



RESEARCH PAPER

No 17

**Vocational education
and training
is good for you**

The social benefits of VET
for individuals



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Foreword

The Europe 2020 strategy for smart, sustainable, and inclusive growth, foresees increasing people's knowledge, skills and competences as one of the main growth engines to propel Europe out of the present deep economic crisis.

Vocational education and training (VET) plays a central role in Europe's response to the unparalleled socioeconomic and technological challenges facing it. VET systems have to endow workers with the right mix of skills and competences, as preventing skill shortages will enable Europe to achieve its full growth potential.

To fulfil their role, VET providing institutions will have to reach out to workers and learners of all ages and social backgrounds. The Bruges communiqué recognises that a new impetus for VET in Europe is needed and that a key strategic objective lies in improving the quality and efficiency of VET as well as its attractiveness and relevance to learners.

The magnitude of the economic and social returns associated with it is an important determinant of attractiveness of VET. While there is extensive evidence on the economic returns on education, only a small, but distinguished, set of findings exists on the social returns. Very little is known about the social and economic returns associated specifically with VET.

The present study is part of a wider research effort by Cedefop to fill this knowledge gap. Over the past four years, Cedefop has investigated the social and economic returns on VET for economic systems, workplaces and individuals. This report complements Cedefop's findings on the economic benefit of VET accruing to individuals, by focusing on wider social benefits such as health, civic participation, and satisfaction with job and income.

This report provides evidence of positive social outcomes generated by VET in terms of increased civic participation and improved health, and that workers in their early career can experience strong positive returns from VET participation. National institutional set-ups are, however, identified as key mediating factors for the realisation of social benefits of VET, i.e. the nature of the social benefits of VET will change depending on the type of system and, hence, according to country. Comparing the social outcomes of continuing vocational training with other types of adult learning (of a general nature) demonstrates that all forms of continuing education and training generate positive social outcomes for individuals and that these are of the same nature and magnitude whatever the type of adult learning.

I trust this research paper, and Cedefop's work on VET benefits, will help policy-makers in continuing to make the case for increasing the attractiveness of VET among learners of all ages and demonstrating that VET is a crucial pillar of European productivity growth and social cohesion.

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Acting Director of Cedefop

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Executive summary

Aims

This project had three aims:

- (a) to review different theoretical approaches explaining why a learning experience can benefit individuals, their families and their communities and to apply these theoretical principles to the particular case of vocational education and training (VET);
- (b) to locate initial VET (IVET) and continuing VET (CVET) within national contexts of education provision and their relationships with the economy; in so doing, to determine whether these national contexts exhibit characteristics which are desirable for social benefits to be realised;
- (c) to test empirically the social benefits of IVET and CVET in Europe, using data from the European community household panel (ECHP).

Theoretical background

There are sound theoretical perspectives that support the formation of the social benefits of learning. Positive VET experience can generate benefits to individuals beyond those of income and employment; the learning content can foster confidence and self-esteem in learners and offer topics relevant to the individual's engagement with their family and society. VET provision should not be geared solely towards giving people the 'know how' or 'the skills to do their job' but should improve individuals' competences, including the ability to meet complex demands and the habits of self-direction. Individuals in a VET setting also have the opportunity to learn from other learners, make new social groups and possibly modify previous ones. These interactions are extremely important for knowledge transmission and improvement in psychosocial factors such as attitudes, motivations and values, which could lead to wider social benefits or social outcomes for learners.

On completion of formal VET, successful learners receive a degree or diploma which is valued in the labour market. The value of this certification has been explained in terms of signalling to employers the potential skills and abilities acquired through the VET experience. In several countries, however, VET

qualification has been regarded as a 'second best' option. This has implications for learner participation, engagement, and future ambitions. Positive VET experience should enable individuals to have success and mobility in the labour market, both in terms of promotion within their specialised field and in terms of job change due to the transferability of skills. It is our premise that positive VET experience, promoting individuals' self esteem, confidence, and agency (habit of self-direction), skills which are becoming extremely valuable in the labour market, should enable labour-market success. It should lead to further learning.

At macro level, VET is embedded into the national context of educational provision and is linked to labour-market regulations and provision of other social services. VET differs in the ways in which learning is provided, the monetary and non-monetary value attached to a qualification, the links with other educational institutions and with the labour market. National systems of social protection, whether market-based or publicly provided, can foster economic and social returns on VET; they may also diminish these returns. All these are important features that could enable a positive VET learning experience to result in benefits beyond those associated with income.

Key findings

Drawing on data from the ECHP, the main empirical findings are as follows:

- (a) there is evidence that for individuals across Europe, IVET is associated with positive changes in health outcomes (measured by indicators such as self-rated health and lack of chronic health conditions), with membership of organisations, and with satisfaction with job or main activity. Some of these associations are only found for individuals living in Finland and Sweden. As the IVET systems of these two are characterised as egalitarian school-based systems, this finding supports the hypothesis that an integrated school system which treats vocational and general education equally, both as educational options and as routes of access to higher education, has a positive effect on individual well-being;
- (b) we found IVET to be associated with increased membership of voluntary organisations in national contexts where participation in civil society is rewarded, such as in Denmark, Germany, Luxembourg and Austria. This suggests that, through participation in IVET, individuals may find incentives to join voluntary organisations;
- (c) there are positive associations between satisfaction with job or main activity and IVET in traditional south European countries and in countries where

- apprenticeships are widespread (e.g. Denmark, Germany, Luxembourg and Austria). Due to the high levels of youth unemployment in south European countries, it may be that youth who are employed are satisfied with their situation as they know the alternative may be several months out of the labour market. Positive correlation between satisfaction and IVET in countries where apprenticeships are widespread may derive from the multiple legal frameworks that regulate the quality of training, safety and labour provisions for apprentices as well as salaries. Increased satisfaction with job or main activity could be attributed to well-structured and regulated IVET;
- (d) most association between CVET and social outcomes is found for individuals in their early careers, for those aged 26 to 45. As with IVET, individuals in their early careers undertaking CVET had positive changes in self-rated health, lack of chronic health conditions, higher rate of membership of voluntary organisations and more satisfaction with job or main economic activity over time. The analysis of CVET by countries suggests that in Sweden, and to some extent in Greece, Spain, Italy, and Austria, episodes of CVET are associated with changes in social outcomes over time, i.e. civic participation and self-rated health to a lesser extent;
 - (e) politically, Scandinavian countries made efforts to improve training and working conditions at the workplace. In particular, these countries attempted to meet the challenge of an ageing workforce; for example, in Finland, programmes aimed to increase participation in training, to improve safety and work protection and to reward competences of older workers. Overall, Scandinavian countries can be viewed as countries with a holistic approach to improving working conditions to keep individuals' ability to work at high level over the life course. Strong associations between CVET and positive social outcomes in Sweden highlight the effect of this approach;
 - (f) for two social outcomes — membership of voluntary organisations and satisfaction with job or main activity — we found some evidence to suggest that individuals living in Greece and Italy who enrolled in CVET may experience positive changes. In addition, individuals in Spain and Portugal also had a positive relationship between episodes of CVET and membership of voluntary organisations. However, in these countries (except Portugal) we found evidence that CVET episodes were associated with increasing chronic health problems. The reasons for this remain open to debate: further analysis could focus on industry level, looking at sectors with a high share of CVET. Chronic health problems could be due to the sector-specific structure of the workforce, for example with respect to age and educational level;

- (g) finally, when comparing CVET with other forms of adult learning of general nature, social outcomes tend to be on a par whatever the nature of the course.

