

## **Linking the dual system with higher education in Denmark when strength become weakness**

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## Linking the dual system with higher education in Denmark – when strength become weakness

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### Policy and cultural context

As more than half of every new generation of youth enter higher education in Denmark the strength of the dual system of vocational education is becoming its weakness. Completing a programme in the dual system doesn't give access to higher education, and the system is increasingly seen as a 'blind alley'. This weakness is closely related to the strengths of the dual system. The dual system is successful in giving direct and fast access to employment for the students, and this contributes to a very low rate of youth unemployment in Denmark. Students<sup>i</sup> who complete a programme in the dual system, become well integrated into the labour market, but at the same time they are diverted from higher education. This has lately put the question of hybrid qualifications on the agenda in Denmark.

Over the last decades the total number of young people taking up a programme in the dual system has been stable. In addition the system provides qualifications that prepares for a high degree of flexibility and mobility on the labour market and a high degree of professional autonomy (Gallie 2007). Thus the 'unmodern' apprenticeship model has proven to be very much in line with the requirements of a (post-) modern labour market. But the dropout rates are high and the number of students completing is declining. Simultaneously the enrolment of youth in the general track of higher secondary education has grown persistently, and this has put the dual system of vocational education under pressure. Higher education is increasingly seen as the pathway to a successful career, and the dual system appears as a diversion on the route towards the tertiary level of education. In addition the progression rate from the dual system to higher education has decreased over the last decades. "*The hole through has narrowed*" as it was expressed by an interview person from the Ministry of Education.

Contrary to the dual system in Austria and Switzerland the dual system in Denmark doesn't offer any regular pathways that at the same time give access to higher education and to the skilled labour market. At least, this has been the case until 2010 when a new programme was launched. When young people at the age of 16 or 17 complete compulsory education in Denmark, they have to decide which way to go. All except a few percent continue into post compulsory education at higher secondary level – at grade 10 to 12 called 'youth education' in Denmark. The pathways at this level are divided in two main tracks: general education (the Gymnasium) and the dual system of VET. The historical division between the general and the vocational tracks remains deep and the aims and purposes of the two tracks are different. General education is organised according to an 'education logic' (Ianelli & Raffe 2007) whose main purpose is to develop qualifications that are recognised by the institutions of higher education and prepare for studies at the tertiary level. Vocational educa-

tion is organised according to an 'employment logic' and has a purpose of developing qualifications that are recognised in the labour market and give access to skilled employment. More than one third of a youth group complete a vocational education in the dual system and they are in most cases cut off from getting access to higher education later in life. This division of young people runs contrary to the ideas of lifelong education and of equal access to education, since the division to a great extent reflects the social background of their parents.

Until now hybrid qualifications haven't been a serious issue in the policy of education in Denmark. Young people who want to progress from the dual system to higher education have to attain the two kinds of qualifications separately in a consecutive process by taking double education. Formally it is an option in the dual system to take supplementary courses and acquire higher education entrance qualifications in specific subjects, but almost no vocational students make use of this option. Thus, hybrid qualifications have been practically non-existent in the Danish educational system, but this is about to change. The falling esteem of the dual system in relation to general education and the concern of policy makers to improve the permeability of the educational system have resulted in a new interest in hybrid qualifications. Consequently, in 2010 a new hybrid programme was launched on the basis of the dual system. The intention is to integrate general and vocational qualifications in an educational programme of four years that will give access to higher education as well as the skilled labour market. Though the experiences with the programme are preliminary, the chapter will explore the position of the various stakeholders in relation to the programme and the opportunities and barriers facing it. But first it will sketch the background in order to explain the absence of hybrid qualifications and the reasons why it is so difficult to introduce them in the Danish educational system.

## **Institutions and qualifications**

### **The absence of hybrid qualifications**

In comparison with the other Nordic countries Denmark has the most 'classic' form of dual system of vocational education that is separate from general education and similar in many ways to the German model. This is also the case with regard to the opportunities for acquiring hybrid qualifications. Employers in Denmark – like employers in Germany - have been very reluctant to recognize full time school based VET. The dual system in Denmark is more school based than in Germany as the programmes typically start with one half or one year in a vocational college before entering a work based training agreement. In Denmark around half of an age group take up a vocational education, but less than 40% of an age group complete an apprenticeship in the dual system due to high drop-out rates. Still the dual system in Denmark has a prominent role as a recognised and valuable alternative to the academic track.

The division between the two tracks is quite profound and is evident in the social recruitment, the learning cultures, the legal framework and the form of governance of education. The two types of education also have separate institutions locally: on the one hand the Gymnasiums and on the other hand the vocational colleges. The deep rooted tracking in the Danish educational system means that it differs from the other Nordic countries, which have a stronger tradition of non-selective upper secondary educations (Antikainen 2006). In Norway all students in upper secondary education at-

tend different programmes in a comprehensive and unified system. Neighbouring Sweden has a comprehensive Gymnasium for grade nine to twelve, that in principle provides all young people with access to higher education – though in reality a significant share don't attain this level (Olofson 2008). In Denmark the unification strategy has failed to gain support from the main stakeholders in the dual system. Instead a strategy for enhancement of vocational education has been pursued, to use the terms proposed by Lasonen & Young (1998). The enhancement strategy means policies for improving VET as a separate track and emphasizing the distinctive qualities of vocational education.

