

# Hybrid qualifications

Increasing the value of Vocational Education and Training in the context of Lifelong Learning

## Country report 2 Denmark

### Views and experiences of stakeholders in relation to hybrid qualifications

Christian Helms Jørgensen and Katrine Lindvig  
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[www.hq-ll.eu](http://www.hq-ll.eu)

Universität  
Konstanz

Prof. Dr. Thomas Ballinger  
thomas.ballinger@uni-konstanz.de

WU  
WIRTSCHAFTS  
UNIVERSITÄT  
WIEN VIENNA  
UNIVERSITY OF  
ECONOMICS  
AND BUSINESS

Prof. Dr. Josef AP  
josef.ap@wu-wi.ac.at



Prof. Christian Helms Jørgensen, B. Sc.  
chj@ruc.dk

UNIVERSITY OF  
Southampton

School of Education  
Prof. Alison Kelly Ph. D.  
a.kelly@ports.ac.uk



Roskilde  
University



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### **The significance of hybrid qualifications**

Hybrid qualifications combine vocational and general qualifications and in the strong sense of the concept these qualifications are delivered in an integrated form in a hybrid programme. Hybrid qualifications give access to an occupation in the skilled labour market as well as to a higher education institution. Hybrid qualifications thus increase the permeability in the educational system and opens up the access to higher education.

The widening of access to higher education is an important issue due to the growing significance of life-long learning and continuing education. It is also important for the promotion of equity in education, since there is a significant social bias in the recruitment to higher education. In addition opening up the access is required in order to develop the competences of all citizens for the new knowledge based economy. The concept of hybrid qualifications is an answer to the question of how to increase vertical permeability and open the access to higher education for students in vocational education.

The general aim of the European project "Hybrid Qualifications" is to study in each participating country (Germany, Austria, England and Denmark) what kind of hybrid qualifications exist and what are the political and educational reasons for their introduction. In the first reports published in 2010 we investigated the structural and general conditions for the introduction of hybrid qualifications and the conditions which restrain their introduction and dissemination. The first reports are available for free download from the project homepage (<http://hq-ill.eu/>). In the Danish report the existing pathways from higher secondary vocational education to Higher Education are examined in connection with a description of the target groups for the programmes, the didactical organisation of the programmes and their funding. In addition an analysis is made of the policy context for hybrid qualifications and the complex role of qualifications in the Danish transition system. Some of the main features of the history of hybrid qualifications in Denmark are drawn up and an assessment are made of the advantages and disadvantages of hybrid qualifications in Denmark. The first report thus forms the basis for this second report, which explores the interests and views of the stakeholders at all levels in relation to hybrid qualifications.

## 1. Aim of the study and outline of the Danish context

It is a general aspiration of European as well as national policy makers in the field of education to make the educational systems more permeable and accessible. More specifically it is a main objective of European education and training policy to increase transition and progression from vocational to higher education ("*vertical permeability*"). This is also the case in Denmark where students in the vocational programmes do not acquire entrance qualifications for higher education. Only 4% of a youth group progress to higher education after completing a vocational education in the dual system.

The Danish educational system combines features from different 'models' as defined by Greinert (1999) or Ashton (2004). Some comparative studies, like Antikainen (2006) and Walther (2006), include the Danish system in a common Nordic model. This model is characterized as being school based and non selective and linked to the egalitarian, social-democratic type of universal welfare regime (Esping-Andersen 1990). This categorisation is appropriate with respect to compulsory education and higher education, but much less so for higher secondary education (grade 10 to 12). In Sweden all young people after completing the compulsory level attend a programme in the Gymnasium that qualifies for entrance into higher education. On higher secondary level Norway and Sweden have more unified systems while the Danish system is selective due to its separation in two tracks.

In comparison with the other Nordic countries Denmark has the most 'classic' form of dual system of vocational education. The vocational track is organised separate from general education and is in many ways similar to the German dual system. However, the VET system in Denmark is more school based than the dual system in Germany as the programmes in Denmark typically start with one half or one year in a vocational college before the students enter a work based training agreement with a company. When they complete the programme they generally gain direct and immediate access to skilled and stable employment similar to the situation in other countries with a dual system (Wolbers 2007). But they do not qualify for entrance to higher education – except if they have completed a three year programme in a gymnasium before taking up a vocational education.

Compared to the other countries in the hybrid qualifications project, the scarcity of established pathways from the dual system to higher education in Denmark is similar the situation in Germany. Denmark has no parallel to the hybrid pathways in Austria ("*Berufsreifeprüfung*" and "*Lehre mit Matura*") or in Switzerland ("*Berufsmaturität*"). At least, until 2010, this has been the case. Generally students acquire either vocational qualifications that give access to the labour market or general qualifications that give access to higher education, not a combination of these. Students, who want to combine the two types of qualifications, do this sequentially by way of taking a double education, first one and then the other. A slightly decreasing share of around 10% of each youth cohort does combine their studies in different ways and end up with double qualifications. These can also be categorised as having hybrid qualifications in the *weak* sense or as consecutive hybrid qualifications that are acquired successively in different educational institutions (see the first German report for the definitions). But the Danish educational system has not until 2010 offered full hybrid qualifications that are acquired in an integrated form in a single programme. This is changing though, as a new legal framework was established in the summer of 2010 to initiate exactly this kind of hybrid programme, the EUX programme. This process will be examined in this report.

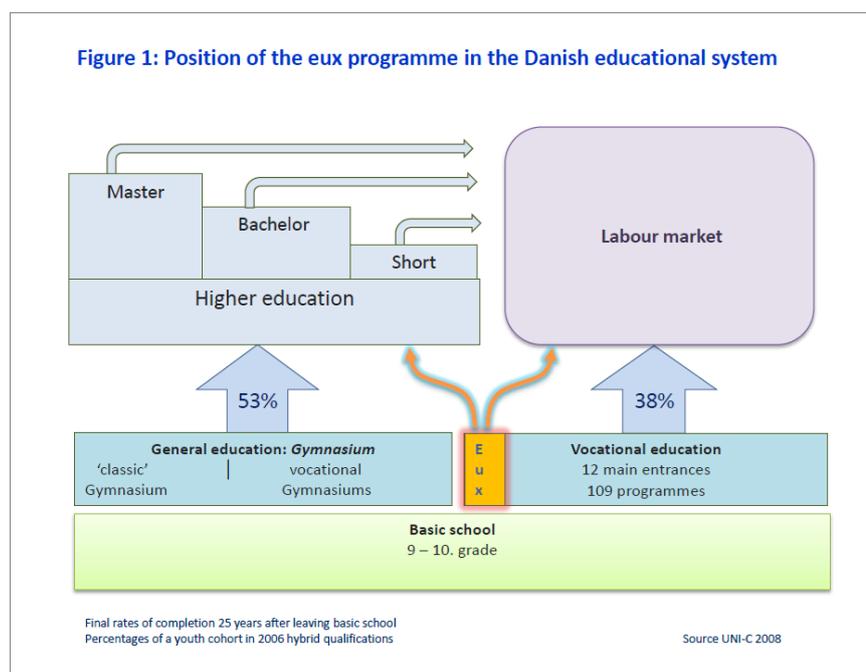
The aim of this second report is to present the results of an empirical study of the perceptions and views of the key stakeholders (teachers, learners, employers, policy-makers) in relation to hybrid qualifications. A special attention is given to the new hybrid programme established in 2010. In addition it is an aim to consider possible policy implications of the study and to present examples of best practice approaches for the realisation of hybrid qualifications.

## Separate, not hybrid qualifications

When completing the Basic School young people in Denmark have to choose between the vocational and the general track of higher secondary education. Higher secondary education provides vocational skills in one track and general skills in another in separate pathways leading to either the labour market or to higher education. But no hybrid forms of qualifications have been offered. An almost equal share of a youth cohort enters the Gymnasium and the vocational track (when students who shift track are included). Due to lower retention rates in VET a smaller share of a youth group completes a vocational programme (38%) than an general programme (53%). Around 10% of a youth group complete a programme in both tracks and take a double education. The majority of them shift from the vocational gymnasium to the dual system of vocational education. Some do their second education after a number of years on the labour market or after dropping out of a higher education.

**The academic track** comprises of four different programmes, the classical Gymnasium (stx), two vocational programmes, one technical (htx) and one business (hvx) and the Higher Preparatory Exam (hf) that has primarily aimed at adults. The classical Gymnasium is the most popular, as it recruits more than half of all student entering the general track. The vocational programmes of the Gymnasium have succeeded in recruiting from wider social groups that are more unfamiliar with academic education. The students here generally have a stronger orientation towards the labour market and the polytechnics and business schools than students in the classical Gymnasium (Andersen 2005). The vocational gymnasiums do not include training in a company and do not give certified qualifications that provides for access to the skilled labour market. Access to the Gymnasium is restricted by requirements of certain subjects and grades in Basic school. Applicants must take an admission test, if they have not taken the examinations required for admission or if the Basic school has recommend a test.

**The vocational track** is based on the dual system that provides a successful transition from education to work for more than one third of a cohort of young people. In most



programmes work based learning make up two thirds of the total time spent in education. They normally start studying 6 – 12 months in a vocational college and do the rest of the training mainly in a placement in a company. Alternating with the work based learning they attend vocational college on block release, typically 10 weeks every year. The dual system in Denmark has problems with low retention rates and falling esteem of the vocational track in relation to the Gymnasiums. Still the system has a prominent role as a recognised and valuable alternative to the academic track.

The dual system of VET in Denmark has proven to be quite effective in providing access to employment for the students. Half of all students continue in regular employment in their training company after completing the dual programme. In addition the system is inexpensive for the state as the companies and the apprentices finance the main part of the training through the value of the work of the apprentices. The state has traditionally avoided direct intervention in the VET system and has mostly left it to the social partners to define the training ordinances and monitor apprentices' training and examinations, the approval of training places and so on. Governments have concentrated on regulating the school-based part of VET and on indirect stimulation of the supply of training placements by means of schemes for financial incentives such as rewards for extra training placements (Juul & Jørgensen 2011).

