

Citation for published version

Valiente, O.[Oscar] & Scandurra, R. [Rosario]. (2017). Challenges to the Implementation of Dual Apprenticeships in OECD Countries: A Literature Review. A Pilz, M. (eds) Vocational Education and Training in Times of Economic Crisis. Technical and Vocational Education and Training: Issues, Concerns and Prospects, vol 24. Springer, Cham. doi: 0.1007/978-3-319-47856-2_3

DOI

https://doi.org/10.1007/978-3-319-47856-2_3

Handle

<http://hdl.handle.net/10609/150773>

Document Version

This is the Accepted Manuscript version.

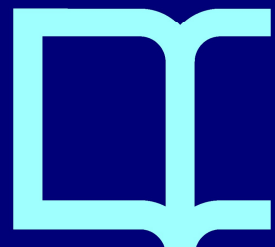
The version published on the UOC's O2 Repository may differ from the final published version.

Copyright

© 2017 Springer International Publishing AG

Enquiries

If you believe this document infringes copyright, please contact the UOC's O2 Repository administrators: repositori@uoc.edu



Challenges to the Implementation of Dual Apprenticeships in OECD Countries: a Literature Review

Oscar Valiente (University of Glasgow) and Rosario Scandurra (Universitat de Barcelona)

Introduction

The global economic crisis and the social problems associated with unemployment, and in particular with youth unemployment, have reinvigorated public debates around the contribution of VET to employability, productivity and economic growth in developed countries. The good economic performance and low levels of youth unemployment in countries with dual VET systems have provided good arguments to the advocates of dual apprenticeships in international debates (Hoeckel et al., 2010). As a result of this, many governments in developed countries have shown great interest in adopting dual apprenticeships in their own national contexts with the aim of improving the employability of young adults and smoothing transitions from education to work. The problem is that the model of dual apprenticeships that has been so successful in countries like Switzerland, Germany or Austria, it is not directly transferable to other national contexts due to its social and cultural embeddedness and the complex institutional arrangements required for its effective implementation (Maurer and Gonon, 2014).

In 2014, the Jaume Bofill Foundation commissioned this literature review to a research team led by the Robert Owen Centre for Educational Change of the University of Glasgow¹. As many other developed countries from Southern Europe, by that time Spain had started the adoption of a dual apprenticeship programme that was facing many challenges in its implementation. The aim of this literature review was not to question the adoption of the policy itself in Spain but to interrogate what challenges other developed countries faced when implementing their dual apprenticeships programmes and how they managed to ensure its effective delivery. Specifically, the main objective of this literature review was to systematise evidence on international experiences of dual apprenticeships in different OECD countries (not only those with dual systems) and to provide theoretically informed and policy relevant insights on the challenges and dilemmas that any government would face in the process of implementing and scaling up this kind of interventions at a systemic level.

Dual apprenticeships as a traveling policy

A dual apprenticeship is what in international and comparative education has been defined as a 'travelling policy' (Ozga & Jones, 2006) or a 'global education policy' (Verger et al, 2012). These policies have solid historical, political and economic roots in specific countries but they have become global because of the action of international organizations, cooperation agencies, governments in other countries and a wide range of policy entrepreneurs (Halpin and Troyna, 1995). In this sense, these policies are the result of the globalisation of a particular localism. The selection of these local policies by international actors is not a random process and usually there are good reasons for selecting these policies over other alternatives. Promoters of dual apprenticeships have seen several advantages in this model of VET provision. Let's start by

¹ The research team included: Oscar Valiente (University of Glasgow), Rosario Scandurra (Universitat de Barcelona), Adrian Zancajo (Universitat Autònoma de Barcelona) and Chris Brown (UCL Institute of Education).

clarifying what we mean by dual apprenticeship before we list the advantages that have been associated to them.

Generally speaking, apprenticeships denote programmes of learning that combine part-time formal education with training and experience at the workplace, and result in an externally recognised vocational qualification. The blending of learning of technical knowledge in the classroom and practical skills in the workplace distinguishes apprenticeships from other forms of vocational learning. On the one hand, apprenticeships differ from full-time vocational schooling because such schooling typically lacks any workplace-based component that is more substantial than short spells of work experience. On the other hand, apprenticeships differ from on-the-job training and labour market training programmes that typically lack a classroom-based component.

Not all countries design and implement apprenticeship programmes in the same way. The dual VET systems in Germany, Austria or Switzerland have specific characteristics that make them different from other forms of apprenticeships and these differences could probably explain the great international attention that they have attracted. In dual VET systems there is a strong component of school based education and well organized employers associations and unions that are actively involved in the assurance of the quality of relevance of in-the-job training (Blossfeld and Stockmann 1998; Ryan 2012, Wolf 2011). This differs greatly from countries like the UK, where training standards for apprenticeships vary largely by occupation and sector and quite often require little off-the-job learning in the formal vocational education system (Wolter and Ryan 2011). These differences oblige us to distinguish between simple forms of apprenticeship, which are subject to a weak regulation by the state and are oriented by a free market ethos; and dual forms of apprenticeships, which are subject to a strict institutional regulation and are oriented by the principles of social partnership between capital, labour and the state. We refer to “dual apprenticeships” and not to “dual systems of VET” because we do not want to restrict our analysis to Germanic countries and because international research has shown that dual forms of apprenticeships exist to a greater or lesser extent in many developed countries (Ryan, 2000), and in many others there are local policy innovations and national reforms moving in that direction.

