A systemic approach to educational research and innovation

This policy perspective is intended to provide policy-makers with a number of tools to optimise current efforts in both educational research and educational innovations through a holistic and better co-ordinated approach.

Target and purpose

Education systems are often in the centre of policy debates at times of economic crises and rising unemployment, as it is a widely held assumption that a well-functioning training system can protect against unemployment in both the short-term and long-term, especially among youth. Periods of economic crisis can therefore be an opportunity for countries to examine how equipped their education systems are to deal with change and to innovate. 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 ultimate effectiveness. A Systemic Approach to Educational Research and Innovation provides an analytical framework and a series of tools to policy-makers, researchers and educational practitioners intended to:

- Benefit from a holistic approach to the knowledge base in the education sector.
- Improve the relationships and the mutual benefits between the often disconnected activities of research and innovation in education.
- Supplement the current policy efforts (mostly reduced to the supply of funding) with matching initiatives intended to monitor and assess the results obtained, and decide upon scaling up.

The main benefit of the systemic innovation approach is that it can help governments and other stakeholders to have a comprehensive evaluation of how the system works and how they can enhance their innovation capacity. It elucidates existing information gaps and points in the lifecycle of the innovation at which a good evidence base might be more useful. It also allows for evaluating the efficiency and improving the cost effectiveness of innovation systems. In the end, the systemic approach to innovation contributes to the assessment of how the innovation system works and to the identification of policies with the capacity to boost the innovative potential of the education system.
Practice

1. Develop a systemic approach to research and innovation as a guiding principle for innovation-related policies in education. Such a systemic approach includes at least five basic elements:
   - A clear policy intended to support education research in light of national priorities, both at policy and practitioner levels.
   - An evolving framework for sustaining both top-down and bottom-up innovations in education, including monitoring and evaluation mechanisms, which can contribute to the generation of new knowledge, as well as information about what works, regarding education policies and practices.
   - A unified knowledge-base that includes both education research evidence and the new knowledge emerging from the assessment of innovations, including links to international knowledge bases on these topics.
   - Regular efforts to synthesise and disseminate new knowledge on effective education policies and practices to challenge the status quo of the system, set new horizons and contribute to incremental change.
   - Capacity building (structural, personal) to enable all the elements above.

2. Promote a continuous and evidence-informed dialogue about innovation with all relevant stakeholders. This includes the creation or support of brokerage agencies designed to provide the required links between research and practice as well as build relevant capacity both in the system and among stakeholders. This dialogue serves to build trust and strengthen networks among key stakeholders and acts as an important mechanism for encouraging local innovation. Transforming the relatively unconnected communities of educational practice, institutions of education and training, research, and local agents of innovation into a coherent and dynamic learning ecology is an important step in the development of a truly systemic innovation system.

3. Build a well-organised, formalised, easy to access, and updated knowledge base as a prerequisite for successfully internalising the benefits of innovation. The benefits of investments made in educational innovations are lost unless the appropriate tools for knowledge management are in place. This implies gathering dispersed knowledge (usually spread, for instance, across different stakeholders and also from diverse sources of innovation), organising it in a consistent and coherent way, generating clear messages, and finally disseminating results in decision-oriented terms for both practitioners and policy makers.
4. Supplement investments in VET innovations with the necessary efforts in monitoring and evaluation. It is in the best interest of public governance and accountability to generate the mechanisms and procedures required to critically evaluate bottom-up and top-down innovations. An empirical assessment can contribute decisively to:

- Inform decisions about scaling up or diffusion of innovations.
- Instil in the main actors a culture of output-oriented innovation – innovations aimed at measurable improvements that can help to cope with innovation fatigue or resistance.
- Get value for money.
- Obtain feedback on the results of particular policy measures intended to foster innovation.

5. Support relevant education research according to national priorities and link these efforts to innovation. Education research is scarce in some countries. In others, work identified as research has trouble accumulating relevant evidence in a meaningful way. In still others, empirical research is mostly a domain for economists rather than educationalists. In all OECD countries there is a need to address common challenges regarding the relevance of (sometimes dubious) research, the dissemination of results to stakeholders, and the actual use of those results. Education systems could greatly benefit from a national structure of education research that combines the following elements:

- Funding opportunities for researchers according to national priorities with international standards of quality.
- Capacity building with the co-operation of research centres and universities, if possible, in view of co-operation with international networks.
- Dissemination activities, particularly by means of tailored publications, intended to engage a large range of stakeholders. In some cases this may require some additional capacity building to give stakeholders the tools to interpret the implications of research evidence.

**Appropriateness and feasibility**

In order to enable a systemic approach to research and innovation in education effectively, there must be a solid evidence base upon which to base arguments and assessments of strengths and weaknesses in the system. The role of government in commissioning and supporting research and the use of evidence in policy is a critical factor. Strong research can help make the costs of inaction clear, both for the education system and for the economy and labour market. This is also a useful tool in obtaining the backing of relevant stakeholder groups, a necessary requirement for the successful implementation and acceptance of a systemic innovation.
Success factors

- Dialogue among all relevant stakeholders during the whole policy cycle.

- The development of a clear set of national priorities for education, and in light of those also for educational research and innovation.

- The establishment of a clear set of assessment criteria in terms of quality, relevance and cost-effectiveness.

- Ability to disseminate results and learn about users’ needs, particularly through brokerage instruments, such as dedicated bodies or platforms. These also provide opportunities for continuous dialogue among all stakeholders.

- International co-operation can also be very beneficial.

Risk factors

- **Low priority given to innovation in education.** In times of economic difficulty there is a general pressure to reign in expenditures, with innovation often first to be cut. However, innovation should not be considered an unnecessary expenditure but rather the essential ingredient that best defines resistant education systems. Innovation and research should thus be protected to the extent possible.

- **Poor quality of the evidence.** The stronger the argument for innovation, the more leeway available to implement change. Clear data on declining employment, increasing drop-outs and other system measures make a more compelling case for the need to innovate. Without such data the risk is that decisions will be founded on general or politically motivated arguments.

- **Low capacity of the stakeholders to absorb the evidence.** In contexts where policymaking is not generally dependent on research evidence, there is often little expectation or literacy among the stakeholders (including the media) that it be used. Although lower expectations allow for more leeway to introduce levers or policies without strong corroborating research, the danger is that decisions made without evidence will be short-term and possibly erroneous. The cost of recovering from such errors is high, on both structural (financial) and human (trust and capacity) levels.
Evaluation

The evaluation of the development and implementation of a systemic approach to educational research and innovation is bound to give rise to complex exercises, because in many instances these initiatives may bring about many different, and sometimes unexpected, results (depending on the degree of novelty of the adopted measure). In the best case scenario, a set of indicators would be developed, intended to monitor improvements in the following areas over time:

- Quality of educational research and development, by monitoring the methodologies used.
- Relevance, both for policymakers (decision-making) and practitioners (scalability and/or transferability).
- Cost-effectiveness, particularly in comparison to other possible choices (such as an increase in efforts devoted to in-service teacher training).

The information gathered in these evaluations is crucial not only for assessing the success or failure of the innovation but also for feeding the innovation policy cycle. Due to this importance, sufficient resources should be available to ensure that evaluations are properly carried out and achieve their objectives.

Further resources

National Reviews of Educational Research and Development  
www.oecd.org/document/36/0,3343,en_2649_35845581_36007780_1_1_1_1,00.html

Systemic Innovation in Vocational Education and Training  
www.oecd.org/edu/systemicinnovation/vet

Digital Learning Resources as Systemic Innovation  
www.oecd.org/edu/systemicinnovation/dlr

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