In Denmark the division between the two tracks in higher secondary education is quite profound and includes differences with respect to the social background of the students, the professional background of the teachers, the learning culture and the forms of governance. Even on the local level the two tracks have separate institutions: the Gymnasiums and the vocational colleges. Only the Vocational Gymnasiums are located in the legal framework of the vocational colleges and are often also physically located in this context. The two vocational Gymnasiums (technical and business) are full-time school based, and do not give access to the skilled labour market. They form part of the unified system of 'Gymnasium programmes', whose main purpose is to prepare for higher education. The Vocational Gymnasiums thus are not providing hybrid qualifications in a strong sense, since they have weak relations to the labour market. The educational system in Denmark has not hitherto included an ordinary educational pathway that is 'hybrid' according to the strong definition, which means that it simultaneously gives access to the skilled labour market and to higher education. In 2010, though, a new programme offering hybrid qualifications has started in a few occupations, and in this report we will investigate the intentions behind this initiative.

## 2. Methods and data of study

The study conducted has an exploratory character and has the aim of mapping the perceptions, views and values of the stakeholders (teachers, learners, training companies, social partners and policy-makers) in relation to hybrid qualifications. In addition the intention is to examine to what extent there are best practice approaches and what policy implications can be formulated as a consequence.

The selection of persons for the 23 interviews in this study 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 higher education institutions, all from the polytechnic and business institutions that are the most used destinations for students from the dual VET 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. We selected persons with hand on experience of the experimental hybrid programme EUD-HTX rather than managers who would have more general opinions the hybrid programme. 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. In sum the interviews included the following persons:

- 2 persons in the Ministry of Education
- 5 persons from the labour market partners
- 6 persons from higher education institutions
- 4 persons from vocational colleges
- 2 persons from training companies involved in the hybrid programme (EUD-HTX)
- 4 former vocational students – of these 2 have continued to higher education

We have promised the interview persons to preserve their anonymity in order to make them speak more freely on issues that are politically sensitive. In the list of interview persons at the back of this report only the position or title of the interview person and the name of the institutions and organisations appear. Separate interview guides were prepared for each group of interview persons and the interviews were mainly conducted in a structured form, though with some open questions to explore opinions and attitudes of the interview persons. The open questions led us to new themes, which we have explored in some of the subsequent interviews. The interviews were recorded, transcribed and analysed thematically guided by the research interests of this project.

### 3. Thematic part

To make our analysis of the interviews with the various stakeholders more comprehensible, we will first sketch some of the key issues that arise in relation to the introduction of hybrid qualifications in Denmark. These issues have helped shape the design of our interviewguide and the questions asked. The first issue is the challenges presented by the strong division between the vocational and the general track in the educational system. The second is an assessment of what pathways and 'blind alleys' exist between the dual system of vocational education and higher education. And the third is the background for the new programme initiated in 2010 offering hybrid qualifications. The discussion of these issues will also provide a further introduction to the national context of the relations between the higher secondary and the tertiary level of education in Denmark.

#### Challenges for hybridization

In Danish higher secondary education (grade 10 to 12) the aims and purposes of the two tracks are different. The purpose of vocational education is to develop relevant qualifications that are recognised on the labour market and give the students access to skilled employment. The main purpose of general education is to develop qualifications that give access to the institutions of higher education and prepare for studies at the tertiary level. In addition some of the general objectives of the two tracks of education are similar: they are to support the student's personal development and their democratic engagement in society and prepare for lifelong learning. This though is put into practice in quite different ways in the two tracks due to their different cultures and positions in the educational system.

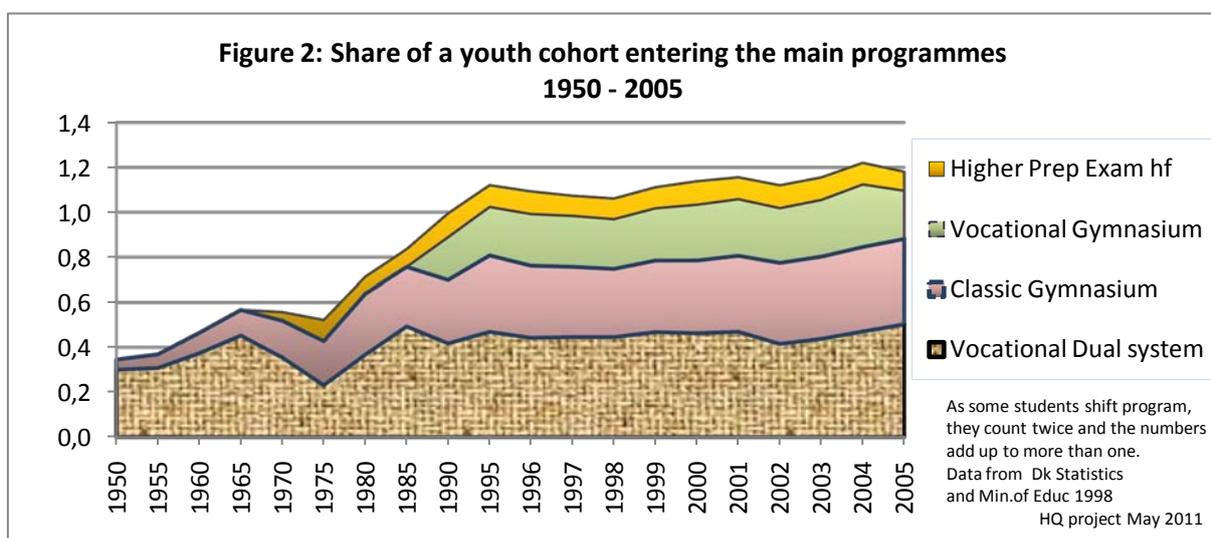
The division between the two tracks of education is deep due to their different traditions and their historical origin in medieval Master apprenticeship and the Latin school respectively. The two tracks are subjected to different forms of educational governance. The three year programmes of the general track have historically been organised by the state, even though one out of six Gymnasiums is a private institution. Still the control by the state is extensive, as the Gymnasiums receive almost all their funding from the state and the Ministry of Education has to approve of major managerial initiatives regarding mergers or divisions. In addition the core subjects and curricular requirements of the programmes are laid down by the state.

In contrast the vocational track has strong roots in the traditional apprenticeship, and represents a modern form of a dual system. The system is subject to a corporatist form of governance (Greinert 1999) where the labour movement and the employers' organizations are represented equally in the regulatory bodies of the VET system. The majority of students in the dual system are oriented towards the labour market, not towards higher education. Even though the opportunity exists to choose additional academic subjects in vocational programmes, very few students have made use of this opportunity. This is comparable with the situation in the German dual system, where only a marginal share (0.5%) of the total population of apprentices use the opportunity to take additional general education lessons besides their regular apprenticeship ('Zuzatskvalifikationen', see German report page 6).

The reluctance of students to take additional general subjects is related to the fact that many of the vocational students chose the VET track because they are tired of the ‘theoretical’ and traditional school-like teaching. This oftentimes makes the teaching of general subjects difficult in the vocational programmes. The labour market partners also have been sceptical about an expansion of the general subjects and they have argued for maintaining the clear vocational profiles of ‘their’ programmes. In addition the majority of the teachers in vocational education have a background as skilled workers and an occupational career as their main background. This contributes to a strong vocationally oriented learning culture that is quite different to the academic learning culture of the gymnasiums. In sum the challenges for the introduction of hybrid qualifications relate to the divergent forms of governance, learning cultures and educational purposes of the two tracks. And the questions asked in the interviews related to how these challenges were handled by the different stakeholders.

In the process of negotiating the new hybrid programme it has been vital for the stakeholders of the VET system that the new programme should be developed on the basis of the dual system of vocational education. This has been considered a precondition for the value and legitimacy of the programme on the labour market. Consequently the responsibility for balancing the demands of the labour market and the demands of higher education has been left to the training committees for each occupation, which have a key role in regulating the vocational programmes.

One question then is how the general content of the hybrid programme has been integrated into the vocational content. Another question is how the cooperation between the two different learning cultures and the two types of teachers of the two tracks has been organised. This challenge has been made more manageable by the fact that the vocational programmes and the vocational gymnasiums belong to the same institution, the vocational colleges. The qualification requirements and the working conditions of the teachers differ markedly, though, and the question is how this challenge has been dealt with. In addition the length of the new programme has been a challenge, as the developmental programme carried through in the period 2005 – 2010 concluded that five years was too long for many students. The question for the hybrid programme is then how it has organised the content of two programmes with a total length of 7 years into a new programme of only 4 years and one month.



