

Hybrid qualifications

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

Country report: Denmark

Christian Helms Jørgensen

September 2010



"This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein."

www.hq-ll.eu

Universität
Konstanz



Prof. Dr. Thomas Deißinger
thomas.deissinge@uni-konstanz.de



Prof. Dr. Josef Aff
josef.aff@wu-wien.ac.at



Prof. Christian Helms Jørgensen, Ph. D.
chj@ruc.dk

UNIVERSITY OF
Southampton
School of Education

Prof. Alison Fuller, Ph. D.
a.fuller@son.ac.uk

Roskilde
University



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HYBRID QUALIFICATIONS

COUNTRY REPORT DENMARK

Term and range of hybrid qualifications in the national system

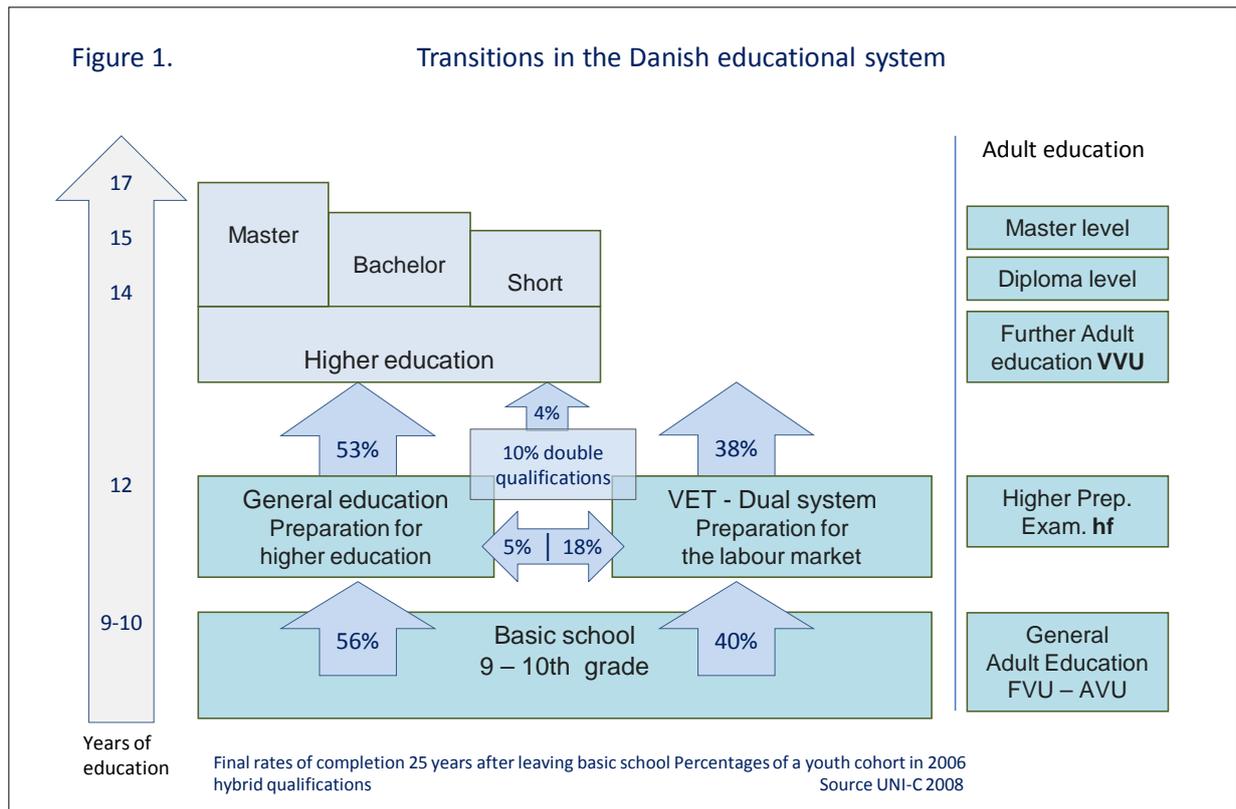
Separation of students and qualifications

In Denmark the Basic School up to grade 9 or 10 is a compulsory comprehensive education primarily in public schools. When young people at the age of 16 or 17 complete the Basic School, they have to decide which way to go. All except a few percent continue into post compulsory education at higher secondary level – at grade 10 to 12 called ‘youth education’ in Denmark. The pathways at this level are divided in two tracks: general education and vocational education and training (VET). The aims and purposes of the two tracks are different. Vocational education has a purpose of developing relevant qualifications that are recognised on the labour market and give access to employment. The main purpose of general education is to develop qualifications that are recognised by 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 should support the student’s personal development and their democratic engagement in society and prepare for lifelong learning.

The division between the two tracks is quite profound and concerns the social recruitment, the learning culture, the legal framework and the form of governance of education. The two types of education also have separate institutions locally: on the one hand the Gymnasiums and on the other hand the vocational colleges that are often located separately in Technical, Business & Commercial, Agricultural and Health Care & Social Work colleges. An exception here is the Vocational Gymnasiums that are located in the legal and administrative framework of the vocational colleges and often also physically in this context. This, in combination with the name, could indicate that the Vocational Gymnasium is an institution that provides *hybrid qualifications*. This though, is not the case, as the vocational Gymnasium is purely school based, and it does not award the certified qualifications that give access to the skilled labour market. The Vocational Gymnasium is according to the latest reform of 2005 part of the unified system of ‘gymnasium programs’, whose main purpose is to prepare for higher education. More correctly this program could be termed ‘vocationally oriented Gymnasium’ as its aim is the vocation programs of higher education like engineering and business economics.

Various kinds of hybrid qualifications are defined in this project (Heine & Deissinger 2010):

Full hybrid qualifications are provided through an integrated curriculum that in a single programme gives access to higher education and to the skilled labour market. In contrast *partial* hybrid qualifications only give one of these two qualifications.



Integrative forms of hybrid qualifications combine the general and vocational curriculum to support an integrated learning process. In contrast we talk of *additive* forms of hybrid qualifications when the general and vocational qualifications are learned separately.

In this report the term *double qualifications* will be used for the qualifications that are acquired separately, in an additive and consecutive process.

The Danish system does not include 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. Formally, in the dual system of VET it has since a reform in 2000 been possible to choose ‘additional qualifications’ to gain access to higher education, but there are practically no reports of this opportunity being used. Moreover these ‘additional qualifications’ are not offered as part of an integrated curriculum, but as individual subjects being taught separate from the vocational teaching.

Students, who want to combine the two types of qualifications, do this by way of taking a double education, first one and then the other. A relatively stable share of around 10% of the 16-19 year olds do combine their studies in different ways and end up with double qualifications. They can be categorised as hybrid qualifications in the weak sense as *consecutive* hybrid qualifications that are acquired successively and normally even in different educational institutions. But only around 3% of an age group continue from VET to the tertiary level and complete a higher education. I will expand on this later. Formally it is an option in the dual system of VET to take supplementary courses and acquire higher education entrance qualifications in specific subjects, but almost no vocational students make use of this option.

The deep rooted tracking in the Danish educational system means that it is different from the other Nordic countries, which have a stronger tradition for comprehensive non-tracked higher secondary educations (Antikainen 2006). This is most clearly the case for neighbouring Swe-

den, which in 1971 introduced the comprehensive Gymnasium for grade nine to twelve. In principle this provides all young people with access to higher education. The reality though is somewhat different as a substantial share of the students at higher secondary level in Sweden doesn't complete their studies with sufficient examinations and grades to gain access to higher education (Olofson 2008).

Similarly Denmark had in the early 1970's reform initiatives that pointed towards a unification of post compulsory education with the aim of integrating the two types of qualifications. That would have brought Denmark close to the unified system in Sweden. Later in this report I will discuss why this historical chance of realising hybrid qualifications failed. The comparison with Sweden raises the question of how the Danish transition system fits in with other European systems.

Vocational and general education in Denmark

The Danish educational system does not fit clearly in the common ideal types as defined by Greinert (1999) or Ashton (2004). Some comparative studies, like Andreas Walther (2006) and Beatrix Niemeyer (2007), 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 relevant with respect to compulsory education and higher education, but much less so for higher secondary education, where Norway and Sweden have more unified systems than Denmark. The Danish system on this level is different by being selective, because of the separation between the vocational and general tracks. While the Danish educational system generally has been more decentralised than the other Scandinavian countries (Telhaug a.o. 2004), the dual system of vocational education has been more centralised with little involvement of local or regional authorities (Olofson 2008). In comparison with the other Nordic countries Denmark has the most 'classic' form of dual system of vocational education that is separate from general education and similar in many ways to the German model. However, the VET system in Denmark is more school based than in Germany as the programs typically start with one half or one year learning in vocational college before entering a work based training agreement.

The dual system in Denmark has a strong position, although not as strong as the similar German or Swiss systems where 60 – 70 % of the 16 – 19 year olds enter the vocational pathway. In Denmark around half of an age group take up a vocational education, but less than 40% of an age group complete an apprenticeship in the dual system. Still the dual system in Denmark has a prominent role as a recognised and valuable alternative to the academic track. The dual system in Denmark has a strong historical continuity like its German counterpart (Thelen 2004; Hillmert 2001), and it has resisted political attempts at unification with the academic track, as will be described further on.

Transition in two separate tracks

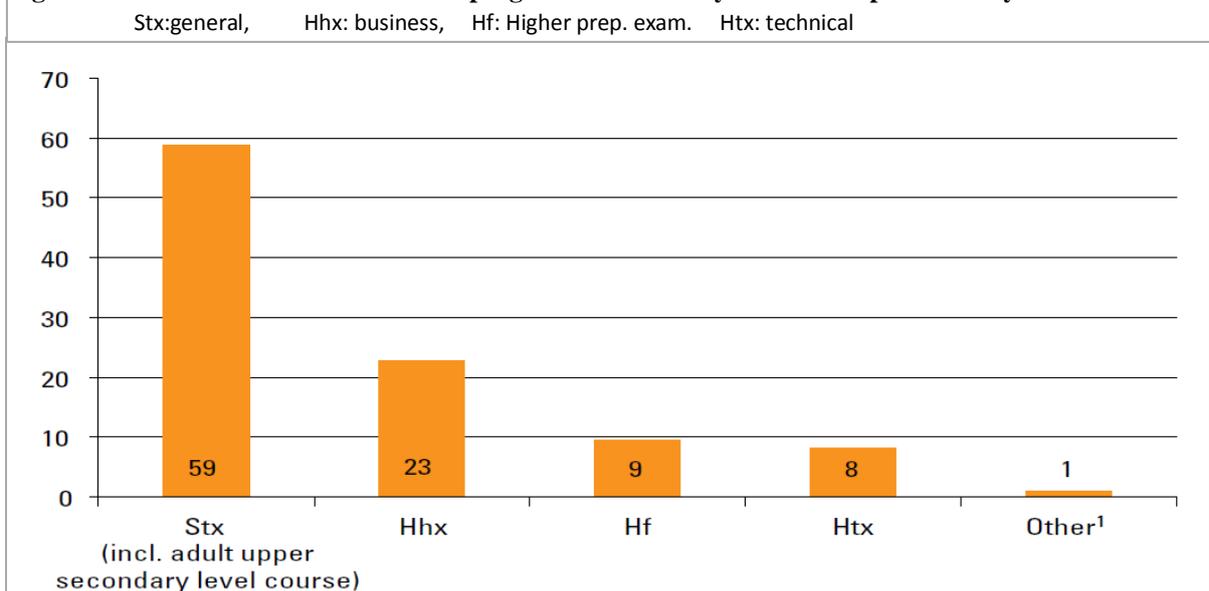
The Danish transition system comprises two main thresholds and a number of secondary

thresholds where individual decision making and institutional selection processes take place. Young people meet the first decisive threshold when they complete compulsory education after grade 9 or 10 at the age of 16 or 17, where the comprehensive and non-selective schooling ends. Half of an age group chooses to take the additional year in grade 10 in Basic school. When completing the Basic School young people have to choose between the vocational and the general track. As shown in figure 1 an almost equal share of a youth cohort enters the Gymnasium and the vocational track, when the students shifting track are included. Due to lower retention rates in VET a smaller share completes a vocational program (38%) than an general program (53%). Around 10% complete a program in both tracks; they take a double education. Most of them shift from the vocational gymnasium to VET. Some do their second education after a number of years on the labour market or after dropping out of a higher education. The two tracks and the qualifications they provide will be described in the following.

The academic track today comprises of four different programs, the classical Gymnasium (stx), two vocational programs, one technical (htx) and one business (hbx) and the Higher Preparatory Exam (hf) that has primarily aimed at adults. The academic track has its roots in the Medieval Latin School that was succeeded by the Gymnasium in 1903. Until the early 1950es it recruited only 5% of an age group of young people and almost exclusively from the highest social elite. It concentrated on teaching the classical languages and civilization, academic subjects and the cultural heritage - and the socializing to the upper strata of society. Its main aim was, like today, to prepare for higher education, the professions and for civil service.

The 'classic' general Gymnasium (stx) has for most of the 20th century been built on two parallel lines, the humanities and the natural sciences. This was by reforms in 1987 and 2005 replaced by a more flexible structure with opportunities for a more individual combination of subjects. The compulsory subjects are two foreign languages in addition to Danish, history, mathematics, classical studies, physics and a number of other subjects like biology, chemistry and geography. The learning methods have been modernized so that classroom instruction is

Figure 2: Distribution of students in the programmes of the Gymnasium in pct of all Gymn. students.



supplemented by project work, individual and group based written tasks and up to 25% of the teaching time can be spent on virtually organised teaching. The classic Gymnasium is chosen by 39% of an age group, while 16% goes to the vocational Gymnasiums (hhx and htx).