Conclusions and recommendations

Looking across our results, we can conclude that there are important complementarities between the institutional arrangements of IVET — and to some extent CVET — and social benefits achieved by individuals. Strong welfare states complement the realisation of health benefits of IVET. Systems that reward civic participation see more voluntarism in organisations linked to IVET. In policy terms, the returns on investment in IVET are affected by the mix of other institutions present in the countries. Without such institutions there is a need for policy coherence across sectors to raise the effectiveness, efficiency and sustainability of the efforts made in IVET to promote social outcomes for individuals. VET itself cannot generate social outcomes without challenging economic and social inequalities at macro level, and stigma and disadvantage attached to the value of IVET and CVET, which individuals perceive at micro level. Tackling these issues may ensure net positive impact of VET for individuals.

Future research is needed to deepen our understanding of how VET is embedded in the system of social and structural inequalities and how this can limit the generation of social benefits. VET itself can deepen educational inequalities if its value is not recognised both socially and monetarily and if there are strong selection effects (VET education mainly catering for the educational needs of pupils from disadvantaged social backgrounds, as a route to earn a livelihood). Previous research mainly focused on the impact of income inequality on economic growth, crime, civic unrest, health, and well-being: few studies focused on inequalities in education. Our results on the possible links between meso-level institutions and micro-level processes by which IVET relates to social outcomes is just the beginning of this research.

Introduction ⁽¹⁾

Many empirical studies show that education, measured as years of schooling or highest qualifications achieved, is strongly related to life expectancy, mortality, obesity, depression, smoking, saving, voting, political interest, trust, volunteering, donating and crime (Haveman and Wolfe, 1984; Grossman, 2006; Feinstein et al., 2006; OECD, 2007; Cutler and Lleras-Muney, 2010). The 2009 edition of *Education at a Glance* (OECD, 2009) presents the relationship between education and three social outcomes — self-assessed health, political interest and interpersonal trust — for 20 OECD countries, and suggests a strong correlation, whereby higher levels of education are associated with better outcomes.

A growing number of studies establish causal relationships between education and various social outcomes. Holmlund et al. (2006) review several empirical studies on the impact of parental education on children's cognitive development, showing a causal effect independent of genetic inheritance. Many of the studies reviewed found that the size of the effect of parental education is modest, with differences by parental gender and social class. From a review of empirical studies on the impact of education on health, Grossman (2005) concludes that several studies show that education has a causal effect on health outcomes, but less is known about the mechanisms for educational effects on health.

However, by focusing on the role of education as measured by years of schooling or highest qualifications achieved, these studies typically do not differentiate between qualifications achieved through general education, those achieved through vocational education and those achieved through a combination of the two. Further, as these studies do not consider the date the qualification was achieved, the question of the different contribution of learning undertaken at different stages of the life course is largely ignored. Although some work has emerged on the association between learning in adulthood and social

⁽¹⁾ Prof. John Preston, University of East London; Prof. Philippe Mehaut, University of Aix-de-Provence, France; Dr John Vorhaus, Dr Andrew Jenkins and Prof. John Bynner, Institute of Education, London; contributed comments and ideas on a previous draft of this report and during our workshop organised in London in October 2009. Special thanks are owed to Dr Yu Zhu, University of Kent, for his support with the understanding of the European community household panel. We are grateful to Eurostat for the provision of the data set.

outcomes ⁽²⁾, or between the achievement of vocational qualifications and social outcomes ⁽³⁾, the role and importance of VET remain relatively unexplored.

This report has three aims. The first is to review different theoretical approaches explaining why a learning experience can benefit individuals, their families and their communities and to apply these theoretical principles to the particular case of VET. The way in which VET should be theorised in terms of microsocial outcomes must be interdisciplinary. Unlike the economic returns on VET, where human capital models predominate, the nature of the social benefits means that we must call on both psychological and sociological theories. Moreover, the benefits of VET are not simply expressed in terms of 'assets' (perhaps various forms of capital) that individuals acquire through the life-course. VET, like other forms of education, is associated with changes in perspective, individualisation and agency. The conceptual framework we propose is, therefore, not only interdisciplinary but also aims to situate individuals within the social context in which decisions concerning learning and life outcomes are taken. While this report focuses on social benefits for individuals, it is necessary to refer to these always as contextualised by meso-level theories (in particular we focus on social capital) and the institutional structures in which decisions are taken (the macro level).

The second aim is to locate VET within national contexts of educational provision. Systems of VET differ in the ways in which learning is provided, in the monetary and non-monetary value attached to a qualification, and in the links with other educational institutions and with the labour market. All these are important features that could enable a positive VET learning experience to result in benefits beyond income or employment. While VET can foster the development of social benefits in some cases, in others the development of these benefits can be inhibited. Although it is not possible to identify empirically how the different elements of a VET experience relate to the realisation of social benefits, we should be able to demonstrate whether the social benefits of VET are context-specific. In doing so, we may be able to determine whether these contexts have the characteristics that are desirable for the realisation of the social benefits.

The third aim is to test empirically the social benefits of VET in a European context. To do so, we drew on data from the European community household panel (ECHP) and obtained indicators of individuals' health, civic participation and well-being. We also obtained indicators for the highest educational

⁽²⁾ Kaestner and Corman (1995); Rosenzweig and Wolpin (1994); Heydon and Reilly (2007); Sabates and Duckworth (2009).

⁽³⁾ Bynner and Egerton (2001); Hammond and Feinstein (2006).

qualifications achieved: more important, we isolated episodes of initial VET (IVET) and continuing VET (CVET) to investigate how these relate to different social outcomes. Our analyses were performed using a life-course perspective, meaning that we differentiated between individual stages in working careers when investigating the possible benefits of VET. Our analyses were also performed by systems of IVET, meaning that we estimated the models for systems of IVET separately. The aim of these analyses is to investigate whether the realisation of social benefits is linked to national IVET systems. If this is the case, we may be able to draw general conclusions about which features of IVET yield social benefits. Finally, our analyses of CVET were undertaken by country to examine whether there are particular countries where the association between CVET and social outcomes is observed.

This report is organised as follows. Chapter 1 provides definitions for VET and for 'social benefits'; Chapter 2 describes different theoretical frameworks for educational benefits. Chapter 3 contains the key features of a positive VET experience which may yield social benefits for individuals. Chapter 4 locates IVET within national education systems and provides a heuristic classification of IVET systems that can be used empirically. Chapter 5 describes the methodology and countries to be included in this analysis and Chapter 6 summarises the results from the empirical models and sensitivity analyses. We provide conclusions and recommendations in Chapter 7.

CHAPTER 1

Definitions

This chapter offers definitions about the key concepts under investigation: vocational education and training (VET) and social benefits.