## Pathways and 'blind alleys' between the dual system and higher education

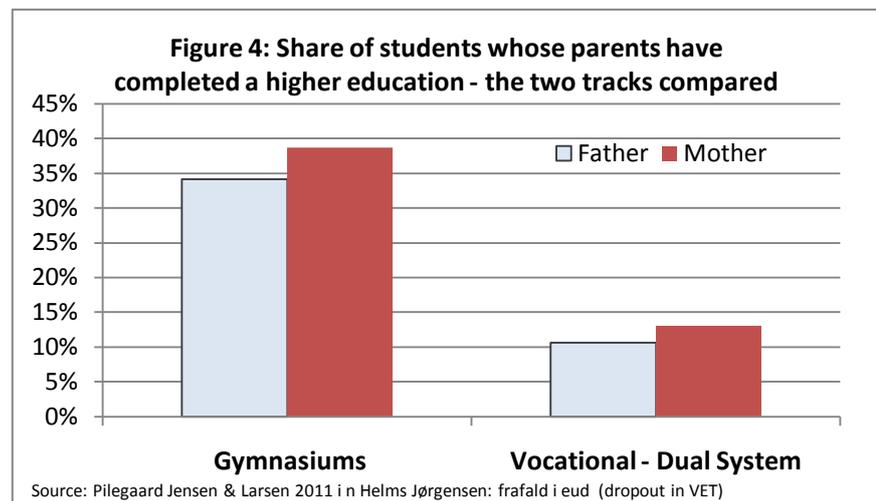
For the last five decades the enrolment of youth in the general track has grown strongly in a way similar to the increased enrolment in academic education reported in other countries (Raffe 2003). Figure 2 shows the expansion of first of all the classic Gymnasium and the vocational Gymnasium since the 1960es. This has put the dual system of vocational education under pressure, even though the enrolment here has not decreased. One of the reasons for the 'academic drift' according to the young people themselves is that they in the general track can postpone their final choice of education and employment (Katznelson & Pless 2008). In addition they think they can keep their future more open as the acquisition of higher education entrance qualifications give them a broader range of opportunities for further 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. Almost half of a youth group now progress to the tertiary level of education and higher education is increasingly seen as the main road to a successful career. For some students and their parents vocational education appears as a *'blind alley'* in relation to continuing and higher education. The

strong increase in the enrolment into higher education has not been evenly distributed on all social groups. A much higher share of students in the vocational track have parents who have not completed any education beyond the compulsory level. And a much higher share of the students in the gymnasiums have parents with an

academic background (Jensen & Larsen 2011). There is a significant social inequality in the recruitment to the general track of higher secondary education when compared to the vocational track. Figure 4 shows that around three times as many students in the general track (Gymnasiums) have parents with a higher education compared with the students in vocational education. This social bias adds to the falling esteem of vocational education, which seems to be self-reinforcing.

This challenge for vocational education is a consequence of the division of the educational system in two tracks after the non-selective basic school. Students who choose the vocational track normally will not qualify for entrance to higher education except in a few occupational areas. It has been shown that in countries with early tracking in a vocational and a general pathway the access to higher education for students in the vocational pathway is often limited (Hanushek & Woßmann 2006). The separation of students in two tracks thus also constitutes a selection process that reflects the social and educational background of the students.

Due to the separation of the two tracks, young people's choice at the age of 16 or 17 will often life-long determine their opportunities for accessing higher education. Only around ten percent of the



students completing a vocational programme will progress to higher education and only around half of this group will complete a programme in higher education. It is often considered a weakness of the dual system of VET, that it diverts the students from higher education (Shavit & Müller 2000). Only in occupational areas where specific educational pathways have been established, does a larger share of the VET-students continue to higher education. The main groups are carpenters who take up studying as Building Technicians (Bach. 3½ years duration) and electricians who take up studying Installation Contractor – a short cycle tertiary education (2 years duration). The business programme has the largest share of students who actually have qualified to enter the tertiary level, and the pathways from VET to HE in this area are more diverse. Some go into a related education primarily as accountants (5 years master level), and some shift into other areas like teachers and nurses.

Several different pathways exist for former VET-students who want to take up higher education though various barriers have to be overcome (Bowers-Brown & David 2005). In a few sub-Bachelor programmes of the polytechnics *direct access* from a vocational education has been possible. With the expansion of higher education and the increasing requirements of general and theoretical knowledge the direct access has become practically closed for skilled workers. Some institutions of higher education have offered preparation courses for skilled workers who wanted to progress to study for example engineering at a higher level. This pathway is commonly used to gain access to the 3½ year ‘practical’ type of education for engineers at Bachelor level (‘Diploma-engineer’) with specialization in chemistry, machinery, construction, etc.

This has for decades been a well-known pathway for a small but stable number of people with a vocational education to continue to higher education. This pattern of progression from VET to higher education has weakened due to the increasing share of young people who go to a Gymnasium. The number of students in the ‘Diploma-engineer’ programme (Bachelor level) has been reduced to half size since 1990 (VTU 2005). In the Technical Universities the share of engineering students who have a vocational education before starting has declined (A4 2009). At the same time the share of students from the Vocational Gymnasium (HTX, Higher Technical Exam) has increased.

Another pathway to higher education is offered by the comprehensive programmes of *adult education* in Denmark. The Higher Preparatory Exam (HF) provides access to a number of tertiary programmes depending on the subjects chosen and the level attained. This programme though is not often used by skilled workers from the dual system due to the history and character of this programme. The HF programme is often used by student to get access to the more demanding programmes of vocational education. Almost every fifth of the students who complete the HF programme do afterwards complete a vocational education typically in the business administration or health care programmes (Klewe 2007). They take a double education, not to get access to higher education, but to qualify for the skilled labour market. This pattern is similar to the situation in Germany where it has become more common for young people to start in the dual system after completing the ‘Abitur’ (Behrens a.o. 2008).

A comprehensive system of adult education was introduced in 2000 to provide ladders for progression in the educational system for adults from the bottom to the top. Research has shown that few people actually do progress from the lower levels to the highest (EVA 2009), but substantial numbers use it as an opportunity to progress one step further up in the educational system. This parallel adult education system also comprises programmes at tertiary level (sub-Bachelor) in the Continuing Adult

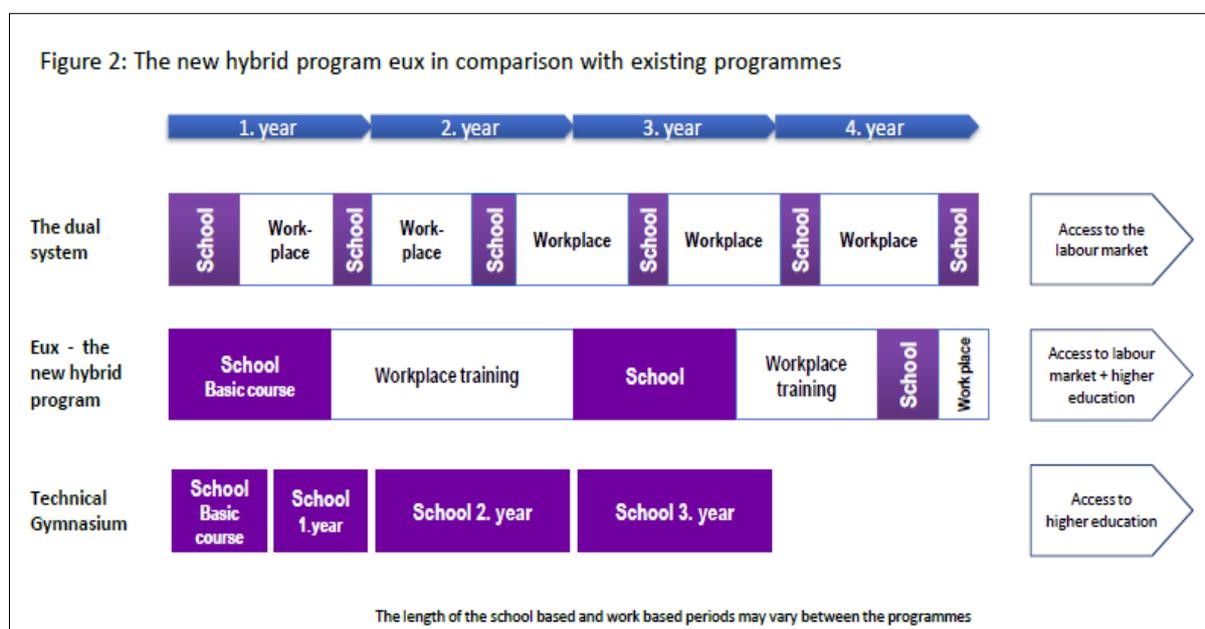
Education (VVU). This programme corresponds to the ordinary short cycle higher education programme (KVU), which has been a main destination for skilled workers who continued into higher education. In the period 2001-07 more than one third of the participants in the VVU programmes had a vocational education from the dual system as their highest prior degree. This is not surprising as many of the courses in the programme are closely connected to the initial vocational education programmes.

### EUX: a new programme for hybrid qualifications

Following a major reform of vocational education in 2000 new opportunities for acquiring hybrid qualifications in the dual system were introduced. Students were offered additional academic subjects to be completed during the ordinary vocational programmes. But very few students have taken advantage of 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 class. Another reason is that students often don't want take additional subjects, because then they will be separated from their ordinary classmates.

A revised initiative thus was launched in 2010 by the passing of a law on the so called 'EUX programme'. The EUX represent a programme for full hybrid qualifications in the strong sense, which means that 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 institutional separation of the two types of qualifications that exist in the Danish educational system as we have described earlier.

The EUX programme has only started in a limited number of occupational areas in the building trades such as carpenters and bricklayers, but is under preparation in many other areas, such as electricians, data-technicians and industrial technicians. Our interviews have investigated the motives and interests behind the new programme and tried to get an assessment of its viability from



the perspective of the key stakeholders at all levels from the ministry of education to the students.

A new initiative for hybrid qualifications was launched in two vocational colleges in 2005 with a developmental programme that combined vocational and general education. It was the so called 5 year '*EUD-HTX programme*' that made it possible to become a skilled carpenter, automation-technician or industrial technician and at the same time get access to higher education. The first students from this programme completed in the summer of 2010. The evaluation of the developmental 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 ½ - 1 year study time when choosing the developmental programme compared to completing the programmes one after the other.

The EUX programme is positioned in between the two existing educational pathways: the dual system and the vocational gymnasium. As mentioned the programmes of the dual system do not give access to higher education. And the vocational gymnasium does not give access to the occupational labour markets for skilled workers. The EUX programme does both by integrating academic subjects from the HF programme (adult education) into the vocational programmes. A key question is how to determine the level of the academic subjects in the new programme, when they have to be at a lower level than in the developmental programmes (EUD-HTX) because the total length of the EUX is shorter. This means that the new programme does not give access to all types of higher education. The entrance requirements in Danish higher education are quite diversified. Some higher education programmes require a higher level in the general subjects than the level normally attained in EUX.