Three determinants explain the persistent divisions of the educational system in Denmark and the absence of hybrid qualifications. The first explanation has to do with the predominance in the Danish production model of small and middle size enterprises (SMEs) that often relies on a craft type of labour and support the apprenticeship system in modernised form (Kristensen & Sabel 1997). This is the result of the conditions of a small open economy with a late industrialisation (Katzenstein 2006). As a consequence, business in Denmark has developed along the lines of 'flexible specialisation' (Kristensen 1996) or 'diversified quality production' (Streeck 1992). This trajectory was reinforced by the fact that the Danish labour market, until today, has been dominated by a craft type of trade unionism not by industrial unionism (Hyman 2001). This has contributed to a close collaboration between the class of small industrial entrepreneurs and the skilled workers unions around apprenticeship as a common good. These stakeholders prefer that the dual system is managed under their control as a separate track.

The second explanation relates to the early institutionalisation of a corporatist form of governance, which gives the labour market partners extensive control over vocational education (Juul & Jørgensen 2011). A centralized regulation of the labour market by the social partners was established as early as 1899, and this was in 1937 extended to include vocational education. The evolution of this 'dual-corporatist model' (Greinert 1999) has contributed to sustain the craft type of unions that have engaged in the upgrading of occupational skills and improvement of the opportunities for further education and training of their members. Due to the craft and occupational basis of these organizations they have taken little interests in providing access to higher education for the apprentices, since this would make them leave the unions. Similarly the Federation of Employers have opposed reforms in the direction of hybridisation, because they have feared that the expansion of the general qualifications would reduce the dominance of vocational skills in the programmes and thus the employability of the skilled workers. In this arrangement an occupational concept of qualifications has been dominant and has prevented the introduction of hybrid qualifications. The corporatist form of governance has in reality conferred the labour market partners a power of veto over major changes of VET. They have until now used this to prevent reforms in the direction of unification of the two tracks of education and to block the evolution of a hybrid programme in the system.

The third explanation for the continued tracking and the absence of hybrid qualifications in the Danish educational system is cultural. The learning cultures (Hodkinson et al 2007) of the two tracks differ significantly due to their different history, purpose, teachers and their social composition. The Gymnasium has its roots in the Medieval Latin School and until the 1960es it recruited only 10% of an age group of young people and almost exclusively from the highest social elite. It concentrated on teaching the cultural heritage, classical languages and academic subjects - and socializing to the upper strata of society. This has changed dramatically over time and now more than half a youth group enter the general track, 39% of an age group choosing the classic Gymnasium and 16% goes to the

vocational Gymnasium. Some, though, later shift to the vocational track. Even though the Gymnasium has lost its former air of elitism, there is a significant social bias in the recruitment to the general track of higher secondary education when compared to the vocational track. A much higher share of students in the vocational track have parents who have not completed any education beyond the compulsory level.

The dual system has its roots in the traditional apprenticeship and is strongly marked by the cultures of work and occupation. Around one third of the normal length of 4 years duration of the programmes is spent in vocational colleges on block release. The great majority of students favour the work based part of the programme and plan for a work based career and not for a progression to higher education. Students, who are in the target group for a hybrid programme, are choosing the vocational Gymnasium, which has been able to attract a significant number of students. And due to the different cultures in the two tracks there has been little demand from the students and teachers here for hybrid qualifications. Besides these three explanations for the absence of hybrid qualifications in Denmark, the absence has to do with the specific role of qualifications in the Danish transition system.

### **The double role of qualifications in the Danish transition system**

To explore the opportunities for hybrid qualifications in Denmark it is relevant to take a closer look at the double role of qualifications in the national transition system (Raffe 2008). Qualifications have a role as media of communication between different levels of education as well as between the two subsystems, education and labour market (Kurz 2005; Chernilo 2002). But the two elements of hybrid qualifications – general and vocational - perform this connective role in different ways. In the Danish systems, based on the dual system and occupational labour markets, the specific vocational qualifications of each occupation provide a close connection between education and work. The qualification profiles of the occupation are agreed upon through a deliberate and institutionalised cooperation between the stakeholders of the two systems. In systems based on general education and internal labour markets there is a stronger decoupling between education and employment. The communication between the two worlds is less institutionalised and the communication mainly takes place through exchanges on the labour market (Gangl 2001). The signaling role of the market dominates, and the stakeholders on national and industry levels have a limited role.