1.1. Definition of VET

Traditionally, VET has been defined by its aims, which are directly linked to the labour market. Unesco ⁽⁴⁾ and the ILO ⁽⁵⁾ define VET as means of preparing for occupational fields and for effective participation in the world of work (Unevoc, 2008). The OECD (2009, p. 20; 2010a, p. 20) defines vocational education in a similar way: ‘vocational education prepares participants for direct entry, without further training, into specific occupations. Successful completion of such programmes leads to a labour-market relevant vocational qualification’. Cedefop also stresses the connection of VET with the labour market: ‘VET: [...] aims to equip people with knowledge, know-how, skills and/or competences required [...] on the labour market’ (Cedefop, 2008c, p. 202).

These definitions, however, could also apply to general education, in particular at tertiary level, which equips individuals for the labour market. For this reason, Bosch and Charest (2010) add additional features. One typical feature of VET — and initial training in particular — not shared with higher education is the earlier specialisation in an occupational field (below bachelor degree level). Another feature is the status of VET within a given system of education, which differs greatly between countries depending on the structure, content and institutional embedding of VET systems. In some countries participation in VET has a high likelihood of entering into jobs with opportunities for further progression and competitive remuneration. In others, the institutional embedding of VET leads mainly to semi-skilled jobs without an institutional structure that opens up pathways for occupational development. In the US, for example, initial VET is seen to prepare individuals for occupations that ‘typically require an

⁽⁴⁾ United Nations educational, scientific and cultural organisation.

⁽⁵⁾ International Labor Organisation.

educational level that is less than a bachelor's degree' (Bailey and Berg, 2009, p. 271).

Definitions of VET not only demarcate between general and vocational education or the status of VET in national education systems, they also highlight different forms of VET. Two forms can be distinguished: IVET, which is defined as being formal, taking place in education and training systems and is engaged in before entering working life; and CVET, which comprises all training activities after entry into working life and can be formal, non-formal or informal. Formal CVET has an educational purpose, is structured in terms of its objectives, time and learning support and leads to certification. Non-formal CVET also has an educational purpose and structure, but does not lead to certification. Informal CVET can have an educational intention but it is unstructured and does not lead to certification (Cedefop, 2008c).

Different forms and levels of VET are also reflected in statistical concepts. The international standard classification of education (ISCED) distinguishes six educational levels with elements of VET in the lower (level II), upper-secondary level (level III), the post-secondary non-tertiary education level (level IV) and the first stage of tertiary education (level V). Due to differences between VET systems across countries, one main concern of a statistical framework for internationally comparable education statistics is to develop a methodology to translate national educational programmes into an internationally comparable set of categories for levels and fields of education. This is done in the OECD's *Handbook for internationally comparative education statistics* (OECD, 2004) with ISCED-based profiles of educational systems in all OECD countries. Many data sets use ISCED as a basic concept for measuring and evaluating education and qualification in and across countries. The European labour force survey (Eurostat, 2009) uses ISCED to classify the level and field of completed and current education with the international standard classification of occupations (ISCO). This method is also followed by the European community household panel, the data set used for the empirical research of this report.

In summary, VET has been classified according to its aims, which are directly linked to the labour market. ISCED might serve as a salient example here since it classifies VET by its labour-market orientation. This definition, however, makes it somewhat difficult to differentiate between VET and general education since both contain elements that are important for the labour market and others that are more general for citizenship and social life. It is unlikely that any social survey contains sufficient information about the content of learning to enable differentiations to be made between aspects of learning related to the labour

market and those that provide more general skills and competences (Jenkins and Sabates, 2007).

For this reason, this project adopts a practical approach to investigating the possible benefits of VET beyond the labour market. We focus on the links between VET and social outcomes across Europe, in five different systems of IVET within Europe and in all countries where ECHP data is available. Each of the five systems shows institutional commonalities with regard to the form of IVET regulation and the labour-market model (cf. Section 4.3) ⁽⁶⁾. In accordance with concepts provided by Cedefop, we differentiate between IVET and CVET and, whenever possible, between formal, non-formal and informal learning, and between courses according to duration and courses and funding source. The specific construction of indicators for these variables depends on information contained in the ECHP, which is explored in Chapter 5.

1.2. Definition of non-economic benefits of VET

The idea that education produces benefits for individuals over and above their labour market productivity is not new. Early philosophers such as Aristotle and Plato suggested that education is central to fulfilment for the individual and for society (Barnes, 1982; Hare, 1989), and individuals and their societies are able to flourish only through a process of lifelong learning. Their focus in this thinking was not on monetary returns but on the moral development of the individual and the well-being of society. In recent times, through the widespread dissemination of human capital theory, education has come to be regarded as an investment with economic value. For human capital theorists, education is instrumental, and even necessary, to improve the production capacity of individuals and, with this, achieve economic growth (Schultz, 1961). In endogenous growth theories (e.g. McMahon, 2002) human capital also has an impact on growth through other non-market outcomes. For example, learning can lead to better health, which results

⁽⁶⁾ The five IVET systems are: the apprenticeship-based system which is common in Denmark, Germany, Luxembourg and Austria; the continental school-based system in Belgium, France and the Netherlands; the market-led system in the UK and, to some extent, in Ireland; the system of general education characteristic of south European countries (Greece, Spain, Italy and Portugal); and the egalitarian school-based system of Finland and Sweden. We acknowledge that IVET systems differ across countries and even across industries within countries, but this is beyond the scope of this research.

in less work absenteeism and higher production which, at aggregate level, results in higher national production, hence economic growth.

Aside from the economic value of education, social scientists started to observe that individuals with higher levels of education live longer, are healthier, commit less crime, and are more actively engaged in society than individuals with lower levels of education (Haveman and Wolfe, 1984; Grossman, 2005). More educated parents have children who are healthier and more academically able than children of less educated parents. Although these associations do not imply causality, the idea that education is perhaps a key causal mechanism for the generation of these benefits began to emerge in empirical literature.

One of the first classifications of the benefits of education was provided by Haveman and Wolfe (1984). They differentiated between the benefits of education for which there is a market, which sets a value on its return, from those where there is no market. For example, the increase in individual productivity that may result from education can be valued in the labour market by wages, whereas the decrease in pain from ill-health that may result from education cannot be valued in such terms. Haveman and Wolfe also differentiated between benefits of education that are exclusive for the individual, those that produce externalities, and those that are for the public good. Certain benefits can have the characteristics of both being exclusive for the individual and generate externalities. The health benefit of education can be classified as exclusive with externalities, in that it directly benefits the individual but also generates externalities through, for example, reducing the risk of contagious diseases for other people. The impact of education on crime reduction has public good characteristics, since crime reduction is beneficial for all members of society and its benefit is non-exclusive.

A recent elaboration of the benefits of education was provided by McMahon (2009). In line with Haveman and Wolfe, McMahon categorised the benefits of education into direct and indirect and subdivided these into marketed and non-marketed benefits. He also distinguished individual benefits from social benefits, which he referred to as externalities. Higher productivity is an example of a direct marketed benefit, while better own-health is an example of a direct benefit, partly non-marketed. The increase in cognitive ability for children arising from improved education for their parents is an indirect non-marketed benefit, whereas education externalities include the public benefits of education that spill over to others in society, including future generations. In this sense, increased democratisation and institutions that function better as a result of educational investment are considered public goods (McMahon, 2009).