The EUX is in essence a combination of two programmes of three years and four years length respectively. But the length of the EUX is only four years and one month and not seven years. This has required an accreditation of some general qualifications that are acquired in the vocational subjects and a shortening of the length of some of the vocational subjects. A question is how this has been organised thorough negotiations between the many stakeholders to balance the diverse interests involved. What has been the position of the labour market partners to the requirement of shortening the work based part of the vocational training, since this is considered vital for the employability of the students. Another question is what has been the position of the representatives of general education to the request for a reduction in the amount of teaching in general subjects, though this is considered vital for the success of the students when they enter higher education. Considering the long tradition of separation of the vocational and the general programmes it has also been a challenge to arrange for an integrated teaching in the two types qualifications. Our interviews have been conducted only 4-6 months after the launching of the new programme, and consequently the results are preliminary. Yet our findings point to a number of dilemmas and challenges to be resolved in order to make a programme for hybrid qualifications a success.

Comparison of the hybrid programme with the two existing tracks			
	General education	Hybrid programme (EUX)	Vocational education Dual system
<b>Institutional setting</b>	Gymnasiums and vocational colleges	Vocational colleges and companies (training placements )	Vocational colleges and companies (training placements )
<b>Governance</b>	State regulation	Occupational self-governance	Occupational self-governance
<b>Qualifications acquired</b>	Higher education entrance qualifications	Higher education and labour market entrance qualifications	Qualifications for entrance to skilled labour market
<b>The content of programmes</b>	Teaching in single academic subjects and some interdisciplinary project work	Some new hybrid subjects – most subjects are taught separately	Training in work tasks and vocational disciplines
<b>Teachers qualifications</b>	Teachers with academic education in single subjects	Both groups of teachers and some cooperation in interdisciplinary teams.	Teachers with a vocational education and work experience
<b>Admission</b>	Restricted admission. Grade averages and entrance tests	No formal admission requirements, but guidance interviews – and a training placement is required	Generally free admission – but training placement is normally required to complete the programme
<b>Funding for students</b>	State funding of colleges and state study grants available for students.	Study grants available for students in basic course. Companies pay wages to apprentices during the main course.	Study grants available for students in basic course. Companies pay wages to apprentices during the main course.

## 4. Viewpoints of the different stakeholders with regard to HQ

In the following section we will look at the roles and viewpoints of the various actors with regard to EUX, the new hybrid programme. Using quotations from the interviews, we have tried to illustrate the interests, challenges and concerns of the different actors in relation to hybrid qualifications and the new hybrid education programme. We will conclude by looking at the issues that particularly affect the interest groups across the board.

### The Ministry of Education

In spring 2010 the Danish parliament voted unanimously to establish the new hybrid education programme EUX with effect from August 2010. Education minister Tina Nedergaard stated that the motivation behind the new programme was to create something comparable with vocational education and training (VET) that would ensure that: *“those students who want to take up vocational training but also want the opportunity to continue with academic subjects or continue their education later do not end up in a blind alley.”*

The Ministry of Ministry of Education is clearly interested in making it attractive to choose VET and in making the path from vocational training to higher education easier and more transparent. This is partly because there will be a demand for highly qualified skilled workers in the future and also because VET has on the whole suffered a loss of prestige. Opting for vocational training no longer holds any great attraction, and of those who do choose it, very few then decide to go on to higher education. One of the interviewees explained it like this: *“Presumably it is because we segregate the students after the 9th grade – and this means a noticeably obvious stigmatisation. We are really struggling to get primary and lower secondary schools to offer different levels, but they do not want to. So some students become stigmatised when they are told by their schools that they are not bright enough to go on to general upper secondary education.”*

This stigmatisation also affects academic levels because if all the strong students are ushered over to upper secondary schools (the gymnasiums), it is naturally the weak students who are left behind. As another interviewee commented: *“Previously it was said that ‘the gateway’ to further education was wide open, but this gateway has become increasingly narrower. This is partly because the academic level of the students doing vocational qualifications has dropped ...”*

Thus for the interviewees from the Ministry of Education, the EUX education programme can be seen both as a means of widening access to higher education and of enhancing the status of vocational training. There is also widespread agreement on this point among the actors in the labour market, who constitute the other decision-making entity. However, although there may be consensus among the various decision makers as to the objectives of the EUX education programme, there is nonetheless considerable disagreement with respect to its structure. Getting the two departments in the Ministry of Education to work together on the new programme has been a challenge. Some in the upper secondary school department believe that placing the programme under the auspices of general upper secondary education would have been beneficial, partly because this would make it easier to attract young people to the hybrid programme.

There are striking differences between how the two areas of education are managed. While general education leading to higher education is unified and primarily in the hands of the Ministry of Education, the Ministry has left a significant part of the management of VET to the partners in the labour market through the so called occupational self-governance. They are responsible for the overall design and planning of the courses while the Ministry of Education is responsible for approving the competencies, curricula, course credits and the duration of the courses. In addition to having the overall financial and legal responsibility for VET and the main responsibility for teaching, the Ministry of Education also supervises the vocational colleges. The labour market partners are primarily responsible for the practical part of the courses and supervise the work based training in the companies. The labour market partners exert their influence through institutions with equal representation of parties that operate on all levels: on state level, within the individual industries and on school level via local education committees. At times, this split management between the state and the labour market partners creates tension. Planning the EUX education programme has called for new types of cooperation between the two different forms of management, with the involvement of many different decision makers. There have been 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 education and training programme that includes additional academic subjects which prepare for higher education. However, 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.

The interviews with the two employees from the Ministry of Education point out the central role being played by the labour market partners in the training committees in shaping the new EUX education programme.

*“Basically we are talking about VET that has been enlarged to include academic competence. We are not tampering with targets for vocational competences. We cannot simply bypass the training committees. However, the law does provide for establishing new, specific upper secondary academic subjects that relate to the vocational subjects.”*

As mentioned earlier, merging the two different education programmes, general and vocational education, is a challenge. Structure, course duration, course credits, syllabuses, geographical location and the different teaching backgrounds and employment agreements of the teachers are all factors which make planning the courses difficult. The quotation above is yet another example of an obstacle, namely that with regard to the legislation that has placed the EUX programme within the existing frameworks of vocational education. This has been necessary to gain the support of the labour market partners, but as a consequence it is not being treated as a third option between general upper secondary qualifications and vocational qualifications. Instead it is being treated by the Ministry of Education as vocational training with enlarged competence. This means in practice that although the Ministry of Education has left 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. This makes creating a true hybrid difficult and it also makes nailing down actual responsibility a challenge – since the ball is being thrown back and forth between the two decision makers. As one of the

interviewees from the Ministry of Education says: *“Integrating the two types of subjects is crucial for the success of EUX and that is what the Ministry of Education is striving for. However, it is the vocational colleges which have the responsibility for actually organising and implementing the courses.”*

### **The labour market partners and the teachers' organisations**

The labour market partners exert their influence mainly via the 48 training committees established for each vocational programme or group of programmes. The committees have the task of supervising developments in the labour markets and, if need be, establishing new courses or reorganising or abolishing existing courses. Together with the training companies, the training committees develop and ensure the quality of the practical part of the courses. The committees also approve the training companies, applications for curtailing or extending courses and supervise the education and training in the companies, including acting as complaints boards for apprentices and companies. Thus the training committees play a central role in regulating course content and structure and also ensure that these vocational qualifications are widely recognised in the labour market.

On the whole, the new education programme is being welcomed by the labour market partners and teachers' organisations, but implementing principles in practice has not been easy. In particular, the designing of the courses and the planning in the training committees take time: how should the practical part and the school-based part fit together in such a way that the programme offers a viable alternative to existing education paths? As one of the parties from the labour market points out: *“It would be wrong to end up creating blocks, since that would ultimately result in two separate courses in half the time, making it an elite education programme, and that would be beside the point. The whole idea is to create a completely integrated educational programme.”*

The ultimate goal of the programme is also being questioned. For some parties it is of prime importance that the EUX education programme provides access to all higher education programmes, so that no students subsequently will have to gain additional qualifications to gain access. However, for others, the high demand on the students is reason for concern as it means a risk of students dropping out halfway through:

*“I am a little worried that we have generally placed demands too high. The students who are aiming to get into higher education should choose subjects from level A. However, there is a risk that we will actually end up excluding many students if we make this the norm – so we should also be able to offer the same for level B subjects so that we can accommodate those who maybe want the option of a summer course etc. at a later stage.”*

The different intentions of the actors with the education programme and the differentiated design of the subjects makes it difficult to talk of one single new programme. In reality it is more like a number of new education courses that are more or less hybrid in their design – some with greater, some with less potential:

*“In the field of construction and technology there is considerable enthusiasm, and it suits them well. The situation is the same in the field of business and commerce, particularly at the larger schools, but essentially they haven't prepared themselves. They just want something that is bigger and more sophisticated but haven't thought about the fact that the new education programme is not simply*

*meant to be a new type of vocational gymnasium. And I'm not sure whether the new programme can make a difference. They could do in the field of construction because there are many carpenters with higher qualifications, and it makes sense. Developments in business and commerce will depend on whether something similar happens – whether students can be convinced that they can use the qualifications to go further – and avoid taking even more supplementary courses.”*

This quotation also emphasises another important point made in the interviews, namely that the response to the EUX programme hugely varies within the different sectors. While it is being welcomed in the construction and technology sector as a missing alternative, expectations in, for example, the business and commerce sector are rather that the programme will merely become yet another option in the range of existing options. Generally, the labour market partners are exceptionally positive towards the new programme and expect to invest a good deal of energy ensuring that it is launched properly. On the other hand, some training committees insist that it might be more advantageous for students to complete two separate programmes consecutively instead of one integrated EUX programme. It might be easier and less of a strain, as some students might manage two separate programmes, but not be able to complete them simultaneously in an integrated programme.

However, there are other challenges in addition to the challenges posed by the split management structure. It is not only the Ministry of Education and the labour market partners who have to reach a consensus. Diverse educational institutions also have to cooperate with regard to timetables, teaching staff planning and syllabuses. Various systems of qualifications have to be tied together and there must be cooperation between companies and the general education subjects.

