

Chapter 9

The Research Agenda

This chapter identifies knowledge gaps in the study of systemic innovation in the VET sector for which further research might be beneficial. The benefits of such an effort could be (a) the improvement of the innovation capacity of national VET systems, particularly by identifying which drivers and barriers are operating in relation to systemic innovation; and (b) an increase in the quality of the processes and the outcomes of VET, by raising awareness of the necessary links between innovation efforts and system performance. The chapter also suggests that the main emphasis of research on systemic innovation in VET shall be put on the systemic factors that can foster innovation, on the processes taking place, and on the impact of systemic innovation on VET quality and outcomes. Additionally, the chapter discusses what could be the most suitable methodological strategies and requirements for systemic innovation and the corresponding policy implications for governments. In this latter respect, four seem to be the most urgent. The first is related to the need to develop national agendas on research on VET and more specifically on the processes of systemic innovation. The second is to incorporate systemic innovation in the national agenda. The last is that governments should benefit from the opportunities being offered by international comparative research in this domain, by way of benchmarking initiatives and developing policy lessons among peers.

To foster the required additional research¹ emphasis on systemic innovation in VET countries will have to develop national agendas on research on VET and more specifically on the processes of systemic innovation; to incorporate systemic innovation in the national agenda; and finally invest on international comparative research in this domain, by way of benchmarking initiatives and developing policy lessons among peers.

Defining research on systemic innovation in VET

There is an intrinsic difficulty with the concept of systemic innovation, partly because of the ill-defined and quasi-intuitive nature of the concept and partly because of the prevalent culture dealing with innovation in the education sector at large.

From the vast literature devoted to researching innovation in education, it can be derived that there are three major approaches:

- *Innovations as discrete initiatives*: Following this approach, innovation is the product of individual learning throughout the system and ultimately of learning by the system itself, and this may be the result of some form of social contagion or natural dissemination. Accordingly, the study of educational innovations is focused on how innovations emerge, are successful, and become widespread.
- *The dynamics of innovation*: This approach emphasises the implementation process, at either the institutional level or the policy level, and how a local and discrete initiative is set to handle particular contextual circumstances, players, or forces.
- *Innovation policies and strategies*: This approach looks first and foremost at how innovations can be sustained, including both the actual support in terms of financing, training, and technical advice, and how the innovation effort is backed with evidence throughout the process of policy design, implementation, and evaluation. The latter concern regarding evidence is the focus of this project, and the one that has received less research attention so far, even considering its potential impact on policy making and systems development.

Systemic innovation is a new concept, both in the general context of education and in VET in particular. Because it is a new concept, there is a high risk of confusion: for instance, whether systemic innovation encompasses the way in which VET systems support small-scale, local, and discrete innovations – which all VET systems do – or whether it comprises the way in which VET systems, particularly from a policy perspective, manage innovations intended to have an overall systemic impact, and how the processes involved function. The latter description of system innovation is the focus of this project.

Moreover, throughout the education sector (and not only in VET) the prevalent school and teacher culture regarding innovation considers the idea of innovation good as such, with much more emphasis and efforts put into the processes than on the evaluation of the outcomes. Innovation is often seen as a process that should be inherent to the professional work of teachers, and consequently much of the educational research dealing with innovation focuses on the processes at the classroom and school levels, with little or no interest in the impact on the learners' results. So, in the prevalent teacher culture, innovation is linked primarily to either the individual teacher or the establishment, and hardly ever to the system itself.