The vocational programs of the Gymnasium (htx and hhx) have different historical roots. The business program was started almost a hundred years back, while the technical program was founded in the 1980s. Both were reformed in the 1980es to widen the participation in the Gymnasium programs. They have succeeded in recruiting from wider social groups that are more unfamiliar with academic education. The students generally have a stronger orientation toward the labour market and the polytechnics and business schools than students in the classical Gymnasium (Andersen 2005). They were in 1987 given the same status as the classical Gymnasium and therefore provide the same access to higher education. The teaching is more related to occupational practices with subjects like for example business economics, marketing, international economics and commercial law in hhx. The vocational gymnasiums do not give certified qualifications for the labour market. Especially in the technical Gymnasium part of the teaching takes place in workshops and laboratories. In the 1980es the vocational Gymnasiums were connected closely to vocational education. The technical gymnasium started as a two year continuing education on the top of a one year vocational basic course common for all vocational students, also students in the dual system. It was possible to start at a vocational college and after 6 – 12 months to choose either a vocational education in the dual system or a vocational Gymnasium. Later the vocational Gymnasium has moved closer to the classic Gymnasium, though it is still located at the vocational colleges.

The learning cultures (Hodkinson et al 2007) in the three programs at the Gymnasium differ due to history, the social background of students and teachers and the scope of the programs. Less than half of the students completing the Business program (hhx) progress to higher education, while two thirds of the student in technical program (htx) do progress (EVA 2001).

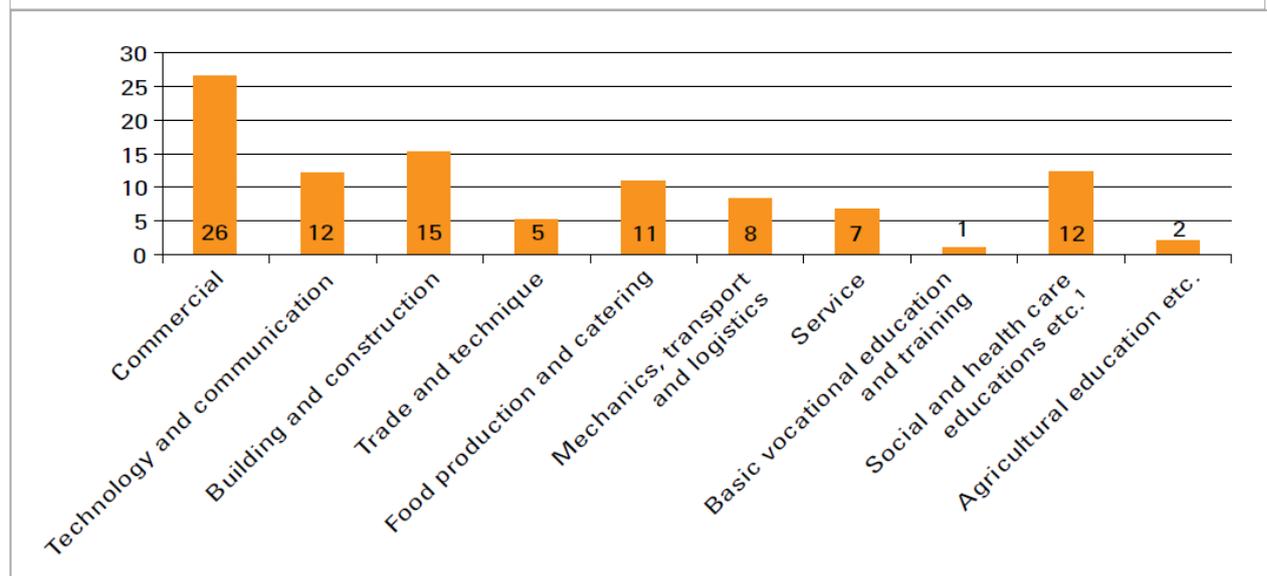
Access to all programs of the Gymnasium is restricted by requirements of certain subjects and grades in Basic school. Applicants must take an admission test if they have not taken the examinations required for admission or if the Basic school has recommended this. Participation is free and students are eligible for Danish Education Support (SU). Teachers in the Gymnasium must have completed a Master's program at tertiary level and in addition must complete a course in didactics and educational theory and practice.

Higher Preparatory Exam (hf) takes two years and admits persons who have completed 10 years of basic school. It started in 1967 as a response to the growth of specialised preparatory courses at teacher-training colleges and nursing schools that had at the time not acquired status as tertiary education. It aimed primarily at adults with some years of experience on the labour market. Today the hf is as much an alternative for young 'dropouts' from the classic Gymnasium or vocational education. The subjects of the hf program are also offered as single subjects and sometimes as packages of subjects at adult education centres, where each year around 80.000 students complete one or more hf subjects. The hf program is often offered at the adult education centres and at the classic Gymnasiums parallel to their stx program. In a later section I will elaborate on the hf as a bridge to higher education.

The vocational track is based on the dual system with strong roots in the traditional apprenticeship, which was reformed in 1977 and finally abolished by a reform in 1990. The basic principles of dual education, the predominance of work based learning and a corporatist form of governance still continue today. The dual system provides a successful transition from education to work for more than one third of a cohort of young people. They start spending 6 – 12 months in a vocational college and do the rest of the education in a workplace. Alternating with the work based learning they go to vocational college on blocks release, typically 10 weeks every year. The system has problems with low retention rates and falling esteem of the vocational track in relation to the Gymnasiums.

The distribution of men and women is well balanced concerning the VET programmes as a whole with 55 % male students and 45% female students. However, gender distribution is quite uneven among the individual programmes, for example in the social and healthcare programmes women make up for 93% of the students, whilst in traditionally male sectors, such as car mechanics, transport and logistics, they constitute only 4%. Ethnic minorities are well represented in the VET programmes, but they are strongly overrepresented in the full time school based program, because they have difficulties getting access to a training contract. This is to some extent due to discrimination, and to some extent due to the weaker social network of ethnic minorities. A considerable share of internships is distributed through personal connections and informal social networks.

Figur 3: Distribution of students in the vocational programmes in percentage of all vocational students



Initial VET consists of four programs: technical, commercial, agricultural and social and health care programs. It is primarily targeted at young people from age 16, but the average age has increased and the average student is now 25 years old when completing a vocational program. The VET system also has a scheme of Adult Apprenticeships leading to recognized vocational qualifications. It has a substantial volume of around 15% of the number of young students in VET. In addition there is a special program, Basic Adult education (GVU) that offers adults over the age of 25 recognition of prior informal learning and a plan to complete a VET in reduced time. There is a trend towards integrating IVET and CVET in one system and to make the provision of VET more flexible.

Institutional realisation: Pathways from VET to HE

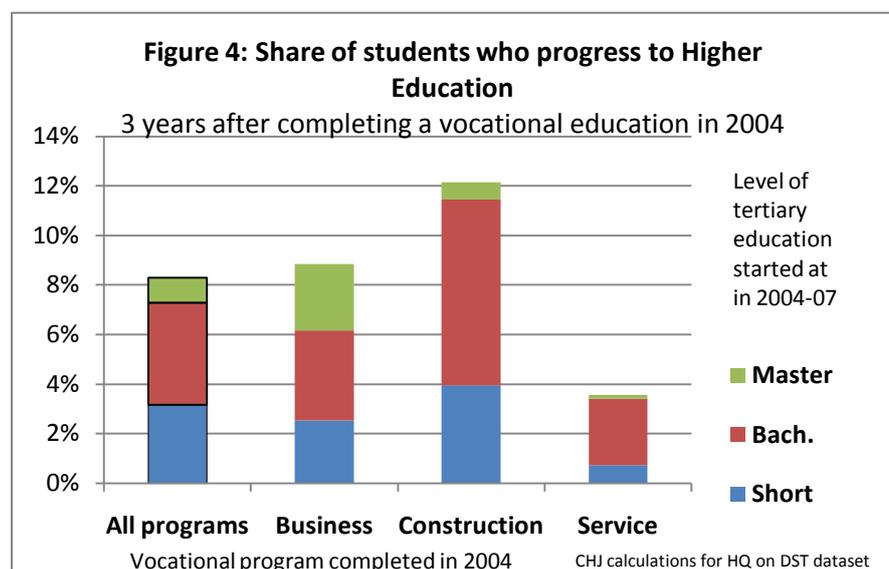
Few reliable data exist on the transition from higher secondary VET to higher education in Denmark. From a dataset that includes all VET students completing in 2004 the author has calculated the number of students who progress to the tertiary level within the three years following graduation from a vocational college. In most of the 7 occupational areas the figures are too small to be shown (due to statistical discretion). Figure 3 shows the average share for all graduates and for the three occupational areas where most students take up higher education. This figure from the age group completing in 2004 is higher than the figures referred to earlier (4-5%). This is partly due to variations in the progression rate depending on the situation in the labour market.

The figures show that only in areas where specific educational pathways have been established historically, does a visible share of the former VET-students progress to higher education. The main groups are carpenters who continue and take up studying as Building Technician (Bach. 3½ years duration) and electricians who take up studying Installation Contractor – a short cycle tertiary education (2 years duration). The business program has the largest share of students who actually have qualified to enter the tertiary level, and the pathways from VET to HE is 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. Generally the number of persons with a vocational education who progress to higher education is limited as mentioned earlier.

Access to higher education through adult education

Since the 1960es a comprehensive system of adult education has been established in Denmark parallel to the ordinary educational system. This included first a wide range of shorter vocational courses (Labour Market Training, AMU) financed and governed through a corporatist form of collaboration between the state and the labour market partners. A National Council for Adult Vocational Education and Training (REVE) has an advisory role to the Minister of Education, and in addition

11 continuing training and education committees have responsibility for specific sectors of the labour market. The system of Labour Market Training (AMU) was from the start clearly separate from the basic dual System of VET and belonged under the Ministry of



Employment, but moved in 1995 to the Ministry of Education. This separation had to do with the division and rivalry between the unions of the skilled and the unskilled workers who are organised in separate unions. For the last 15 years the two systems of CVET and IVET have increasingly become integrated legally and institutionally. New opportunities have been established for unskilled and semiskilled workers with relevant work experience to get supplementary school based education to become skilled.

Another measure in this direction has been an expansion of the opportunities for adult apprenticeships. This initiative has been driven by a combined effort of the government and the General Workers Union ('3F') ambitions to lift their members from the status of unskilled to skilled. This policy has developed in response to numerous forecasts of a strong decline in the future requirement for unskilled labour. This has resulted in a strong interest in giving un- and semiskilled workers better access to education and training to become skilled. It is remarkable that no similar initiatives have taken to give skilled workers access to higher education. In line with this there has been little interest in providing programs for hybrid qualifications. This is in contrast to the political interest at the European level in the provision of pathways for progression from initial VET to higher education (CEDEFOP 2008; Dunkel 2009). It is remarkable that this has been no significant issue in Denmark, since the country has a strong tradition for adult and further education and the educational system provides very good opportunities for people to return to education later on in life (Dieckhoff 2008). One reason for the lack of interest in hybrid qualifications and progression routes from VET to higher education lies in the governance of VET. The corporatist form of governance of the dual System means that the unions have a strong professional orientation that includes interest in the upgrading of occupational skills and improvement of the opportunities for further education and training of their members (Hyman 2001). Due to the occupational basis of these organizations this professional orientation has not included interests in general qualifications and access to higher education. Yet the educational programs for adult in Denmark offers opportunities for achieving higher education entrance qualifications, especially the hf program.

Higher Preparatory Exam, hf – a pathway from VET to HE

The participation in further vocational training for employed is among the highest in Europe due to the collective funding of the system (OECD 2009). Adult education also includes general education on a basic (FVU) and preparatory (GVU) level that comprise literacy, numeracy, language and ICT. The two year hf program, the Higher Preparatory Exam, provides access to a number of tertiary programs depending on the subjects chosen and the level attained. In principle the hf program is equal to the ordinary Gymnasium. Hf is used by many young people who drop out of the Gymnasium. 15% of the students who started in the hf program in year 2000 had earlier dropped out of the Gymnasium. A recent study (Ulriksen a.o. 2009) has shown that students from families, who are unfamiliar with academic education, have a greater risk of dropping out of the Gymnasium, than students from educated families. The hf program has a considerably greater share of students, whose parents are skilled or unskilled workers than students in the Gymnasium (Klewe 2007).

It could thus be assumed that the hf program would be a favourite opportunity for former VET trainees who wanted to progress to higher education. But a study has shown that only a small minority (5%) of the students in the HF program have an initial vocational education as background (Klewe 2007). When only few of the former trainees from the VET track make use of the hf program, this has to do with the history and character of this program. First, the program was established with the aim of widening the access to the teacher and pedagogue professions, and these occupations still are the main destinations for students from the hf program. Secondly, more than 70% of the participants are women (Klewe 2007). They come from two different groups: one group are older women who participate out of personal interest (called the '*con amore*' students in an evaluation of the program). The other group are young people who have given up an ordinary vocational education or Gymnasium or who have left Basic school without the final exam and then have shifted to the adult education system (EVA 2005). This profile of predominantly female participants with weak connections to the labour market is not conceived of as a natural choice for employed skilled workers, who are often male. So even though the backgrounds of the students in the hf program are quite diverse, the learning culture only attracts a small minority of the former VET trainees. The connection of the hf program to vocational education is more often the opposite. Almost every fifth of the students who complete the program do afterwards complete a vocational education typically in the business administration or health care programs (Klewe 2007). They take a double education, not to get access to higher education, but to qualify for the skilled labour market.

Pathways from VET to the polytechnics

Skilled workers have historically had some links to the polytechnic universities. During the early years of the industrial revolution in the late 1800th century Danish skilled workers went to the German '*Technische Hochschulen*' (Institutes of Technology) for further study, since this was not yet possible in Denmark. Later, as the engineering institutions expanded, these were also accessed by skilled workers. With the post-war expansion of higher education the increasing requirements of general and theoretical knowledge made the direct access difficult for skilled workers. In 1961 a one-year preparation courses was established as an opportunity for skilled workers who wanted to progress to study engineering at a higher level, typically in the 3½ year 'practical' type of education for engineers ('*Diplom-ingeniør*') 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. There are signs that this pattern of progression from VET to higher education has weakened due to the increasing share of young people who go to a Gymnasium. Especially the number of students in the '*Diplom-ingeniør*' program (Bachelor level) has been reduced to half size it had in 1990 (VTU 2005). In the Technical Universities the share of engineering students who have a vocational education before starting has declined (A4 2009). The share of students who has a 'craft' background at the '*Diplom-ingeniør*' study has decreased from over 30% in 1980 to 7% in 2004 (VTU 2005). At the same time the share of students from the Vocational Gymnasium (htx) has increased.