### **Higher education institutions**

Another important factor in relation to the new EUX programme is the institutions receiving the students who have completed the hybrid programme, in this case the higher education institutions. Institutions of higher education have played only a peripheral role in designing the EUX programme. They have not been involved in the concrete planning of the programme, have not been involved with the training committees and as such, have had no part in the negotiations with the Ministry. Nonetheless they are a key player as their approval and recognition of the new EUX students is vital for ensuring the EUX qualifications will be able to bridge the gap between VET qualifications and higher qualifications in the long term. Possibly precisely because of their peripheral role in the designing of this programme, interest in EUX on the part of the higher education institutions has not been particularly visible.

In this study we interviewed three higher education institutions that will be receiving students with the new EUX qualifications in the future. Even though the programme will potentially be able to channel more students into higher education, enthusiasm for it is limited. There are several reasons for this. One of the arguments is that the EUX programme does not offer a better alternative to existing programmes – it simply reflects a certain ignorance about the existing opportunities for accessing higher education. At present taking a supplementary course after completion of vocational training is possible. At the university college of engineering for example, it is claimed that completing a programme in the dual system and a supplementary course might take less time than a EUX programme, but give access to the same education – as an careers adviser explains:

*“There is a certain ignorance about how vocational training courses and higher education courses connect. It does not take particularly long to complete an access course to get a place at the university college of engineering – it can even be done in as little as 7 weeks, however many people working in occupations believe that it takes much longer and that’s why they don’t consider it.”*

On the whole, those interviewed from higher education programmes think that the problem relates to how the different levels of education connect with each other. As the situation is right now, many students take double qualifications, vocational and general, consecutively to get access to higher education and this is both expensive for them and for society in general. In other words, there is inadequate communication between the different levels:

*“It is not the careers advisory services that pose the biggest problem, but rather the overall perception of the education system. We think in blocks rather than thinking laterally – EUX is also a reflection of this.”*

Another reservation is that there are already plenty of applicants for higher education programmes and since the students who have come from a VET programme are regarded as weaker learners and thus less attractive with regard to the per capita grant system, it has been decided not to take any active measures for precisely this group.

According to the three people interviewed, however, one advantage of the new EUX programme is the financial aspect. Previously, it primarily used to be the socioeconomically advantaged students who completed double education or who took supplementary courses and went on to study engineering. It was the people with vocational training who were able to do jobs on the side or moonlighting while studying or who could live off their education grant. The difference between an education grant and an apprentice's wage is a real impediment since students cannot afford to live on less with a grant after they have become accustomed to receiving a wage as an apprentice or a full wage in a company. This has made it difficult for those who already have a family and do not have any savings. This problem continues to exist for EUX students who go on to higher education. However, since the EUX programme provides an apprentice's wage during the entire duration of the course and not just during the practical training, financial difficulties arise only later. During the EUX programme the students receive apprenticeship wage that is higher than the state study grant, and this might make it possible to reach a new target group.

### **Vocational colleges – technical and business**

Vocational colleges play a central role in the development of the new hybrid education programme. They are responsible for planning and designing the programmes right down to the last detail. They have the task of transforming the proposals elaborated by the training committees for the different subject areas and put them into practice. The colleges are responsible for developing a good learning environment for the students and are at the same time dependent on being able to recruit students to the programmes so that they balance financially. Two vocational colleges have run the developmental EUD-HTX programmes since 2005 by starting up new groups each of the following years. Their experience shows that it is a big challenge to integrate the teachers from the two areas. One of the colleges reported that there were considerable difficulties with the cooperation between the

teachers from the two areas in the first two years. Not only do the two teaching cultures need to approach each other, but the students in the two tracks have to be socially and culturally integrated. The students on the developmental programme felt most at home in the vocational programme; however, the students also need to be integrated into the learning environment of the vocational gymnasium (HTX) by getting them to participate in social arrangements there. The two different areas of education have different ways of organising and structuring the teaching. It has been a challenge for the education institutions to take the training committees' instructions into consideration while also following the framework established by the Ministry of Education. One teacher comments:

*“We hope to get round it, but it’s a problem that you can gain course credits on a different basis at upper secondary schools and on VET programmes. One system measures in terms of skills, the other in terms of teaching time and that makes it a little difficult to bring the programmes together. If the Ministry could just work it out, we could work it out among ourselves. Sometimes, though, we ought to be allowed to just work it out for ourselves, for that would make it easier. We’re very good at finding solutions at school, raising levels etc.”*

Opinions on the advantages of a new hybrid education programme are remarkably divided, and it is above all the courses in the field of building and construction that are welcoming the new EUX programme. EUX is not a novelty within the field of business and commerce in quite the same way, as different tailor-made models have already been used here for many years, partly because students at business and commerce colleges come from decidedly different educational backgrounds, and also because the sector is a broad one and thus has many different demands. Here, the EUX programme will not be a completely new option, but rather a more manageable option for those students who already show an interest in training in business and commerce. As one of the colleges puts it:

*“The EUX programme allows us to tidy up and sort out the various products on offer and bring them under one umbrella. So in the future it will be less of a labyrinth because EUX gathers everything together.”*

In many of the education programmes managers say that the main issue is to recruit students from general upper secondary education. The EUX programme is not aiming at students who have already opted for a classic VET programme, but at students who know early on that they want to continue their studies and wish to have complementary vocational training.

If the EUX programme manages to fill a gap and attract single-minded students who would otherwise choose HTX (technical college), this would be positive. However, if the programme does not manage to recruit from institutions other than vocational colleges, it will not work in the long term. There is a risk of removing the strong students from the ordinary vocational training programmes and thus devaluing the classic VET courses even further:

*“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 vocational training programmes – will we end up requiring roofers to have Gymnasium qualifications and will there be anything at all left for students who cannot manage a more academic education?”*

Since the new EUX programme has so far only been run as a pilot project, it has been difficult for vocational training colleges to provide a clear picture of the programme's target group – particularly

because many of the colleges ended up recruiting from their own ranks instead of recruiting from other education programmes. There is, however, basic agreement that the new education programme will be considerably more demanding than conventional VET programmes and that it could well become a kind of *elite education*:

*“The target group consists of very ambitious, hard-working students – after all, it’s one thing to complete an upper secondary school education first and then do vocational training after. But doing both at the same time and within more or less the same time span – that’s a pretty big challenge.”*

The policy makers did not necessarily have the creation of an elite education programme in mind, but rather a programme that could offer a third education route as an alternative to general upper secondary education and vocational training. However, the length of the programme together with the demands placed on the students will clearly have an impact on the level.

If, on the one hand, the labour market partners say they want to ensure sufficiently high levels that lead directly to higher education, while, on the other hand, the Ministry of Education wishes to keep the education costs down by keeping programmes to a standard length of four years, it will be difficult to avoid the programme taking on an elite character. It could be beneficial to vocational training colleges to have a programme that places higher demands on the students and thus creates a higher level, but this presupposes that the EUX education programme, as a hybrid programme, is designed in such a way that it is twice as good as existing single programmes and not simply half the duration of double programmes.

Time will tell whether the EUX programme ends up becoming an elite education or an alternative for a broad section of students. Recruiting enough students from general upper secondary education could also be a challenge, as the EUX programme requires a training placement in a company, of which there is a shortage. This constitutes yet another challenge, namely to what extent companies will be interested in offering training placements to the new EUX students.

### **Companies with apprentices**

Companies play a central role in the new education programme, partly because large companies such as Danfoss, Grundfos and B&O were among those who launched and supported the EUD-HTX pilot project, but also because the success of EUX greatly hinges on whether companies are willing in the long term to recruit students from the new EUX programme and thus to ensure sufficient numbers of placements. So far only major companies have had EUX students and here, both the programme and the students have been welcomed:

*“There’s respect for EUD-HTX students. There is a certain prestige in taking a longer programme; the other apprentices look up to them, as they are well aware that taking two programmes requires more effort. Owing to their dual education, they are good on the job. On average they are better.”*

The companies we talked to were exceedingly positive about the new programme, not only because the apprentices, as mentioned above, are good on the job and perform well with the other apprentices, but also because they acquire certain skills that are valuable and useful for the company – as one company says:

*“The advantages are that the students 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 students being able to do those sorts of things.”*

EUX students can thus do other things than classic apprentices can, however this comes at a price. The new programme has fewer periods of training placements in the company and students are away at college for longer periods than with the classic VET programmes, which makes it more expensive for the companies to have an apprentice. The first and second years are an investment on the part of the company – this is when they invest resources in training the student (apprentice) for the job. After the first two years, apprentices are often working independently and can solve problems by themselves and this is when the company can profit from having them. If time is taken off precisely these the final years, companies lose some of the reward of their investment and thus profit less from having an apprentice. For major companies this factor has to be taken into consideration in order to create a recruitment basis for highly skilled workers. And it is precisely highly trained candidates with a VET background that the companies are looking for – as one interviewee explains:

*“It is the practical candidates the companies really want: the academic side is just the prerequisite for moving further up and finally becoming an engineer. Of course, as an outsider, what you notice most of all is the new aspect of the education programme – the fact that you can enhance your competence – but actually the academic element is more a bridge to ensure that the practical and specialised candidates have access to and take part in higher education so we can create a recruitment base.”*

For SMEs, getting access to a larger recruitment base of EUX students is possibly not a significant enough argument. Not only do they get apprentices who cost more – they also get apprentices who have an education they are not familiar with and who in all probability will not stay with the company when they have completed their education, since they will go on to higher education. Thus the colleges and the social partners will have to make much more of an effort to sell the idea to smaller companies – as an education adviser points out:

*“Interest on the part of companies has not been great. Employers think traditionally – they are not so much interested in the students' education as in making money from them. Generally bosses know more about the cars they buy than they know about their students' education.”*

As far as the decision makers and colleges are concerned, generating interest in the education programme among SMEs is a challenge, since smaller companies still train the majority of apprentices. Thus it is crucial that they are also interested in the hybrid programme and can see the advantages.

