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Vocational education and training: dual education and economic crises

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Abstract

In Denmark, Germany and a number of other countries Vocational Education and Training is based on the principle of dual education. This means that the apprentices spend one part of their education and training at a vocational school and another part in a company or firm directly involved in ordinary working life. The close connection to working life implies that the transition from being apprentice to becoming a trained employee is relatively easy compared to school based VET systems.

The principle of dual education within VET is known worldwide for its ability to provide the labour market with highly qualified labour which is able to adjust to new and changing conditions and introduction of new technology. Furthermore skilled labour educated and trained according to dual education has a very high mobility on the labour market. Dual education secures tight connections between the educational system and businesses and enterprises because of the involvement in the educational processes and finally the principal of dual education is a relatively cheap way to educate skilled labour compared to school based educational systems within VET.

The economic crisis put pressure on the principle of dual education within vocational education and training (VET) because the firms and companies are less motivated to provide the necessary number of training places for the apprentices.

On the one hand this causes problems for the young people wanting to take a vocational education as they are not able to finalize it without access to a proper training place. On the other hand it provides problems for businesses and enterprises because there will be a shortage of skilled labour in the future.

In this paper a number of approaches to comply with this challenge from countries which organize their VET on the basis of dual education are presented. The examples come from Denmark, Germany, Austria, Switzerland, Holland and Norway. The purpose of the paper is to provide knowledge and inspiration across countries about different ways of handling the principle of dual education in difficult economic situations and to create a basis for making the principle less fragile during economic down turns. © 2010 Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: Vocational Education, and Training, Dual Education, Economic Crisis.

1. Introduction

In Denmark as in a number of other countries Vocational Education and Training (VET) is organized around a principle of dual education where the apprentices alternate between a vocational school and training place in a company or firm. Thus the provision of a sufficient number of training places is the main precondition for the success of the system. The economic crises has inclined the firms and companies to be more reluctant to accept apprentices and therefore the number of training places are not sufficient to meet the demand from young people to

become a trained craftsman or to meet the labour market's future demand of qualified labour. In other words the principle of dual education is under pressure and needs revision..

2. The Danish Situation – an example

The Danish government has presented the ambition that in 2015 95% of a youth cohort must finalize a youth education (i.e. VET or College). The VET system is seen as the pivotal point for obtaining this ambition. This provides the system with a number of problems because of its dependency of a sufficient number of training places in firms and companies. Due to the economic crises the number of training places has declined and increasing number of young people do not finalize a youth education (Koudahl 2008). In other words the principle of dual education is under pressure – as it is in other countries which have organized their VET systems around the principle of dual education. What is to be done to secure the obvious advantages of dual education and at the same time secure its independence of economic downturns and market conditions?

3. Different organisation and administration of VET

The way Vocational Education and Training systems are organised differs in different countries. Basically there are three different models which to some extent correspond with the way they are controlled, regulated and administered (Green, Wolf and Leeney 2000):

3.1.1. The Market model

This model which is found in United Kingdom is characterised by very little direct involvement by the State. Basically it is the market forces which determine the education of skilled labour. Training is placed at a firm or enterprise and the content of the training is determined by the specific task of the enterprise or firm. One advantage of this model is that the firms train the labour force they need for their own production and that the number of apprentices complies with the number of training places. A major disadvantage of this model is that there is a risk that the apprentices only acquire a rather narrow qualification profile and that they are not able to take up work in another firm that demands a different qualification profile. On the one hand this might lead to a small degree of mobility on the labour market and on the other hand the trained worker is at risk of becoming unemployed if his qualifications are not needed anymore if the firm closes or new technology is introduced. As the model is totally dependent on the firms' and companies' willingness to take in new apprentices it is very vulnerable to changing economic conditions.

3.1.2. The State controlled model

This model is as an example is found in France the content of the training and the regulation and administration is entirely taken care of by the State. VET is an integrated part of the ordinary educational system and the admittance depends on the young people's ability to comply with traditional school based education and it therefore requires a set of academic qualifications which might be a disadvantage to those young people with a more practical approach to educational activities. In that sense the model tends to become elitist and exclusive. An advantage of this model is that young people do not have to decide if they want a practical or academic based education before entering but they have the possibility to change direction after they have started. A disadvantage is that the qualifications acquired during the training is not the ones demanded by the labour market and further more there is not necessarily a match between the number of trained labour and the demand of the labour market. Because this model is not dependent of the access to training places in firms and companies it is not as such vulnerable to economic changes.