As shown in figure 4 it is only in a few occupational areas where well known pathways like this to higher education have been established. One of them is electricians who progress to study as Installation Contractors – a short cycle tertiary education of 2 years duration. Every year around 1.500 students complete a vocational education as an electrician and there were a total of 35.000 electricians on the Danish labour market. A recent study has shown that out of these every year 235 electricians complete a higher education, mainly as installation contractor, bachelor of engineering, chief engineer and in information technology (NewInsight 2010). The learning environment in these educations can be interpreted as characterised by hybrid qualifications. The students in the School of Engineering are a combination of skilled workers (craftsmen) and students from the Gymnasium who intend to take a 3½ year program as Diploma-engineer. The head of school describes the institution like this:

“We have students who come directly from the Gymnasium and who have never seen a plane. They are not always aware that even if you **know** something, it is not sure that you **can** something. In our institution they are mixed with young craftsmen who know a lot but not always know why. It is a great advantage for us, because the two groups can lift each other and create a dynamic learning environment.” (Ugebrevet A4, 2009).

Continuing Adult Education (VUU) at tertiary level

There is a strong educational tradition in Denmark of adult and liberal education, which has developed partly in opposition to the academic education and the academic elite. Pedagogically this tradition has its roots in the prominent educationalist, N.F.S. Grundtvig, who formulated principles of radical school reform in the middle of the 19th century stressing the value of non-academic knowledge: *‘learning for life – not for school’*. Institutionally this tradition has its stronghold in the Danish Folk High Schools related to first the independent farmers organising and later the labour movement (Korsgaard 1997). The strong identification with the tradition of liberal education means that the Danish Folk High Schools have refrained from offering formal general education with examinations. This situation is different in the neighbouring Swedish Folk High Schools that represent a bridge to higher education for people without formal qualifications to get access (FFD 2008). In Denmark, though, participation in a course at a Folk High School counts positively in the so-called ‘quota two’ applications. ‘Quota two’ is a share (now at 10%) of the student places that are reserved for non-standard applicants who can gain access to higher education without fulfilling all the formal qualifications, but by having their informal qualifications recognised.

A new legal framework for a comprehensive parallel system of adult education was passed in 2000. It was followed by high political expectations of having created new educational pathways for adults at all levels. The intention was to open up ladders for progression in the educational system for adults from the bottom to the top. Later research shows that very few people actually do progress from the lower levels to the higher (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 programs at tertiary level in the Continuing Adult Education (VUU) program that corresponds to the ordinary short cycle higher education

program (KVU). The KVU has been the main destination for skilled workers who continued into higher education. The difference between the ordinary program (KVU) and the adult program (VVU) is that the adult program is to be offered in flexible arrangements and connects to the adult's special backgrounds. The adult programs are organised so that they are accessible for employed people (typically as part time courses), and so that it has an adult pedagogical approach by including the participants' work life experiences. Access is open for people with at least an initial vocational education and two years work experience or an exam from the Gymnasium, normally the vocational gymnasium. The VVU program can also be accessed through an assessment and accreditation of the applicants' prior experiential learning. A summing up of the backgrounds of all students in the VVU program in the period 2001-07 shows that more than one third of the participants had a vocational education from the dual system as their highest prior degree. This is not surprising as many of the courses in the program are closely connected to the initial vocational education programs.

One of the barriers to the program is the limited knowledge among adults of the program. In a national survey half of the population said they knew very little about it. This has partly to do with problems of terminology, as the VVUs are termed 'academy educations' (Danish '*akademi-uddannelser*') which is somewhat misleading considering the vocational and non-academic nature of these programs (EVA 2009).

A recent evaluation of the program shows that it is used by the students in three different ways: one third uses VVU as a coherent program, which by completion gives access to higher education on a higher level (Diploma/Bach. level). One third completes a partial program with a certified degree (e.g. '*Teknonom*'). And the last third takes only isolated courses and does not aim at the completion with an exam for the whole program (EVA 2009). In the last case the program is used parallel to other further education courses and not as a pathway to a higher education. In total only 9% of the graduates from the VVU from 2007 had continued to a higher level of higher education (The Diploma and Bachelor levels) two years later (EVA 2009). This observation concerning the VVU program confirms the general picture of progression from VET to higher education: this primarily takes place along specific vocational pathways that links higher secondary education with the lower levels of tertiary education.

Even though the VVU program is formally aimed at all sectors in the labour market, 95% of the programs have been in the business sector with a large share of courses in management. Only 2 % of the participants were in the technical sector, and consequently this program is only used as a pathway to higher education in the commercial sector. This is partly due to the historical evolution of the program and partly due to the fact that a larger share of students in the business programs of VET has a general education that gives access to higher education. The commercial programs in initial vocational education have a greater share of general subjects than the technical programs and they appear more like general education institutions. In the status hierarchy of the students the business colleges are considered to be closer to the Gymnasium and more valuable than the technical colleges (Katznelson 2007). A significantly higher share of students in the business programs has chosen these, because they could not qualify for the Gymnasium. Some of the students in the business programs have the progression to higher education as part of their career perspective.

Double education - double qualifications

The Danish youth educations (grade 10 – 12) do not provide hybrid qualifications; they give a choice between either qualifying for the labour market through VET or qualifying for higher education in one of the four programs of the Gymnasiums. Some people don't follow these institutional routes, but create their own pathways across the tracks. Statistics from early 1990es until now show that a stable share of around 10% of a cohort achieves double qualifica-

Table 1	
Share of the students from VET (dual system) who progress to higher education within 10 years after completing VET	
Continue to	Percentage
Short cycle HE (2 years)	3,3 %
Bachelor at university colleges	6,4 %
Master/Bach at universities	1,3 %
Tertiary: total	11 %
Source: Ministry of Education 2008	

tions – measured 25 years after completing compulsory education (Ministry of Finance 1998; Ministry of Education 2008). The share with double education has decreased a little from 12% in 1990 to 10% in 2008.

Around half of this group (6% of the age group) completes a program in both tracks without progressing to higher education. Another 2 % take up a higher education program after completing a double education, but don't complete an education on the tertiary level. The rest is a group of less than 3 % of an age group completes a dou-

ble education and afterwards also completes a higher education (Ministry of Finance 1998). This is a clear indication that the connection between VET and higher education is weak in Denmark. As shown in table 1 around 11% of all VET students progress to higher education. Of the entire age group this amounts to 4 -5% who continue to the tertiary level. Yet around one in ten young people of an age group do complete a double education. They follow four different pathways through the educational system.

The *first* group are students who first complete the vocational Gymnasium and then shift to the vocational track to get a more direct and faster access to the labour market than through higher education. Only 6 out of every 10 students from the Vocational Gymnasium progress to higher education. When they shift to the VET track, they will normally get a reduction of the length of their vocational study program due to their prior learning. Particularly for students in the business Gymnasium this is a common progression route, as some programs of the business Gymnasium require double qualifications (Finance and Insurance). This partly explains the gender bias in students who takes double education: 8% of the men and 11% of the women in an age group in 2005 (Henningsen 2007).

The *second* group of people who take a double education are adults with a vocational education who return to the educational system after some years of employment. They are typically skilled workers who after some years on the labour market and some years after having started a family, try to make use of the 'second chance' offered by adult education. A common progression route for this group is to take either the Higher Preparatory Exam (hf) or a special preparatory course for the short cycle higher educational programs (KVU and VVU), as will be developed further later on.

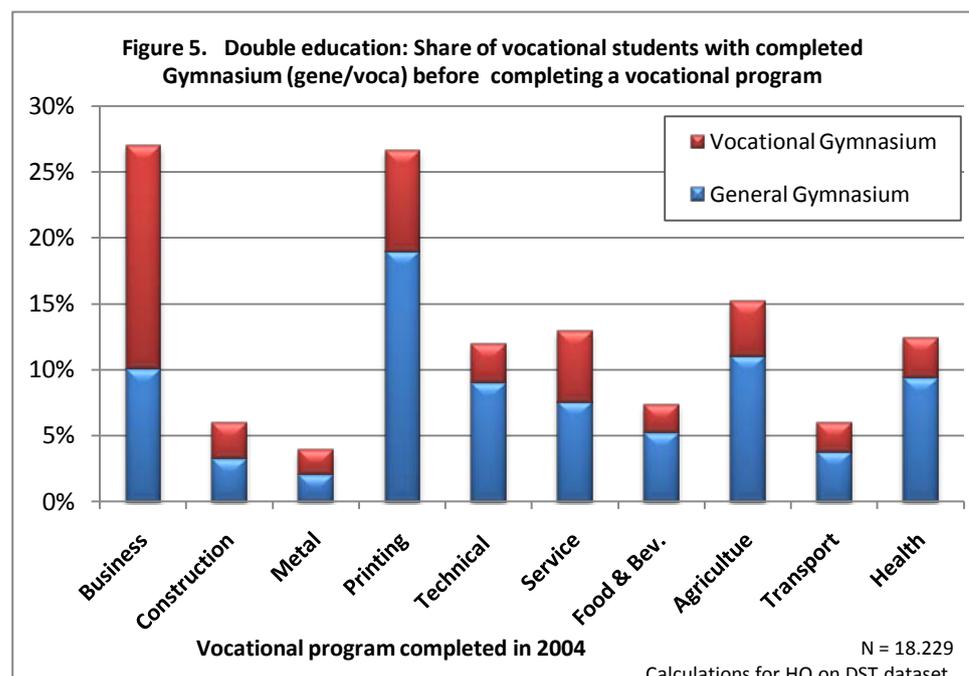
The *third* group of people with double education are adults who have entered the labour market after completing the Gymnasium or even a higher education and then take up an Adult Apprenticeship. The share of persons in Adult Apprenticeship who had previously completed the Gymnasium was 14% in 2006, and in addition 7% of adult apprentices had even completed a tertiary education (Ministry of Education 2008). More than 20% in this program had double qualifications.

The *fourth* group of people with double education combine two different vocational programs. Typically this pattern is found by people who want to leave the occupation they have qualified for, and then take up another vocational education. This can be for personal reasons or caused by difficulties in getting access to employment in the initial occupation. For some the second vocational education can be taken as an Adult Apprenticeship that provides the student with more favourable financial support during the study. More than a third of all students in the Adult Apprenticeship program had earlier completed another vocational education (Ministry of Education 2008b).

The occurrence in Denmark of double education is part of a general pattern with an increase of non-linear and complex school to work transitions. This patterns is similar to international trends that report a rise in non-standard transitions as young people cut across the institutionalised pathways in the educational system (Wyn & Dwyer; Walther 2006; Gangl & Müller 2003) and move back and forth between the formal routes of progression in ‘yo-yo transitions’ (Jensen et al 2002).

The share of the students in vocational education who take double education is quite uneven across industries and vocational programs as shown in figure 2. The figure is based on calculations on a dataset with all vocational students completing in 2004 (Jørgensen a.o. 2009). It shows that particularly the business administration program and printing have a large share (over 25%) of student who had completed the Gymnasium or the Higher Preparatory Exam (the hf program)

before entering a vocational college. Printing is a small program that historically has had a high status, while business administration is a large program that includes a quarter of all vocational students. It is especially in the Banking and In-



insurance program that we find many with a double education. This program has a high number of applicants due to high wage levels and good opportunities for upwards career mobility. Consequently the program has a high social status in comparison with many technical programs. In addition the revolution in information and communication technology (ICT) has increased the qualifications requirements in these programs. This has made it possible to attract a significant number of young people with higher education entrance qualifications to these areas. In contrast many of the large technical and male dominated programs in like Metal, Food & Beverages, Transport and Construction have a small share of student who have completed the Gymnasium before entering the program.

It can be concluded that the occurrence of double education is related to a combination of high qualifications requirements, good wages and career opportunities and a general high attractiveness of a program. In Banking and Insurance it has even been suggested that the program should be upgraded formally to a non-university tertiary program to correspond with the actual position that the program has acquired.

Double education as a problem

Persons with double education are valued by employers both as skilled workers with a prior exam from the Gymnasium, and as graduates from higher education with a prior vocational education. The first will often be an office worker in a bank and the second a diploma engineer. The additional qualifications give them the ability to communicate better across the established demarcations and diving lines in the organisation (Kristensen 1996). But since double education represents a non-standard pathway, it also creates problems. One problem is that the student runs a risk of having to go through the same curriculum twice. Another is that double education means double costs of education.

A political answer to the first problem has been to strengthen the recognition of prior formal and informal learning when (re-) entering the educational system. This has been implemented most thoroughly in vocational education, where the assessment of prior learning is obligatory for all new students (Ministry of Education 2008c). This is intended to reduce the most undesirable kind of double education, where students have to take the same subject at the same level twice. In practice it can be very difficult for the providers of education to arrange individual programs that take into account the prior learning as most programs are based on classes. An extensive modularisation and individualisation of education can result in the dissolution of the social learning environment to the detriment of not least the most vulnerable students. This became obvious in the vocational education track in Denmark following the Reform2000 that radically individualised the educational pathways – and increased the problems of retention of students.

Double education has been a constant phenomenon in Denmark since the 1980es, and it has many different forms. Double education must be considered an asset for the labour market and the learners - like hybrid qualifications. However double education also poses a number of problems for learners as well as for educational institutions and politicians.

As the share of young people taking double education rose in the beginning of the 1980es it

was considered to be a result of the rising youth unemployment. Young people stayed in education and tried to acquire extra qualifications before entering the sharpened competition on the labour market. In 1982 the Ministry of Education published a report on double education that described the phenomenon of '*artificially raised entrance requirement*' in a number of educational programs (Ministry of Education 1982). Double education was interpreted as the result of a number of different changes: heightened requirements in modern work processes, stronger selection by educational institutions to secure retention and sharpened competition among applicants that unnecessarily had raised the requirements.