Allmendinger (1989) propose the two concepts standardisation and stratification to classify and compare national VET systems. Vocational qualifications have a key role in developing a tight institutional complementarity between the vocational programmes and the occupational labour markets (Marsden 1999). This is achieved through the acquisition of these qualifications in the work based training, which for employers is considered a key quality of the dual system. Vocational qualifications are conceived of as integrated wholes that combine practical skills, vocational knowledge and a 'vocational habitus' (Colley 2003), which is developed through the participation of the apprentices in the skilled workers' community of work. Vocational qualifications have very limited currency in the academic track and the links between the two tracks are weak. This means that the two kinds of qualifications differ with respect to their nature, the way they are acquired and their systems of certification (Clarke & Winch 2006; Brockmann a.o. 2008). General qualifications mainly comprise codified and abstract knowledge tested through exams regulated by the Ministry, while vocational quali-

fications are mainly action based and ‘tacit’ (Polanyi 1983). They are tested in practical work situations and certified by the social partners.

In Denmark the qualification profile of each occupation is defined by the trade committee on the national level. The trade committees are bipartite organs where the labour market partners regulate the VET programmes for each occupation through an instituted form of ‘occupational self governance’. Their regulatory mandate is quite wide-ranging and is defined in the legal framework for vocational education. It includes the specification of the curriculum of the individual programmes, the continuous upgrading of the qualifications profiles, the approval of training companies and the supervision of the quality of training placements, conflict resolution etc. This close involvement of the labour market partners in Denmark is on the one hand a warrant of the relevance of the programmes for the labour market. This contributes to a high employability of apprentices from the dual programmes (Dieckhoff 2008). In addition the standardisation promotes mobility and flexibility in the occupational labour market. The average job tenure in Denmark is among the lowest in Europe and the job mobility is the highest (EU Commission 2007). This is one of the reasons why the government generally has acknowledged the occupational self-governance of the labour market partners with respect to vocational education. A weakness of this centralised regulation and the standardised profiles is that it limits the scope for experiments across the two tracks and the development of hybrid qualifications. The dominance of the apprenticeship model and occupational qualifications has made it difficult to introduce general qualifications in the system if these were not closely connected to the vocational practice. The Danish system, though, does display examples of hybrid qualifications in a weaker sense of the concept and also processes of hybridisation, as I will explore in the following.

### **Hybridisation of vocational education**

Even though the two tracks of higher secondary education have remained separate, there have been trends towards convergence. A major step in this direction was the shift from the purely work based apprenticeship to the dual system and subsequent growth of school based learning and general subjects in VET. The attempts to integrate general qualifications in VET have been no harmonious or linear process. When the day school was made mandatory in all VET programmes in 1956 it mainly included vocational subjects like technical drawing and applied math. The curriculum was defined in close connection with the requirements of practice in the training companies. But increasingly apprenticeship was considered not only as training for work, but also as education for personal development, citizenship and democratic participation. In the 1970es the Socialdemocratic Party proposed a major reform for a unified and comprehensive educational system for all young people at grade 10 to 12 similar to reforms in the other Scandinavian countries. The reform was based on a political belief in education policy as a mean to achieve a more equal and just society. The reform was blocked by the employers in collaboration with the skilled workers unions and the right wing in Parliament. The labour market partners feared that the unification of the two tracks would weaken the occupational self governance, which give them extensive control of VET.

During the 1980es the traditional apprenticeship continued parallel to a modernized and more school based form of dual system (called *Basic Vocational Education, EFG*). The students in the EFG started with one year ‘*Basic Course*’ in vocational college before continuing in a training placement. In the Basic Course 40% of the curriculum were general subjects, and it represented a step towards

unification with general education. In later reforms this trend was reversed. There are several reasons for the failure of the attempts to develop hybrid forms of educational programmes. One reason was the didactical problems of integrating the two kinds of qualifications in the teaching practice. Differences in the social and educational backgrounds of the teachers and their learning cultures made it difficult to create a 'hybrid' curriculum. The general subjects remained on the whole separate and external to the vocational teaching. Furthermore, the many small craft based companies were not convinced of the usefulness or relevance of general qualification in VET. In addition many of the students had chosen the VET track because they were tired of the 'theoretical' and traditional school-like teaching. This made the teaching of general subjects difficult in the vocational programmes. The labour market partners also were sceptical about an expansion of the general subjects and argued for maintaining the clear vocational profiles of 'their' programmes (Christensen 1978). As a result the trend towards convergence of general and vocational education was replaced by the continued separation. In recent years this has been favoured by political initiatives to increase the retention of students by reducing the scholastic forms of learning and to enhance the practical learning in workshops.

