in the Systemic Innovation strand are Australia, Denmark, Germany, Hungary, Mexico and Switzerland.

2. The broad aim of the Systemic Innovation strand of this project is to analyse the *process of innovation* in VET systems. In this context, systemic innovation can be defined as any kind of dynamic system-wide change that is intended to add value to the educational processes. This strand will analyse innovation systems and innovation strategies in VET by bringing together evidence of the drivers for systemic innovation. Particular attention will be given to how countries go about initiating innovation, the processes involved and the relationships between main actors, the knowledge base which is drawn on, and the procedures and criteria for assessing progress and outcomes.

3. Although the management of change within complex systems is a key challenge to educational policy-makers, the dynamics of innovation in education remain to be fully understood. So far, not much comparative analytical attention has been devoted to the policies related to educational innovation, the knowledge-base on which they draw, and their effectiveness.

4. In addition, the analysis of innovation from a systemic perspective has been very limited in the field of VET. Those analyses of innovation in VET that go beyond particular case studies of institutional or teacher-led initiatives tend to focus either on the links between new technological developments in a particular economic sector and the resulting demands for VET, or on the promotion of the innovative spirit that is usually attached to an entrepreneurial approach to labour opportunities.

THE SYSTEMIC ANALYSIS OF INNOVATION IN EDUCATION: BACKGROUND

Concepts and definitions

5. *Innovation*: The concept of innovation that will be used here is deliberately open: innovation is change in an educational context that is introduced with the aim of improving the operation of education systems, their performance, the perceived satisfaction of the main stakeholders, or all of them at the same time.

6. *Systemic analysis*: The systemic analysis of innovation involves the comparative investigation of how education systems or sectors go about initiating innovation, the processes involved, the knowledge base

which is drawn on, and the procedures and criteria for assessing progress and outcomes. Importantly, the systemic approach to *innovations* is distinct from the analysis of *reforms*. While reforms are an improvement in the structure of something, innovations may or may not emerge from pre-existing policies. In addition, the systemic analysis of innovations focuses on how the innovation develops dynamically, i.e. how the innovation is adapted to context and how that context is then shaped by the innovation. To do this a systemic approach should look particularly at sustainability and scaling up, i.e. built-in capacity building such that the innovation could be sustained and refined over time, and wide adoption in institutional process or development (also a marker of success).

7. Following this approach, a systemic analysis of innovation in education, as opposed to the study of the emergence of discrete initiatives, will pay attention to:

- The conceptualisation of innovation.
- The dynamics of innovation from a knowledge management perspective.
- Innovation policies and their context.
- Innovation indicators.

Innovation systems and policies in practice

8. Innovation systems and policies assume to varying extents that the requirements needed to promote innovations can be clearly specified. Additionally, they also assume that we can use evidence to identify which innovations may become mainstream practices. Accordingly, innovation systems and policies are designed to:

- Promote the emergence of innovations.
- Support existing processes of innovation.
- Evaluate the impacts of innovations.
- Scale innovations up.

9. In so doing, the most commonly used tools are:

- Government-led innovations
- Specific programmes mainly aimed at supporting innovations by funding them or providing external support, including support from industry.

- Agencies, usually with a strong involvement both of the research and the professional community, which can provide an array of programmes, but work also as brokerage agents.
- Networks of innovators, be these institutions, groups of educators or individuals.

10. Much remains to be known about the effects and effectiveness of these policies and their behaviour in different system configurations. Evaluating them is difficult and one cannot, for example, simply count the increase of the number of ongoing educational innovations. However, they should be evaluated in terms of their ability to support innovations and to decide, making use of available evidence, when a particular innovation is worth scaling up, and how to successfully achieve this.

AIMS OF THE SYSTEMIC ANALYSIS OF INNOVATION

Research evidence and innovation: questions for investigation

11. Although there is an increasing interest on the role played by research evidence in policy formation in education, not enough is known about the connections between research findings, public policies and educational innovations. Previous CERI work on knowledge management, on educational R&D and particularly on evidence-based policy research point to the current difficulties experienced when trying to align these three elements along the same lines.

12. The systemic analysis of innovation in education provides another opportunity to continue and refine the work carried out so far paying, particular attention to the connections between evidence and innovation processes in education. In particular, this activity seeks answers to such questions as:

- What was the process for identifying key areas for innovation and who was involved?
- How were bridges between stakeholders brokered to allow for exchange of knowledge and practice?
- What were the principal knowledge sources and types drawn on in preparing the innovation?
- How was the process of innovation development implemented?
- How was the process scaled up (e.g. from local to national/regional level)?
- What were the criteria used for evaluating the innovation, and how were these applied?
- What were the positive and negative lessons learned, with respect to both process and outcomes?

13. Sharing experience in this way should shed light on the comparative strengths and weaknesses of different systems and policy approaches, for example:

- the connections between research evidence and innovation policies in education;
- the extent to which innovation policies in education are driven from the centre;
- the openness of education systems to bottom-up innovation;
- the channels through which innovation policies are developed and implemented;
- the time horizons adopted for implementation; and
- the ways in which monitoring and evaluation are carried out, and the roles played by stakeholders in different education system configurations.