The Government has generally considered the practice of taking double education as undesirable, because it delays the entrance of young people unto the labour market and involves an extra and unnecessary expense of public resources. This is similar to the attitude taken by politicians to double education in Germany (Pilz 2004). The 'Structure Commission' that in 2004 developed proposals for reform of the public sector, calculated that extra spending of time due to double education and shift of education every year reduces the workforce with 40-45.000 persons. It pointed especially to the Business Gymnasium, where as many as 44 % of the students continue in another higher secondary education, mainly a vocational education (Structural Commission 2004). This led to the closing down of the one-year program at the Business Gymnasium, which was used as a main pathway for double education students. The Ministry of Finance though did not consider double education in this sector a serious problem, since the students had their earlier qualifications recognised, and they achieved education at a higher level (Ministry of Finance 1998).

Double education also has been considered as undesirable, since it could increase 'educational inflation' (Beck 1986). When still more young people complete the Gymnasium, the relative value of this credential decreases. It can result in people with superior training pushing less well-trained youth out of the training market and down the employment ladder. This obviously has been the case in the business education programs, where the number of vocational students with double education seeking a training place in Bank & Insurance has resulted in a de facto raising of entrance requirements for a training place.

This effect also has been visible in the semi-professions (nurses, teachers and social workers) where an increase in the number of applicant with double education has precluded a raising of the entrance requirements and the status of the program – and the profession. In nursing for example 75% of the newly enrolled students in the 1980es had completed the Gymnasium, even though this was not formally a requirement. Later on nursing was upgraded to become a Profession Bachelor degree and was placed at the University Colleges. These experiences reminds us that hybrid qualifications can have unintended negative consequences. Hybrid qualifications can be an opportunity for some and at the same time a requirement that excludes others.

Didactical patterns: the convergence of general and vocational qualifications

Increasing school based learning in VET – a process of hybridization?

There has been a progressive growth of school based learning at the expense of work based learning in VET. This development has been driven by a number of different social forces. Firstly, from the early 1950es the scarcity of training places to train the baby boomers of the war generations was a reason to make day schools mandatory. Later in the 1990es the lack of training places was countered by introducing a full time VET program. Secondly, the labour movement has argued for an increase of the general curriculum in VET to strengthen the skilled workers active participation in democratic processes. And thirdly, increasing the ‘academisation’ VET has been part of a strategy to achieve parity of esteem between vocational and general education.

The growth of school based learning and the increasing significance of general qualifications in the curriculum of VET could be interpreted as a trend towards hybrid qualifications in VET. The attempts to integrate general qualifications in VET have been no harmonious or linear process. When the day school was made mandatory in all VET programs in 1965 it mainly included vocational subjects like technical drawing and applied math. The curriculum was defined in close connection with the requirements of practice in the work based learning. But increasingly apprenticeship was considered not only as training, but also as an education for personal development, citizenship and democratic participation. In the 1970es the Social Democratic Party proposed a major reform for a unified and comprehensive educational system for all young people at grade 10 to 12 similar to reforms in the other Scandinavian countries. The reform was based on a political belief in the possibility of achieving a more equal and just society through educational policy. The reform was blocked by the employers in collaboration with the right wing in Parliament and the skilled workers unions. The labour market partners feared that the unification of the two tracks would weaken the occupational self governance, which give them extensive control of VET. The conservative wing in Parliament feared that the reform would undermine the exclusive qualities of the Gymnasium. In the following decade the belief in education as a means to social reform was gradually replaced by neoliberal policies in the beginning of the 1980es.

During the 1980es the traditional apprenticeship continued parallel to a modernized and more school based form of VET (called Basic Vocational Education, EFG). The students in the EFG started with one year ‘Basic Course’ in vocational college before continuing in an internship. In the Basic Course 40% of the curriculum were general subjects, and it represented a convergence in the direction of general education. But in later reforms this trend was reversed. There are several reasons for the failure of a more hybrid form of VET with a combination of vocational and general qualification (as I will elaborate on later). One reason was the didactical problems of integrating the two kinds of qualifications in the teaching practice. Differences in the social and educational backgrounds of the teachers and their learning cultures made it diffi-

cult to create an integrated or ‘hybrid’ curriculum (Juul 2001). The general subjects remained on the whole separate and external to the vocational teaching. In addition the many small craft based companies were not convinced of the usefulness or relevance of general qualification in VET. Many of the students had chosen the VET track because they were tired of the ‘theoretical’ and traditional school-like teaching. This made the teaching of general subjects difficult in the vocational programs. The labour market partners also were sceptical about an expansion of the general subjects and argued for maintaining the clear vocational profiles of ‘their’ programs. As a result the convergence between general and vocational education was replaced by the perpetuation of the separation of qualifications. In recent years this has been favoured by political initiatives to increase retention by reducing the scholastic forms of learning and to enhance the practical learning in workshops. A reform passed in the middle of 2010 states that all programs shall be reviewed to control if there is any unnecessary ‘academisation’ that can be removed to increase the retention rate of ‘weak learners’ (Ministry of Finance 2010).

At the same time there have been efforts to attract ‘stronger’ students to VET by offering additional general subjects that will prepare for admission to higher education. This effort has not been any success, as very few students have used this opportunity. The latest initiative in the direction of introducing hybrid qualifications in VET is a bill passing through Parliament preparing for a new program called the Vocational Education Extra (eux) to take effect in August 2010. This program is intended to combine a vocational education with higher education entrance qualifications by adding to it the general subjects of the Higher Prep (hf) and to increase the length of the program accordingly. The expectations to the volume of this program are quite modest: 90 students every year. These expectations are based on the experiences from two developmental classes at two vocational colleges that started in programs of hybrid qualifications in 2005. They developed five year programs that combined vocational and general education and gave access to skilled employment as well as to higher education. It has been difficult to recruit students to these programs due to the requirements and the length of the program (Parliament 2010). Four other colleges got permission to commence the program, but did not succeed in recruiting a sufficient number of students to start classes. Educational programs offering hybrid qualifications thus have an insignificant position in Denmark. I will discuss some of the reasons for this absence in the end of this report. In some countries full time school based VET offer hybrid qualifications like for example the Swiss ‘Berufsmatura’. Denmark also has a program of full time school based VET parallel to the dual program.

Full time school based vocational education

In addition to the dual System of vocational education a program of full time school based vocational education has been offered since 1993, called ‘*school based training*’ (in Danish ‘*skolepraktik*’). It started as a temporary measure to counter the growing queue of vocational students who were seeking a training place without success. The full time school based program later was turned into a regular pathway and it has for the last two years been part of the so called ‘*guaranty of educational completion*’. It means that all students taking up a vocational education in any one of the 12 occupational areas has the right to complete a program in this

area – though not necessarily the specific program they were aiming at. The volume of the full time school based program has been adjusted upwards and downwards in accordance with the situation on the training market. At the latest peak in 2004-5 the share of students in the full time program amounted to 13% of all students in vocational education. It thus constituted a significant alternative pathway to the dual System that could be interpreted as a ‘hybrid form of apprenticeship’.

“Only Denmark [...] and The Netherlands [...] have managed to substantially revive their apprentice routes and this by creating hybrid or mixed-mode apprenticeships where training contracts can be based on the company or the school.” (Green 2002).

Even though it is a school based scheme, most of the students who take up their main course in this scheme do find an ordinary training place in a company before completing it. They are actually obliged to continue actively searching for an ordinary training place, while they attend the full time program, and to prove that they are mobile with respect to location and occupation. They have to move to another location or shift to a neighbouring occupation, if a vacant training place shows up there. Among all stakeholders there is consensus that the full time program should be considered a compensatory measure or as it is frequently termed ‘*an emergency solution*’ that makes up for a temporary decline in the supply of training placements. During the economic upturn the volume of full-time students was reduced partly due to the declining demand and partly due to political intervention.

Full time school based courses are a heavy burden for public funding compared to the work based dual program. The government has restricted access or entirely closed down the scheme in some occupational areas when the situation on the training market is favourable. This happened latest in 2005 where eight programs were closed down (got ‘*zero quotas*’). This meant that the number of students in full time school based VET fell from a total of 8.000 in 2005 students to only 1.600 in 2007. Due to the financial crisis these programs opened up again in 2009 with a limited number of students (Juul & Jørgensen 2010).

Does this program then represent a case of *hybrid qualifications* as indicated in the quote above? The answer is negative, since the program is subject to the same curricular requirements as the ordinary work based training. It does not give easier access to higher education than the ordinary dual program. The full time program is formally recognized by the labour market partners as equal to the ordinary program. It gives access to the same kinds of jobs, though the employment rate is somewhat lower than that of for students from the ordinary dual program. This is due to the fact that almost half of students in the ordinary program become employed in the training company after completing their education. Students who complete in a full time program do not have this opportunity.

Table 2: Separate qualifications in Danish higher secondary education

Track ►	General education	Vocational education
Types of qualifications	Academic qualifications that give access to higher education: - Universities - University colleges	Vocational qualifications that give access to the skilled labour market : - Union membership - Unemployment benefits
Structure	4 programs: • Traditional academic Gymnasium, stx • Business oriented Gymnasium, hhx • Technically oriented Gymnasium, htx • Higher Preparatory Exam, hf	• 12 basic courses (½ - 2 year) • 125 main programs with additional specializations
Institutions	Gymnasium (stx) Vocational colleges (hhx and htx) Adult Education Centre (hf)	Vocational colleges: - Technical, business, agricultural and care & service work.
School- /work-based	Only school-based (plus opportunities for a few weeks of work placement in Vocational Gymnasium)	Alternating (dual) programs: 1/3 school-based, 2/3 work-based Full time school-based programs available as a 'special measure'.
Length	3 years generally (stx/hhx/htx) 2 years for Higher Prep. Exam (hf)	3 – 4 years generally - A few longer: 5 years - A few shorter: 1½ - 2 years
Governance	State governed combined with institutional autonomy. Gymnasiums are becoming independent ('state freehold')	Corporatist self-governance Vocational colleges are independent institutions ('state freehold')
Funding	State funding of schools and students grants (for students over 18 years). Free tuition.	State funding of colleges. Companies pay wages to apprentices when trained in companies. Companies share expenses to wages during school-based learning.
Access /recruitment	Restricted admission: Specific subjects in Basic School Grade point average required	Generally free admission. In some programs a training agreement with a company is required. In some numerous clauses.
Learning culture	Valuing the <i>correctness</i> of codified knowledge. Structured by school /academic subjects and disciplines, but increasingly also interdisciplinary project work.	Valuing the <i>usefulness</i> of vocational knowledge and skills. Structured by the work tasks and the collaboration of journeymen and apprentices.
Teachers	Teachers with academic education (master degree plus further pedagogic training)	Mainly teachers with vocational /professional background and labour market experience. Professional teachers teach in some school subject.
Share of a age group completing	Academic track: 53%	With double qualifications: 10% Vocational track: 38%

The most significant difference between full time and dual VET is that training in the full time program takes place in a workshop in a college and not in a company. Those responsible for teaching are ‘instructors’ or ‘trainers’ like in a company, not teachers with the pedagogical competencies normally required in vocational colleges. The amount of general subjects in this program matches the amount in the ordinary dual program. In sum the full time school based vocational program is no case of hybrid qualifications, and it does not represent a short cut from vocational education to higher education. In comparison with a German full time school based equivalent of VET, the Vocational College (‘Berufskolleg’) in Baden-Württemberg (Deissinger & Ruf 2006), the Danish ‘*skolepraktik*’ is more comparable to the dual program. Most of the students, who start in the full time program, do obtain a training contract and shift to the dual program before completing. The school based program generally gives access to the same skilled labour market as the dual program. The Danish ‘*skolepraktik*’ has a lower status than the ordinary dual and work based VET. This is different to the Swiss version of a full time VET (‘*Berufliche Vollzeitschule*’) that has equal status to the dual VET, because it gives easier access to higher education (Zulauf & Gentinetta 2008).

In a research project recently completed for the Danish Ministry of Education (Juul & Jørgensen 2010) we examined the frequency of transition from vocational education to higher education for the cohort leaving a vocational college in 2004 – a total of 22.000 students. This was combined with data on the socio-economic and educational background of the students in the different programs. The study showed first that among the students in ordinary dual program 16% had earlier completed a three year education in the Gymnasium that gives access to higher education. This was only the case for 6% of the students in the school based program. The parents of these last mentioned students had lower socio-economic position and a weaker connection to the labour market. This reflects the lower status of the school based program, which is aiming at students who cannot obtain a training contract with a company due to lack of social network, discrimination or weak attainment in school. There are no clear differences in the share of students from the full time school based and the work based program who continue to higher education three years after completion. But a larger share of students from the school based program shift to an entirely different occupational area. This is probably a sign of the poor opportunities of the full time school based VET for developing a strong vocational identity, since this normally is developed by participating in a community of skilled workers in a workplace (Wenger 1999). Participating in a community of students in a college does not give the same opportunities.

Target groups

The main target group for educational pathways offering hybrid qualifications in the broad sense – that is including the additive and consecutive types – are vocational students (apprentices in the dual system). They can acquire higher education entrance qualifications either during the vocational programme, before or after this programme. As mentioned, the legislative framework of VET provides since the reform in 2000 for ‘additional qualifications’ to be learned during normal dual VET the programme. There is no official record of the number of students making use of this opportunity, but the number is very small. It seems to be limited to

students in the business programmes who have a two year full time school based basic course. Some students choose to take ‘additional qualifications’ in order to gain access to the vocational Gymnasium (hhx), which give access to higher education. A share of 11 % of the students in the business programme does shift to the vocational Gymnasium where they can acquire double qualifications (New Insight 2009).

In the middle of 2010 a new law has been passed to create a hybrid pathway (the ‘eux’) as part of the vocational track. It is yet unclear if this will have a form of an integrated curriculum, or if the general and the vocational subjects will be taught separately.

Another target group is former vocational students who want to progress to higher education after completing their vocational programme. As will be described later, three main pathways are accessible: the Higher Preparatory Examination (hf), special preparation courses giving access to programmes of the polytechnics and Continuing Adult Education (VUU) at tertiary level (below the Bachelor degree), which is open for former VET students.

The third target group is the students who complete the Gymnasium and then shift to the vocational track. Almost a third of the students from the Business Gymnasium do take up a vocational education afterwards (Ministry of Education 2009:table 6.7). Since a reform in 2003 all students in the vocational programmes must draw up a personal educational plan based on an assessment of the student’s prior formal and experiential learning (Ministry of education 2006). Consequently students who have completed a programme in the Gymnasium and shift to the vocational track will have a substantial reduction in the vocational course.