Though there has been no consistent trend of convergence between general and vocational education, some drivers for hybridisation can be identified. One has been the attempt to use school based education compensate for the scarcity of work based training placements. This was the reason why day schools were made mandatory in the 1950s and why in the 1990s a full time VET program was introduced as a provisional measure. Later some short (1½ year) permanent full time school based programmes have been launched aiming at students who cannot find an ordinary training placement. Secondly, the labour movement has argued for an increase of the general curriculum in VET to strengthen the skilled workers active citizenship. Thirdly, employers have gradually required higher level of academic skills and theoretical knowledge - like language - in connection to the vocational skills. This is most notable in the business programmes, where all students since 1995 start with two year school based learning before progressing into a training placement in administration, retail or finance. Lastly, the increasing 'academisation' VET has been part of a strategy to achieve parity of esteem between vocational and general education. This is most clearly the case with the latest initiative in 2010 to introduce a full hybrid program of VET, which is expected to attract more academically strong students to the vocational colleges.

Another initiative towards convergence was the introduction in the 1980s of two programmes of the Vocational Gymnasium that are aiming at the vocational programmes at the tertiary level. The Vocational Gymnasium was placed in the institutional context of the vocational colleges in order to raise their esteem by attracting more ambitious and academic students. The Vocational Gymnasium has succeeded in recruiting from wider social groups that are unfamiliar with academic education. The students generally have a stronger orientation toward the labour market and the polytechnics and business schools than students in the classical Gymnasium (Andersen 2005). The teaching is more related to occupational practices with subjects and this, in addition to the name, could indicate that the Vocational Gymnasium is an institution that provides hybrid qualifications. But this is not the case since the Vocational Gymnasium does not award the certified qualifications that give access to the skilled labour market. More correctly this program could be termed 'vocationally oriented Gymnasium' as its aim is the vocation programmes of higher education like engineering and business economics. For a proportion of the students, especially in the business program, it has become a pathway to achieve double qualifications. Typically they don't continue from the Vocational Gymna-

sium to higher education, but shift over to the vocational track and complete a double education similar to the patterns seen in Germany (Pilz 2009). The success of the Vocational Gymnasium constitute a barrier to the introduction of the new hybrid program, the EUX, since many of the potential students for this hybrid programme are recruited to the Vocational Gymnasium. The traditional transition pathway from the dual system to the polytechnics and business schools has to some degree been replaced by the pathway through the vocational Gymnasium. Increasingly young people who aim at the lower levels of tertiary education pass through the vocational Gymnasium rather than through the dual system.