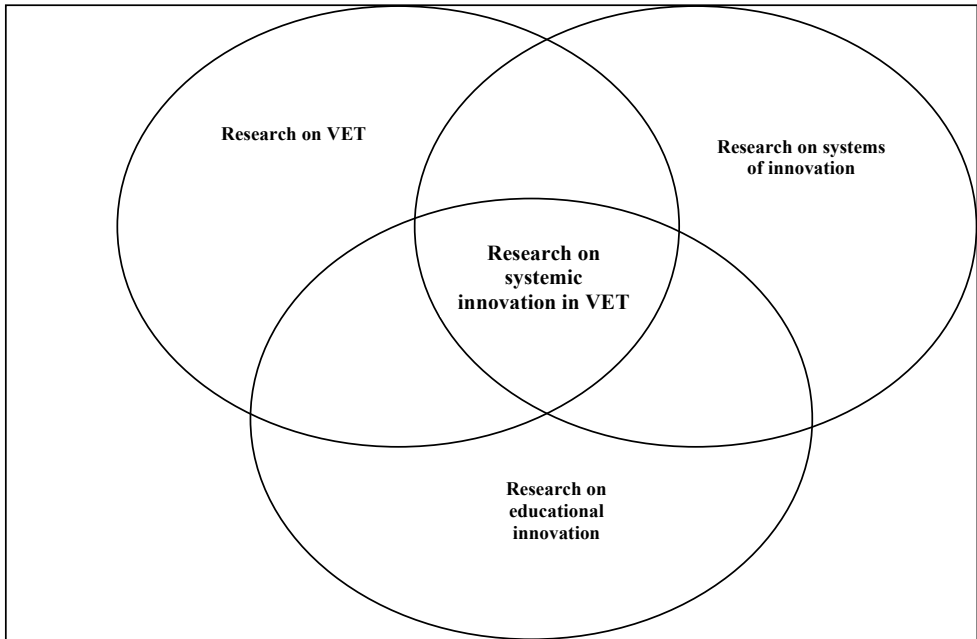
Not surprisingly, these intrinsic difficulties have contributed to a strong bias in educational research on innovation toward qualitative methodological approaches that support this prevalent culture, and to approach innovation in VET as has been done in other education sectors.

The view taken throughout this report is that research on systemic innovation should focus on the structural and policy factors that influence the development of innovations seeking to have a system-wide impact. This research is systemic in two different ways. First, it focuses on the system level: it takes into account how a particular system deals with highly specific kinds of innovations. Second, it addresses only system wide innovations, those which are expected to have a system-wide impact). Therefore, it is systemic because looks holistically at the system while focusing on its ability to change through system-wide innovation. Not surprisingly, most of the cases considered in this project could be said to be top-down initiatives for a number of reasons. However, at least in theory, systemic innovations could be also bottom-up, provided that the system allows them to scale up.

There are thus intrinsic and extrinsic difficulties with research on systemic innovation. The intrinsic difficulties come primarily from the very nature of the concept, which is not only new but elusive. At the same time, there also exist extrinsic difficulties mostly related to a prevalent teacher culture and approach to innovation that tends to focus on discrete innovations, often avoiding issues related to scaling up.

Converging fields

Research on systemic innovation in VET can be seen as taking place in a shared space in which three different research domains converge, as depicted in Figure 9.1: research on systems of innovation, research on innovation in education, and research on VET. Each of these three domains has a distinct methodological tradition, with a given set of concepts and tools not easily transferable.

Figure 9.1. **Research on systemic innovation in VET as a shared research space**

Research on systems of innovation has been a highly fruitful research area and will probably increase its policy value in the near future, as the OECD Innovation Strategy indicates.² There are obvious connections between a knowledge economy and the way countries deal with the production and management of new knowledge, as well as how that knowledge is transformed into new processes or products with added economic value. It is also a promising perspective for the education sector, but not without its controversy and weaknesses. Nevertheless, it is important to consider what conceptual frameworks and methodological approaches have been successfully developed and applied so far in other sectors where the concept of innovation is also elusive. In particular, as has already been pointed out in Chapter 6 (“The Role of the Knowledge Base”), the work done by the OECD in the domains of technology, firm-based innovations, and public governance can be instrumental for future research on systemic innovation in VET.

Compared to research on systems of innovation, research on innovation in education tends to be far more focused on the dynamics of innovation in educational settings, mostly from an organisational perspective. So far, it has had a very strong qualitative approach, mostly studying discrete or local innovations with a view to help overcome the existing difficulties located

in the institutional context or in the relationships among local stakeholders, although some examples of research on innovation turn out to be the expression of a particular policy context as well. Also, a general understanding that the quest for innovation should be part of either a responsible exercise of the teaching profession or the institutional behaviour of a school has supported this approach.