### **Vocational students – present and former**

The students play another important role in this area, since they are the ones who ultimately decide whether EUX is just a flash in the pan or a real alternative. The students we talked to seemed especially positive about the idea of a new hybrid education programme and many of them wished that going on to higher education was easier. One of them comments:

*“Being a plumber is no great challenge – it involves hard physical labour and is very tiring. I did additional training so I could use my brains more. I missed having colleagues who were a bit more intellectual and work that was less physically strenuous.”*

This quotation is from a plumber who trained further to be a plumbing technician. He would like to have had the opportunity to opt for an EUX programme and to gain hybrid qualifications, but also says that he is not sure whether he would have chosen that option after tenth grade:

*“... Someone would have to have encouraged me to do it, since at that time I wasn't mature enough to make a decision about the rest of my life, and I think that goes for many 16 and 17-year-olds. I chose to train as a plumber because my friend's father offered me a job in his plumbing company. So that was it. The college would have to have provided more advice to get the students to go further in the education system. My college wasn't particularly good at that, as far as I can remember.”*

Students point to guidance as an important factor in ensuring that the new hybrid programme is a success. They also say that they should be able to do vocational training and an education programme preparing them for higher education simultaneously or consecutively, otherwise it is too difficult managing on a grant. This is one of the main reasons why they do not opt for higher education and it means that there has to be greater financial incentives to couple vocational training with higher education. As one of the interviewees says:

*“I think I would make a good engineer, but financially it is not worth spending so many years in higher education, and 6½ years is a long time to study. Studying something else would be a waste of the skills and knowledge I have now. I could imagine doing further education and training if I could get course credit – but there wouldn't be a lot to gain financially so there would really have to be something else to gain – prestige or other challenges.”*

Former students name time and financial factors as the biggest impediments to entering into further education and training. If EUX is to be a real alternative working hard for a shorter period of time must be worth it; otherwise taking double education or simply not doing any further training would be just as good. The last point made by the students which is worth noting is their obvious pride in their special field. Present and former students are completely aware that there is more prestige linked to being, for example, an engineer, but in practice they are not especially interested in being “studious”. Here, the students, like the companies, confirm that the best thing is an education programme with a practical approach – in that respect they are advocates of the new hybrid qualifications.

### Group interview with former apprentices on hybrid qualifications

To illuminate the issue of hybrid qualifications the following is an example from a group interview with three male skilled workers who completed their vocational education in 2000 in technical programmes. One of them is a man of 29 who completed a vocational education and immediately after continued to study at a tertiary level. First he did a one year preparation course and then studied for three years as a chief engineer. This opened for his present employment as an engineer in the planning and design of industrial production facilities. He says that he profits a lot from his vocational education and that he is working with the same kind of tasks as earlier, but on a higher level. His vocational education gave him credit for a reduction in the length of the study period. He says he knew right away that he would take up studying, when he had completed his vocational program. He believes that if he had not done so immediately after completing his apprenticeship, he would have dropped the idea.

One of the others confirms, that once you are used to earning a real wage, you cannot afford to take up a study. They agree that the state study grants are too small to make a living, when you have family and kids. Another argues that he will not leave his secure job for an uncertain educational career of at least three years. A third argues that if he should take up studying at the tertiary level, it would require at least two years on study grants, and afterwards he would just get the same wage as he receives now, he says. *“So why should I do that?”* he asks rhetorically. This point of view reflects the small difference in earnings between many bachelor degree engineers and the skilled workers.

They reflect on conditions for taking up further education and argue that they should be accessible as evening courses and in a modularised form *“so that you don’t become tired of school”*. Then they might consider taking one course after the other until they had completed the entire program. Another hindrance mentioned is uncertainty about general qualifications - will they be adequate? One believes that in his present job he only uses a tiny part of the maths and foreign language he learned at school. He believes this will make it very difficult for him to take up further studies. They agree that it is easier if you continue immediately after completing your vocational education, otherwise *“you will quickly fall behind with your general qualifications”*. They agree that some kind of study leave, for example one day off every week, would help taking up further studies. One of them however, does not believe that employers are interested in employees taking up studies, as this might make them leave the company and apply for a better job elsewhere.

Two of those interviewed express this as a problem when they describe their perception of the engineering department in the company in which they are employed. One says: *“All those who have a vocational background, they do it right first time, whereas you have to fight with those who are only ‘bookworms’.”* One of the others jokes about the technical drawing that is worthless for use, if it is done by engineers with only academic education. *“They are some theoretical developers that draw up some new product, but it cannot be made in practice. It should be a requirement to have a vocational education for people who take up further technical studies.”* They indulge in additional narratives on the inadequacy of a purely academic technical and engineering education, and the qualities the combination of vocational and general qualifications. They draw on the dualist conception of qualifications, and are quite sceptical about the possibilities of combining the two. But they are anyway proponents of the idea of *hybrid qualifications*.

## 5. Key issues in the interviews

Our interviews have indicated that at a structural level the educational pathways from the dual system of VET to higher education have become more difficult over time. One interviewperson from the Ministry of Education expressed it in this way, that *'the hole through has become narrowed'*. This narrowing of the progression routes from the dual VET to higher education is explained by a number of reasons. One reason is that the entrance requirements have been raised at the most frequently used destination programmes at tertiary level for vocational students. Only a few (like the sub-bachelor programme for electric installation contractor) is still accessible directly from a programme in the dual system. Other tertiary programmes have been reformed and aligned with the general entrance requirements to higher education, which is an exam at the level of the Gymnasium. Another reason is that there is an increasing share of students with low level of general qualifications in the vocational programmes. This is due to the fact that practically all young people today do progress from basic school into post-compulsory education. But some of these students are not driven by positive motivation and ambitions, but are forced to enrol by the active labour market policy that especially aims at young people. Since their level of qualifications hardly even is enough to make them complete a vocational programme, they certainly don't qualify for entrance into higher education. Furthermore the introduction and expansion of the programmes of the vocational gymnasium has pulled a substantial share of the academically strong students out of the dual system into these programmes. In addition the technical gymnasium has gradually been separated from the dual system and become more integrated into the other programmes of general education. In sum the division of the dual system of VET and higher education has been fortified over time, and the strong increase in the share of young people who progress into higher education has passed round the dual system. As a consequence the dual system increasingly emerges as a 'blind alley' in the educational system.

Our interviews have confirmed that very few students in the dual system have taken advantage of the opportunities for choosing additional general subjects that were introduced by a major reform of VET in year 2000. The reform failed in this respect the intentions of widening the progression routes from VET to higher education. On the contrary some years later there have been adjustments in the vocational programmes with the purpose of limiting the amount of general content of the programmes in order to reduce dropout rates. This is because dropout is assumed to be related to many 'at-risk' students' aversions to learning abstract and bookish knowledge in academic forms of education. This means that the dual system of vocational education has moved further apart from the gymnasiums.

In order to attract more determined and academically strong students to the vocational programmes some colleges in 2005 launched as an experiment the hybrid programme EUD-HTX in collaboration with the Ministry of Education. The first students completed in the summer of 2010, and the assessments of the experiences were generally positive. The students who enrolled in the hybrid programme were assessed by the vocational colleges to be more ambitious and motivated than students in the ordinary vocational programmes. The employers of the training companies had positive judgements of the students, as they could perform more advanced tasks and work more independ-

ently. But the colleges found that it was difficult to recruit a sufficient number of students and that the length of five years was a barrier to reaching a greater number of students.

The experiences from this developmental programme (EUD-HTX) inspired the passing of a legal framework for the introduction of the new hybrid programme, the EUX in 2010. The intentions of the programme were similar to the developmental programme, but the length was shorter and the level was to be lower in some subjects. Our interviews have revealed a number of political and pedagogical dilemmas to be handled in the planning and organisation of this hybrid programme. We will go further into these dilemmas in the following, but first we will take a look at the diverse reasons the stakeholders gave for supporting the introduction of a new hybrid programme.

### **Reasons for introducing a new hybrid programme**

Among the stakeholders we found some variation in the reasons given for supporting the new hybrid programme. The following reasons were given by the interviewpersons or were expressed in documents relating to the stakeholders:

- To provide better opportunities for students in the vocational programmes to progress to higher education.
- To increase the recruitment of more academically strong students to the vocational colleges and the dual system of VET
- To increase the esteem of vocational education by including more advanced programmes
- To reduce ‘blind alleys’ in the educational system and to provide more educational choices for students in VET.
- To reduce the costs of double education and to improve the overall efficiency of the system by increasing the permeability in the educational system from higher secondary vocational education to higher education.
- To establish a shorter, recognised and integrated hybrid programme for the students who otherwise would take more irregular pathways to achieve double education.
- To counteract and diversify the ‘academic drift’ in the direction of the gymnasiums by offering a new hybrid programme in the vocational colleges.
- To widen the recruitment to the tertiary level of education and reduce the social inequality in access to higher education by establishing a new pathway that goes across the divide between the two tracks in higher secondary education.
- Educate highly valued employees with hybrid qualifications to work on the boundaries between the development and production departments. Hybrid qualifications are expected to link the communities of the craftsmen and skilled workers with research and development and the planning, sales, customer and marketing departments. Building engineers with experiences of the practice of the craft were mentioned as highly valued on the labour market.

### **Target groups for the hybrid programme**

Since the early 1990es educational reforms with neoliberal inspiration have sought to reduce direct state regulation and replace it with an educational market. To achieve this education institutions

have been granted higher degrees of autonomy and have been encouraged to develop new programmes and compete for students. The increased competition for students has put vocational colleges under pressure, given the academic drift of young people and the persistent increase in the intake of students in the Gymnasiums. Since the 1980es there has been a doubling of the share of a youth cohort that enters higher education. This massive increase has passed round the vocational colleges and increasingly positioned these as 'blind alleys' of the educational system.

The interviewpersons emphasized especially the consequences of the expansion of the vocational gymnasiums which have attracted many of the ambitious students, who would earlier have gone to vocational education. In addition they underscore the importance of attracting to the new EUX programme ambitious students from the other higher secondary programmes and not just to provide a new pathway for students, who would go to vocational education anyway.