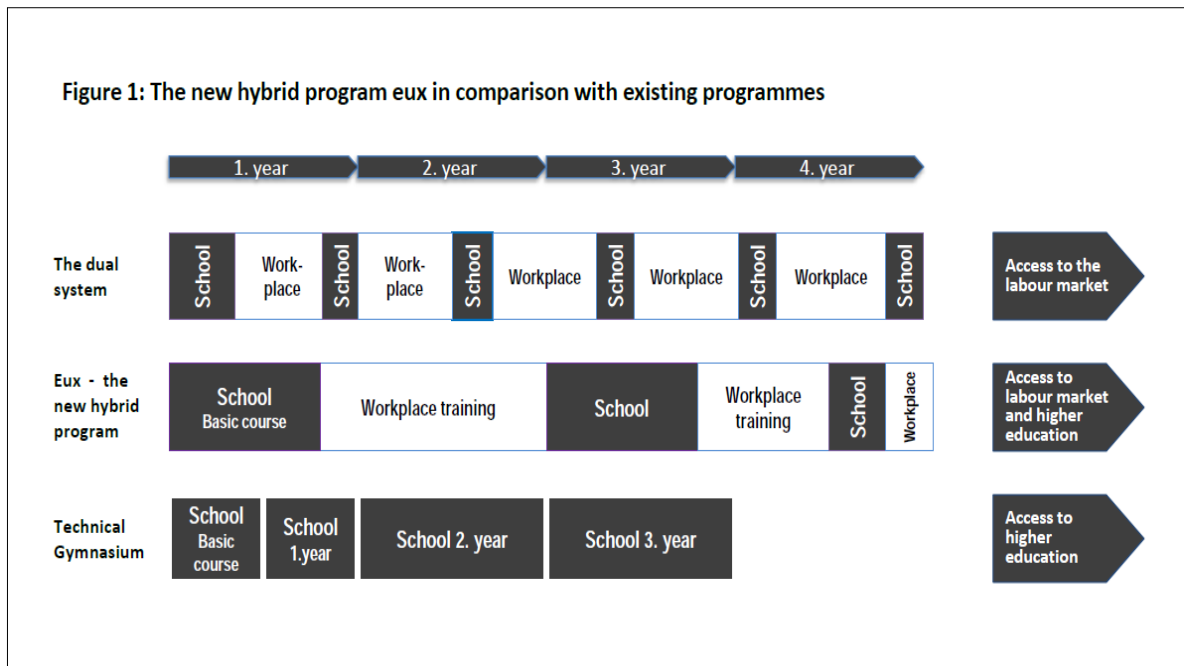
## **Current policy issues**

### **EUX: a new programme for hybrid qualifications**

During the last decades a number of policy initiatives to promote hybrid qualifications have been pursued, though, with limited success. In connection with major reforms of the dual system in 1991 and 2000 the opportunities to attain higher education entrance qualifications in the dual system was explicitly written into the legislation. This was not part of a strategy for hybridisation, but rather for providing linkages by offering 'additional qualifications' in the dual system. This was no success, since very few students have used this opportunity. One reason is that it is not very economically attractive for the colleges to offer these subjects, since it is difficult to gather a sufficient number of students in each subject to organise a whole class. Another reason is that these qualifications are offered not in an integrated curriculum, but as individual courses taught separate from the vocational teaching that often takes place in workshops in the colleges. The majority of students in the vocational colleges are oriented towards vocational skills and occupational employment. Choosing additional general qualifications would separate them from their class mates and prolong their course, and this doesn't appear encouraging to them. So in spite of continuous political initiatives there hasn't been room for hybrid qualifications in the Danish educational system. This is one of the reasons why the widening participation in higher secondary education has benefitted only the Gymnasiums and not the dual system. As a consequence the dual system increasingly appears as a 'blind alley' in the overall system. It gives favourable opportunities for employment and good earnings, but only in specific occupations. So when young people have to choose between the two tracks at the age of 17, many chose the Gymnasium to keep open their opportunities for higher education - or just to postpone their specific choice of career and employment. In addition the social recruitment to the dual system is biased, as three times as many students in the Gymnasiums have parents who have completed higher education compared with the students in vocational education. This also reduces the status of the dual system.

This development has put pressure on the dual system and policy makers to improve the esteem of vocational education. The introduction of a new hybrid programme, EUX, has been a key initiative to achieve this. Since 2005 a pilot programme has been tested in two vocational colleges. It gave the opportunity to become a skilled carpenter or an industrial technician and at the same time get access to higher education. The evaluation of the pilot programme has shown that the duration of five years was too long to attract any substantial number of students. It was not clear for students what the advantages were of the hybrid programme when comparing it to acquiring the two types of





qualifications consecutively, as double education. The students would only save  $\frac{1}{2}$  - 1 year study time when choosing the pilot programme compared to completing the programmes one after the other. A revised initiative thus was launched in 2010 by the passing of a law on the so called 'EUX programme', which represents a programme for hybrid qualifications in the strong sense. The two types of qualifications are transmitted in an integrated form in a single programme. The experience from the developmental programme ('EUD-HTX') showed that in order to succeed the programme had to cope with some serious challenges. These challenges relate to the deep institutional separation of the two types of qualifications in the Danish educational system.

In the following the motives and interests of the stakeholders of the new programme will be explored and its viability will be assessed. The analysis is based on a study of policy documents and interviews with 23 persons. The selection of persons for the interviews has been made with an intention to cover the key stakeholders in the field. This includes two civil servants in the ministry of education with good knowledge of the political process leading to the introduction of the new hybrid qualifications programme – one from each department involved. It also includes five representatives from the labour market partners who have a key role in the governance structures of VET: two from employers associations and two from trade union federations and one from a vocational teacher union. At the level of educational institutions we have selected six persons from from the polytechnic and business schools that are the most used destinations for students from the dual system. From the vocational colleges we have selected four persons from technical as well as business programmes and from institutions with experiences of hybrid qualification programmes. Lastly we have selected four students, three for a group interview and one for a single person interview. They have all completed a vocational education 3-5 years ago and two have later progressed to higher education.

## **Viewpoints of stakeholders with regard to HQ**

The interest of the Ministry of Education in hybrid qualifications is related to the low permeability between the dual system and higher education and the low esteem of vocational education. An additional argument for introducing a new hybrid programme is that it is an advantage for students to have additional choices. The historical separation of vocational and general education also divides the Ministry, and the cooperation between the two departments has been a challenge. Differences in the forms of regulations, institutional structures, course duration, credits, syllabuses and the different backgrounds and working conditions of the teachers are all factors, which has made the planning the new programme difficult. There are significant differences between how the two tracks of higher secondary education are managed. While general education is primarily in the hands of the Ministry of Education, the regulation of the dual system on all levels is to a significant degree works through the occupational self-governance that operate on state level, within the individual industries and on school level via local education committees.

Planning the hybrid programme has called for new types of cooperation and the involvement of many different decision makers. The stakeholders have different perceptions of the extent to which the EUX education programme is primarily an offshoot of general upper secondary education, but with a vocational focus, or is an offshoot of vocational education that includes a number of general upper secondary academic subjects. The law defines it as a vocational programme in the dual system that includes academic subjects which prepare for higher education. This has been necessary to gain the support for the programme of the labour market partners, who would not cede control of the vocational part of the programme. As a consequence it is not seen as a third option between the general and the vocational track by the Ministry of Education but as dual programme with enlarged competence. This means in practice that although the Ministry of Education has left much of the planning of the courses to the training committees, it has nonetheless from the outset set up a narrow framework for designing the new programmes. In addition there has been some uncertainty among the many actors as to how free they are to change the academic level of the subjects, the coursework and the course duration. This has sometimes made the whole process lengthy and arduous and makes it difficult to create a true hybrid programme and make the nailing down of responsibility a challenge due to the many stakeholders.