This is why action-research, intended to involve practitioners in research, has been so widespread and popular in educational research – and probably, in some countries, the dominating paradigm in educational research. This is also the case of research in VET, where apparently the dominating research methods are action research, accompanying research and evaluation research (Kämäräinen, 2004). Although neither of the three would comply with classical scientifically-based research standards, they can be useful to develop theory. The problem lies more in the lack of balance between qualitative and quantitative approaches in VET research. For instance, a recent literature review, restricted to the articles published in the *Journal of Vocational Education Research* between 2001 and 2005 lead to the conclusion that a majority of published articles in the sample was either descriptive or qualitative in nature; whereas, only 6% employed quasi-experimental designs (Gemici and Rojewski, 2007).

As has already been stated, there is a general impression that VET is not the best served educational sector in terms of research in most OECD countries. In fact, research on VET is difficult to overview for a number of reasons (Lauterbach, 2001). First, there is the problem with defining what should be considered as research on or of relevance for VET. Second, its multidisciplinary approach, as research related to VET is conducted within various scientific fields including psychology, sociology of work, sociology of education, industrial sociology, organization theory, education and economics with an impressive variance of methodological approaches. Third, the heterogeneity among researchers, institutions and organizations that pursue this type of research. Fourth, the wide range of areas covered, which in a recent overview included: the development of occupations: the vocational disciplines; comparative and historical analysis (Rauner and Maclean, 2009) of VET systems; planning and development; costs, benefits and financing; occupational work and competence development; didactics of teaching and learning in VET: and the impact of technology on VET.

There are indications that the lack of attention to VET research might be slightly remitting, at least partly because of the resurgent interest in VET for political, economic and social reasons (Wolter, 2009). It is against this context of resurgence that a few indications emerge. For example, at European level VETNET, a European Research Network in vocational education and training, part of the European Education Research Association (EERA), has

been operating since 1997, and the number of researchers associated with it is steadily growing. The international network of VET centres sponsored by UNESCO (UNEVOC) goes also in a similar direction. A new international peer-reviewed journal, focused on empirical research on VET, *Empirical Research in Vocational Education and Training*, has been recently launched. All this adds to the sustained work being carried out by a number of dedicated research institutes and some international organisations. However, the research review conducted in 2008 by CERI in the context of this project failed to find any empirical work done in the area of systemic innovation in VET (or related concepts). In this respect, ongoing research on innovation in VET seems to be an extension of what is going on in the wider arena of educational research on innovation: mostly qualitative research focused on institutional innovations and the organisational aspects of innovations, with a preference for action research.

Links between research and innovation in VET

The effectiveness and sustainability VET is closely related to the capacity for learning and innovation in institutions which carry out VET research, influence it politically and make use of its results. When this triangle of influence loses its impetus, the development of VET stagnates (Bundesinstitut für Berufsbildung [BIBB], 2000). In regard to the potential benefits of linking research and innovation efforts in VET, a number of factors have prevented VET systems from strengthening those links, at least to the extent that they seem to have done in other sectors – although not necessarily in education. Drawing on the cases studied in this project, these factors include:

- The reduced effort devoted to VET research, both from a government investment perspective and from the research community as already discussed, resulting in a very small evidence base. VET research is scarce in some countries. In others, there is much development work that is identified as research but has trouble accumulating relevant evidence in a meaningful way. Still in others, VET research is mostly a domain for economists and policy makers, and less for educationalists. But whatever the situation, there exists a need for both practitioners and policy makers to address common challenges regarding the relevance of (sometimes dubious) research, the dissemination of results to stakeholders, and the actual use of those results by them.
- The lack of adequate communication channels or brokering tools between the community of VET researchers and the potential users of research. This may be a problem of language (researchers not using the appropriate tools to communicate results in a meaningful way) or of communication channels (research journals not being read often by VET policy makers and even less by practitioners).

- The lack of interest in dissemination from researchers, and the lack of incentives to publish in journals other than scholarly ones.
- Shortcomings of training of potential users, particularly VET teachers whose training in many OECD countries does not incorporate any specific training on how to use or understand research.
- The limited usability and impact of existing VET research, both for policy makers and for practitioners. As happens in other education sectors, it may well be that the research conducted on VET does not touch upon the issues that potential users might expect to be addressed by VET research specialists.