The vocational colleges don't expect it will be easy to attract a greater number of students to the hybrid programme. At the same time they agree that it is very important not admit students, who don't have the necessary qualifications to complete the programme. The hybrid programmes are described as very hard and demanding. The colleges thus face a dilemma of attracting a greater number of students, but at the same time to restrict the entrance to only those who have good qualifications and a high motivation. Our interviews and study of documents have pointed to a number of target groups for the hybrid programme:

- **Ambitious students** who would normally choose the vocational gymnasium (htx or hhx), but who prefer teaching that is more diversified and vocationally oriented than the full time school based htx and hhx programme.
- **Ambitious students from non-academic social backgrounds** who will not have the Gymnasiums as a natural choice, and who would find the social environment more comfortable in a hybrid programme that provides higher education entrance qualifications in connection with vocational subjects.
- **Students from academic backgrounds** who would find a hybrid programme more challenging as it provides vocational skills as well as higher education entrance qualifications.
- **Academically 'stronger' and more ambitious students** already in the vocational programme.

It is generally seen as crucial that the hybrid programme succeeds in recruiting students who would otherwise have gone to the gymnasiums and not the ordinary students in the dual system, since this could drain the dual system of the most ambitious students and further reduce the esteem of this system.

### **Dilemmas of duration and time**

A major challenge for the hybrid programme has been how to organise a four year programme with a content that it otherwise takes seven years to learn in the two separate programmes that the EUX programme integrates. The interviews have mentioned two key issues of the planning, negotiations and struggles over the EUX programme. One is the duration of the work based training periods and the other is the credit awarded in each part of the programme (general/vocational) for qualifications acquired in the other. The challenge in the planning of the hybrid programme has been to cut the

overall duration of the programme. 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 considerable reduction has not passed without criticism.

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 acquired through the participation in an authentic work practice. 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. Shorter training periods means lower revenue.

Since the conditions of the companies vary between the industries, different models for the hybrid programme have emerged. Some industries have one-year school periods and one-year internship periods; others have half year school and training periods. Experiences from the developmental programme showed that some repetition was required for the students, when they returned to college after one year training period in a company.

The problem of putting the content of seven years programmes into four years has been aggravated by differences in the way the organisation of the teaching is handled in the two programmes: a time-based versus a competency based organisation. In the vocational gymnasiums time is organised in hours and the duration of the teaching at each level is binding for all education institutions. In vocational education the programmes are organised in weeks and according to the competency based model of education, which means that the duration of teaching is adjusted to the learning process of the individual student. For example in the ordinary programme, the duration of the basic course can vary from 20 weeks to 60 weeks.

To conclude, the development of the hybrid programme has revealed some hard to solve dilemmas concerning the length of the programme: the length of the hybrid programme should be long enough to attain a high quality, but short enough to make a difference in comparison with taking a double education. The dilemma to be solved is that the length should not be much longer than the ordinary dual programmes in order to attract more students, but that the length should be sufficiently long to avoid a compressed programme that only a few elite students can complete. In addition the length should be made reasonably short in order to attract students, but long enough to make employers provide training placements. Employers might refrain from offering training placements if the training periods are cut too much, and this has represented a dilemma of training placements.

### **Dilemmas of training placements**

The new hybrid programme has broad support from the major stakeholders, including the employers' organisations. In some occupations, like electrical supply, the employers have been very eager to start up the hybrid programme. But in other industries employers are no uniform group, but quite diversified or even divided between small companies and larger corporations, between the crafts and industry. They often have a different approach to apprentices and training placements. The larger firms often take on apprentices with a long-term investment and recruitment perspective. The small and medium sized companies more often rely on the labour power of the apprentices to maintain day-to-day production. Historically 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 be missing the apprentices in 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 deficit of 8.000 placements for students, who have finished their basic course and need a placement to progress in a training placement. The situation in relation to training placements varies quite a lot between industries. In the building industry the situation is very strained during the financial crisis, whereas it is quite good in some manufacturing industries.

Generally the students from the hybrid programme have to go into a hard competition to succeed in acquiring a training placement. As a consequence the training committees in some industries have organised information campaigns among employers to make the hybrid programme recognised. Furthermore the training committees encourage the vocational colleges to pay specific attention to make available placements for the hybrid students. One of the interviewpersons described the situation as 'cannibalism' as the number of training placements is limited and the students of the hybrid programme would compete for the same placement as the students of the ordinary programmes. One vocational college had invited a meeting to inform the local businesses about the hybrid programme, but very few attended. In contrast a large number of youths and their parents attended another meeting to inform this group. This was seen as an indication that the question of training placements should be taken very serious in order to make the hybrid programme a success.

### **The struggle over the subjects – credit and level**

In the process of planning and organising the hybrid programme the importance and length of the various subjects have been contended. 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. The key question to be settled has been how much credit should be given for this learning. Teachers from the academic track have been more restrictive in giving credit, than teachers from the vocational side. This planning process has involved difficult negotiations between colleges, training committees and the Ministry of Education. Another method to achieve the reduction in teaching time 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. In addition the teaching of hybrid subjects is experienced as being more inspiring and motivating by the students. The design of these new hybrid subjects have made the teachers from the two tracks work together and supported the development of a common hybrid learning culture across the vocational- academic divide.

A third method 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. In developing these projects, the teachers have drawn on experiences from the vocational gymnasium, that have a good practice in project-based work. 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 discrete subjects.

There have been tensions between the individual subjects and the integrated projects. For example in one vocational college a teacher from the vocational gymnasium took over the teaching of math from the beginning of the basic course in order to achieve the curricular requirements of the subject. But this was criticised by other teachers since a single-subject focus would make integration of subjects more difficult. One vocational college reported that the two first years had involved many conflicts between the two diverging cultures, the academic and the vocational, but that the relations had improved a lot in the direction of an emerging hybrid learning culture.

In an evaluation of the hybrid developmental programme one of the vocational colleges summarised the experiences. It concluded that the successful integration of the two programmes requires a strong organisational framework that encourages the two groups of teachers and students to work together. In addition one key person should be assigned the role of responsible for coordination. And new administrative procedures should be developed to fit the special requirements of the hybrid programme. For example the two programmes had quite different ways of reporting and handling students' absence from lessons.

A contended issue in the planning of the hybrid programme has been the *level* to be acquired in the academic subjects – and what type of hybrid qualifications should be offered (see the German report on the distinction). Should it be high enough to gain access to all institutions of higher education (hybrid qualifications type 1) or just to the lower levels, the Bachelor degrees at the university colleges and short cycle programmes at the Vocational Academies (hybrid qualifications type 1)?

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. This requires an A-level in math, which is higher than the level accepted by the Ministry of Education. The act on EUX stipulates a level of 'general entrance requirement' to higher education (which means a B-level) and not the specific entrance requirements of certain programmes. The training committee argues that the advantages of going through a hybrid programme would be lost, if the students only gain access to short cycle programmes of the vocational academies, that have a position in the educational system similar to that of the German vocational academies (Dessinger 2000). The training committee argues that 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 whole idea of a hybrid programme is lost. This is an issue that still has to be settled in negotiations between the Ministry of Education and some training committees.

## 6. Policy implications and best practices

The analyses in this and the preceding first report on hybrid qualifications in Denmark have revealed that the strength of the dual system of VET also is a weakness. The dual system has performed well in securing high levels of employment and a direct and immediate access to skilled employment 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 many skilled workers in Denmark have life earnings at the same level as Bachelor graduates (nurses, basic school teachers) from higher education institutions. Besides skilled workers in Denmark generally have a high degree of professional autonomy at work in international comparison ('discretion over job tasks' Gallie 2007), which implies good opportunities to learn at work. In addition they have wide-ranging opportunities for work based careers supported by a comprehensive system of further training. Work based learning careers thus are an attractive alternative to careers based on 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). In addition the position of skilled workers on the labour market gives them few incentives to re-enter the educational system and start a programme of higher education.

Political initiatives taken earlier to establish new pathways offering hybrid qualifications have not been successful. The introduction of the vocational gymnasium in the early 1980es was intended to widen the social recruitment to higher education and raise the esteem of the vocational colleges. The vocational gymnasiums have been a success inasmuch as they attract more than 15% of a youth cohort today. They have managed to attract many students from non-academic families and thus contribute positively to reduce the social inequality in the access to higher education (Andersen 2005). But around 25% of the students who complete the vocational gymnasium don't progress to higher education and 10 years after completion they still have not completed any other education. They might have been better off with a vocational education that gives access to the skilled labour market, which the vocational gymnasium does not.

The opportunities introduced in 2000 to take additional academic subject in the vocational programmes have largely been ignored by the students - and probably also by the vocational colleges. The situation in Denmark is similar to the situation in the German dual system, where additional qualifications are taken by only a marginal group of students.

The developmental programme EUD-HTX was considered a success, but recruitment to the programme was limited. The fate of the new hybrid programme, EUX, has yet to be seen. It is not possible to make any valid policy recommendations at present time. The experiences from Germany and Austria of providing hybrid qualifications inside the dual system are not encouraging (see the two country reports). A number of major challenges to be handled in relation to the hybrid programme have been identified on the basis of our study.

The hybrid programme has been introduced to provide a missing step on the educational ladder towards Higher Education for vocational students in the dual system. But the compressed curriculum and the high requirements raise the question, whether the hybrid programme is an option for the many - or just for the elitist few? It is a challenge for the hybrid programme to widen the recruitment and attract some of the students who would otherwise choose the vocational gymnasiums.

The intention of the hybrid programme is to contribute to raise the esteem of the vocational colleges by offering a more advanced programme. There is though a risk that it might have the opposite effect. If the hybrid programme mainly attracts students from the ordinary vocational programmes, it can further reduce the esteem of these ordinary programmes by pulling the strongest students out of these programmes.