The labour market partners have welcomed the new hybrid programme, though there has been some disagreements concerning the level and structure of the programme. In line with the employers' confederation the skilled workers unions have earlier opposed the integration of the two tracks, because they feared the labour market organisations would lose influence in a comprehensive model. Hybrid qualifications cut across some of the established divisions on the labour market and thus pose a challenge to the organised interests. Occupational forms of qualifications and craft types of unions dominate in the Danish labour market. The skilled workers' unions have tried to upgrade the dual system rather than link it with general education. They have pursued a strategy of introducing high quality and high level programmes inside the dual system, some lasting 5½ year, in order to attract and keep the more ambitious students. So it could be expected that the unions would make reservations in relation to the new hybrid programme. Yet the main unions of skilled workers have taken a positive stand to the EUX, mainly because they see this as a way to improve the status of vocational education – and of their members.

The employers' organisations generally approve of the hybrid programme, but in some industries they have been divided between smaller and larger companies. The larger companies more often require the new kind of hybrid qualifications to work on the boundaries between the development and production departments. Hybrid qualifications are expected to link the communities of the skilled workers with employees in development, planning, sales and marketing departments. It was expressed this way in an interview with a person from a training company involved in the hybrid pilot programme: *"The advantages are that the [EUX-] apprentices have better writing and analytical skills and have no problem answering the telephone or calling abroad. They are better at languages and are better at writing. They can write an e-mail in English without any major difficulties – companies are not used to apprentices being able to do those sorts of things."*

The institutions of higher education have played only a peripheral role in designing the EUX programme. Even though the hybrid programme could potentially channel more students into higher education, their enthusiasm for it is limited. The polytechnic school of engineering for example offer preparatory course aiming at students from the dual system and don't see the need for a hybrid programme. Another reservation is that students who have come from a dual programme are regarded as weaker learners and thus are less attractive.

The vocational colleges play a central role in the development of the new hybrid programme and have the responsibility for planning and designing the programmes in detail. Experiences from the pilot programme show that it is a big challenge to integrate the teaching cultures of the two tracks. Not just the teachers, but also the students in the two tracks have to be socially and culturally integrated. The two areas of education have different ways of organising and structuring the teaching. It has also been a challenge for the vocational colleges to take the training committees' instructions into consideration while also following the framework established by the Ministry of Education. The colleges have been quite enthusiastic about the hybrid programme. But they also point to the risk that the programme will recruit the strong students from the ordinary dual programmes and thus devaluing these even further. The risk that the hybrid programme will increase educational inflation is expressed by a manager: *"Technical colleges are at the bottom of the hierarchy – the students are not particularly strong from the outset. We are worried that the new education programme will actually serve to undermine the ordinary programmes. Will we end up requiring roofers to have Gymnasium qualifications? Will there be anything at all left for students who cannot manage a more academic education?"*

Lastly, from the point of view of vocational students (apprentices) the hybrid programme is welcomed, but it has been difficult to recruit students to the pilot hybrid programmes from 2005. The programmes were considered to be too long and too demanding, since the students had to complete two full programmes over five years. But a hybrid programme is probably the best way to increase progression from the dual system to higher education, because it is very difficult to make former apprentices return to the educational system, once they are well established in the labour market. Almost half of all apprentices continue as ordinary employees in the training companies after completion, and their earnings are from the beginning close to earnings of experienced colleagues. Their transition to the labour market has been achieved successfully, when they complete their apprenticeship in the dual system. Typically they will be members of the skilled workers union, participate in their community and have a strong occupational identity. If they want to progress to higher education, they have to break with this trajectory and re-enter the educational system. In

addition the social and cultural background of the majority of apprentices makes it unlikely for them to invest in academic education. Apprentices double their income, when they change status to become employed craftsmen. This happens typically in the period of life when they establish family, get children, and obtain their own home and car. They become tied up financially in a way that makes it difficult to take three or four years out for further studying. In addition their earnings if they went on to complete a higher education would not be significantly higher, than what they earn as skilled workers due to the compressed wage structure in Denmark (DØR 2001). Besides our studies have shown that skilled workers in Denmark have good opportunities for work based careers supported by a comprehensive system of further training as an alternative to careers based on higher education (Jørgensen a.o. 2009). In sum this explains the low rate of progression from the dual system of VET to higher education in Denmark. And this also leaves it as an open question, whether the hybrid programme will be able to attract any substantial number of students.