Several potential advantages have been identified in dual apprenticeship programmes, particularly when compared to full time school-based VET systems. Firstly, the ‘situated learning’ that characterizes dual apprenticeships is for some learners both more motivating and easier to undertake than the less situated learning that characterizes classroom-based programmes (Gonon, 2009; Soskice, 1994). Secondly, the skills developed by apprentices benefit from the closeness of learning to production. Learners are exposed to both the production methods and the work requirements of actual workplaces rather than to classroom substitutes. And thirdly, dual apprenticeships are associated with smoother school-to-work transitions. Having taken an apprenticeship seems to have a positive impact in early labour market outcomes because of reasons outlined above and because of the acquisition of superior information and contacts in the labour market (Ryan, 2001). For these reasons, it is expected that students enrolled in dual apprenticeship programmes will be more employable than those enrolled in school-based VET. They will develop better practical skills, they will develop skills that are more relevant for the companies in their economic sector, and they will have better knowledge and networks to access a job.

Dual apprenticeships have not escaped criticism even in countries with a long tradition of dual VET provision, but they still maintain a well deserved high level of international recognition for their achievements in making students' transition from school to work as smooth as possible. Furthermore, they are constantly benchmarked as examples of good practice by international organizations when discussing the reform of VET systems internationally (Hoeckel et al., 2010). Attached to the international interest in dual apprenticeships, the Swiss and

the German national agencies for development cooperation, SDC and GIZ, have expended great efforts in transferring the dual VET system to many developing countries. In fact, the export of the dual VET system to developing countries has been the main focus of German vocational and training cooperation for a long time. The failure of most of the international initiatives to export the dual VET system in the 80s and the 90s has led to a shared agreement that this is a model of VET that it is not directly transferable to other countries. Research on this field has shown that cultural and institutional contextual conditions do matter in terms of an effective implementation of dual forms of VET (Barabasch et al. 2009; Maurer and Gonon, 2014; Stockmann 1997, 1999). The engagement of employers in the provision of training, the level of development of the chambers of commerce, the institutional capacity to monitor and evaluate the quality of the training in the workplace, the prestige of vocational studies and ability to reach agreements between social partners are some of the requirements that have been identified for an effective implementation of dual forms of VET.

This recognition has not prevented the increasing international popularity of these programmes and the intense cooperation activity to implement them globally, but there has been a shift in the way cooperation agencies approach the transference of the dual VET system. Instead of trying to directly transfer the dual VET system as a technical solution, most of the efforts are now concentrated in developing dual structures in order to gradually implement elements of the dual VET system in accordance to specific features of the recipient countries. The emphasis on the reform of local institutions and governance structures has created great opportunities for technical cooperation in the development of new legal frameworks in recipient countries. This new scenario also includes new opportunities for peer-to-peer cooperation between international offices of the Swiss and German chambers of commerce and the chambers of commerce in developing countries.

Being aware of these developments, our literature review aims to contribute to the debates on the transferability of dual apprenticeships with some specificity. Firstly, we will not question the evidence base for the adoption of dual forms of VET or their effectiveness in the countries where they operate. We will focus just on the challenges and the policy dilemmas that policymakers encounter in the implementation and management of these policies once they have already decided to adopt them. Secondly, we will pay specific attention to the challenges of implementing dual apprenticeships at a large-scale level and not just keeping them as small-scale innovations. Thirdly, given the renewed interest for dual apprenticeships in developed countries in the post-recession scenario, we will limit our review of evidence to OECD countries. We expect that it will be easier to extract lessons for developed countries when we analyse the experience of countries that share some similar contextual conditions. Fourthly, and finally, the review of evidence will include several forms dual apprenticeship programmes and not just those in the well-known dual VET systems (i.e. Switzerland, Germany, Austria). Given the difficulty to directly transfer dual models of VET from one country to another, we think that considering a wider diversity of dual apprenticeship models will be more useful than restricting the analysis to just one paradigmatic model.

Theory driven literature review

Overall, the systematic review of literature is defined as research that examines rigorous and transparent evidence produced by secondary sources for solving a problem previously conceptualized. Oakley (2012: vii) states that the purpose of a systematic review is to “arrive at a more comprehensive and trustworthy picture of the topic than is possible from individual pieces of research”. For this purpose, James et al. (2013: 5) argue that “good reviews, conducted in a systematic and transparent way are a valuable tool for aiding policy making, since

they provide a 'short cut' to the pool of research knowledge in a given area". Simultaneously, however, Oakley argues that systematic reviews can act as a valuable check on how knowledge has been used by the powerful and so bring policy makers to account:

The lives of many people are touched by what policy-makers decide to do to promote health, education and welfare. It is therefore essential that policy decisions and strategies are founded on the best evidence, not only about what works, but about what people want and what they consider to be appropriate. At its heart, systematic reviewing is a tool of democracy. It exposes the policymaking process and the work of professionals and others to the standard of good evidence, and it opens up to public scrutiny the 'academic' business of collecting and analysing research. (2012, pp. vii–viii).

Systematic reviews are, as Moss (2013) contends, as much a research tool to support democratic action in a Habermassian sense as they are an aid for more effective policy-making. The questions that guided our systematic review of the literature were: *What policymakers in OECD countries need to know if they decide to implement a dual apprenticeship program? What kind of challenges and dilemmas they will have to face?* In order to answer these research questions, we positioned our approach more towards the theory driven end of the systematic review methodological spectrum. The aim of the review was to provide theoretically informed and policy relevant insights on the challenges and dilemmas that any government would face in the process of implementing dual apprenticeship programmes. We focused on collecting insights around governance elements involved in the implementation of these programmes. Those elements are inserted in contextual and institutional characteristics and are based on endogenous experience of every single country. Rather than factors that can be evaluate independently, our question deal with a broader and theoretical level. For this reason we centre our attention on a wide range of literature instead of focusing on evaluation studies that are more targeted to specific aspects of the policy. In other words, our literature review was more conceptual than aggregative (Sandelowski et al., 2011; Gough et al., 2012).