3.1.3. The Cooperative mode

This model which is the pivotal point of this paper is found in Denmark, Germany and a number of other countries. Here VET is organised on the basis of the principle of dual education. This means that the apprentices spend one part of their education and training at a vocational school and another part in a company or firm directly involved in

ordinary working life. The idea is that the apprentice will acquire skills and qualifications needed on the labour market as a whole by alternating between school and the training place as the school will provide those qualifications which the apprentice is not able to obtain at the training place. In that sense this model provides a broadly qualified labour force which is able to take up work in different firms and companies. Additionally the close connection to working life implies that the transition from being apprentice to becoming a trained employee is relatively easy compared to school based VET systems.

4. Dual education: advantages and disadvantages

The principle of dual education within VET is known worldwide for its ability to provide the labour market with highly qualified labour which is able to adjust to new and changing conditions and introduction of new technology. Furthermore skilled labour educated and trained according to dual education has a very high mobility on the labour market. Dual education secures tight connections between the educational system and businesses and enterprises because of the involvement in the educational processes and finally the principle of dual education is a relatively cheap way to educate skilled labour compared to school based educational systems within VET.

It is characteristic that countries that have organised VET according to the principle of dual education have a very high degree of organisation and regulation of the labour market. This goes for both employers and employed who are organized in separate organisations who negotiate terms and conditions for the education and training of apprentices. The countries also have a very developed regulation and administration of the educational system which is to a large extent guaranteed by the State authorities but also accepted by the other parties involved in education and training of the future work force (Thelen 2004). The involvement of the different parties secures a common accept of the system and provides it with a broad legitimacy on the labour market and it commits the parties to the ongoing development of the crafts and trades.

But economic crisis put pressure on the principle of dual education within vocational education and training (VET) because the firms and companies are less motivated to provide the necessary number of training places for the apprentices.

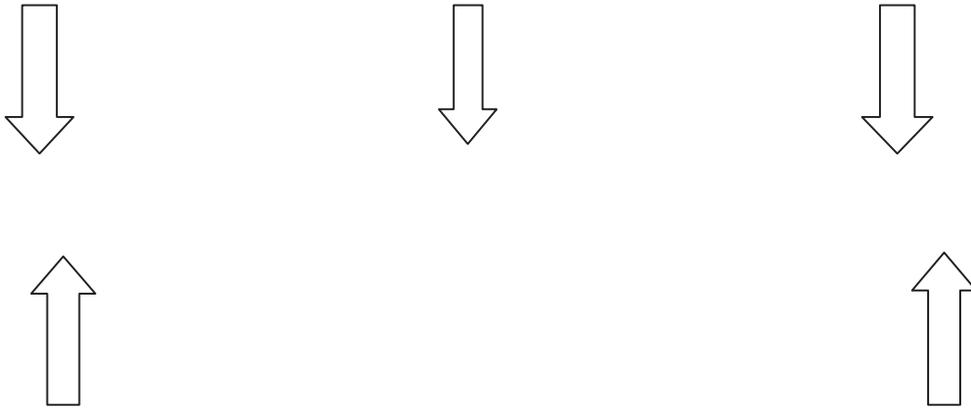
On the one hand this causes problems for the young people wanting to take a vocational education as they are not able to finalize it without access to a proper training place. On the other hand it causes problems for businesses and enterprises because there will be a shortage of skilled labour in the future.

This problem has been addressed in different ways in different countries which organize VET according to the principle of dual education. The following examples of how different countries addresses this challenge is partly based on a number of studies ordered by the Danish Ministry of Education and published in four reports under the administration of The Ministry of Education’s Analysis and Prognoses Unit for Vocational Education and Training System (Oxford Research 2010, Danish Technological Institute 2010, Clematide 2010, Jørgensen and Juul 2010).

5. The market of training places

Factors that influence the market of training places are shown in this figure and will be elaborated in the presentation.

Structural changes	Market conditions	Demographic development
The number of training places affects the labour market’s need for qualifications	The market conditions have an impact on the companies ability to have apprentices because they must have tasks to perform in order to provide training of the apprentice	The size of the youth cohort influences the demand for apprentices which varies over the years.