An alternative, but complementary, approach was provided by Schuller et al. (2002). The authors classified the benefits of learning along three main dimensions in terms of three sets of capital: human, identity and social capital. Human capital refers to the knowledge and skills individuals gain through education to enhance their productivity in the labour market and also to function better in various other aspects of their lives. Identity capital refers to tangible assets, such as qualifications, and intangible assets, such as self-esteem and self-efficacy. Social capital refers broadly to networks, norms and close relationships with others in society and with institutions, including aspects of bonding, bridging and linking social capital. This approach, therefore, extends the analysis beyond human capital considerations: the advantage is that benefits of education can be formed by a mixture of capitals.

Schuller et al. (2002) suggested that the social benefits of learning can pertain to the individual alone, as is the case of improved own health, or they may have effects on different forms of social groupings, for example family life or the wider community. In many cases, learning has both kinds of effects. For example, the case of learning reducing the likelihood that young people engage in criminal activities has both an individual effect for young people and a wider community impact. Improved health for individuals and families is another example. It has a direct benefit for the individual, but it could have important social benefits such as reducing the cost of national healthcare provision.

With these classifications in mind, it is important to highlight what we mean by the 'social benefits' of VET for individuals. The term 'social benefits' is partly linked to non-marketed (non-economic or non-monetary) benefits: non-marketed implies that the benefits of education do not have a wage return linked. Nevertheless, social benefits may have an economic value both for the individual and for society (as is the case of better health for individuals, which reduces the cost of national health care provision and the productivity loss of individuals). Social benefits do not exclusively refer to benefits for society. While, in some sense, this is true, for example, for reduced crime or increased civic participation, other social benefits of education pertain to the individual, the family, the community or society as a whole.

The social benefits of VET may be 'final' benefits, or may be 'realisable' benefits, that is, those which accrue tangible (if not necessarily immediate) benefits to the individual. These benefits might include, for example, improved health and quality of life. Some benefits, though, are not immediately realisable but may be thought of as being assets which individuals might draw on in future events. These benefits might include resilience or self-esteem. Learning may bring about transformations in people's lives but it may also enable individuals

and societies to sustain what they are doing or what they have achieved (Schuller et al., 2002). The former type of effect is the one most celebrated in empirical analysis, as with improved health. However, sustaining good health over the life course could also be an important benefit of learning for individuals.

These definitions are particularly important when undertaking empirical research on the social benefits of VET. A key feature of the social benefits of learning, and in particular of VET, is that the economic value is not quantified. For instance, engaging youth in IVET, supporting the prevention of unhealthy behaviour, is viewed as a social benefit of VET. Social benefits of individuals would be better physical health, better mental health, and longevity. This could lead to individual economic benefits in terms of higher productivity, fewer work days lost due to illness, lower private health care costs. Public social benefits comprise, for example, fewer accidents, fewer diseases, and better public health. Public economic benefits could include lower public healthcare costs and higher tax revenues.

CHAPTER 2

Theoretical approaches

Several theoretical frameworks from different disciplines have been put forward to explain how education impacts on non-economic outcomes. Advocates of each theory tend to work within specific academic disciplines or traditions such as public health, economics, psychology or sociology, all of which offer important insights. Sometimes there is clear compatibility between the different traditions but it is not always obvious whether different approaches are competing or complementary. For example, in the approaches discussed by Haveman and Wolfe (1984) and Schuller et al. (2002) human capital is a salient concept. To some extent, the different theoretical approaches reviewed here exist in isolation. Generally, however, they focus on similar issues. Sometimes they use very different methodologies, axioms and assumptions and, in some cases, even different terminologies, so that similarities between them are obscured. For example, in economic models the term 'allocative efficiency' refers to how education makes individuals more able to choose different goods and services and how these enable individuals to achieve social benefits. In psychological models 'allocative efficiency' is explained in terms of different channels or moderators of educational effects, that is, how educational effects are transmitted to individuals (channels) or how educational effects can be modified (moderators).

This chapter draws on theories from sociology, economics and psychology to explain the social benefits that emerge from a positive learning experience. In doing so, it extracts from these theories the main principles needed for a learning experience to result in personal and social outcomes. We do not distinguish learning that is the result of VET from any other kind of education; rather, learning is used as a general concept and discussion focuses on the reasons why this learning enables individuals to be healthier or more active in society. In Chapter 3, we move from this general concept to identifying the main features that a positive VET experience must have to generate social benefits.

2.1. Identity and social capital

In the first instance, we build on the sociological approach to consider whether identity and agency can be impacted by the learning experience. We also focus on the role of social capital, and structural inequalities that prevent individuals from achieving their potential through learning. In its broadest sense, identity capital refers to tangible assets, such as qualifications, and intangible assets, such as self-esteem and self-efficacy, that help to determine how a person defines him/herself (Côté and Levine, 2002). As Côté expressed it: 'identity capital represents attributes associated with sets of psychosocial skills, largely cognitive in nature, that appear to be necessary for people to intelligently strategise and make decisions affecting their life courses (i.e. to individualise)' (Côté, 2005, p. 225).

A positive learning experience can be hypothesised to affect individuals' identity capital by improving self-esteem and self-efficacy, impacting on the overall psychological well-being and the potential of individuals to achieve livelihoods. Learning can also offer individuals the potential to develop a professional identity which, in turn, as it provides them with a sense of autonomy that ultimately improves their psychological well-being, enables them to take control of their work (Deutschmann, 2005). Learning also leads to tangible assets such as qualifications which can be realised in the labour market.

Emirbayer and Mische (1998) define the concept of agency as a temporal embedded process of social engagement, in which past habits and routines are contextualised and future opportunities envisaged with the contingencies of the present situation. For Bandura (2001) agency refers to the capacity of individuals to act independently and to make their own choices. Evans (2002, 2007) suggests that the study of human agency empirically lies in comparing the ways people report and contextualise their present situation, their past experiences and their future opportunities. Evans (2007) suggests that these different dimensions of agency can be identified empirically using 12 indicators: sociability and confidence; fulfilled work life; fulfilled personal life; belief that opportunities are open to all; belief that your own weaknesses matter; belief in planning not in chance or randomness; belief that ability is not rewarded; actively seeking a career; unlikely to move; politically active; helping-/people-career oriented; and negative view of future ⁽⁷⁾.

⁽⁷⁾ There are positive and negative statements in the agency scale measured by Evans (2007). This is a requirement of a Likert scale.

Mirowski and Ross (2005) assert that learning can enhance a sense of personal control, which directly impacts on the individual's agency, and thus enables an individual to live a healthier, happier, and more fulfilled life. A positive learning experience encourages and helps individuals to assemble a set of habits and ways that are not necessarily related, except in promoting health (Mirowski and Ross, 1998). In other words, learning acts as a root cause of good health because it gives people the resources to control and shape their own lives in ways that protect and foster health, regardless of the kinds of health risks faced in their time and place (Mirowski and Ross, 2005).