14. The systemic approach includes the reflection on 'innovation fatigue', or the pace at which successive innovations can be effectively implemented. Sharing experience in this way could also shed light on the experience and role of other stakeholders in fostering innovation in the VET system (e.g. industry, small and medium-sized enterprises, and/or teacher unions).

Systemic innovation in VET: questions for investigation

15. Generally speaking, the systemic approach to innovation applied to VET can provide good insights for a broader perspective of innovation systems and policies in education and a basis for further research in this area, particularly regarding the connections between research evidence and innovation in education. In particular, work on systemic innovation in the VET sector offers major opportunities to investigate:

- *Competing concepts of innovation* in VET: how is innovation defined and understood in different VET systems? Why should innovation in VET systems be fostered?
- *The dynamics of innovation* in VET from a knowledge management perspective: what are the main models of innovation in VET in OECD countries? What are the systemic factors involved?
- *Innovation policies* in VET: from the perspective of evidence-based policy research, how are innovation policies designed? What is the role of research evidence in nurturing innovation policies? How these policies are monitored and evaluated?

- *Innovation indicators* in VET: can innovation in VET be operationalised and accounted for? What would a system of indicators in this area look like? Would it be useful for benchmarking countries and monitoring progress over time?

METHODOLOGY: MAPPING SYSTEMIC INNOVATION IN VET SYSTEMS

16. A provisional attempt to map systemic innovation in VET systems should cover the formal educational system (i.e. secondary and post-secondary VET), as well as non-formal education (e.g. external training and workplace training). E-learning in both formal and non-formal education contexts is also included. These schooling and learning sectors could then be probed along a number of dimensions that could promote and sustain the process of systemic innovation, such as:

- The creation of networks of institutions
- The development of new tools (e.g. curricula, teaching methods, the use of ICTs)
- The establishment and use of concrete incentives for innovation (e.g. Country Innovation Units, Innovation Prizes)
- Explicit capacity building of stakeholders and/or relationships (e.g. through teacher training projects, private sector initiatives), and
- Partnership and bridging with the private sector

17. This of course is not an exhaustive list. The set of possible sectors (e.g. in formal and informal education settings) can be combined with the types of innovation processes listed above to create a matrix that allows mapping different opportunities and modalities for systemic innovation. An example of one such matrix would be:

VET sectors	Types of systemic innovations					
	Networks of institutions	Developing new tools (e.g. curricula, ICTs)	Incentives for innovation (e.g. Innovation Units)	Explicit capacity building of stakeholders or relationships	Partnership and bridging with private sector	Other
ISCED 2 Initial VET (if appropriate, further specify if distance / e-learning)						

1 December 2007

ISCED 3 Initial VET (if appropriate, further specify if distance / e-learning)						
ISCED 4 Initial VET (if appropriate, further specify if distance / e-learning)						
ISCED 5 Initial VET (if appropriate, further specify if distance / e-learning)						
Continuing VET (if appropriate, further specify if distance / e-learning)						
Other						

18. Such a matrix was sent to all OECD countries for information and possible examples. We have received case studies from our participating countries (Australia, Denmark, Germany, Hungary, Mexico and Switzerland). These case studies will form the basis for our analysis of systemic innovation in VET systems, including the refinement of the matrix (above), the development of a typology, and a model of innovation in education.

19. One issue which has become apparent from this first attempt to map systemic innovation in VET is that many of the projects are newly conceived or newly launched, and as such there is not yet a completed evaluation or an attempt to sustain/scale up the innovation. As this project proposes to look at the *processes* underlying the innovation, these elements are quite necessary in order to fully understand the nature of the innovation cycle and the dynamics between existing evidence, new innovative measures, and the manner in which the system evaluates and learns. We will thus balance the newer cases of innovation with those that have had completed evaluation cycles and implementation experiences.

Timeline of the project

The field work in the Systemic Innovation strand comprises case study review visits that will be conducted over a period of 18 months.

The project follows the following timeline:

1 December 2007

- 5 February 2007: Initial meeting of country representatives provides guidance on scope and focus of the activity in response to draft paper.
- April 2007: Education Committee and CERI Governing Board agree finalised proposal.
- 30 June 2007: Deadline for countries to decide on the participation in VET activity
- 17-18 September 2007: Second meeting of national experts: VET
- 4-5 February 2008: Meeting of experts and review teams : Systemic Innovation
- 26-27 May 2008: Third meeting of national experts: VET
- Ongoing 2008 Q1 to 2008 Q3/4: Case study Site visits
- 2008 Q2/3: Analyses of specific instances of innovation, tracing the trajectories of the process over time.
- 2008 Q4: Synthesis report bringing together the lessons from inter-country comparisons and provides an initial typology of initiatives.
- 2008 Q3: Report on initial considerations for the creation of a system of indicators on educational innovation, its feasibility and the methodology.
- 2009 Q1: Joint (CERI/ETP) conference to report outcomes.