The model suggests that a number of factors influences the way the market of training places works. It is important to be observant to the fact that there are a number of interests tied to the VET system. Following the theory of social fields presented by Pierre Bourdieu (Bourdieu et. al 1996) you can point to the fact that the companies tend to regard apprenticeship as an investment like other investments, that they are in a position as shareholder and not of a “careholder” and that they often do not have long-term obligations considering costs in relation to the training of the future work force. The (Danish) Government regards VET as a mean to reach a politically set goal on education for all young people, while the young people often regard VET as a mean to be able to obtain a job and to be able to live an ordinary family life (Koudahl 2006, 2008).

6. Different initiatives

6.1.1. School involvement

In Denmark the company based part of VET is to some extent substituted by school based training when there is not a sufficient number of ordinary training places. The access to school based training is regulated by the state on a six month basis. But the quality is rather poor mainly because the vocational schools are not eager to make the necessary investments as school based training is only supplemental to the company based training. Additionally school based training has a low status among apprentices and on the labour market. The employment rate for apprentices who have completed school based training is considerable lower than for apprentices trained in firms and companies (AER 2008, 2009). In Germany school based VET has been developed since the early 1990’ies to overcome shortage of ordinary training places. This system which includes full length VET and supplementary courses etc. includes as many students as ordinary VET. Bus as the case in Denmark the students have bigger problems finding a job after finalizing their training (BIBB 2009, Wordelmann 2009). Both I Denmark and in Germany it seems as if the employers oppose school based education and training, partly because they fear a decline in the quality, partly because they lose their influence on VET when it is transferred into VET schools.

In Holland a two string VET system has been developed. The school based VET where the students spend 80% of their time in a VET school and 20% in a company, and a ordinary dual VET where 80% of the time is spent in the

company. The school based VET attracts the youngest students and the dual based the oldest. Both systems are accepted as equal on the labour market.

6.1.2. Responsibility for the provision of training places

In Switzerland the organizations of the employers are responsible for the provision of training places and it is common that more companies “share” an apprentice. This is different for Denmark where the apprentice and the VET schools are responsible of finding a training place and apprentice signs a contract with one company for the full VET. In Germany all companies and firms are to be member of a “Chamber” (Employers organization) and those organizations play a main role in the provision of training places. Furthermore Germany has a long tradition of separate apprentice workshops in the companies separated from the ordinary production.

Austria also has both a school based and a dual based VET system. Apprentices who have an agreement to take up training in a company can be signed in to the dual based VET. As an alternative to this permanent training centers have been established where it is possible to finalize the whole VET or to take part of VET and continue in a firm or company. This flexible arrangement has proved very inclusive and has given lots of young people the chance to finalize their VET.

In Norway regional training place offices are established in a corporation between the ministry of Interior and the local employers’ organizations with the responsibility to provide training places and to make sure that all potential apprentices are guaranteed a training place. In other words the interests of the state and the interests of the employers are merged in order to secure the interests of the young people seeking VET.

Experiences from different countries suggest that there is no alternative to school based or training center based involvement in VET if the principle of dual education is to be provide the necessary number of training places independent of economic up- or downturns. The challenge is to secure the advantages of dual education *and* to make the system more rugged in the long perspective and less dependent on economic fluctuations.

6.1.3. Alternating between school and company

In Denmark the company based parts of VET is 75% of the total educational time (app. 4 years). The apprentice spend short periods at the vocational school and long periods at the company or firm. In Germany and Switzerland the apprentice typically spends 1 day per week in school and four days in the company. In Norway VET begins with a two year school based course and hereafter two years in a company.

There is no evidence that one of these models is more efficient than the others but it is evident that a combination of both school based, company based and maybe training center based elements can ease the pressure on the ordinary training places with the possibility of including more young people in VET without losing the advantages of the principle of dual education.

7. Suggestions

It is not possible to elaborate sufficiently on this issue within the frame of a five-page paper but a few suggestions will be put forward:

If you want to continue having a principle of dual education In VET it is obvious that there is no way around making supplements to the company based training – if all young people who want to begin VET shall be given the chance. Evidence from Holland and Austria suggests that this can be done in quite different ways. But common to both is that there must be an acceptance on the labour market that all combinations- company, training center and school based VET – are equally good and fine qualification systems. As a contrast both in Germany and in Denmark only the company based VET is found to have the highest status on the labour market.

On the other hand you could leave the question of training places entirely up to the labour market. This would secure a match between the number of apprentices and the number of training places. But it would not provide a sufficient number of training places for all young people who want to take VET, and there is a risk that the system will develop towards the Market model.

Formalized corporation between the organizations and the State in order to secure a sufficient number of training places seems to be a way onwards.

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