The emphasis on social capital emerged from a new frontier in sociological analysis based around the work of Putnam (1993 and 1999) and Coleman (1988), and refers to networks, norms and close relationships with other members of society. The most basic form of social capital is bonding social capital, which coalesces around a single, shared identity, and tends to reinforce the confidence and homogeneity of a particular group. Bridging social capital refers to horizontal social networks that extend beyond homogenous entities. This form of social capital involves cross-cutting networks among people of various ethnic, cultural, and socio-demographic backgrounds. Linking social capital is characterised by connections with individuals and institutions with power and authority. This is theorised in terms of vertical rather than horizontal networks within the social hierarchy. Through interactions with other learners and teachers a learning experience can impact on individuals' social networks, reinforcing bonding and bridging social capital. Similarly, learning can enable individuals to have access to institutions, not only in the labour market, but also government services, non governmental organisations (NGOs) and civil societies.

2.2. Economic framework

Most economic models focus on the direct impacts of learning on economic and non-economic outcomes, and the choices made by individuals to maximise the impact of learning on these outcomes. Recent economic models have their theoretical basis in human capital theory (Schultz, 1961; Becker, 1965). Human capital refers to the knowledge and skills individuals gain to enhance their productivity in the labour market and to function better in various other aspects of their lives. Learning contributes to the formation and accumulation of human capital.

There are two main channels through which learning may impact on non-economic outcomes. First, it may improve the effectiveness of the production of these outcomes. For example, Grossman (1972) developed a model to explain how learning makes individuals more productive in producing good health⁽⁸⁾. In his model, health is both a consumption and investment good. It is a consumption good as it is valued by consumers; it is a direct source of utility. It is also desired as investment since good health improves individual earning capacities. Since learning improves efficiency in producing health, this reduces the relative price of health, making health a 'cheaper' good for individuals with higher levels of education to consume. Therefore, the demand for health and investments in health improve after a positive learning experience.

Second, learning may change the nature of production decisions, giving more weight to inputs that maximise the generation of non-economic outcomes (or, alternatively, as suggested by Rosenzweig and Schultz [1982] and Deaton [2002], individuals choose a different bundle of inputs in the production process). For example, when parents decide to invest in their children's academic achievement, parents with higher levels of education are more likely to choose developmental enhancing activities for their children (for example, going to the library) which parents with lower levels of education may not choose. Also, parents with more education may choose to read to their children more often than parents with low levels of education. This allocative efficiency, focusing on inputs that are impacted on learning to generate social benefits, is the second channel for educational effects.

Regardless of the efficiency gain of education or better allocation of inputs, the strength of economic models is that they make explicit the substitutions involved in decision-making to produce the desired outcomes. For example, money spent on books and computers for children cannot simultaneously be spent on holidays and restaurant meals for parents. Similarly, time spent in the labour market earning income to buy consumer goods cannot be spent on leisure activities and so on. Decisions about the relative allocation of time and resources depend on the value individuals place on the different outputs obtained by them. In economic models, learning is a key factor that affects the relative value that individuals place on time and resources during the decision-making process. For this reason, learning is theorised to impact on social outcomes.

The above direct effects of education can be described as absolute effects (see Box 1, adapted from OECD, 2007 and 2010b, for a fuller explanation). However, education that others acquire could also affect an individual's social

⁽⁸⁾ Grossman (1972) uses the term education, rather than learning.

outcomes. For instance, if individuals are surrounded by peers with higher level education, they may perceive higher level of trust, observe less crime or receive health advice. This is generally called the cumulative effects of education (OECD, 2007). Moreover, even if one is surrounded by highly-educated peers, when there are large differences between groups, social outcomes may not be realised. This is called the relative effects of education (OECD, 2007; 2010b). Note that absolute and cumulative effects of education imply that more education is better in terms of promoting social outcomes. However, relative effects of education imply that an increase in everybody's level of education may not have any effect on social outcomes unless it is achieved with greater equality.

Box 1. Absolute, relative and cumulative effects of education

The absolute model implies that the probability that individuals will derive social outcomes depends on their own level of education. For example, education may promote civic participation via the absolute model by improving people's skills and competences but also by operating on the amount of content specific information that individuals possess on the importance of engaging in civic and social affairs. Education can also reinforce individuals' beliefs that they can make a difference in their communities, and help them understand how to translate such beliefs in practical actions. The absolute model can predict that when policies promoting education and learning are successful in increasing the average educational attainment of the population, social outcomes will also increase under the assumption of causality. The absolute effect of education can also be negative. If education increases the opportunity cost of time, engagement in relatively time intensive activities will be lower among the highly educated.

The relative model implies that the probability that individuals will derive social outcomes depends on social status, their relative position in the social hierarchy, and that this position reflects how educated they are compared to those around them. Education may operate through the relative model with respect to health, for example, to the extent that access to health care is rival – one person's access lowers another person's benefit from accessing health care – and limited. For scarcity and rivalry of participation, opportunities for access may be limited on the basis of educational position, for example because the better educated have more information on how to participate through greater information and more influential social networks, and a relative effect of education can be observed.

The cumulative model implies that engagement depends on how educated others around you are. According to the cumulative model, two individuals who have the same level of education but live in two different areas, one where others are highly educated and another where others are poorly educated, will have very different social outcomes. The cumulative effect of education can be either positive or negative.

Source: Adapted from OECD (2007, 2010b).

Although the economic framework makes no implicit mention of VET, it treats education as a broad concept and therefore hypotheses generated from these models can be tested for VET. A testable hypothesis, which we follow in

this report and which is in line with the absolute model, is that VET enables individuals to have better allocation of resources which will maximise their health outcomes. Another potential hypothesis is that the achievement of VET in different societies will lead to different social outcomes for individuals living in these societies. This will be in line with the cumulative model shown in Box 1 and is related to differences in VET supply, the quality of the provision, and the value of the qualification in different societies. This hypothesis is not tested here, but we derive possible explanations for differences in social outcomes for VET in different systems of IVET. The relative model implies that the social benefits of VET depend on the relative position of individuals in society. This hypothesis can be tested by looking into the social benefits of VET for different social groups. Unfortunately, this work is beyond the scope of this report.

2.3. Ecological framework

Bronfenbrenner's ecological or contextualised model (1979, 1986) underpins two frameworks developed by the Centre for Research on the Wider Benefits of Learning for conceptualising how a learning experience can impact on non-economic outcomes (Feinstein et al., 2006; 2008)⁽⁹⁾. The ecological or contextual model is based on interactions between individuals, located in particular contexts, in which dynamic processes support, sustain or hinder successful outcomes; an example is the place where the learning experience occurs. This context is characterised by material resources, like books and computers, and non-material resources, such as the knowledge that practitioners have on the topic (characteristics of context). In this context there are interactions between learners and teachers (proximal processes). Learners and teachers come from different backgrounds which may impact on how resources are used and interactions are developed (distal factors).

In the ecological model, proximal processes are the primary mechanisms for producing positive outcomes, for instance school attainment, behavioural development, happiness. Examples of proximal process variables in the context of the family described in Feinstein et al. (2008) include aspects of parent/child relationships such as warmth and affection, the use of discipline, control and punishment, and the educational content and structure of language used in the home. Examples of proximal processes in VET may be the use of language, the

⁽⁹⁾ This section also addresses the pedagogical content of VET.