Funding

Generally Denmark has a high proportion of public spending on education as indicated in table 3. The funding of compulsory school up to grade 9 (and the voluntary 10th grade) falls on the 98 municipalities in Denmark. The higher secondary education (Gymnasiums and vocational colleges) are funded by the state, and even the minor part that are private institutions obtain the majority of funding from the state. The financing of the different levels and programmes of education is made year by year as part of the negotiations of the total state budget.

Students/apprentices in vocational education can obtain grants and loans from the State Education Grant and Loan Scheme, when they attending the full time school based part of their programme (the basic course, the first ½ -1 year) and when they are over 18 years old. When the students/-apprentices are attending the main course (the 2. – 4. year) where they are being trained in a workplace, they receive a wage paid by the training company at a rate stipulated in the general agreements between the labour market organisations.

While the vocational colleges are funded by the state, the work based training during the internships is in principle self financed. The costs of training the apprentice on part of the employer are compensated by the value of the productive work performed by the apprentice. And the value of the training for the apprentices is paid for by the apprentices who receive a low wage for their productive work. This means that the dual system is inexpensive for the public budget in comparison with school based training. The programme of full time school based training that is established to compensate for the lack of ordinary internships has earlier funded by the employers through a training levy imposed on all employers and administered by a fund

Table 3: Total public and private expenditure per pupil/student per year in Denmark and selected OECD countries

Country	Youth education	Higher education	Expenditure per student from 1th form through youth education
Norway	12,498	14,997	125,650
USA	10,468	22,476	112,750
Denmark	9,466	15,225	109,778
Austria	9,962	13,959	106,397
Sweden	8,218	16,218	92,979
Germany	10,459	12,255	87,660
France	9,883	10,668	86,406
UK	-	11,484	81,732
OECD average	7,884	11,100	81,485

Source: Education at a Glance, 2007.

Employers' Reimbursement Scheme ('Arbejdsgivernes Elevrefusion', AER). Since 2004 the state has taken over the funding of the full time school based training and subsequently this programme has been reduced strongly. The AER pays compensation to companies for the wages they pay to their apprentices while the apprentices are attending vocational school during the main course (year 1.-4. of the training period). This mechanism spreads the costs of training on all employers and

relieves the financial burden of the companies training apprentices.

In the budgets of the vocational colleges state grants make up approximately 80 % of the total funding and are thus the dominant source of revenue for the institutions. More than 90 % of the state funding is allocated according to activity-level determined grants, the so called taximeter funding. This funding system was introduced in the early 1990es inspired by neoliberal ideas of creating an educational market and installing the students and companies as 'costumers'. The taximeter system means that most of the funding is linked to the output or performance of the vocational college. In addition the government has established a number of special funding schemes to increase retention and increase the number of training contracts with companies. The taximeter system gives the educational institution a higher degree of financial and managerial autonomy with respect to reaching the output targets set up by the Ministry. It also constitutes the institutions as agents on an educational market competing with other institutions for students and finance generating activities. This may encourage innovation at the local level, but may also imply that the educational goals become subjected to narrow economic considerations of management.

In international comparison a relatively high share of public spending on education goes to the State Education Grant and Loan Scheme to support students financially while studying. This mainly goes to students in higher education and has been a central part of the policies to reduce social inequality in the recruitment to higher education.

Study grants for widening the participation in Education

The precondition for widening the social recruitment to Higher Education is that financial support for study is available. Before World War Two financial support was private and depended on assessment of the students individual needs. In the early 1950's a public fund was established with a broader scope. Following the student unrest in the late 1960es and the critique of

academic elitism in universities measures were taken to increase the admission of students from non-academic backgrounds. The demand was raised that young people should have equal opportunities for study at all levels independent of their family background and their financial resources. A new institution 'The Danish Educational Support Agency' awarded their first allowances with a mixture of grants and loans in 1970. In the late 1970es in the last days of central state based educational planning the Social Democratic party was in government. It prepared a proposal of social quotas to regulate the access to Higher Education, but this was rejected in Parliament. Instead initiatives were taken to increase the financial support for students and to extend compulsory general education from 7 to 9 years and develop new educational pathways to Higher Education.

The basic principles have until now been, first, to secure that no talented students should refrain from education because of lack of financial support. Secondly, students should not be forced to work so much when studying, that it would harm their study. And size of the grants for students depended on the earnings of their parents until 23 years of age (Means-tested, low rate of interest loans and grants) and was made into a right for all. All students enrolled on a tertiary level program are entitled to a number of monthly grants corresponding to the prescribed duration of the chosen study, plus 12 months. In comparative studies on the financial support for tertiary education Denmark is generally pointed out to as having free tuition and generous grants (OECD 2009 Chart B5.2.). It should be noted that fees are charged for the Open University courses that are typically accessed by adults. The Danish State Education Grant Scheme for Adults provides support for adult who want to take up study later on in life – for example adult 'second chancers' who want to continue from VET to Higher Education after some years of employment. Under this scheme unemployed people can study and still receive their unemployment benefits provided that they are active job seekers. The grants and loans though are still well below the average earnings of a skilled worker in Denmark – approximately one third - and thus not sufficient for adults with financial responsibility for a family and children.

Governance of education

The two tracks of youth education have different social and historical roots, and this also means that they are subjected to different forms of educational governance. The programs of the general track have historically been organised by the state, and some have for a period been owned by the regional authorities. An addition one out of six Gymnasiums are private institutions. By an administrative reform in 2007 the legal status of the state and regional Gymnasiums were transformed into a so called 'state freehold' (self ownership) similar to the legal status of the vocational colleges. This means that these educational institutions have a higher degree of financial and managerial autonomy. But still the control by the state is extensive, since institutions receive almost all their funding from the state and since the Ministry of Education has to approve of major arrangements regarding mergers or divisions. In addition the core subjects and curricular requirements of the programs are laid down by the state.

The regulatory framework of the vocational programs offered by the VET-colleges is also laid down by the state. In contrast to the other Scandinavian countries, Norway and Sweden, Denmark has two different sets of legal regulations for the general and the vocational track respectively. This is primarily due to the pivotal role of the labour market partners in the governance of the VET system in the system of occupational self-governance. And in contrast to these neighbouring countries the vocational colleges and the Gymnasiums are only weakly linked up with the municipal authorities, though they are obliged to coordinate their provision of programs to the local requirements.

The evolution of occupational self-governance of vocational education is historically connected to the evolution of the so-called ‘Danish model’, which was a result of the September agreement in 1899 (Due and Madsen 1993). The Danish model established a centralized regulation of the labour market by the social partners who recognized the legitimacy of each other and assumed the responsibility to conclude and enforce binding agreements on behalf of their member organizations. The state then adopted a more secluded role by make the agreements concluded between the social partners legally binding for the entire labour market and by setting up institutions to solve labour conflicts through concertation. A precondition for the evolution of this model is the strength of the central bodies of both labour movement and employers organizations. Another key condition behind the success of the Danish model is the high rate of organization characterizing both employers and employees.

In the beginning of the 20th century the institutionalised cooperation of the labour market partners focussed on the regulation of wages and working conditions. With a reform in 1937 of the apprentice system this model came to include the regulation of the apprenticeship system forming what is described as a ‘dual-corporatist model’ (Greinert 1999). In contrast to Germany, where only employers are given direct influence over the regulation of the dual system, both the labour movement and the employers’ organizations are represented in the bodies regulating the Danish VET system. The pluralist governance of the VET system in Denmark com-

Table 4. Levels of regulation of the dual-corporatist model in Denmark	
State governance	Occupational self-governance
Ministry of Education	Council for Initial VET (REU)
Advisors from the Ministry of Education	Trades committees in each industry
Vocational colleges Funding and legal framework	Labour market partner represented in the Board of Governors and the Local Educational Committee (LUU) of the college
Companies: Solidaristic funding (AER) of training through a training levy	Local Works Council or Local Educational Committee (only in larger companies)

biner a number of different regulatory principles, state, market and corporatist regulation. The provision of training places mainly relies on market regulation in combination with a commitment of companies to contribute to the ‘collective good’ of a well trained pool of skilled labour (Johansen 2002). The general requirement of the work based training is stipulated in the training ordinances that are part of the legal framework of VET, but the training is mainly entrusted with the employers under limited external control. The school based part of the programmes is mainly regulated by the state, which funds the vocational colleges. This includes a general law of vocational education and laws on examination, quality assurance, transparency, etc. (Cort 2005). Since the beginning of the 1990es the detailed regulation of the vocational colleges has been replaced by framework regulation focusing on the output and leaving more room for local management in determining how to reach the performance goals set up by the ministry.

In the Danish VET-system there is a close interdependence between the occupational self-governance and the continued existence of the dual system. On the one hand the occupational self-governance is a guarantor of the involvement and support of the system by employers and thereby of their willingness to provide training places. On occupational self-governance is a guarantor of the support of the trade union movement for the terms governing the interchange of work and training that are built into apprenticeship as a form of learning. The unions accept that apprentices are employed in productive work at a low wage in exchange for getting access to training in the workplace.

With the evolution of the occupational self-governance it has been entrusted with new tasks as the school-based part of the VET system has expanded. The social partners have the role as advisers to the Ministry of Education on questions concerning the VET system in general, while the trades committees are responsible for the individual programmes. Apart from playing an important role in securing the legitimacy of the system and the engagement of the social partners, the system also ensures that the various programmes of the VET system are in accordance with the needs of the labour market (Clematide & Wittig 2009). As a result the state has traditionally avoided direct intervention in vocational training and by and large left it to the social partners to define the training ordinances, lay down procedures and to monitor apprentices’ training and examinations, approval of training places and so on. Instead the state has concentrated on regulating the school-based part of VET and on indirect stimulation of the supply of internship placements by means of schemes for financial incentives such as rewards for extra training placements. In table 4 above is shown the involvement of the social partners at all levels of regulation of the VET system.

The policy context: qualifications in the Danish transition system

As indicated above, it can be an advantage to explore the question of hybrid qualifications in relation to the overall structure and functioning of the national transition system (Raffe 2008). A first step in the direction of identifying the Danish system can utilize the concepts of *standardisation* and *stratification* with reference to Allmendinger (1989). The Danish system represents a highly standardised model where certified occupational qualifications correspond

to occupationally segmented labour markets (Sengenberger 1987; Marsden 1999). The pivotal role of the occupation (vocation/Beruf) means that qualifications mainly are conceived of as integrated wholes that combine practical skills and theoretical knowledge (Brockmann a.o. 2008; Deissinger 1998). Qualifications are occupational and not primarily tailored to the individual company, job or task.

The qualification profile of each occupation is defined by the trade committee on the national level. The trade committees are bipartite organs where the labour market partners regulate the VET programs for each occupation through an instituted form of 'occupational self governance'. Their regulatory mandate is quite wide-ranging and is defined in the legal framework for vocational education. It includes the definition and continuous upgrading of the qualifications profiles of the individual programs, specification of their content and curriculum, supervision of the quality of training places and conflict resolution etc. This close involvement of the labour market partners is on the one hand a warrant of the relevance of the programs for the labour market. That contributes to a high employability of trainees from the vocational programs. This is one of the reasons why the government generally has acknowledged the occupational self-governance of the labour market partners with respect to vocational education. On the other hand the centralised regulation and the standardised profiles make it difficult to develop local experiments across the two tracks, for example with hybrid qualifications. This became manifest in the 1970es where developmental projects were shut down as a result of intervention from the social partners, who were afraid of losing control of 'their' part of the educational system if it was integrated in a comprehensive educational system (Christensen 1978).

The high degree of standardisation of qualifications has from a neoliberal position been criticised for being out of step with the requirements of a dynamic production and a flexible labour market. Yet it has been shown that the highly standardised qualification profiles are a precondition for the very high flexibility that characterises the Danish labour market. Strong institutions can improve flexibility since they function as infrastructure that facilitates interchange and mobility. This point was early highlighted by Werner Sengenberger (1987; 1990), and has later been part of the theories of the 'flexicurity' model of Danish labour market (Wilthagen & Tros 2004). The average job tenure in Denmark is among the lowest in Europe and the job mobility is the highest (EU Commission 2007). When this high mobility doesn't result in high transaction costs for business related to recruitment and training, it is owing to the high degree of standardisation of qualifications. It contributes to a close match between the standardised occupational qualifications produced in the VET system, the occupationally segmented labour market and the occupational qualification structure of the employment system (Marsden 1999).

The key role of occupational qualifications

The key role of occupational qualifications gives part of the explanation for the absence of hybrid qualifications in this set-up. The VET programs are mainly focussed on the specific vocational qualifications that are primarily acquired through work based learning and socialisation. It is the specific vocational profile of the programs that make them match closely with the corresponding skilled jobs. This match between education and work is not found in educational systems that have an emphasis on general qualifications. The close match also has conse-

quences for the school to work transition.

In a recent comparative study of England and Denmark Dieckhoff (2008) finds that the Danish educational system with its main focus on specific vocational qualifications result in a lower youth unemployment and a more smooth transition from education to work. When young people complete a vocational education and enter the labour market, they have almost the same risk of unemployment and almost the same average wages as experienced skilled workers.

Other studies have showed similar results. Young people who enter the labour market from a dual system, like that in Denmark, have shorter periods of job seeking or unskilled employment before achieving a skilled job, than young people completing an education in systems dominated by general and school based education (Gangl & Müller 2003; Gangl 2001). This is a consequence of the close match between occupational labour markets and the dual system of vocational education. Systems based on comprehensive general education correspond with internal labour markets and a looser connection between education and work (Marsden 1999). In these systems the risk of unemployment for newcomers to the job market is significantly higher and the introduction wages are lower (Müller & Shavit 1998).

The downside of the dual systems and the highly organised labour market is that it is very difficult for young people without a vocational education to enter the skilled labour market (Wolbers 2007). Though only a limited number of skilled occupations (electricians, plumbers, etc) have a formal authorisation and an occupational monopoly, the dual system works as a system of certification that limits the access of unskilled workers to skilled jobs. This employment protection is a precondition for maintaining the high value of vocational qualifications and for the functioning of the 'high skills equilibrium' in the Danish production system (Harcourt & Wood 2007).