The scope of our literature review was limited to studies on VET within OECD countries published in English after 2000. We initially searched in two ways. Firstly, carried out a Boolean search in four relevant education and social sciences databases² combining a list of search terms from different thematic blocks: apprenticeships (dual training, dual system, work-based training, etc...), skills (capability, competence, employability, etc...), labour (employment, wage, earning, recruitment, etc...), education level (secondary, high school, college, higher education, etc...) and countries (list of OECD countries). Secondly, recommendations on seminal literature were also sought from and provided by experts and colleagues in the field. The references cited by the authors of these studies were also scanned through a snowballing strategy. Search combination gave the result of 132 studies. Through applying exclusion criteria and assess the quality of studies extracted we end up with 32 studies. In addition 4 studies were added following the recommendations from experts in the field. This approach to sourcing literature, combined with the screening criteria and approaches to quality control, resulted in a total of 36 papers, studies, reports and books being reviewed (the list of references reviewed are available in the appendix) Data from the papers, studies and reports were then 'extracted' using a data extraction form; this enabled us to capture data on salient conceptual and theoretical fields, which was then used to develop our subsequent conceptual and theoretical frameworks.

Following the process of data extraction we analysed our data in the following way. Firstly we applied a deductive theoretical approach: specifically, we had already conceived a theory of change based on the notion of realist synthesis (e.g. see Pawson, 2001), which seeks to explain and evaluate the barriers and drivers that underpin successful social interventions. We also combined this realist approach with the notion of the 'logic model', which argues that change can be determined through the identification of linear causality - from the inputs of an

² These were: Applied Social Sciences Index and Abstracts (ASSIA); International Bibliography of the Social Sciences (IBSS); Science Direct (Social Sciences); Scopus (Social Sciences)

intervention through to intermediary and then final outcomes through social mechanisms. In the line with our deductive approach, we then undertook a more inductive or grounded perspective to analyzing the data collected in the extraction forms (Strauss, 1987). In particular, we attempted to ascertain the themes and categories which emerged from the data and then: i) examine the relationships that existed between these categories; ii) to develop these into conceptual hierarchies with both horizontal and vertical theoretical linkages (i.e. linkages within and between hierarchies); and finally iii) ascertain how these might relate and augment our understanding of the various stages of the theory of change including the contextual factors. In its aggregative state our analysis of the data should also be taken to represent a range of policy-options that might be explored by policy-makers as they progress along a theory of change allied to the contextual considerations that need to be taken into account when considering which options might work best.

The literature review covered a wide range of references in terms of research design and national contexts. Most of the references had a theoretical focus (15), some of them were evaluations (7), some were quantitative (5), others qualitative (4), other studies were mixed method (4) and only one study was a literature review. Some of the studies were comparative or multi-country studies (7), and the country with more studies was the UK (9), followed by Switzerland and Germany (4 each), then the US and Canada (2 each), and we only reviewed one study for each of these countries: Norway, Netherlands, Italy, Ireland, Finland, Denmark, Austria and Australia. Several methodological limitations can be identified in our review of the literature. Firstly, we only covered literature written in English; therefore we did not review any evidence from the literature written for example in German, which has a long tradition of VET research. Secondly, our approach relied probably too much on the academic literature available in scientific databases because we did not significantly research 'grey' literature and the manual searching of journals and textbooks was reduced in scope. Thirdly, it was difficult to determine when a policy could be considered as a dual apprenticeship programme. We tried to follow Ryan (2000) in his definition of modern apprenticeships³ but sometimes, even after reading the full paper; it was difficult to determine the nature of the apprenticeship programmes under analysis. In the cases of dispute, we privileged country diversity in our sample of studies.

Making dual apprenticeships attractive to employers

It is generally assumed that companies' and employers' motivation to get involved in dual apprenticeships depends mainly on the individual assessment in terms of cost-benefit analysis (Juul Jørgensen, 2011; Smith et al., 2011). Under this assumption, employers will be involved in dual apprenticeships only if: the cost of the apprentice is lower than its productivity during the period in the company, or/and the investment in its training and selection compensates for the additional cost of selecting the most able and well-trained candidates directly from the labour market. Dual apprenticeships offer employers the opportunity to gather more information about the capabilities of potential employees and screen the best candidates for the job (Askild and Nilsen, 2005). Dual apprenticeships seem to work as a signalling channel that displays the capabilities of learners in the workplace, so that employers can acquire sen-

³ Ryan (2001) defines modern apprenticeships and provides a list of institutional requirements to be considered so: 1) the VET programme is divided into two components: one school-based and the other in the workplace; 2) it is a programme of initial VET that leads to the acquisition of a formal qualification; 3) qualification levels within the European context are equivalent to upper secondary or tertiary education; 4) the programme includes compensation in the form of a salary/benefit to the learner; 5) the direct costs of training apprentices in the workplace are sponsored by the employer; 6) there is a formal contract or relationship between the learner and the employer that protects both parties; 7) activity in the workplace is mainly aimed at training the apprentice; 8) there are actors within the company with the responsibility of defining training programmes, tutoring and/or evaluation.

sible information about the potential future performance of employees. Acemoglu and Pischke (1998) point out that a key factor for participation in dual apprenticeships is the possibility for the selection and recruitment of learners. In countries with a dual VET system, employers are more likely to select the best candidate for a future job and pay wages below the productivity of individual learners. The economic literature indicates that this process occurs only in the presence of some institutional factors that contribute to its effectiveness, such as the involvement of committees in monitoring the learning contracts and labour regulations that discourage labour turnover (Acemoglu and Pischke, 1998). In addition, these countries have been historically characterized by high employment stability, low wage flexibility and strong occupational safety (ILO, 2012; Estevez-Abe et al., 2001). However, this cost-benefit analysis is not the only element that needs to be taken into account to understand the motivation of employers. This analysis is affected by the intrinsic conditions of the firm (size, production sector, type of production environment), the economic cycle of expansion or recession, the incentives put in place by the state and other social arrangements and institutional considerations.