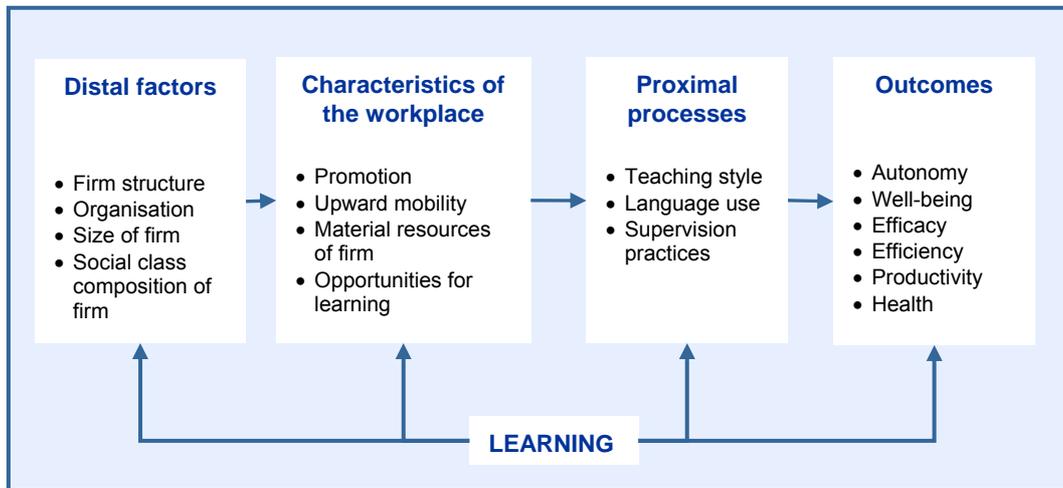
disposition of teachers with learners, and teaching methods (a more detailed explanation is provided in Chapter 3).

Proximal processes change and adapt over the life course and are constrained and influenced by the characteristics of both the immediate context, for example the family, school, or work. Context can be defined in the ecological model as the location and/or institutional grouping within which particular sets of processes occur, the workplace being a particularly important context for learning. Proximal processes are also influenced by more distant social, economic and demographic environments, which in the ecological model are called distal factors. Qualification through VET and participation in unaccredited VET are examples of distal factors, but they also include social class, income and the organisation of the firm, among others. In the ecological model, distal factors cannot impact on outcomes unless they are mediated or channelled through the resources available in the context and the use of these resources for the achievement of outcomes. For VET, distal factors in learning contexts, either at the workplace or institutions for IVET, are particularly important. Distal factors such as the organisation of the firm, the social class composition of the workers or the learners, are unique to the provision of VET and the ways in which VET benefits may be realised for individuals.

This model can be exemplified using the case of an individual who receives on-the-job training, a form of non-formal CVET (Box 2). Within the workplace, distal factors refer to the structure of the firm, its organisation, and its social class composition, among others. These factors cannot directly affect outcomes, such as autonomy, higher productivity or better health. Distal factors must impact on outcomes through their effect on the characteristics of the workplace; examples include possibilities for promotion and upward mobility or the material resources of the firm, which then impact on the proximal processes within the workplace, which are mainly characterised by the interactions between individuals within the firm. Learning can impact on an individual's outcomes in the workplace, for instance sense of autonomy, through possible changes on distal factors, characteristics of the workplace and interactions with supervisors and managers ⁽¹⁰⁾.

⁽¹⁰⁾ This framework could be modelled empirically with detailed microdata using statistical techniques such as structural equation models.

Figure 1. **Conceptual model for the influences of learning on outcomes in the workplace**



Source: Adapted from Feinstein et al., 2008.

2.4. Summary

Overall, there are important aspects in all theoretical frameworks discussed above that are helpful in understanding why a learning experience may lead to the generation of outcomes beyond income and employment. First, there are immediate changes as a result of the learning experience. Individuals engaged in learning acquire skills and knowledge and improve their capabilities, which could, in principle, enable a more efficient decision-making process for the different aspects of their lives (health, family, engagement in community and social participation). Second, individuals in a learning context, which could be an educational institution or the workplace, form new social groups, modify previous social networks, and form relationships with teachers or tutors, masters⁽¹¹⁾ or employers. These networks can increase individuals' bonding and bridging of social capital.

Third, a positive learning experience could have the potential to tackle structural inequalities. Structure refers to factors such as social class, ethnicity, gender and religion which influence the opportunities that individuals have. Structural inequalities are produced by social norms, policies or practices that tolerate or promote the unfair distribution of, and access to, power, wealth and

⁽¹¹⁾ This report uses the term 'master' referring to a person who works and trains other junior trainees or apprenticeships.

social resources (CSDH, 2008). In this sense, a learning experience which develops the capacity of individuals to find out what needs to be done and how to do it, and which fosters habits of self-direction, has the potential to generate non-economic benefits even within a system characterised by high levels of social and economic inequalities (Mirowski and Ross, 2005). This is referred to as the relative effect of education (OECD, 2010b).

CHAPTER 3

Main features of learning through VET

The theoretical frameworks reviewed in Chapter 2 provide important insights into reasons why a positive learning experience might result in benefits beyond income or employment. In this chapter we focus explicitly on the learning experience which results from VET. Based on the theoretical models reviewed and the work undertaken by the Centre for Research on the Wider Benefits of Learning, Institute of Education, we suggest the following features of the VET learning experience that together could lead to social outcomes:

- (a) content of learning;
- (b) impact on skills and competences;
- (c) relationships with other individuals;
- (d) recognition of achievement;
- (e) potential for educational progression;
- (f) potential for success in the labour market.

Some of these features are generic and may be shared by individuals learning in other educational contexts. However, the descriptions of each feature provided below are based on information and evidence that relates almost exclusively to VET⁽¹²⁾. Further, these features are linked together in the VET learning experience and are separated here for analytical purposes. For example, the content of learning is related to the impact that this content may have on skills and competences, which is also linked to the relationship between learners and VET opportunities of for further learning and labour-market success.

⁽¹²⁾ A recent study by Kelly and Price (2009) found the following features of VET in the US: VET is a choice, so it increases engagement with school and work activities and it enhance individuals' ability and motivation; VET is a career track, so it is linked with employment opportunities; VET contains an element of experimental learning in the classroom, which enhances team activities, negotiation and leadership skills; VET is based on multidimensional performance assessment, which allows some students, who were not academically able, to receive higher assessments of their vocational skills; the teacher-pupil is a mentoring relationship. All these features are covered in Chapter 3.

3.1. Content of learning

To investigate the content of VET, we must focus exclusively on formal IVET. Non-formal and informal CVET are characterised by a wide range of providers, with different programmes, ethos and modes of delivery (Feinstein and Sabates, 2008); this is too broad for us to provide a description of the content of learning for each of these programmes. Focusing on formal IVET enables us to look at the content of learning using information provided nationally⁽¹³⁾.