This first analysis of the role of qualifications in the Danish transition system indicates that hybrid qualifications should be explored in relation to the particular institutional set-up or 'transition regime' (Walther 2006). Qualifications link educational systems and systems of employment in different ways in other countries (Brockmann a.o. 2008). In addition qualifications are conceptualised differently in other countries, which reflect differences in basic social structures or 'learning cultures' (Deissinger 2008) across the European countries.

In a discussion of the European Skills Frameworks (EQF) Clarke and Winch (2006) explore how 'skills' and 'qualifications' are conceived of differently in different national contexts, especially the German versus the Anglo-Saxon countries. In the Anglo-Saxon concept of skills these are regarded as individual attributes that are associated with discrete tasks and jobs rather than occupations. Skills are associated with manual ability and have no particular association with a knowledge base. In contrast the German and Danish concept of qualifications includes the ability to apply theoretical knowledge in a practical work context. It is holistic and linked to the occupation ('*Beruf*'). They conclude that this conceptual variation is linked to differences in the socio-political role of qualifications, to different industrial structures and labour processes and to differences in institutions regulating vocational education and training.

The multiple roles of qualifications

These findings indicate that the question of hybrid qualifications cannot be considered as an isolated aspect of the educational system. It involves the relations between the educational system, the labour market and the employment system. In a comparative perspective educational systems differ between countries with respect to their internal structure and forms of governance (Greinert 1999; Deissinger 1994). This is important to have in mind, when considering differences in national or industry-specific qualification structures. To understand the dynamics of these differences it is important also to consider how the educational system interacts with the labour market and employment systems. This is because qualifications perform the role of a medium of communication between the three social subsystems, where qualifications are produced, distributed and employed (Kurz 2005; Chernilo 2002).

This should not be understood as some kind of automatic ‘functional fit’ between these subsystems as rationalist and (neo-) functionalist theory tend to see it (Johansson 1982). Each subsystem has its own internal dynamics that often create discrepancies and contradictions between them. The expansion of general education for example must partly be explained by the internal dynamics of the educational system itself, as education became a positional good in itself and a precondition for more education (Archer 1982). But simultaneously there are strong social interests in achieving a close correspondence between the subsystems: to make graduates employable and to meet the qualification requirements of business. This effort often takes place as negotiations and struggles over the definition, demarcation and structuring of qualifications – or *hybridization* of qualifications. Forecasts of businesses’ qualifications requirements, descriptions and prescriptions of qualifications in curricula, assessment and recognition of experiential learning and presentation of qualifications in CVs, etc are all examples of the key role of qualifications in the interchange between education and work.

In historical perspective qualifications have a key role in developing institutional complementarities between the systems of education, work and the labour market. It has been emphasized that these complementarities result in different developmental trajectories of national educational systems (Thelen 1999; 2004). So to explore the qualifications - vocational, general or hybrid – it is relevant to pay attention to the complex role of qualifications.

Generally qualifications perform a number of different tasks in modern and differentiated society:

In the *educational system* qualification are *measures* of educational attainment and *gatekeepers* to higher levels in the hierarchically structured educational system. Externally, in society, qualifications have the role of status markers or positional goods in the ‘credential society’ (Collins 1979).

On the *labour market* qualifications work as *gatekeepers* to professional organizations, their social community and the coverage of their general agreements that regulate the conditions of work. In Denmark the labour market has been strongly divided into skilled, semiskilled and unskilled work (Christensen 1978), and the VET certificate have been the ‘admission tickets’ to the skilled labour market and the privileges it provides.

In the *employment system* qualifications work as *productive capacities* in skills or knowledge based economies. It has been pointed out in the debate on ‘low skills’ and ‘high skills’ equili-

briums (Finegold 1999; Thelen 2004) that the deployment of qualifications depends on the ‘production regime’ (Gallie 2007). In Denmark the prevalence of the dual system and the craft based forms of production means that the predominant type of jobs are occupational as Taylorism has had less influence than in most of the larger industrial economies.

Qualifications function as a *medium of interchange* between the three subsystems of education, labour market and employment.

Qualifications are key components of the *work identities* and the meaning people attach to their working life. Qualifications are not only commodities that are ‘acquired’. To become qualified through a process of learning involves a process of becoming and participating, for example becoming skilled carpenter and participating in their community and trade union (Wenger 1999; Billett 2006).

In short qualifications are produced and certified in the educational system, distributed and allocated on the labour market and employed and utilized in the employment system and perform a key role in linking these subsystems. In addition qualifications are key elements in the work identities and occupational biographies (Alheit 2005; Heinz 1995). In Denmark and other countries with dual systems qualifications are divided in general and vocational qualifications, and this makes it relevant to explore the way these two types of qualifications connect education and work.

Qualifications as media of interchange

As indicated above qualifications have different roles and have different meanings in education, on the labour market and in the production system. They also have a special role as a medium of interchange or communication between these three worlds. The two elements of hybrid qualifications – general and vocational - perform this connective role in different ways. In systems based on the dual form of VET and occupational labour markets the specific vocational qualifications provide a close connection between education and work. The interchange takes place not only through the exchange on the labour market, but also through a deliberate and institutionalised cooperation between the stakeholders from the two systems. In systems based on general education and internal labour markets the communication is more un-coordinated and unspecific (Gangl 2001). Here the role of the stakeholders in the interchange on national and industry levels is limited and the signalling role of the market dominates.

Various approaches have been developed to explain these and other differences in the national qualifications systems. Deißinger (2008) uses the concept ‘*learning cultures*’ to conceive of the broader cultural and institutional patterns that have historically developed differently. One of the strengths of this approach is that it emphasises the historically produced practices and assumptions that are just taken for granted in a learning culture. The dominant concepts of qualifications in a learning culture – and the presence of hybrid qualifications - can only to a limited extent be explained as a result of deliberate planning and rational choice.

Another useful approach to analyse differences in the interchange between education and employment systems is the concept of ‘coordination regimes’ developed by Hillmert (2001;

2002). It distinguishes between *horizontal* and *vertical* coordination between education and work. The horizontal coordination refers to the allocation of qualifications in the social division of work on the same level, for example between the different occupations in the dual system of VET. The vertical coordination refers to the hierarchical division of work and the allocation of qualifications based mainly on the length of general education. In this interpretation general and vocational qualifications communicate in different ways between the educational and the employment systems. General qualifications primarily communicate about the length or level of education, and vocational qualifications communicate mainly about the specific content and area of work concerned. This indicates a challenge for developing hybrid qualifications, as they will have to combine communication between the horizontal and the vertical dimension.

This difference between general and vocational qualifications might be changing due to the introduction of a national qualifications framework (NQF) and the policy of competency based education. It means that educational objectives are to be described not in term of the duration of education or in terms of curricular content, but in terms of the performance of the competences delivered by education. In the national qualifications framework all educational programs have been described in a common language at 8 levels and in terms of knowledge, skills and competencies (Ministry of Education 2008c; Cort 2010). In Denmark the principles of competency based education and the NQF have been implemented in adult as well as in vocational education. But that does not imply that NQF will replace the existing occupational concepts of qualification. The introduction of the NQF is a political initiative that only has a direct effect on the educational system. Its effect on the labour market and the employment system might be limited due to the strong organisational interests and the role of tradition and culture in preserving the established conceptions of qualifications. This is especially the case in the Danish VET system where the social partners rely on pragmatic and practice-oriented notions of qualification, when they adapt the vocational programs to changes in working life.

Several studies have shown how the strength of the apprenticeship system (in modernised form) in Denmark is related to the prevalence of small-scale and craft based forms of niche production (Kristensen & Sabel 1997). This again is the result of the conditions of a small open economy with a late industrialisation (Katzenstein 2006). It was not before the late 1950es that the value of manufacturing export superseded the agricultural export from Denmark. Large scale mass production based on a Taylorist organisation of work was no option in that situation, since markets for standardised products was dominated by other countries. As a consequence, business in Denmark developed along the lines of 'flexible specialisation' (Kristensen 1996) or 'diversified quality production' (Streeck 1992). This trajectory was reinforced by the fact that the Danish labour market, until today, has been dominated by a craft type of trade unionism not by industrial unionism (Hyman 2001). This has on the one hand contributed to a considerable identification and close collaboration between the class of small industrial entrepreneurs and the skilled workers unions not least around apprenticeship as a common good. On the other hand this kind of trade unionism has contributed to the development of an institutionalised bi- and tri-partite type of corporatist governance. This has included co-determination in the workplace, high union density and high coverage of collective agreements on the labour market as well as a high degree of occupational self-governance of vocational education

(Campbell a.o. 2006). In this arrangement a holistic and occupational concept of qualifications has been dominant.

This particular articulation between education, the labour market and employment has consequences for the relevance of hybrid qualifications. The key role of specific vocational qualifications in the Danish transition system produces a close connection between education and work. Studies have shown that around half of all vocational students continue in ordinary employment in the same company where they were trainees (Jørgensen a.o. 2009). When completing their education in the dual system, the vocational trainees are already well-integrated into the labour market. They are immediately recognised as competent skilled workers or craftsmen and start earning a good income on a level equal to some groups with a higher education. This transition pattern makes it less attractive for them to return to the educational system to take up to a higher education. It also means that hybrid qualifications have limited value for young people who take the vocational track. If they want to acquire additional general qualifications in the dual system to gain access to higher education, it will postpone their entry into the labour market with 1 – 1½ year. And it will postpone the moment when they shift from earning an income as a trainee to earning an income as a skilled worker. This is one of the reasons why hybrid qualifications are almost unknown in Denmark. But a certain group of young people do acquire a double education at the higher secondary level of education by completing first one and then another education.

Policies for Hybrid Qualifications

Unification or separate tracks

European countries have pursued different strategies to improve the esteem of vocational education compared to general education (Raffe a.o. 1998). A common categorisation proposed by Lasonen & Young (1998) defines four strategies for parity of esteem. These are: (1) vocational enhancement; (2) mutual enrichment; (3) linkages; and (4) unification. The dominant strategy of the Danish context is the first, vocational enhancement, which attempts to maintain the separation of the two tracks, but upgrade the quality of the curriculum, teachers' qualifications or relations with the labour market. Most of the political parties in Denmark and the dominant labour market organizations are in favour of maintaining vocational education as a separate system. The reasons are the efficiency of this system concerning successful transition from school to work, high employment rates and high flexibility on the labour market (Jørgensen 2008). But maintaining the division in two separate tracks and a division of students based on their attainment in primary and lower secondary education also has negative sides. Tracking entails a social selection of students according to the socio-economic status of their parents. Tracking thus tends to reduce equality of educational opportunities in the transition from school to work (Hanushek and Wößmann 2006; Müller & Gangl 2003). Children from families with poor educational background more often are sorted into vocational education, even when

their educational attainments equals the attainment of children from families with more educational resources (Andersen 2005; Hansen 1997). This negative effect of tracking has historically been a reason for the labour movement and the Social Democratic Party to oppose tracking and favour reforms in the direction of a comprehensive school.

The termination of tracking was accomplished in Denmark with respect to primary and lower secondary education in the early 1970es. At that time a major reform was under way in vocational education as the traditional apprenticeship had run into crisis due to falling numbers of applicants. So it was natural also to question tracking at the higher secondary level of education. This was a high time of democratic reforms of the educational system following the student unrest of the late 1960es. Apprentices played a central role in the early waves of the student movements with sizeable demonstrations around the country against the traditional apprenticeship (*‘Master apprenticeship’*). Consequently demands were raised for a unified and untracked system of higher secondary education especially in part of the labour movement and on the Left Wing in Parliament. It is relevant to take a look back at these historical encounters, since this period in theories of path dependency can be considered as a ‘critical juncture’ (Thelen 2004; Mahoney 2000). The outcome of the struggles, negotiations and the coalitions formed in this period has set the direction for the institutional trajectory in the following decades till today.

History of hybrid qualifications

A Parliamentary Commission was set up by the social democratic government in 1967 to develop proposals for a major reform of the apprenticeships system. The main thrust of the reform was to introduce a new one year basic course as a common element in all programs. The student should start with basic vocational training in combination with general education in a vocational college before signing a training contract with an employer. This was a step in the direction of a unification strategy for higher secondary education – and thus an opening up for hybrid qualifications. Several arguments were given to change the deep-rooted tracking in higher secondary education: first the shift to a school-based entry to vocational education allowed for the students gradual and qualified choice of program. In traditional apprenticeship the choice of the final program was made at an early age – and almost one third never completed, often because they found out they had made the wrong choice. In the reformed vocational program this was replaced by a gradual specialisation through successive choices. Secondly, this was thought to increase the flexibility of the educational system and allow for a shift between programs and to increase the mobility of the skilled workers on the labour market. The de-specialisation of the vocational programs was meant to prepare the students better for lifelong learning and enhance their adaptability to a future of more rapid and continuous change. Thirdly, the increase of general subjects in the curriculum to 40% was substantiated by pointing to the importance of education for citizenship and democratization and co-determination in working life. Earlier this perspective had not been given weight, as apprenticeship was conceived of as a preparation for a lifelong employment in a specific occupation. This conception of apprenticeship seemed to rest on a consensus between the utilitarian interests of employers

and the practical and work oriented interests of apprentices, who were often tired of school based forms of education. Lastly, the reforms intended to attract more qualified students to vocational education, because of the dramatic decrease in the number of apprentices and the equally dramatic increase in the intake in the Gymnasium and general education.

In connection with the reform proposals were raised to introduce a new Vocational Gymnasium that would provide a vocational certificate as well as meet the requirements for access to higher education. It was proposed that some subjects in the vocational program could be completed in the Gymnasium through a close cooperation between the two institutions. This would mean programs of hybrid qualifications.

The political debate in Denmark was parallel to the debate in neighbouring Sweden, where employer engagement in vocational education had not been as strong as in Denmark. In Sweden a major reform was implemented in 1972 to form the comprehensive Gymnasium that integrated a number of vocational programs, and where all students were expected to reach a level of qualifications to get access to higher education. But since this comprehensive Gymnasium did not include workplace learning as a substantial component and had weak links with employers and the labour market, it did not give direct access to the skilled labour market.