With the exception of the first factor, these are not specific to VET research, as previous CERI work on educational research and development, through five country reviews, has pointed out repeatedly.³ So, from a knowledge management perspective, the entire issue reflects a situation that many countries have to face: a disconnection between educational research and impact on policy making or practice. However, it is interesting to point out that some countries seem to have already addressed the issue. In a comparison between VET research in Australia and the United Kingdom (Bailey, 2003) it was clearly shown that the two countries not only had different levels of investment in VET research (Australia investing double than the United Kingdom in relation to the overall expenditure on VET), but also different strategies to contribute to raising the standards of VET research and to building a sustainable research community.

The argument over the relevance of VET research can be taken further by examining the absence of links between research and innovation in this domain. As it has already been claimed, although there are severe doubts nowadays about the impact of educational research on innovation in educational practice, the idea they should be interrelated is still unquestioned (de Bruijn and Westerhuis, 2004). From a knowledge-management perspective, it would be reasonable to expect that, other than drawing on research on ongoing innovations or assessing its effects, VET systems could count to a certain extent on research as an eventual source or pump for innovation. This is not the case. Although some of the cases examined here do present some use of the existing evidence base, in a way that has to be considered at least promising, the overall picture presented in Chapter 6 (“The Role of the Knowledge Base”) is rather discouraging.

It could be argued that there is an absence of links between research and innovation in VET, or that the traditional relationships within which experts and researchers develop new concepts and schools and teachers implement them have been challenged and contested. As already stated, VET research is not given the support it needs to effect change and promote innovation.

Despite the potential key role of knowledge-based innovation in education, VET systems typically have low levels of investment in educational research; low levels of research capacity; and weak links between research, policy, and innovation. A great deal is still to be done – through effective brokerage and promoting collaborative forms of professional development, for instance – to ensure that the research occurring directly informs the practice of practitioners in VET institutions and in the workplace. And also that practice informs research and pushes forward relevant research questions.

It is often said that what makes innovation substantially different from change is that change brings novelty, but innovation adds value. However, it would be interesting to test whether the prevalent teaching culture is ready to accept a sharp distinction between discrete innovations (*e.g.* changes in classroom practices), which are often not documented in their effects or impacts on learning, and real innovations whose effects on learning can be backed with evidence. Without an operational definition of innovation in education, it will be impossible to progress toward benchmarking innovation by using dedicated indicators. If the difference between an innovation and any discrete change is unknown or unclear, governments will not be in a position to assess how well spent the money and the resources invested in educational innovation are, or which policies are genuinely successful in promoting significant innovations – and thereby bring better educational processes and results. If the missing link between innovation in VET and better quality or results remains to be seen, there will be a persistent risk of fostering innovation in education as such, just for the sake of it.

Research gaps in systemic innovation in VET

Needless to say, research on systemic innovation in VET does not include all the aspects and issues related to innovation in VET, and there is plenty of room for different alternative approaches and emphasis. VET research has always kept an eye on innovation, particularly in areas such as (Bähr and Holz, 2005): identifying, specifying and operationalising innovation needs; generating and collaboratively shaping innovations; testing and evaluating them; implementation, transfer and dissemination; and summative evaluation of the product and the process as well as impact analysis. In particular, the organisational analysis of innovations in VET is extremely useful in providing insights about readiness for change at the institutional level, its levers, and its barriers. Another well-documented research area is the use of technology in teaching and learning in VET, as well as the emergence of technology-enabled innovations. However, the need of a higher involvement of VET research in generating and supporting innovations was already signalled almost ten years ago (Laur-Ernst and King, 2000) in view of the growing pace of change, and the globalisation of the economy, the labour market and of education.

To supplement existing research on innovation in VET, which usually praises qualitative approaches, a full research line on systemic innovation has to be developed. In so doing, countries may get a double benefit, since this research has the potential to contribute to:

- The improvement of the innovation capacity of national VET systems, particularly by identifying which drivers and barriers are operating in relation to systemic innovation; and
- An increase in the quality of the processes and the outcomes of VET, by raising awareness of the necessary links between innovation efforts and system performance.

Despite its exploratory nature, this project has highlighted how such benefits are resulting from research on systemic innovation. In so doing, the project has unveiled both knowledge gaps in this domain and areas that are clearly in need of further research, and which have only been tackled initially in this report.