We generally found that most formal IVET programmes provide a set of skills that do not focus exclusively on the technical aspect of the profession, but also on other skills that are more general and useful for daily activities; the main feature in VET is, consequently, its emphasis on learning outcomes. Nevertheless, there are also national differences in the outcomes that IVET aims at: for example, social integration, as an outcome of IVET, may be the focus of some programmes but not in others. In England the government piloted the inclusion of functional skills in English, mathematics and information and communication technology (ICT) into a new diploma for 14- to 19-year-olds, which aimed to provide both theoretical study and practical experience (DCSF, 2009). In France, accredited VET comprises seven core skills: proficiency in French; knowledge of a foreign language; mathematics and science; ICT; humanities; social and civic skills, and independence and initiative. VET in France also includes both *savoir-être* (attitudes and behaviour) and *savoir-faire* (professional skills), although the first is not necessary for acquiring certification (Speake, 2007). In Scotland, individuals engaged in VET have to pass employability skills training to achieve certification (Speake, 2007). In Finland citizenship is part of the VET programme.

In other countries, such as Finland and Sweden, vocational education is integrated into upper secondary school curricula and very few apprenticeships exist (Lindberg, 2003). VET provides a set of skills or competences similar to those of general education. The dual system in Austria, Denmark, Germany, the Netherlands, and Switzerland combines the acquisition of professional competences through training in companies, with a curriculum consisting of vocational and general education in vocational training colleges (Cedefop, 2008b). Brockmann et al. (2008) compared the VET systems in, Germany,

⁽¹³⁾ Several publications cover the characteristics of vocational educational systems in various European countries, their structure and organisation as well as recent reforms (e.g., Cedefop, 2008a, 2009; Eurydice, 2008). While some of these publications report on the curricula of different European countries, the content of learning is not discussed in any detail and, for this reason, they are not cited here.

the Netherlands and UK-England, and found that the English system concentrates on a narrow set of skills, without a focus on personal development or a more general education to increase student employability. In contrast, the German and Dutch systems are knowledge-based and designed to develop multi-dimensional competences, from theory to practice, from civic education to personal development. The German and Dutch systems aim at equipping students for lifelong careers (Brockmann et al., 2008).

3.2. Impact on skills and competences

The second main feature of VET deals with the ways in which the content of the learning experience impacts on individuals' skills and capabilities. We focus here on whether the skills, knowledge and competences learned in VET may be translated into economic and non-economic outcomes. Much literature focuses on labour-market outcomes, either rates of return or employment prospects, and very little on social benefits (Preston and Green, 2008).

From interviews with vocational learners in the UK, Tennant and Yates (2005) found that upper secondary level learning and certification was directly linked to learners' confidence, workplace skills and personal development. Indirect or secondary impacts included attitudes to further learning, improved employability and awareness of the utility of qualifications for career progression. Unwin et al. (2004) found that formal VET was associated with increase in learner confidence. In France, the vocational *baccalauréat* has been found to increase self-esteem, confidence and desire for education in those who had previously felt failed by the education system (Gendron, 2005).

In Germany, VET has been linked to the development of professional identity (Deutschmann, 2005). Professional identity enables individuals to take control of their work life and also to influence conditions in the workplace due to the autonomy and problem-solving competences gained from VET. Sauer (2003) and Streeck (1989) point out that forming of professional identity is more likely to occur the earlier VET takes place and the more VET is recognised by the social and institutional environment. Ehrke (2009) developed a five-scaled ladder of social progression in vocational training with the novice at the first step and the expert at the fifth step, characterised by possessing a productive concept of personality and life. In a survey conducted by the German Federal Institute for vocational education and training, with 12 items on economic and non-economic benefits of CVET, the most affirmative item was personal advancement (Beicht et al., 2006, p. 137). A different study by the German Ministry of Education found

that 80% of individuals generally agreed that CVET helped them to manage their daily life (BMBF, 2006). This confirms that individuals regard non-economic benefits to be as relevant as economic benefits like higher income or better employment opportunities.

Research into the impact of learning on health and social capital found that learners on college vocational courses showed a reduced consumption of alcohol, reduced authoritarian attitudes and an increased race tolerance. In contrast, learners on employer-based courses had an increased likelihood of alcohol intake. However, such learners also had increased life-satisfaction, more tolerance towards race, higher levels of civic participation and did more exercise. Feinstein et al. (2003) found that their results were mediated by gender, since the negative association between vocational learning and reductions in life satisfaction was found only for men. Similarly, evidence from the *UK National child development study*, a cohort study of individuals born in Britain in one week of 1958, shows that learners on vocational courses, who previously held low levels of qualifications, were less likely to be depressed (Feinstein et al., 2003). However, the association between vocational training and depression is usually small, and often non-significant in statistical terms.

Some evidence exists of the social and cultural benefits of VET. Over 50% of apprentices in the Leonardo da Vinci programme in which placements were taken abroad, experienced high or very high benefits in terms of interpersonal skills, adaptability and willingness to take on new tasks. However, it is impossible to determine whether the benefits were from the vocational experience itself, or the international element of the experience (Baur, 2006; Molloy, 2006). Meeting people and forming supportive relationships are outcomes of VET identified in qualitative studies (e.g. Hammond, 2004), an evaluation of a mentoring programme on a health education course for people aged 55 and over, living in the Netherlands (Kocken and Voorham, 1998), and a national survey in Germany where 83% of all respondents fully or generally agree that (continuing) training is a way to get in contact with people (BMBF, 2006, p. 287).

3.3. Relationships with other individuals

Vocational teaching is characterised more by socialisation than by qualification, i.e. it is more a question of transmitting dispositions and attitudes than of giving the knowledge and skills required for specific tasks (Frykholm and Nitzler, 1993, p. 434 cited in Colley et al., 2003).

Our third main feature relates to the formation of social networks, both between learners and between learners and teachers, mentors, masters and employers. As the quote above illustrates, some of the benefits of VET are based on socialisation, through the transmission of attitudes and behaviours. However, this transmission of dispositions and attitudes is not always rewarded in VET. Students who do not fit with the dominant social group can be marginalised, even to the extent of self-exclusion from the VET programme. In a nursery nurse training programme, for example, bonding occurred between the upper working class students leading to isolation of the lower working class students, who then left the programme. The tutors encouraged this bonding, in conjunction with a process of learners identifying with the necessary characteristics needed for the type of work for which they were training (Colley et al., 2003).

Different occupations have different identities associated with them. Colley et al. (2003) gave as opposing examples the male logical atmosphere of engineering and the female caring ambience of nursery nursing. They pointed out that learners are not necessarily predisposed to the 'vocational habitus' of their chosen industry, but have to adapt (as in the nursery nursing example above) to succeed. Different types of VET will encourage social capital in different ways. Learners on day-release from their employers tend to have capital from their work, with attendance at college seen as a necessary part of their progression, but not as highly valued by learners as their work-based practice (Colley et al., 2003).

Hyland (2003), as well as Preston and Green (2008), view vocational learning as having two purposes for the State (rather than the learner): increasing economic competitiveness and increasing social inclusion and cohesion. However, the pursuit of economic capital through the State often occurs to the detriment of social inclusion and cohesion. Hyland (2003) believes it is important to strike a balance between developing social and economic capital in VET. The social gain from VET depends on the learners' existing networks and access to institutions. In communities with strong family structures and high engagement with voluntary organisations (e.g., Northern Ireland) there are low levels of participation in formal CVET. One possible explanation may be that strong community links lessen the need for formal qualifications for entry into the labour market. In contrast, in these communities there are high levels of participation in non-formal and informal CVET (Schuller and Field, 1998). We can see here the interplay between the micro- and macro-level benefits of VET, whereby individuals could achieve positive benefits from the VET experience (formation of networks and more civic participation) and these can produce benefits for society (higher levels of social cohesion as well as reduced crime).