Small and medium enterprises (SMEs) have features (e.g., a lack of economies of scale, lack of organizational capacity, specificity of economic activity and the diversification of tasks to be developed), which might make their participation in dual apprenticeships more difficult. In dual VET systems, the participation of SMEs is very significant because it is eased by the institutional support provided by the chambers of commerce. These institutions create their own training centres that complement the training that takes place in the workplace in SMEs. In these cases, the establishment of institutional mechanisms and cooperation allow SMEs to operate as a network in order to have access to planning and the provision of training in the workplace, which large companies are sometimes more likely to do by themselves. Firm size can also be an impediment when policymakers try to establish a dialogue to reform or change their VET system. In Anglo-Saxon countries (Ryan, 2006), all attempts to involve employers in the management of VET have only been able to attract large employers. Small firms have been systematically uninvolved in training in the English context (Fuller and Unwin, 2004). In England, the industrialization of the country and the prevalence of the service sector have also hindered the development of dual apprenticeships (Hogarth et al., 2011).

Dual apprenticeships are more attractive to employers in periods of economic growth and labour shortage (Brunello, 2009; Askild and Nielsen, 2005). Some of the evidence reviewed suggests that the number of learners tends to fall more rapidly during periods of recession (Brunello, 2009). Employers adjust their own needs to increase competitiveness in the short term and to minimize training costs. Moreover, in periods of economic recession and high unemployment, the manufacturing sector tends to hire higher educated apprentices (OECD, 2010), thereby worsening the job opportunities of learners with lower or no qualifications (Behrens, 2008). Young people respond to reduced training and career opportunities by staying in school longer in order to get higher qualifications and gain access to higher education. Bassanini and Brunello (2008) pointed out that training policies are not necessarily the only tools available and are perhaps not the best for supporting training in a phase of prolonged recession. Askild and Nilsen (2005) arrived to similar conclusions for the Norwegian case, where employers' demand for apprentices seemed to be very affected by the economic cycle. This pattern may be due to the demand for labour, but will also be compatible with the hypothesis of long-term investment.

State intervention plays also a decisive role when it comes to mitigating the cost of training for employers. Under dual apprenticeship schemes the cost of training is shared between employers and the state (Troltsch and Walden, 2011). Historically, state intervention has been decisive in the presence of negative economic cycles, which produced a sharp decline in the supply of training opportunities (Juul and Jørgensen, 2011). In Germany, the state has funded

the cost of work-based training during economic stagnation, contributing to the maintenance of the dual model. Thus, the objective of these strategies is to maintain an economic and social model, which represents the joint efforts of the state, employers and trade unions, and that relies heavily in the formation and utilisation of medium-low and medium-high skilled workers by the industry (Culpepper and Thelen, 2008; Heinz, 2000). Moreover, state intervention may be enhanced to meet the needs of certain strategic sectors (Twigg, 2012; D'Agostino et al., 2010). This is a government proactive move to prevent long-term structural problems, seeking to enhance the competitiveness of its industry and/or mitigating the shortage of skills in the market in the long term (Lehman, 2000; O'Connor, 2006; Vickerstaff, 2007).

Employer's involvement in dual apprenticeships is also affected by the social arrangements with trade unions. This element varies considerably and depends on many factors such as the structure of the economic system, the organization and institutionalization of trade union bodies, institutional culture and the history of relations between employers and employees, as well as the level of recognition of these entities. An example of the importance of trade union participation is the Irish model of dual apprenticeships, which attempted to implement an "institutional development system" (Ryan, 2005). The lack of cooperation among unions has been the primary reason for the failure of former reform attempts in Ireland (O'Connor, 2006). In Denmark, employers and union representatives sit on the boards of directors of professional schools (Bosch and Charest, 2008; Juul Jørgensen, 2011). In the Netherlands, a central board of social partners works with representatives of vocational schools to develop qualifications and curriculum-linked training (Brockmann et al., 2011; ILO, 2012). In these countries, the unions are engaged in developing the vocational training system, which makes them co-responsible for the implementation and sustainability of the model. In countries with dual VET systems, the dialogue between employers, unions and the government it has been formalised through different institutions at the federal, state and regional levels, with the aim of ensuring that all the interests are represented in the governance of the system. This feature is present in all countries with a dual tradition, but not only in these countries. The participation of social partners within the company has direct effects on the degree of legitimacy and acceptance of dual apprenticeships (Wahab, 2011). The collective representation of employers, unions and professional organizations and the social arrangements are key aspects to explain the success of dual apprenticeships in many of these countries (Kammerman et al., 2011).

Finally, it has to be said that the involvement of employers also depends on their own engagement with the social goals of VET and their trust in the sustainability of the apprenticeship system. Employers need to be convinced that the apprenticeship system is a solid endeavour with a significant impact on the economy and society. Otherwise, they will see their involvement in the initiative as an unnecessary risk for their company. Dual VET systems have been developed thanks to the strong involvement of stakeholders but also thanks to the determined and sustainable action of the state, that has developed together with other stakeholders a solid legal framework and governance mechanisms. The government should play a coordinating role and act as a "facilitator and regulator" of apprenticeship schemes in order to ensure their sustainability. This involves ensuring dialogue and making the benefits of such an alliance tangible (Betts and Smith, 2006). In some countries, e.g. England, France and Italy, governments offer employers the possibility of participating in the governing bodies of VET; however, this does not always imply a real and effective stakeholder participation in the management of the system (ILO, 2012). The relationship between social actors reinforces the path dependency of countries, providing a system of collective decision-making and ensuring VET coordination as part of active labour market policies (Alex and Stooss, 1996; Flude and Sieminski, 1999; Soskice, 1994; Heinz, 2000). This allows for equilibrium between the provision of training opportunities and unions' acceptance of relatively low wages for apprentices

(Steedman, 2005). In addition, the sustainability of dual apprenticeships and their results depend heavily on the political interests of trade associations and their relative power to influence political agendas.