Since the complete list of issues would be extremely long, the following paragraphs present only a short selection of the themes that have an intrinsic interest from a research perspective, a policy perspective, or both. This is why, in this selection, the main emphasis of research on systemic innovation in VET has been put on the systemic factors that can foster innovation, on the processes taking place, and on the impact of systemic innovation on VET quality and outcomes. As the last of these is clearly a requisite for the other two, it is presented first below.

The assessment and measurement of innovation as a requisite

Measuring innovation activity becomes crucial not only for governments to understand the effects of their investments in innovation in VET, and therefore inform policy, but also to raise awareness of the benefits of innovations among teachers, students, families, firms, and other stakeholders, as well as compare and assess the impacts in relation to alternative investment opportunities. In fact, if innovation in VET is not expected to produce important consequences for the effectiveness of learning/teaching, equity, and the cost efficiency of VET systems, what is it worth?

However, as has been previously stated, innovation in VET, as in many other public service sectors, is an elusive concept. Most of the literature on innovation in education defines innovation as the implementation of new or improved ideas, knowledge, or practices with a positive impact. In the case of the provision of education, the positive impact can be defined in multiple ways, and relate to either the learner's results, the quality of the teaching/learning process, a reduction in the cost of delivery, or an increase in the

accessibility of the service. This definition increases the complexity of identifying innovations in education, as it is difficult to know when something is an improvement, and of what type, over the previous situation. This is obviously also the case in VET.

At present, due to this complexity, there has been little effort to overcome these difficulties and to define a conceptual framework capable of defining innovation in education and thereby pave the way for improving the measurement of innovation and its assessment. But in this context it is also important not to be constrained by the traditional metrics used in other sectors, which would preclude from capturing “hidden innovation” (NESTA, 2006) or new trends in open and user-led innovations which are clearly also relevant in the education sector – as they are in the public services sector in general.

The research questions are extremely simple in this respect:

1. How much innovation is taking place in a particular VET system?
Or, how innovative is a particular VET system comparatively?
2. What kinds of innovations are taking place?
3. How much of this innovation effort can be assessed as being successful? What are the criteria qualifying an innovation as “successful”?

To do this, it is imperative to come up with:

- A consensus on an operational definition of what counts as innovation in education, which may or may not compete with the prevailing one in teacher culture;
- A conceptual framework, related to the context, the inputs, process, and outputs of innovation in education, from which to suggest possible indicators for benchmarking innovation policies in education; and
- A set of methodological strategies and tools to gather the required information, and process it in a meaningful way for policy purposes, including comparable indicators.

The systemic factors affecting innovation

These systemic factors can be either structural, related to the structural characteristics of the VET systems, or policy-related – namely, related to public policies, both explicit and implicit, intended to address issues related to innovation in education, ranging from support and funding to monitoring and evaluation.

There exists a need for a model that defines the structural factors that can affect systemic innovation in VET. The attempt to provide a typology

drawing on the case studies analysed here constitutes a first step toward designing the tools for approaching the relevance of systemic factors (see Chapter 7, “Towards a Typology of Systemic Innovation in VET”). Such a range of factors has only been explored in this project. Drawing on this, an initial list would include:

- Models of governance of VET systems, *i.e.* whether they are centralised, federal, local, or industry-based; the level of involvement of private firms and industries at all levels; and whether this is organised around consensus-building or drawing on strong government leadership.
- Structural characteristics of the provision of VET systems, *i.e.* whether they are dual, school-based, or mixed models, as well as levels of participation.
- Dominant VET culture in the country, *i.e.* whether there is public esteem or consensus-building around VET issues.

With innovation policies in VET the picture becomes less clear, since in many cases there exists no explicit policy. Most education ministries or other public authorities responsible for VET have units dealing with innovation and improvement and implement a more or less explicit innovation strategy in education, but others do not. Regardless, there are a few issues worth investigating further, such as:

- Investment in VET innovation (*e.g.* public calls, dedicated centres or staff, investments made by private companies and firms, etc.);
- Investment in VET research (same as above, with the added difficulty of mapping efforts made by universities); and
- Monitoring and assessment procedures (including dedicated government or independent units) for both innovation and research.