In Denmark the legislation for the reform was passed in Parliament and even the political parties closest to the employers supported the expansion of general subject in the programs. The abolition of the traditional apprenticeship was foreseen to be carried through in 1982, and developmental work was planned to test new forms of integrated general-vocational education. At this point Denmark was close to what can be perceived as 'a Swedish solution' that would pave the way for an educational pathway providing hybrid qualifications combining vocational certification and access to higher education (Christensen 1978). These intentions though were never put into practice. Following the economic crisis in the middle of the 1970es the parliamentary balance shifted and the neoliberal-conservative government applied the brakes in 1982. Traditional apprenticeship was to continue alongside the new Basic Vocational Education (EFG). Simultaneously the skilled workers unions went against the integration of the two tracks, because they feared the labour market organisations would lose influence in a comprehensive model. The Federation of Employers even more strongly opposed the plans, as they feared that the expansion of the general qualifications would reduce the priority of vocational skills in the programs and thus the quality of the skilled workers. As the political climate in the following years shifted from a Social democratic belief in state based planning to a neo-liberalist belief in market based and demand oriented delivery of qualification to business, the attempts at major reform were blocked. Through the following two major reforms of vocational education no attempts have been made to bring to an end the separation of the two tracks – and the separation of vocational and general qualifications in higher secondary education.

In the 1980es a new intermediary pathway, the Vocational Gymnasium was established with two programs: a technical and a business program. The Vocational Gymnasium was placed in the institutional context of the vocational colleges in order to raise their attractiveness to the more ambitious students and approach vocational education to general education. Over the years though the Vocational Gymnasium has been integrated more strongly into the general track, and lost its close connection to vocational education. It has not become an institution

offering hybrid qualifications. For a proportion of the students, especially in the business program, it has become a pathway to achieve double qualifications. Typically they don't continue from the Vocational Gymnasium to higher education, but shift over to the vocational track and complete a vocational education in reduced time.

Widening the access to higher education

The issue of equal access to education has been central in the Nordic welfare states in the post-war period. Education is basically considered as a common good, not an investment for the individual. Widening the access to education has been a key element in the political strategy of the Social Democrats and the Left Wing in Parliament for achieving a more equal and just society. This strategy was connected with a strategy based on Human Capital theory to increase public investment in higher education for financial reasons.

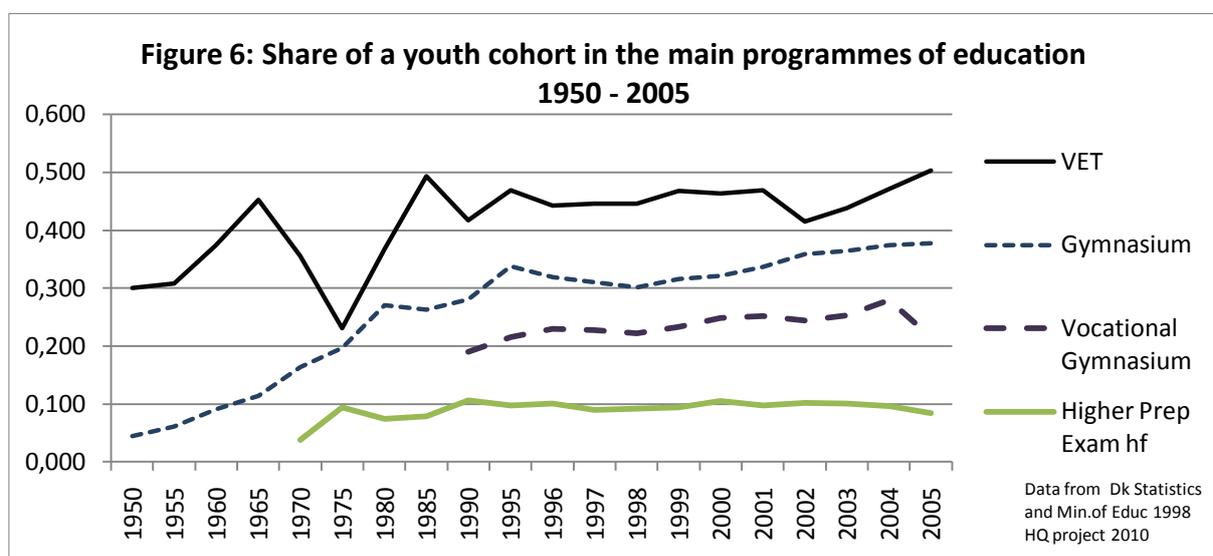
As a result education in Denmark on all levels is public and without fees and formally access is open to all, except in programs on the higher levels of adult education. The great expectation that was attached to education during the period of rapid growth has gradually waned, as research in education showed that social inequality largely continued (Hansen 1983; Jæger, 2007). Even though Higher Education had opened up for the inclusion of broader social groups, the mechanisms of social reproduction are still very effective. All social groups had been lifted up through the educational expansion, but the gap between the social groups had remained almost unchanged due to the 'elevator effect' (Beck 1986). As higher education have expanded, new distinctions have emerged. Access to the high-status university programs is limited to children from the academic elite. Recent research has shown that the social bias in the social backgrounds of the constituency of different universities varies from a factor 3 at some of the new universities in the periphery to a factor 15 at the old universities in the larger cities (Thomsen 2010). The disappointing results of achieving social justice contributed to a shift in the arguments for widening the participation in Higher Education.

The reform policies that connected Higher Education to 'democratization' was increasingly supplemented with arguments of the economic interest of society in taking advantage of the 'talent reserve' of the entire population. Similarly the argument was proposed that policies should secure that public spending on Higher Education was actually used on those who had the most talents – and not just on the offspring from a closed elite. The economic boom of the 1960es and the expansion of the welfare state created a lack of higher education graduates. The result was a quick expansion of participation in tertiary education - in fact participation doubled every three years during the 1960es. This expansion was supported by the emerging theory of Human Capital that pointed to the importance of specialized scientific knowledge as a key factor in the growth of modern economies. The economic arguments were at first oriented towards meeting the demands of the national economy and its still more technologically advanced production system. But it had also an international dimension. Denmark was close to the front during the Cold War and after the Sputnik chock in 1957 the 'system competition' between East and West led to increased interest in higher education – and a strong growth in the participation in university studies. In fifty years, from the beginning of the 1950es to the turn of the century, the number of students participating in university studies has grown over

eight times from 13.000 to 107.000 students (Ministry of Education 1998; 2008a).

At the same time, and as a precondition, the number of students in the Gymnasium rose rapidly from the beginning of the 1960es as shown in figure 4. In the period from 1950 to 1970 the number of students in the Gymnasium tripled, and in the period from 1950 to 1995 the number of students in the academic track as a share of 18 year olds rose from 5% to over 50%; this was more than ten times doubling in less than fifty years. The academic drift certainly was strong, and the Gymnasium seemed a success. In the 1960es this was paralleled by a rapid decline in the intake of students into vocational education. This crisis for vocational education resulted in a major reform of VET that abolished the traditional model of apprenticeship and introduced the new Basic Vocational Education (EFG). It was a more school based form of education that represented an approximation to the academic track. Generally the success of the Gymnasium did not happen on the expense of vocational education. With the first oil-crisis in the middle of the 1970es the youth labour market collapsed and the influx into vocational education rose sharply. Since then the vocational track has maintained an intake of around half a generation of 18 year olds from the beginning of the 1980es up until today (figure 4).

Tracking has been a constant characteristic of the dual system in Denmark. It has been shown that early tracking, in grade 4 – 6, which is common in several European educational systems, is particularly harmful for children from families with low socio-economic status (Hanushek & Woßmann 2006; Gangl & Müller 2003). Considering the strength of the political consensus on equity in education it is remarkable that the issue of strengthening the link between vocational education and Higher Education has been virtually absent in the political debate. The focus has been on the recruitment to the Gymnasium and Higher Education, not on giving access for people with a vocational education to higher education. This probably has to do with the relatively favourable position of the skilled employees on the Danish labour market with respect to low unemployment, good earnings and career prospects. In addition the wage differential between skilled employees and higher education graduates is low in Denmark (*“The rewards for tertiary education are substantially lower in Denmark, ..”* OECD 2009 p. 157; Chart A7.1.). As a consequence there has been little pressure from the strong skilled workers unions for ac-



cess to higher education, maybe also caused by the reluctance by these unions to lose members to the professional organisations of the academic community.

In sum the policies of pursuing a more equal access to Higher Education and of widening the participation in Higher Education has relied on a general political consensus in Denmark. These policies have been based on two competing discourses: One under the label of a ‘democratisation’ of education and increased social equality and justice, the other under the label of economic growth and welfare. Since the early 1980es the balance between these political discourses has changed. In the 1960es and 1970es the agenda of social equality was strong and a number of measures were taken to open access for students with a non-academic background. But during the last three decades the economic agenda for Higher Education has been strongly revived in connection with the discourses of globalisation and the emerging ‘knowledge economies’ (Arnesen & Lundahl 2006). For the present government this has been condensed in the slogan: *‘From research to invoice’*, which requires a closer connection between Higher Education and business. This has led to a wide-ranging reform of the governance of Higher Education with two main implications: the autonomy of universities is reduced and substituted with governing by a board of directors with a majority from outside the academic world, especially business. Funding for teaching is closely linked to productivity and a larger share of funding for research is dictated by political agendas. With respect to the expansion of participation in Higher Education there is broad political consensus on the goal that at least half of a generation of young people should complete a Higher Education in 2015. The present figures show that 45% of a cohort completes a Higher Education (Ministry of Education 2008a), which is slightly below the OECD average (47%) and substantially over the figures for other countries with dual systems like Germany (32%) (OECD 2009).

Advantages and disadvantages of hybrid qualifications in Denmark

Drivers and barriers related to the educational system

Hybrid qualifications have only implicitly been part of educational policies to end tracking at higher secondary level. The unification strategy (Raffe a.o. 1998) has, as described in the report, been part of the struggle for social justice by achieving equal opportunities for access to education. The transition to a unified system would give new opportunities for combining general and vocational qualifications in one program – to realise hybrid qualifications. In principle there has been consensus in Denmark that everyone should have equal chances to develop their talents. The intention of achieving a *‘democratization of the access to education’* was formulated early by the Youth Commission, which was set up in 1945 to deal with the question of the integration of the large, post-war youth cohorts. It underlined the interest of society in giving access to Higher Education for all, independent of their financial capability. *“It should be possible for everyone, independently of their own or their parents’ financial conditions to achieve the education that their talent and interest proscribe...”* (The Youth Commission 1949 p12 quoted from Hansen, E.J, 1997). This has not just meant the absence of tuition fees and the

introduction of public study grants support. It has also resulted in the establishment of new educational programs such as the Vocational Gymnasium that has succeeded in recruiting a larger share of students from non-academic families. In addition a comprehensive system of adult education provides opportunities to return to education after some years on the labour market, for example the Higher Preparatory Exam, hf, which gives access to higher education. These policies seem to have underestimated the social and cultural barriers to widen the participation in education. Although the effects of class and financial conditions have decreased, considerable imbalances have remained in social recruitment to higher education (Hansen 1997; Thomsen 2008; Jæger 2007). One of the mechanisms behind these imbalances is the tracking of higher secondary education. The idea of hybrid qualifications challenges the deep-rooted tracking in the Danish educational system at this level. As the analysis has shown, strong interests have resisted attempts to unify the two tracks. Firstly, the barriers to unification and hybrid qualifications are differences in the forms of governance of the two tracks and the diverging interests of their multiple stakeholders. Historically this has not least been the reluctance of the labour market organisations to cede control of VET. Secondly, the divergent educational and social backgrounds of the teachers and the learning cultures in the two tracks constitute a serious barrier. This has been manifest even in the more manageable attempts to integrate general and vocational qualifications in the existing the VET system (Juul 2001). Thirdly, the educated classes have an interest in preserving the Gymnasium (stx) as a separate institution apart from vocational colleges. Lastly, the government is unwilling to accept a system providing hybrid qualifications, if this implies additional costs similar to the costs of double education.

In the spring of 2010, the government has passed a proposal to introduce additional general qualifications as an option in vocational education (the eux program). This is expected to attract only a small minority of the vocational students. It has limited chances of becoming a well known and recognised pathway offering hybrid qualifications. In addition the interest of the state is ambiguous, as a hybrid pathway would very likely require more resources than the present structure. Students acquiring hybrid qualifications in order to progress to higher education would occupy training places that are in short supply. They could displace ordinary trainees and add to the problem of a lack in training places.

Drivers and barriers related to the labour market

The distribution of qualifications from the educational system to the employment system takes place through the labour market. In Denmark, qualifications are mostly distributed in a standardised and aggregate form as *occupational qualifications*, and less as discrete job-related or individual qualifications. The allocation of qualifications is quite strongly organised by trade unions, collective agreements, demarcation agreements and a close cooperation between the labour market organisations. In this process, qualifications are structured according to the structures and tracking of the educational system on the one hand, and to divisions of labour in the employment system on the other. The main divides on the labour market run between skilled and unskilled workers unions, blue- and white-collar workers organisations and between the confederations of the professions and the confederations of the workers.

Hybrid qualifications cut across some of these established divisions and thus pose a challenge to the organised labour market interests. The disputed questions are: who should organise persons with hybrid qualifications, what work should they be employed in, and under what conditions should they be employed? Skilled workers on the one hand and middle level technicians, planners and managers on the other are organised in different unions. Unskilled workers also have separate unions. Historically the skilled workers unions on the one hand have tried to maintain control of their segment of the labour market and their specific areas of work against the attempts of employers to substitute skilled workers with unskilled workers.

For employers this is motivated by an interest in increasing the competition among workers, lower wages and to increase employer control. On the other hand the skilled workers unions have struggled to gain control of new advanced areas of work that have developed due to the technological restructuring of work. When some of the more simple tasks were handed over to semiskilled workers, were outsourced or automated, the skilled workers' unions have upgraded 'their' VET programs to include more complex and abstract tasks and the general qualifications needed to perform them. This could be a potential interest in hybrid qualifications. But the skilled workers' unions have had little interest in providing broader pathways to higher education, as this would mean losing their most qualified members. This indicates a general ambiguity related to the introduction of hybrid qualifications.