Making dual apprenticeships attractive to students

It is generally assumed that students in dual apprenticeships choose these studies because they want to earn a wage while they study and because they want a smooth and rapid transition into the labour market once they finish their studies (Hall and Soskice, 2001; Green, 2006; Bol and Werfhorst, 2013). This can be true for certain students' profiles, but not for all of them. Dual apprenticeships must meet certain conditions if they want to attract a large number of students with very different profiles. Some of these conditions include the right balance of generic and specific skills in the curriculum and effective regulatory and evaluation mechanisms that ensure the high quality of the training in the workplace.

The tension between general and specific skills is one of the key elements to constructing a quality dual apprenticeship. In terms of labour market insertion, companies require an optimal combination of general and specific skills. More and more the labour market demands a workforce with sound general skills, such as the ability to work in teams or the ability to learn, rather than just a series of specific tasks to be performed following pre-established processes (Heinz, 2000). With this new focus on general skills, preference is given to the combination of different knowledge and skills in specific contexts, rather than for the intrinsic specificity of a particular knowledge. An example of these changes on the VET system is modularization. The definition of a professional profile is not well established by a sequential and unambiguous curriculum; rather, it is the result of selection and the individualization of learning, which leads to the ability to use these skills in a variety of fields (Pilz, 2012). The adaptation of the VET curriculum to face the demands of a changing market is very important for assessing the effectiveness of dual apprenticeships. Dual apprenticeships schemes should place a strong emphasis on the development of these generic skills if they want to prepare their students for the new demands of today's labour markets.

Generic skills are very important for certain students' profiles not only because they give them the opportunity to find jobs in very different companies and occupations, but also because they give students the possibility of continuing their education at a higher level, either at the finalisation of their apprenticeship or at a later stage of their life. When policymakers suggest that dual apprenticeships can be a good way to improve the attractiveness and social prestige of VET, usually they have in mind a particular student social profile. This potential dual student is characterized by low educational expectations, a certain risk aversion associated with educational investment, low confidence and likely poor results in earlier stages of education. A dual apprenticeship policy that seeks to meet this target population will mainly focus on ensuring a good match between students' capabilities and companies' needs, and will place more emphasis on developing the specific skills that the student needs to get a job in this sector. On the other hand, if policymakers want to attract students to the VET route who might otherwise choose the academic route, then the dual apprenticeship programme will need to have additional characteristics. Most of the students that typically pursue academic routes likely come from higher social backgrounds, are less risk averse and have higher educational expectations. To attract these students to VET, dual apprenticeships need to provide training at the higher standards of quality, a training that meets the demands from the most competitive companies in the sector, but also a training that meets the requirements from the education system to continue studies at a higher level. Giving access to higher levels of education depends on the academic barriers that VET students face in certain countries, and also

depends on the emphasis placed by the VET curriculum in developing these generic and core cognitive skills. Without these skills, young apprentices will not be able to succeed in their higher education studies.

One of the main challenges for dual apprenticeships is transforming the workplace into a space for high quality training. A tension exists between the idea of learning designed as a generic and transferable component (Guile and Okumoto, 2007) and the idea of the workplace as the best context for learning how to apply these knowledge and skills (Collins and Evans, 2007; Flyvbjerg, 2001; Juul Jørgensen, 2011). Acquiring "deep" tacit knowledge requires apprentices to be actually integrated within the social group that shares this experience and have that specific knowledge. The possibility for apprentices to be inserted into a work-based environment not only gives them the opportunity to acquire knowledge and socialize within the workplace, but also provides an advantage by establishing a set of social/professional ties. This provides apprentices with a kind of meta-knowledge of how the labour market works and serves as a contextual complement to their enhanced human capital (Burt, 2001; Granovetter, 1995). Dual apprenticeships not only act as a means for acquiring regulated and standardized professional qualifications (Fuller and Unwin, 2003; Onstenk, 2003), but also provide a period of socialization and personality development for young adults (Heinz, 1996 and 2000; Walden, 2007). Apprentices are more likely to incorporate work values by being part of a larger group of peers (Hogarth et al., 2009) and by experiencing real labour relations. As part of this experience, dual apprenticeships must offer some legal protection to the learner and the employer in a form of a contract. This contract should determine rights and obligations from both parties, the duration of the apprenticeship, the learning programme, the methods of assessment and the certification process (ILO, 2012). The contract has great symbolic value for the apprentice because it regulates the working conditions and the training received in the workplace (OECD, 2010). Joining the labour market is not only about getting a job and receiving a pay, it is about becoming a member of a functional community of labour relations and a specific work culture (Heinz, 2000; Vickerstaff, 2007; Taylor and Freeman, 2011). Making dual apprenticeships attractive to students also means providing the conditions for a successful integration into this set of regulated social relations.