The research agenda in this domain could largely be organised around two main issues:

1. Which structural factors have an influence on innovation policies in VET?
2. Which policies are more effective in promoting successful innovations in VET and why? How universal are these policies? Which are the factors affecting the effectiveness and efficiency of innovative initiatives in VET?

The process of innovation from a systemic perspective

This is the area that has received the most attention in this project. Given the exploratory nature of the work done so far and the limited range of available evidence, some issues remain pending. In particular, there are two areas that deserve additional attention: the processes and dynamics of systemic innovation, and the role of the evidence base.

With respect to these two areas, the development of a typology of systemic factors can be considered an initial point of departure. However, a higher degree of definition would be required, as suggested above.

Once again, the scope of potential research opportunities is immense. However, there are three particular domains that should be put forward: the model of innovation suggested here, the dynamics of systemic innovation, and the role of the evidence base.

This project started with the design of an innovation model (see Chapter 2). Such a model is largely based on the assumption that systemic innovation in education can be approached as a rational cycle, as it has been applied to policy analysis. Throughout the development of cases, the innovation model was applied to VET and became refined but not formally validated. It was extremely useful as a tool to organise the analysis, but the question remains open as to whether such a model allows for a full account of systemic innovation. Therefore, other models not based in the rational approach might also be explored.

The dynamics of systemic innovation in VET remain by far the issue that has received the most analytical attention in this project. One of the main benefits of the work in this domain has been the identification of sets of drivers and barriers, which contribute to a better understanding of the dynamics of systemic innovation. However, the issue of which factors and interventions can result in successful innovations remains unsolved, due to the lack of tools to assess the success of innovations.

The last issue is the role played by the evidence base in the process of systemic innovation. As with the dynamics of innovation, the lack of opportunities to assess the success (or failure) of the cases prevents one from addressing properly whether a more rigorous use of the evidence base always results in better processes and outcomes of systemic innovation in VET.

On the whole, the pending research questions are:

1. Can the model of innovation be validated?
2. What particular factors in the processes or dynamics of systemic innovation are the most critical for producing successful innovations?

3. Can particular uses of the evidence base be related to more efficient ways of designing, implementing, and assessing systemic innovations?

Implications for research in innovation in other education sectors

At a first glance, much of the work done in this project could be scaled up to education as a whole as well as certain other sectors and, in particular, to schools and universities. Probably, the same applies to the research agenda described in this chapter; its value and relevance for a better understanding of how education systems work in relation to innovation, as well as the implications, is well worth exploring.

However, such a value may not be obtained by simply scaling up to education at large or by automatically transferring the findings and the pending issues identified here. As has been clearly stated in Chapter 3, the processes of systemic innovation in VET have particular nuances that may make them unique in many respects. Just consider the range of stakeholders involved or the role played by developments in the economy and the labour market, particularly in times of crisis (as is the case right now), that can demand quick responses from the VET side. Therefore, in many respects systemic innovation in VET may be far more relevant and strategic than, for instance, in schools.

Therefore, it is possible to think of a similar research agenda in other education sectors. However, it would be better to start with a grounding work, which does not exist yet in the rest of the education sectors, than to transfer automatically the issues identified here.

Conclusions and policy implications

There are four clear policy implications. The first is related to the need to develop national agendas on research on VET and more specifically on the processes of systemic innovation. The second is to incorporate systemic innovation in the national agenda. The last is that governments should benefit from the opportunities being offered by international comparative research in this domain, by way of benchmarking initiatives and developing policy lessons among peers.

1. **Setting up national research agendas for VET.** It has been widely recognised that the entire field of research on VET has failed to attract the intensity of interest from researchers that other education sectors, such as higher education, have had in the past decades – for instance, the number of international peer-reviewed journals on this research field is quite small. Limited public funding and a lack of esteem as a research field can explain at least partly the current situation. However, there are not many OECD countries with a national

research program for VET, and even fewer are the countries that realise the strategic value of VET research for the development of the VET system and the economy at large. Only two of the countries examined here, Australia and Switzerland, seem to have realised the potential of VET research, and they support its development in different ways and with different approaches. This report has proved to some extent that the support for VET research, particularly when done in the context of a well-defined set of national priorities, is an indication not only of real policy endorsement of VET as a sector but also of a more mature development in the research community. The development of a national agenda for VET research, and the accompanying measures intended to support both research capacity building and, in the long run, evidence-based research seeking to inform policy making or to improve practice, must therefore be seen as a governmental priority. In short, VET research needs an additional impulse because VET systems could greatly benefit from a national system of VET research that combines the following elements:

- Funding opportunities for researchers according to national priorities with international standards of quality. Such a research agenda could be negotiated by some, if not all stakeholders in VET and include also an innovation agenda, as anticipated by Westerhuis (2009) for instance;
- Capacity building with the cooperation of research centres and universities, if possible in view of cooperation with international networks;
- Building networks to foster ongoing dialogue not only between stakeholders and researchers, but also networks to stimulate dialogue between researchers themselves, building supportive communities of researchers, as already suggested by Kearns (2004). Furthermore to deepen the impact and diminish the scope of action, research centers or networks should focus on strategic areas of development for policy and practice.
- Dissemination activities, particularly by means of tailored publications, intended to engage a large range of stakeholders, who in some cases may require some additional capacity building, in the discussion of the implications of research evidence;
- Mechanisms for the involvement of those institutions or programmes responsible for initial and continuous VET teacher training.

2. **Supporting research on Systemic Innovation in VET.** Continual improvement of the tools of innovation – in a theoretical and a methodological sense – is as necessary as revision of the funding rules

(greater differentiation, more flexibility, greater share for research) (van Wieringen, Selling and Schmidt, 2003). In the context of such a national agenda, there must be room for research on systemic innovation in VET. As this report shows, VET systems have intrinsic characteristics that make them particularly complex compared to other education sectors. These include: the extremely close link with both quantitative and qualitative variations in labour market, the context derived from the emergence of knowledge economies, the varied range of stakeholders with diverse agendas, and the competition with other forms of postsecondary education, particularly university education, to attract students. Policy efforts to support systemic innovation – lying somewhere between fostering the emergence of local innovations and developing reform agendas – would greatly benefit from the improved knowledge about the processes of systemic innovation that only evidence-based research can provide.

3. **Scaling up to education.** Attempts to transfer the lessons learnt from the work done on VET to other education sectors, such as schools as universities, even considering important limitations, might be worth the effort. Designing a specific research agenda – even if it is intended only to promote exploratory studies – will not only have its own direct benefits but also contribute to creating opportunities for the emergence of synergies.
4. **Adding research value through international comparative analysis.** Although much of this work could be undertaken at the national level, there is a potential economy of scale to approaching this issue from an international and comparative perspective. As in other sectors, OECD may prove to be a particularly well-equipped organisation to provide opportunities for co-operative international work in the VET sector and, in the coming years, particularly in the domain of innovation.

Key messages

VET research needs an additional impulse. VET research is scarce in some countries. In others, there is much development work that is identified as research but has trouble accumulating relevant evidence in a meaningful way. Still in others, VET research is mostly a domain for economists and policy makers, and less for educationalists.

In particular, there is a need for an additional research emphasis on systemic innovation in VET, which could throw light on the systemic factors that can foster innovation, on the processes taking place, and on the impact of systemic innovation on VET quality and outcomes.

The resulting knowledge base may lead to:

- The improvement of the innovation capacity of national VET systems, particularly by identifying which drivers and barriers are operating in relation to systemic innovation; and
- An increase in the quality of the processes and the outcomes of VET, by raising awareness of the necessary links between innovation efforts and system performance.

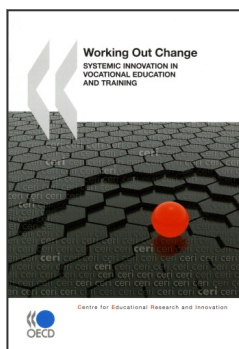
Notes

1. Chapter 1 in this report provides definitions for *research* and *development* in the particular context of education.
2. Further details on the OECD Innovation Strategy at www.oecd.org/innovation/strategy.
3. Five country reviews of the national systems of educational R&D were conducted by CERI between 2000 and 2007. The countries involved were Denmark, England, Mexico, New Zealand, and Switzerland. There is a dedicated website where the corresponding reports can be downloaded at www.oecd.org/edu/rd

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