In our interviews a number of suggestions and proposals were made for the improvement of hybrid qualifications and especially the new hybrid programme, EUX:

- The hybrid programme is intended to some degree to offer hybrid qualifications through integrated and interdisciplinary teaching in some subjects. The high requirements and the compressed time for teaching can make it difficult for the teachers to transcend the boundaries of their respective subjects and engage in hybrid forms of teaching. To achieve this will require the development of a new hybrid learning culture among the teachers and students. It is important to acknowledge that this takes time and requires an encouraging environment for teachers and students, which is a responsibility of the managers of the vocational colleges.
- To manage these challenges and become a success requires that high priority is given to the development of the hybrid programme on part of all the stakeholders. Students, teachers and employers have to be convinced about the advantages of a hybrid pathway compared to the existing alternatives. And additional initiatives are needed by the stakeholders to provide alternative forms of hybrid qualifications and new pathways to higher education for adults with a vocational education.
- The Ministry of Education should encourage that the institutions of higher education develop new programmes at the tertiary level that are relevant and attractive for graduates from the hybrid programme.
- The Ministry could ease the institutional and organisational barriers for the smooth cooperation of teachers from the two tracks (general agreements, rules and regulations).
- Employers could take initiatives to secure sufficient number of training placements for the students in the hybrid programme, without 'crowding out' students from the ordinary vocational programmes. The labour market partners and the state could in collaboration initiate institutional innovation to secure training placements for all students who complete a basic course and thus have qualified for a training placement.
- Vocational colleges and the Ministry of Education could take additional initiatives to raise the esteem of vocational education and increase permeability, since the hybrid programme will not in itself do this. The establishment of joint campuses for Gymnasiums and vocational colleges could be one step in the direction of reducing the separation of the two types of programmes – and students.
- The Ministry of Education could take initiatives to create more transparency in higher education institutions' recognition of vocational qualifications. Today this is left to the individual institution of higher education to decide.
- Higher education institutions should offer more flexible and part-time studies with evening classes for adults with a vocational education, so that it is possible to combine part time work and family with part time study.
- The very successful provision of full hybrid qualifications in Austria based on the full-time school based programme of VET demonstrates the opportunities for introducing a similar pathway in

Denmark. The Danish VET system has for more than 20 years offered a school based alternative for students who were unable to find a company based training placement. This certificate has almost equal value in the labour market as the certificate of the dual system – but no currency in higher education. It would be possible without any large reforms to extend this school based vocational pathway to also offer hybrid qualifications and hereby raise the esteem of the school based VET.

Due to the historical tradition of a strong separation of the general and the vocational tracks and very few attempts to bridge the gap between them, we have few examples of best practices. The EUX programme is too new to be assessed properly. The experiences from the pilot project EUD-HTX are generally positive, and this pilot project can be considered to be a best practice. The project demonstrated that it is possible to combine programmes in the dual system with higher entrance qualifications. The limited number of students in the pilot project and the difficulties in attracting a larger number of students to the project mean that it is a conditioned best practice. The experiences from the parallel initiative in Austria, the *apprenticeship with A-level* (*Lehre mit Matura*) and similar experiences from Germany point to the difficulties in providing hybrid qualifications inside the dual system.

The teaching practices and the pedagogy of the pilot project and the EUX programme offer examples of 'best practice'. The new 'hybrid subjects' introduced in the EUX programme demonstrates how elements from the general and vocational curricula can be integrated in new subjects like 'Technology'. In addition the practice of project based teaching in the pilot project, in the EUX and in the vocational gymnasiums, demonstrates how the integration – or hybridisation – successfully can be accomplished.

Position of the various stakeholder in relation to the hybrid programme		
Stakeholders	Interests and advantages	Challenges
<b>Department of education</b>	Increase permeability Raise the esteem of VET Avoid costs of double education The pilot hybrid programme is regarded as a success	Integrating elements from two separate systems Reconciling multiple stakeholders of the new programme Settling credits for learning across the vocational – academic divide
<b>Social partners</b>	Improve the esteem of dual system. Counteract ‘academic drift’ Maintaining control of the new hybrid programme	The trade unions can lose the most qualified members The employers’ confederation are not always in line with the SMEs
<b>Companies</b>	Access to more academically oriented apprentices and recruitment of engineers with hybrid qualifications Hybrid qualifications create a linkage between production and research & development departments	Increased costs due to longer periods in college (off-the-job training) Providing sufficient number of training placements Establishing new job positions for ‘hybrid employees’
<b>Higher education institutions</b>	Potential student recruitment The hybrid programme bypasses the lack of RPL/APEL at the polytechnics and some ‘missing links’ in the educational system	Worried about higher resources requirement for hybrid students The hybrid programme does give access to all higher education programmes
<b>Vocational colleges</b>	Increase the esteem of VET Attract academically ‘stronger’ students to VET and compete for students with the gymnasiums. Provide a recognised mainstream pathway to higher education to replace local forms of hybridization and double education.	The hybrid programmes might increase the competition for training placements. The students might not complete the very compressed hybrid programmes in time. The hybrid programme might be only an elite programme that further will reduce the esteem of the ordinary programmes. Recruitment problems to the hybrid programmes have to be solved. <i>Can hybridization, real integration of teaching and teachers be achieved?</i>
<b>Students</b>	Complete two educational programmes almost in the time of just one! Students receive a wage during their study – higher than state study grants Keep open the future opportunities of progressing to higher education.	The students might not meet the high requirements of the hybrid programme. The students might not obtain a training placement. <i>Can students build strong social relations, if they have to shift between classes?</i>

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## Interview persons for the hybrid qualifications study

<b>Ministry of education</b>	
1	Supervisor, Ministry of Education Dep of general education
2	Chief consultant, Ministry of Education, Dep of vocational education
<b>Social partners and policy makers</b>	
3	Consultant, Danish Confederation of Trade Unions (LO)
4	Manager of Education, Danish Construction Association (employers federation)
5	Deputy director of Tecniq, Danish Electrical, Plumbing, Heating and Ventilating Contractors' Association
6	Consultant of education, The Danish Metalworkers' Union (Dansk Metal)
7	President of teachers in business colleges union (HL)
<b>Higher Education Institutions</b>	
8	Student Counsellor at Technical University of Denmark, Lyngby, Copenhagen
9	Student Counsellor at Aalborg Polytechnics in Engineering
10	Manager of the Study Center, Copenhagen Polytechnics in Engineering
11	Dept manager KEA - Copenhagen Business Academy
12	Manager of education, Polytechnics of Building Engineering.
13	Career Advisor, Roskilde Business Academy
<b>VET institutions</b>	
14	Manager of dept, EUC Syd, Vocational College South in Sønderborg
15	Education supervisor, Copenhagen Vocational Construction College
16	Education Manager, Tietgen HG, Vocational Business College
17	Project manager, House of Technology, Mercantec, Vocational College of Technology
<b>Training companies</b>	
18	Training Manager, Danfoss AS, Sønderborg (large company producing thermostats)
19	Training Manager, Grundfos A/S Bjerringbro, (large company producing pumps)
<b>Students</b>	
20-22	Group interview with three former vocational students from Aalborg Technical Vocational College
23	Interview with former vocational student Construction College

## Interviewguides

### **Social Partners and Policy Makers**

What is your assessment of the present pathways from Dual VET to Higher Education – their strengths and weaknesses (recognition of prior learning in HE, pathways in adult education, special prep. courses, etc)?

Why have only few students in the Dual VET system made use of the opportunity (since ‘reform 2000’) for acquiring hybrid qualifications or dual qualifications in VET?

Is there a potential for widening the participation in higher education for graduates from the Dual VET system?

What are the most important experiences until now of the development projects offering hybrid qualifications (the EUD-HTX programme)?

What are the motives and intentions behind the reform of VET introducing hybrid qualifications (the EUX programme)?

How do you assess the potentials of the new programme for hybrid qualifications (EUX) in competition with the vocational gymnasiums (htx and hhx) and the dual system?

What are the target groups for the new programmes providing hybrid qualifications (EUX)?

What are the benefits and values of hybrid qualifications for learners, for employers and for the educational system?

What factors do you think will determine the success of the new programmes providing hybrid qualifications (EUX)?

What are the strengths and weaknesses of the EUX programme in relation to established pathways from Dual VET to higher education (special preparation programmes for studies at the polytechnics, Higher Preparatory Exam, hf, etc)?

How do you assess the involvement of the labour market partners in the EUX programmes?

What policy recommendations could you point at?

### **HE and VET institutions and programme managers and teachers**

How will you describe the connection of your institution in relation to the opportunities for progression of students from Dual VET to institutions of higher education?

Does your institution offer hybrid or double qualifications – and (if yes) what are your experiences with these programmes?

How do you assess the advantages and disadvantages of hybrid or double qualifications?

How do you assess the interests among the students for hybrid or double qualifications?

What are the admission requirements for the programmes providing hybrid qualifications?

What are the target groups for the programmes providing hybrid qualifications?

What factors influence the interests of the students for hybrid or double qualifications?

What is the relation between general and vocational qualifications in the programmes offering hybrid qualifications: are they provided integrated, parallel or sequential?

How would you describe the didactical principles, the curricula and the forms of assessment in the hybrid/double qualifications programmes?

What are the most important experiences until now of the programmes offering hybrid qualifications (the eud-htx programme)?

How do you assess the potentials of the new programme for hybrid qualifications (EUX) in competition with the vocational gymnasiums (htx and hhx) and the dual system?

What is your assessment of the present pathways from Dual VET to Higher Education – their strengths and weaknesses (recognition of prior learning in HE, pathways in adult education, special prep. courses, etc)?

Is there a potential for widening the participation in higher education for graduates from the Dual VET system?

What are the benefits and values of hybrid qualifications for learners, for employers and for the educational system?

What factors do you think will determine the success of the new programmes providing hybrid qualifications (EUX)?

What are the strengths and weaknesses of the EUX programme in relation to established pathways from Dual VET to higher education (special preparation programmes for studies at the polytechnics, Higher Preparatory Exam, hf, etc)?

How do you assess the involvement of the labour market partners in the programmes offering hybrid qualifications?

What kinds of best practices could you point at?

What policy recommendations could you point at?