The quality of the training in the workplace cannot be guaranteed just by a contract, other resources, regulations and evaluation mechanisms are also necessary. The availability of experienced and well-trained trainers and mentors in the workplace is one of these prerequisites (Fillietaz, 2011; Rakkolainen, 2001; Tynjälä, 2005; Tynjälä and Välimaa Sarja, 2003). Trainers, in cooperation with schoolteachers, are responsible for the integration of the learning in the workplace into the whole educational experience. This integration can be promoted using different pedagogical tools such as individualised learning plans, educational projects, learning diaries, portfolios and learning groups (Tynjälä Virtanen, 2008). In addition to the availability of well-trained trainers, companies must offer adequate spaces and facilities for the training of the apprentices. This infrastructure is not always available in companies; therefore an external body has to be responsible for the inspection of the training environment in the workplace. The evaluation and monitoring of dual apprenticeships is a key element to guarantee the quality of the learning. In most of the countries the evaluation and monitoring responsibilities are exercised mainly by the state, but responsibilities are quite often shared with other social partners. In some cases, the department responsible for the evaluation of apprenticeships is Department for Education (Germany, Denmark and the Netherlands); while in others, it is the Department of Finance (Austria) or the Department of Labour (Ireland). These departments can exercise direct control of the system (Austria, Netherlands) or may delegate authority to a specific body responsible for the apprenticeships (Denmark, Ireland and Germany), as is the case for the German Federal Institute for Vocational Training (BIBB). Dual apprenticeships can be regulated either by national or regional institutions and

the task of defining the content and the methods of training usually are shared between different actors. In Germany, chambers of commerce have a leading role in determining the training standards for specific occupations and they authorize and oversee the conditions of companies offering apprenticeships. Different governance arrangements with more or less involvement of social partners are present in different countries, but the common element to all of them is that the evaluation and monitoring of apprenticeships is a key element for ensuring the quality of the training in the workplace.

A mode of conclusion

The success of political reforms depends largely on how different policy designs interact with the social and economic contexts in which they are implemented, and how social actors react to these interventions. Our literature review has systematised international evidence on some of the challenges and dilemmas that governments in OECD countries face when they want to implement large-scale dual apprenticeship programmes. We suggest that the main challenge they face is to make dual apprenticeships attractive to both employers and students. On the one hand, governments need to understand that, although some employers might have good economic reasons for getting involved in dual apprenticeships programmes, making attractive this policy to the rest of the employers will require a decisive action from the state. This action can take the form of economic incentives targeted to SMEs and specific economic sectors, or even general economic incentives in order to keep the programme economically attractive to employers during periods of economic recession. Moreover, and beyond its economic dimension, governments need to get employers' associations and chambers of commerce involved in the governance of the programme in order to convince individual employers of the social good associated to the intervention and its long-term sustainability. On the other hand, governments cannot expect many students to be interested in dual apprenticeships just because it is offered a pay and there are high probabilities of a quick insertion in the labour market. Dual apprenticeships must meet certain conditions if they want to attract a large number of students, particularly if they want to attract students with good academic records and high educational expectations. Some of these conditions include the right balance of generic and specific skills in the curriculum, well-trained trainers and learning conditions in the workplace, a solid regulatory and evaluation mechanisms participated by social partners that ensure the high quality of the training in the workplace.

The challenge of making dual apprenticeships attractive both to employers and students raises a dilemma for policymakers between keeping pilot programmes as small-scale innovations or trying to scale them-up into systemic reforms of their VET provision. Small-scale innovations often are designed to serve the needs of strategic sectors of the economy that demand for a highly skilled manual workforce and that have the capacity and the willingness to invest in the attraction and training of talent. These small-scale innovations will have a significant impact only on a small proportion of students and will co-exist with traditional structures of VET. Scaling-up these innovative experiences, as we have seen in this literature review, would require increasing public expenditure in the incentives offered to employers, the development of new regulation and institutional capacity, and the reform of governance structures in order to include social partners in the management of the system. It is not surprising that many countries have not been able or have decide not to scale-up exemplar pilot experiences of dual apprenticeships to a systemic level.

Bibliography

- Acemoglu D, Pischke J (1998) Why Do Firms Train? Theory and Evidence. *The Quarterly Journal of Economics* 113 (1): 79-119
- Barabasch, A., Huang, S., & Lawson, R. (2009). Planned policy transfer: the impact of the German model on Chinese vocational education. *Compare*, 39(1), 5–20.
- Bol T, van de Werfhorst H G (2013). Educational systems and the trade-off between labor market allocation and equality of educational opportunity. *Comparative Education Review*, 57 (2): 285-308
- Burt RS et al (2001) *Social Capital: Theory and Research*, Aldine Transaction, Piscataway, New Jersey
- Busemeyer M (2009) From myth to reality: Globalisation and public spending in OECD countries revisited. *European Journal of Political Research* 48: 455–482
- Christopoulou R and Ryan P (2009) Youth outcomes in the labour markets of advanced economies: decline, deterioration and causes', in Schoon I and Silberstein R (ed) *Transitions from School to Work: Globalization, Individualization, and Patterns of Diversity*. Cambridge, pp. 67-94
- Collins H, Evans R (2007) *Rethinking expertise* University of Chicago Press, London
- Culpepper PD (2007) Small States and Skill Specificity: Austria, Switzerland, and Inter-Employer Cleavages in Coordinated Capitalism. *Comparative Political Studies* 40(6): 611-637
- Culpepper PD, Thelen K (2008) Institutions and Collective Actors in the Provision of Training: Historical and Cross-National Comparisons. In: Mayer KU and Solga H (ed) *Skill Formation: Interdisciplinary and Cross-National Perspectives*, Cambridge University Press, Cambridge pp 21-49
- Estevez-Abe M, Iversen T, Soskice D (2001) Social protection and the formation of skills: a re-interpretation of the welfare states in Varieties of Capitalism. *The institutional foundations of comparative advantage*. (ed. Hall, Soskice) Oxford: Oxford University Press.
- Flyvberg B (2001) *Making Social Science Matter: Why Social Inquiry Fails and How it Can Succeed Again*, Cambridge University Press, Cambridge
- Gough D, Oliver S, Thomas J (2012) *An introduction to systematic reviews*, Sage, London
- Granovetter, M (1995) *Getting a Job: A Study of Contacts and Careers*, University of Chicago Press, Chicago
- Green A, Preston J, Janmaat J G (2006) *Education, Equality and Social Cohesion*, Palgrave Macmillan, London, UK.
- Greinert WD (1994) *The German system of Vocational Education: History, Organization, Prospects*. Nomos, Baden-Baden
- Hall P, Soskice D (2001) *Varieties of Capitalism. The institutional foundations of comparative advantage*. Oxford: Oxford University Press.
- Halpin, D, Troyna, *The Politics of Education Policy Borrowing*. *Comparative Education* Vol. 31, No. 3 (Nov., 1995), pp. 303-310