To conclude the following reasons were given by the stakeholders for the advantages of introducing a hybrid programme:

- To offer more opportunities of educational choice for students in the vocational programmes.
- To increase the recruitment of more academically strong students to the vocational colleges.
- To increase the esteem of vocational education by including more advanced programmes.
- To reduce 'blind alleys' in the educational system and increase the permeability in the educational system.
- To reduce the costs of double education and to improve the overall efficiency of the educational system.
- To counteract the 'academic drift' in the direction of the Gymnasiums by offering a new hybrid programme in the vocational colleges.
- To widen the social recruitment to the tertiary level of education.
- To supply companies with employees with hybrid qualifications to work on the boundaries between the development and production departments.

## Evidence from policy and practice

### Policy dilemmas of hybrid qualifications

Evidence from the new hybrid programme and from earlier attempts has revealed a number of dilemmas for education policy and teaching. One is *the dilemma of the duration* of a hybrid programme. The question is how to organise in a four year programme the content that it otherwise takes seven years to learn in the two separate programmes? The dilemma concerning the length of the programme means that on the one hand the length of the hybrid programme should be long enough to attain a high level of qualifications, and on the other hand it should be short enough to make a difference in comparison with taking a double education. The length should not be much longer than the ordinary dual programmes in order to attract students, but that the length should be sufficiently long to avoid a compressed programme that only elite students can complete. And it should be long enough to make employers provide training placements, which implies another dilemma.

Employers might refrain from offering training placements if the training periods are cut too much, and this has represented a *dilemma of training placements*. The largest reductions of time has been made in the work based training periods, which in an ordinary vocational programme make up two thirds of the total duration of the programme. This significant reduction has not passed without debate. The concern has been that too radical a reduction of the training periods would threaten the recognition of the programme on the labour market, since the value of the dual system relies on the specific qualifications and the socialisation that is acquired during training placements. In addition, for the employers the length of the programme has implications for the financial costs of apprentice training. The value of the labour afforded by the apprentice goes into financing the training costs of the company. Apprentices are employed and paid by the training companies, and shorter training periods means lower revenue. The length of the placement is to some extent determined by financial considerations in addition to the educational considerations. The hybrid programme is based on the dual system in order to obtain support from the employers' organisations. But employers are no uniform group. Smaller and larger companies often have different approaches to apprentices and training placements. Larger companies often take on apprentices with a long-term investment and recruitment perspective. The small and medium sized companies provide the majority of training placements and often rely on the labour power of the apprentices to maintain day-to-day production. The length of apprenticeship and the training periods in the companies has been decided on the basis of an assessment of the financial costs and benefits of the companies. Companies normally invest in the beginning of the training period and benefit the last year or two of an apprenticeship contract. Cutting too much down on the work based training periods could cause the companies to withdraw from providing training placements for the new hybrid programme. Furthermore, during the prolonged school based off-the-job periods the smaller companies might miss the apprentices to maintain the production. In smaller firms apprentices often count as part of the necessary workforce to maintain the running of daily business. When the companies have to do without the apprentice for one year, while the apprentice attends the school based teaching, then the companies might chose not to take on apprentices. The question of training placements is considered a serious challenge to the success of the programme. At the time of the introduction of the hybrid programme there is a serious deficit of placements for students in the dual system, who have finished their basic

course and need a placement to continue their programme. The dilemma facing the hybrid programme is that if it cuts too much down on the length of the training placements the lack of placements could be aggravated, but if long periods of work based training can make it very hard to attain a high level of general qualifications – or the length of the total programme will be too long to attract students.

Yet another dilemma or conflict has been over the importance and *length of the various subjects*. What content could be left out or reduced in order to achieve the required reduction in the duration of the length of the programme? One method to reach the time reduction has been to give credit for the general qualifications acquired through the vocational teaching. When electricians learn the technical content of the vocational programme, they also learn some math, but how much credit should be given for this learning? A solution to the dilemma has been the introduction of new interdisciplinary or hybrid subjects, like ‘technology’, that involves multiple subjects such as social science, physics, math and language skills. In these subjects the students can at the same time learn general and technical subjects and thus save some teaching time. A third way to reduce time and integrate the two types of subjects has been through project-based teaching, where content from different subjects are integrated by making the students work in groups on a common project. An example of project-based teaching in one vocational college is ‘Bridges in Europe’ that integrates chemistry, physics, math and technical knowledge and skills. An issue of potential conflict is the role of the various subjects in an integrated teaching. Teachers in some subjects fear they are reduced to a minor and supporting role for other subjects that are assigned a more central role. This issue can be aggravated when the pressure on the time is strong, since time spent on a common project work can place strain on the individual subjects.

A last dilemma concerns the level to be acquired in the academic subjects – and what type of hybrid qualifications should be offered. Should it be high enough to gain access to all institutions of higher education (full hybrid qualifications) or just to the lower levels, the Bachelor degrees at the University Colleges and short cycle programmes at the Vocational Academies? On the one hand the Ministry of Education has paid attention not to set the level too high and not make the programme too elitist and exclusive. On the other hand some training committees have argued that the level should be high enough to meet the entrance requirements of the most likely programmes in higher education, e.g. the Diploma in Engineering for electricians. The training committee argues that the advantages of going through a hybrid programme would disappear, if the students only gain access to short cycle programmes of the vocational academies. If the students have to take supplementary courses in order to gain access to their favourite higher education programme after completing the hybrid programme, the idea of the hybrid programme will be lost. This is an issue that still has to be settled in negotiations between the Ministry of Education and some training committees.