Access to higher education can be valuable for individuals, but can be a problem for groups and organisations – or even for society, if the ambition is to achieve a more equal distribution of chances and resources. The expansion of educational participation in the last fifty years has even given access to Higher Education for more children of skilled and unskilled parents. But the relative inequalities between the social groups have not been fundamentally affected (Beck 1986). The opening up of pathways for social mobility through higher education to high positions in society for some individuals from the lower classes could neutralize social and political tensions. This has been a common assumption in sociological theory. In a meritocratic society social inequality is legitimated by equality of educational opportunities (Young 1958). Increasing the social mobility of individuals in a stratified society can contribute to a perpetuation of the hierarchical system as a whole. This is an additional explanation of why the trade unions have been reluctant to promote hybrid qualifications and pathways to higher education.

Drivers and barriers related to the employment system

Skilled workers and craftsmen constitute a core part of the labour force in the Danish production regime (Estevez-Abe & Iversen & Soskice 2001; Gallie 2007). In Denmark, processes of deskilling connected with Taylorism have been less pervasive than in Anglo-Saxon countries. Skilled workers in Denmark generally have considerable autonomy and in addition have good opportunities of progressing into more advanced jobs (Kristensen 1996). In our survey among the former VET trainees who completed in 2004, more than half of the respondents said that they were working with tasks that are more demanding than their education qualified them for (Jørgensen a.o. 2009).

Table 5: Drivers and barriers for hybrid qualifications in Denmark

	Drivers for hybrid qualifications	Barriers for hybrid qualifications
Educational system	<p>Strategies for achieving parity of esteem: upgrading VET with academic qualifications (the new eux program) to produce hybrid qualifications.</p> <p>Strategies for increasing equity in educational opportunities by ‘unification’ (de-tracking) (Raffe a.o. 1998)</p>	<p>Different forms of governance between general and vocational education. Labour market partner worried about losing control in a comprehensive system of education.</p> <p>‘Double education’ considered waste of resources by government.</p> <p>Different learning cultures and different backgrounds of teachers in general and vocational education.</p>
Labour market	<p>Skilled workers’ unions strive for academic upgrading to compete for control over areas of work with technicians and graduates from higher education (Thelen 2001).</p> <p>Maintaining ‘social closure’ by strengthening the theoretical knowledge base of occupation (<i>‘academization’</i>)</p>	<p>Strong tradition of separate federations of trade unions for skilled and unskilled workers and graduates from higher education and different traditions of unionism work against hybridization.</p> <p>Compressed wage structure in Denmark reduces incentive for skilled workers to progress to HE.</p>
Employment /production System	<p>Knowledge-based production requires more abstract and analytical thinking in combination with vocational knowledge.</p> <p>Some companies prefer graduates from the Gymnasium instead of trainees from the dual system of VET.</p> <p>Demands for codification of vocational knowledge for reasons of control, standardization and knowledge sharing (Stevenson 2001).</p>	<p>Established divisions of labour and patterns of organizational control. Higher education graduates and skilled workers are employed on different labour market segments.</p> <p>The Danish production model is based on craft skills in SMEs. Work-based careers are open to skilled workers and this reduces their incentive to embark on education based careers.</p> <p>New forms of vertical segmentation of internal labour markets.</p>
Culture	<p>The growing cultural value of general education, the ‘academic drift’, drives a growing proportion of youths in the direction of the Gymnasium.</p>	<p>Incongruity between learning cultures in the two tracks due to differences in social backgrounds of students and teachers.</p>

In connection with other evidence, this provides an indication that skilled workers generally have considerable opportunities to move upwards in the organisational hierarchy. Advancement in the employment system seems to be an attractive alternative to advancement through formal education, which might not have clear financial advantages. Wages of skilled workers are close to those of the middle technicians and supervisors. Employment rates are high for skilled workers and beyond the present financial crisis, the future for employment seems favourable. These conditions probably explain why few employees with vocational education progress into higher education. The institutional complementarity between education and employment in the Danish model means that skilled jobs seldom require a high level of general qualifications. Hybrid qualifications in the form of double education only play a significant role in certain industries like printing, banking and insurance and ICT.

The relatively favourable position of the skilled workers is related to the craft-based small scale production model. This model is under pressure due to increased global competition and the transformation to a 'knowledge society' (Gallie 2007). The question is what role hybrid qualifications could have in this situation?

One likely trend is that the productive centre of the organisation will shift from the skilled workers to the academic and professional employees. The increased supply of people with higher education leads to changes in recruitment patterns and organisational hierarchies (Noyelle 1987; Marsden 1999). This implies that the career patterns of skilled workers might be limited by new forms of segmentation of internal labour markets due to the increased employment of professionals. As a consequence the intermediary positions, which could earlier be attained by skilled workers through internal advancement, become filled by people with a higher formal education. These intermediary positions have drawn on of a kind of 'hybrid qualifications' developed on top of an apprenticeship in jobs that include planning of production and personnel, project management, negotiations with customers and brokering between R&D departments and production departments (Kristensen 1996). With the expansion of the non-production related activities there has been a growing professionalization of these functions. This happens even in the SMEs that have traditionally relied strongly on skilled workers for a wide range of tasks. The result is that new 'glass ceilings' are established for the internal advancement and informal learning of skilled workers. They can only obtain limited internal advancements without acquiring formal education at the tertiary level. This can create new incentives to develop hybrid qualifications to give skilled workers access to higher education. But the closing of the internal career ladders might also lead to an increased separation of the two groups of employees. Their qualifications would be separated, not hybridized.

The strength of this trend towards new career patterns and segmentation of internal labour markets have not been studied in detail. Our research (Jørgensen a.o. 2009) on the labour market careers of skilled workers in the first 3 - 5 years after the completion of an apprenticeship indicates that there still is a high degree of vertical mobility for skilled workers into jobs that comprise management, coordination and planning tasks. This mobility takes place without these employees going through tertiary education.

Drivers and barriers related to culture and work biographies

As mentioned earlier qualifications play multiple roles as productive human capacities, positional goods and admission cards to professional organisations. Qualifications are also a key component in identity formation and in the formation of meaning in working life. As an increasing number of people complete more formal education, the credentials and the qualifications acquired become essential markers of identity. This is increasingly so, as the significance of traditional markers of identity are losing their pivotal role: the belonging to a family, a class or a locality. As a result of the meritocratic tendencies – though not uncontested – of modern societies credentials and qualifications become important as determinants of the life courses and as key components of work biographies (Alheit 2005; Billett 2006).

What then is the role of hybrid qualifications in the work biographies of skilled workers and VET trainees? It has been emphasized that a key quality of the dual system is that it facilitates the socialisation to work and the integration of the trainee into the skilled workers community (Deissinger 1998; Heinz 1995). They develop identities as craftsmen with vocational qualifications that are different to the general qualifications of the academic track. The separation of general and vocational education in Denmark has resulted in the development of two distinct learning cultures along the two tracks. These cultures are generated by the values that students coming from different social backgrounds bring into the education, by differences in the teach-

Table 6	
Vocational and general qualifications perceived in the vocational culture	
VET - vocational qualifications	Gymnasium –academic qualifications
Applied and useful qualifications	General and abstract knowledge – ‘just theory’
Practical knowledge organized for productive problem solving	Theoretical knowledge organized in disciplines and subjects for reproduction in school
Experience and skills whose values have been proved in real practice	Knowledge that is correct according to theory – but has limited relevance for practice
Qualifications to handle ‘real world problems’ and get things done	Qualifications to solve school tasks and talk about the world outside school
Vocational and general qualifications perceived in the academic culture	
VET - vocational qualifications	Gymnasium –academic qualifications
Narrow and specific skills	General knowledge - universally useful
Qualifications to do jobs: execution of tasks	Qualifications to plan, analyze and manage activities: conception and planning
Qualifications as practical skills and ‘know how’	Qualifications as ‘know that’ and ‘know why’: understanding relations, reasons and causes
Knowledge and skills based on practice, tradition and intuition	Knowledge based on science, reason and arguments

ers backgrounds and by the curricula and purpose of the programs. This has resulted in differences as to what kind of qualifications are valued and considered as meaningful, and a dualist conception of qualifications as outlined in table 3. In the academic and the vocational culture, the qualifications of the other track are conceived as having less value. This dualist conception relates not just to the two tracks, but can also be found in vocational colleges where general subjects and vocational teaching are managed by teachers with different backgrounds and cultures (Juul 2001).

These dualist conceptions in the learning cultures of the two tracks constitute barriers to the introduction of hybrid qualifications. Probably more so in VET than in the vocational gymnasium, where some degree of hybridisation already exist, though without including work based learning or certified qualifications for the labour market.

Studies have shown that the dualist conception is often strongest early in the traineeship. As the trainee in practice experiences the need for theoretical knowledge, a more integrated understanding of qualifications develops (Jørgensen 2006). Accordingly an interest for general knowledge and further education often arise after some years of occupational practice after the completion of a vocational program. But at that time other biographical circumstances make it difficult to progress into higher education.

Conclusion: Why are there almost no hybrid qualifications in Denmark?

The connection between the dual system of VET and the tertiary level is quite weak in Denmark. In addition there is limited interest in the issue of improving the permeability from initial vocational education to higher education. This is not and has not been a significant political issue. Consequently hybrid qualifications are practically non-existent in the Danish educational system. Several reasons for this can be identified.

First, the tracking of youth education and the structure of the educational pathways diverts young people who complete a vocational education, from progressing to higher education. In the dual system of VET they do not acquire qualifications for entrance into higher education. On the contrary during the program they become well-integrated into the labour market. And when they complete, they start receiving high introduction wages and have high employment rates. This is among other things due to the fact that around half of the students from the dual system continue as employed in the company where they were trained. Their transition to the labour market has been achieved successfully, when they complete VET. Typically they will be members of the skilled workers union, participate in their community and have a strong occupational identity. If they want to progress to higher education, they have to break with this trajectory and re-enter the educational system. In addition the social and cultural background of the great majority of skilled workers makes it unlikely for them to invest in academic education. In their social environment, higher education is unknown territory and investment in higher education has a uncertain outcome.

A second reason relates to the life course of vocational students. New entrants on the skilled labour market have earnings very close to the level of the experienced workers. Trainees double their income, when they change status from being a trainee to become an ordinary em-

Table 7: Income over the life course depending on education		
Education		Income over the life course (mio. DKR)
Vocational education Higher secondary level		
	Business administration	11,7
	Car mechanic	12,2
	Electrician	12,5
Higher education Tertiary level - Bachelor		
	Nurse	11,6
	Teacher in Primary school	12,8
	Building Technician	14,0
Source: Dalskov 2006		

employed craftsman. This happens typically in the period of life when they establish family, get children, and buy their own home and car. They become tied up financially in a way that makes it difficult to take three or four years out for studying. Normally they will have to start by acquiring higher education entrance qualifications (six months to two years) and afterwards take up at least two years study at the tertiary level. Their earnings after completing a higher education will not always be significantly higher, than what they earned as skilled workers (DØR 2001 tabel II.21). Often a skilled male worker living with

a female nurse or a social worker will earn more than she does – even though she has an education at the bachelor level and his is at the higher secondary level (table 7). Graduates at bachelor level will more often be employed in the predominantly female public sector, where wages are lower, whereas males completing VET will often be employed in the private sector with higher average earnings (Dalskov 2006). In addition the distinct learning cultures of the two tracks and the dualist conception of qualifications common among VET trainees constitute cultural barriers to a progression to higher education.

A third reason lies in the organised interest. The skilled workers' union has no interest in seeing their most ambitious and able members shift to a white-collar union or an academic profession. Much of the wage setting in Denmark is decentralised and takes place as employees are pressing for higher wages at workplace level. The gains of the employees with the most bargaining power are used as a lever mechanism by other members of the union to keep up with their colleagues. To support this process they are provided with detailed wage statistics by the union. The highly-skilled and high-income core of the union membership would be the most likely to take advantage of improved opportunities to continue to higher education. This valuable asset could be lost for the union. Instead the strategy of the strong, skilled metalworkers union (*Dansk Metal*) has been to expand upwards. It has established more advanced five-year programs in the dual system to improve its position in the competition for members and for new areas of work with the organisations of the middle ranking technicians and engineers. Our analysis of the career patterns of skilled workers shows that those who have completed the longest and most advanced VET programs have a low rate of progression to higher education. The reason is that they already perceive themselves as being highly qualified specialists and equal to graduates from higher education, according to our interviews with representatives from the trade committee (Jørgensen a.o. 2009).

A fourth reason relates to educational policy and the interests of the Government. Labour market forecasts have pointed to an increasing lack of skilled labour in the future (Fredriksen & Madsen 2006). This could have serious economic consequences, as the Danish 'craft type' pro-

duction model is strongly based on the employment of skilled workers. Shortage of skilled labour could increase the tendency to outsource production or add fuel to a wage-inflation spiral. None of these alternatives look very pleasant from the perspective of the politicians. Thus the Government or employers have no great interest in draining the existing pool of skilled labour by building broader pathways from VET to higher education.

Overall there is no great pressure from any of the key stakeholders for increased access from VET to higher education - from the labour market organisations, the Government or the skilled workers themselves. An exception could be the higher education institutions that increasingly compete for students. Extending the recruitment base from the students of the Gymnasiums to VET students could be interesting. But most of the VET students do not meet the requirements for entrance at the tertiary level – not even for the tertiary short cycle vocational programs. In addition, according to the funding system of the educational institutions (the taximeter system) the institution receives a standard rate per student no matter how much it costs. VET students might be more demanding than students from the vocational gymnasium, who are used to study in a school-based learning environment.

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Christian Helms Jørgensen, Associate Professor Ph.D.

Department of Psychology & Educational Studies, Roskilde University

Postbox 260, DK-4000 Roskilde, Denmark

Phone: 0045 46742923 (work)

Email: cjhj@ruc.dk

<http://www.ruc.dk/paes/>