- Hansen H (1999) Caps and Gowns: Historical Reflections on the Institutions that Shaped Learning for and at Work in Germany and the United States, 1800-1945. *Business and Economic History* 28: 19-24
- Hoeckel, K., Schwartz, R., & others. (2010). *Learning for jobs: OECD reviews of vocational education and training: Germany*.
- James A (2012) *Research methods and methodologies in education* Sage (London & Thousand Oaks CA)
- Maurer, M., & Gonon, P. (Eds.). (2014). *The Challenges of Policy Transfer in Vocational Skills Development: National Qualifications Frameworks and the Dual Model of Vocational Training in Vocational and Continuing Education* (1 edition). New York, NY: Peter Lang AG, Internationaler Verlag der Wissenschaften.
- Moss G (2013) Research, policy and knowledge flows in education: what counts in knowledge mobilisation, *Contemporary Social Science: Journal of the Academy of Social Sciences*, DOI: 10.1080/21582041.2013.767466
- Müller W (2005) Education and Youth Integration into European Labor Markets. *International Journal of Comparative Sociology* 46: 461-485
- Oakley A (2012) Foreword. In: Gough D, Oliver S, Thomas J (ed), *An introduction to systematic reviews*. Sage, London, pp. 7–10.
- Ozga, J., & Jones, R. (2006). Travelling and embedded policy: the case of knowledge transfer. *Journal of Education Policy*, 21(1), 1–17.
- Pawson R (2001) *Realist Synthesis: Supplementary reading 5: the promise of realist synthesis*, Available via: www.leeds.ac.uk/realistsynthesis/Supread4.doc. Accessed 17 July 2012
- Pawson R, Tilley N (1997) *Realist Evaluation*. Sage, London
- Räkköläinen M, Työssäoppimisen O (2001) Guidance of work-related learning. In Räkköläinen M, Uusitalo I (ed) *Työssäoppiminen ja ohjaus ammatillisissa oppilaitoksissa*. Helsinki: Tammi, pp. 103-135
- Ryan, P (2001) The school-to-work transition: a cross-national perspective, *Journal of Economic Literature* 39 (1): 34-92
- Ryan, P. (2000). The institutional requirements of apprenticeship: evidence from smaller EU countries. *International Journal of Training and Development*, 4(1), 42–65.
- Sandelowski M, Voils C, Leeman J, Crandell J (2011) Mapping the Mixed Methods–Mixed Research Synthesis Terrain, *Journal of Mixed Methods Research*. Available via: <http://mmr.sagepub.com/content/early/2011/11/17/1558689811427913.abstract?rs=s=1>, accessed 8 May 2012
- Soskice D (1994) The German Training System: Reconciling Markets and Institutions. In *International Comparisons of Private Sector Training* (Ed. Lisa Lynch). University of Chicago Press.
- Stockmann, R. (1997). The sustainability of development projects: an impact assessment of German vocational-training projects in Latin America. *World Development*, 25(11), 1767–1784.
- Stockmann, R. (1999). The Implementation of Dual Vocational Training Structures in Developing Countries: An Evaluation of Dual Projects' Assisted by the German Agency for Technical Cooperation. *International Journal of Sociology*, 29(2), 29–65.

- Strauss A (1987) *Qualitative Research for Social Scientists*, Cambridge, Cambridge University Press, Cambridge
- Streeck W (1989) Skills and the limits of neo-liberalism: the enterprise of the future as a place of learning. *Work, Employment and Society* 3(1): 89-104
- Thomas J, Newman M, Oliver S (2013) Rapid evidence assessments of research to inform social policy: taking stock and moving forward. *Evidence & Policy*, 9(1): 5-27
- Tynjälä P, Välimaa J, Sarja A (2003) Pedagogical perspectives on the relationship between higher education and working life. *Higher Education* 46: 147-166
- Tynjälä P. Integrative pedagogies: learning in real life situations. A keynote address presented at ENPHE NUF conference, Enhancing physiotherapy competencies in innovative learning environments, Helsinki, 6-8 October 2005
- Verger, A., Novelli, M., & Altinyelken, H. K. (2012). Global education policy and international development: an introductory framework. *Global Education Policy and International Development: New Agendas, Issues and Policies*. Huntingdon: Bloomsbury, 3–31.
- Watt A, Cameron A, Sturm L, Lathlean T, Babidge W, Blamey S, Facey K, Hailey D, Norderhaug I, Maddern G (2008) Rapid reviews versus full systematic reviews, an inventory of current methods and practice in health technology assessment. *International Journal of Technology Assessment in Health Care* 24(2): 133-139