### **Emerging issues**

This study on hybrid qualifications in Denmark has revealed that the strength of the dual system of VET also is a weakness. The dual system has performed well in securing high rates of employment and a direct and immediate access to the skilled labour market after completion of a vocational programme. The vocational students become well integrated into the labour market during their work

based training placement of typically three year duration. In addition large groups of skilled workers have life earnings at the same level as Bachelor graduates (nurses, basic school teachers) from higher education institutions. Moreover they have wide-ranging opportunities for work based careers supported by a comprehensive system of further training. Work based learning careers thus are attractive alternatives to careers based on higher education. The position of the skilled workers on the labour market gives them few incentives to re-enter the educational system and start a programme of higher education. And in the dual system they don't obtain qualifications to access higher education. In sum, the dual system supports the transition of the students to the labour market, but at the same time diverts them from progression to the tertiary level (Shavit & Muller 2000).

Until lately hybrid qualifications have not been high on the political agenda, since none of the key stakeholders in the dual system have taken interests in it. The legal opportunities have existed in two decades for acquiring additional hybrid qualifications in the dual system, but they have not been utilised. As every second young person today progress to the tertiary level of education, the Gymnasium is increasingly is seen as the main road to a successful career. The Gymnasium is conceived by young people as giving a broader range of opportunities for future careers compared with vocational education. In contrast, when entering a vocational programme, they fear being locked into a single occupation without opportunities for later shifts or progression. Vocational education appears as a 'blind alley' in relation to higher education. This is one of the reasons for the falling esteem of the dual system and the decreasing share of young people who complete a vocational programme. This is also one of the reasons for the new interest in hybrid qualifications that will give apprentices from the dual system access to higher education. Another reason is that employers are concerned about the falling attractiveness of the dual system and see the hybrid programme as a way to reverse this trend.

The pilot programmes from 2005 and the new hybrid programme from 2010 have demonstrated the opportunities and barriers for building hybrid qualifications into the dual system. There is positive support from all stakeholders, and this in itself can contribute to the success of the hybrid programme. But some inherent tensions and difficulties have also emerged. The organisation of the new hybrid programme is faced with some complex dilemmas concerning length, levels, attractiveness and training placements as outlined above. The dilemmas relates to the task of combining a three year general programme and a four year vocational programme in one hybrid programme. If the hybrid programme is too long it will be difficult to attract students – five years proved to be too long in the pilot projects. If the programme is made shorter, reductions have to be made in either of the two elements to be hybridised. Reducing the time spent in a placement can jeopardize the commitment of the smaller companies to provide placements. Reducing the school based part can jeopardize the direct progression to higher education, since only access to specific polytechnic programme will be attained. Aiming at high levels of general qualifications in a short programme can provide more universal access to higher education, but will make the hybrid programme manageable only for a small elite. The attractiveness of a hybrid programme depends on distinct qualities in comparison with on the one hand the vocational Gymnasium and on the other hand taking double education consecutively, which for some students appear more manageable: one programme at a time. This has been the solution in the successful Swiss hybrid programme, the *Berufsmaturität*, which in one version offers entrance qualification for higher education as an additional year after completion of the vocational programme. In the other version the general qualifications are ac-

quired by attending vocational college two days every week instead of the normal of one day (Nikolai & Ebner 2011).

The dilemmas of the Danish hybrid programme is closely connected to the organisation of the dual system, where normally more than two thirds of the programme is training placement. The Austrian case of the *'Lehre mit Matura'* (see the chapter on Austria) and German case of additional qualifications in the dual system (*'Zusatzqualifikation'*) demonstrate the difficulties of proving full hybrid qualifications in a dual system. One way to escape the dilemma is by basing hybrid qualifications on a full time school based programme. The Austrian case shows that it is quite possible to offer hybrid qualifications in a full time school based vocational programme. A condition for its success is that the employers recognise the vocational qualifications that are acquired through school based learning on equal footing with vocational qualifications acquired through work based learning. This is not the case in Denmark and Germany. In Denmark the full time school based Vocational Gymnasium does not give access to the skilled labour market. And the full time school based vocational programme is not recognised as a regular programme and doesn't give access to the same opportunities for employment as the dual system. The new hybrid programme, the EUX, is fully recognised by the employers on equal terms with the dual system, but it doesn't give full access to the universities. It thus represents a pragmatic solution to the dilemmas sketched, and it is yet to be seen, if it has found a viable compromise.

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<sup>i</sup> While they are in the vocational colleges, they are termed 'students', and while in the training companies they are termed 'apprentices' – both terms will be used here.