Appendix. Reviewed Articles, reports and books

- Abdel-Wahab M (2012) Rethinking apprenticeship training in the British construction industry. *Journal of Vocational Education & Training* 64(2): 145-154
- Askilden J E, Nilsen O A (2005) Apprentices and young workers: A study of the Norwegian youth labour market. *Scottish Journal of Political Economy* 52(1): 1-17
- Behrens M et al (2008) Taking a straightforward detour: learning and labour market participation in the German apprenticeship system. *Journal of Vocational Education & Training* 60(1): 93-104
- Bilginsoy, C (2003) The hazards of training: Attrition and retention in construction industry apprenticeship programs. *Industrial and Labour Relations Review* 57(1): 54-67.
- D'Agostino S, De Angelis E and Deitmer L (2010) Italian apprenticeship reform: impact from national and regional perspectives, in Rauner F and Smith E (Eds), *Rediscovering Apprenticeship, Technical and Vocational Education and Training: Issues, Concerns and Prospects*, Chapter 6 Springer, London and New York, NY, pp. 59-73
- Deist F, Tutlys V (2012), Limits to mobility: competence and qualifications in Europe. *European Journal of Training and Development*, Vol. 36 (3), pp. 262-285.
- Filliettaz L (2011) Collective guidance at work: a resource for apprentices? *Journal of Vocational Education & Training* 63(3): 485-504
- Guile D, Okumoto K (2007) 'We are trying to reproduce a crafts apprenticeship': from Government Blueprint to workplace-generated apprenticeship in the knowledge economy. *Journal of Vocational Education & Training* 59(4): 551-574
- Heinz WR (2000) Youth transitions and employment in Germany. *International Social Science Journal* 52(164): 161-170
- Heinz WR (2002) Transition discontinuities and the biographical shaping of early work careers. *Journal of Vocational Behaviour* 60(2): 220-240
- Hogarth T et al (2012) Apprenticeships in England: what next?. *Journal of Vocational Education & Training* 64(1): 41-56
- Imdorf C, Leemann RJ (2012) New models of apprenticeship and equal employment opportunity. Do training networks enhance fair hiring practices?. *Journal of Vocational Education and Training* 64(1): 57-74
- Juul I, Jorgensen CH (2011) Challenges for the dual system and occupational self-governance in Denmark. *Journal of Vocational Education & Training* 63(3): 289-303
- Kammermann M et al (2011) Two-year apprenticeships - a successful model of training?. *Journal of Vocational Education and Training* 63(3): 377-396
- Lassnigg L (2011) The 'duality' of VET in Austria: institutional competition between school and apprenticeship. *Journal of Vocational Education & Training* 63(3): 417-438
- Lehmann W (2000) Is Germany's dual system still a model for Canadian youth apprenticeship initiatives?. *Canadian Public Policy* 26(2): 225-240
- O'Connor L (2006) Meeting the Skills Needs of a Buoyant Economy: Apprenticeship -- The Irish Experience. *Journal of Vocational Education & Training* 58(1): 31-46

- OECD (2010) Workplace learning, in OECD, Learning for Jobs, OECD Publishing, Paris
- Onstenk J, Blokhuis F (2007) Apprenticeship in The Netherlands: connecting school- and work-based learning. *Education and Training* 49(6): 489-499
- Overview of apprenticeship systems and issues: ILO Contribution to the G20 Task Force on Employment. Available via: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/genericdocument/wcms_190188.pdf. Accessed 20 June 2012
- Pilz M (2012) Modularisation of vocational training in Germany, Austria and Switzerland: parallels and disparities in a modernisation process. *Journal of Vocational Education & Training* 64(2): 169-184
- Rauner F (2010) Rediscovering apprenticeship: research findings of the International Network on Innovative Apprenticeship (INAP). Technical and vocational education and training series, Springer, Dordrecht
- Ryan P (2000) The institutional requirements of apprenticeship: evidence from small EU countries. *International Journal of Training and Development* 4(1):42-65
- Ryan P et al (2006) Educational and Contractual Attributes of the Apprenticeship Programmes of Large Employers in Britain. *Journal of Vocational Education & Training* 58(3): 359-383
- Sager, F (2008). Securing the long-term bases of the dual system: a realistic evaluation of apprenticeship marketing in Switzerland. *Journal of Vocational Education & Training* 60(2): 133-147
- Schmidt C (2010) Vocational education and training (VET) for youths with low levels of qualification in Germany. *Education and Training* 52(5): 381-390
- Shaw A, McAndrew J (2008) Advancing apprentices: developing progression routes into higher education through the development of a pilot Higher Level Apprenticeship scheme. *Journal of Vocational Education & Training* 60(2): 133-147
- Simmons, R (2009) Entry to employment: discourses of inclusion and employability in work-based learning for young people. *Journal of education and work* 22(2): 137-151
- Smith E et al (2011) Australian employers' adoption of traineeships. *Journal of Vocational Education & Training* 63(3): 363-375
- Smith R, Betts, M (2000) Learning as partners: realising the potential of work-based learning. *Journal of Vocational Education and Training* 52(4): 589-604
- Taylor A, Freeman, S (2011) 'Made in the trade': youth attitudes toward apprenticeship certification. *Journal of Vocational Education & Training* 63(3): 345-362
- Twigg B (2012) Semta: Higher apprenticeship in advanced manufacturing and engineering: Meeting the higher level skills challenge. *Higher Education, Skills and Work-based Learning* 2(3): 298-303
- Vickerstaff S (2007) 'I was just the boy around the place': what made apprenticeships successful? *Journal of Vocational Education & Training* 59(3): 331-347
- Virtanen A, Tynjälä P (2008) Students' experiences of workplace learning in Finnish VET. *European journal of vocational training* 44(2): 199-213
- Walden G, Troltsch K (2011) Apprenticeship training in Germany - still a future-oriented model for recruiting skilled workers? *Journal of Vocational Education & Training* 63(3): 305-322

Woods J G (2012) An analysis of apprentices in the US construction trades: An overview of their training and development with recommendations for policy makers. *Education and Training* 54(5): 401-418.