The relationship between learners and mentors is also important. There are different types of mentoring: industrial mentoring in schools through business-education partnerships; community mentoring aimed at supporting young people from ethnic minorities; or mentoring as an intervention responding to issues of social exclusion. Evidence from Colley (2003) has shown that mentoring learners is important as mentors usually represent positive role models for success and offer support and advice for young people in training. In some cases, the relationship between learners and mentors can change people's attitudes, values and beliefs, both for the learner and the mentor (Majors et al., 2000).

The acquisition of social networks may differ depending on the place of learning. In some countries the workplace is an important context for learning. A survey conducted among 271 German apprentices in commercial occupations measured the relationship between motivation to learn and the degree of integration of apprentices into the corporate expert culture. Results showed significant effects for feeling integrated into the community of practice at the workplace, the degree of self-efficacy and the motivation to learn (Müller, 2009). The achievement of these three outcomes for learners was mediated by the relationship with their masters or employers (Müller, 2009). Masters or employers can help learners to achieve these outcomes not only by demonstrating to learners how to do their job, but also by supporting them to reflect and become independent with respect to their ability to define and solve problems (Collins et al., 1989).

3.4. Recognising achievement

In several European countries vocational qualifications tend to be perceived as second best to academic qualifications, resulting in both policy-makers and researchers being exercised by the question of how to increase the 'parity of esteem' between the two strands. While the European Union has made increasing the attractiveness of VET and its parity of esteem with general education part of its VET agenda, the academic community has shown greater interest in the concept in some European countries (England for example) than others (such as France) (Lasonen and Manning, 2001). The launch of the vocational *baccalauréat* in France indicates an acknowledgement of the lack of parity of esteem. Before its introduction, the vocational track (the *Certificat d'aptitude professionnelle* [CAP], or *Brevet d'études professionnelles* [BEP]) were perceived as the track of relegation and exclusion (Gendron, 2005). A comparative analysis by Cedefop of IVET in the European context also refers to

the efforts that various European governments are making to address this idea of VET as 'second best'. The study points out that some countries, such as Austria and Sweden, already have a larger uptake of vocational than general courses (80% and 54% uptake of VET in Austria and Sweden, respectively) compared with the lower uptake in Portugal (8%) and Denmark (36%) (Cedefop, 2008).

Research in the UK by Vickers and Bekhradnia (2007) has shown that students taking vocational qualifications (General national vocational qualification, GNVQ) were awarded more points used for entry into higher education than those taking the general certificate of secondary education (GCSE). Students on vocational courses were also awarded more points than their peers taking traditional A-level examinations, which are more directly linked to university progression in the UK. The unequal treatment of students from vocational routes to improve their chances of progression into higher education, relative to those from general education, has led to undervaluing vocational qualifications. Students taking vocational qualifications have been perceived as being less likely to progress to higher education. Research, however, has not supported such claims (Vickers and Bekhradnia, 2007). There are no differences between the aspirations of students with vocational qualifications and those with academic qualifications when prior ability is considered. Though the proportion of students from an academic route who aspire to university is higher than the proportion of students from a vocational route, this may be due to the fact that lower ability students tend to choose to study for vocational qualifications, which reflects on the status of this route in comparison with those who chose to study for academic qualifications.

In increasing the parity of esteem, the views of young people on the value and importance of VET are also critical. In a report on young people's perspectives on education, training and employment in England, many of those on Modern apprenticeships (a training scheme for 16-25 year olds launched in 1994 in the UK) talked about their teachers wanting them to stay on at school and take academic qualifications at upper secondary level (A-levels) rather than learn a trade. One apprentice illustrated how their different educational career options were presented to them: 'it's like a big hour talk on A-levels, and then it's like "you could go to college", half an hour on college, or you could go to a job, full stop' (Unwin and Wellington, 2001). Apprentices seemed to be aware of the fact they were bridging the academic/vocational divide by both learning a trade and continuing at college after the apprenticeship, and generally felt better prepared for the labour market than their peers who had gone to college or university but left without any workplace skills or skills relevant to the labour market (Unwin and Wellington, 2001).

Structural issues affecting the recognition of formal IVET and formal CVET need to be addressed to ensure greater recognition compared with academic qualifications. In the UK, university admissions tutors still focus on qualifications acquired through general education (Edward et al., 2008). Up until recent years the university entry system did not include vocational qualifications when considering candidates' prior qualifications for their proposed course of study, which further served to devalue them (Connor and Little, 2005). Returns on vocational qualifications in some countries are still lower than those for their equivalent academic qualifications. In terms of labour market structural issues, research has shown small returns on low level vocational qualifications compared with no qualifications in England and Scotland (Blundell et al., 1996; Feinstein et al., 2004; Booth et al., 2003).

3.5. Potential for education progression

The fifth main feature of VET is the possibilities for education progression, not only within the vocational route but also accreditation and progression within general education. To this end, Green (1995) compares the VET systems of France and England. In France, although there are three strands to the system — *Baccalauréat* (Bac), *Brevet d'études professionnelles* (BEP) and *Certificat d'aptitude professionnelle* (CAP) — all strands have general education in common, aiding transfers between study routes. Curricula for all three strands are centrally designed, enabling standardisation and movement between strands. In England there is less integration. Qualifications are awarded by a multiplicity of different bodies whose work is overseen by a central curriculum and assessment authority. For this reason Green suggested that, in England, fewer than half of 16-year-olds attain five good general certificates of secondary education (GCSEs) compared with France, where three-quarters attain the comparable Brevet (Green, 1995). Nonetheless, Méhaut (2010) still suggests that there is dominance of general education in France, which is attributed to the 'meritocratic' convention of the French education system and which leads to a 'secondary' status of IVET.

Hatt and Baxter (2003) showed that vocational learning in England left students less prepared for progression into higher education than students coming from academic routes. This failure was due to lack of preparation in their previous educational experience for the crossover into the academic route, so learners fell behind while acquiring the requisite skills for a different system of assessment. Further, they found that the number of students moving from

vocational to academic routes was small. They concluded that the skills that the vocational students learn need to be recognised in the higher education system to enable progression (Hatt and Baxter, 2003). These results coincide with Rainbird's (2010) statement of continuing polarisation in the English education and training system although there has been a continual process of change in the role of the State with a range of policy initiatives designed to engage employers in training (Rainbird, 2010, p. 265).

However, Young (1993) reports on Finland and Sweden, two egalitarian societies, and the reforms made to their vocational systems in the 1990s. The changes involved integrating more academic education into vocational courses to enhance progression to university. In Germany, a vocational certificate opens up career tracks to middle management. After a certain period of work experience, usually five years, all vocational qualifications can be supplemented by promotional training, defined as training that equips participants for advancement to the grades of master craftsman, technician or, in service occupations, business administrator. These vocational career tracks remain separate from higher education. Major progress was made with regard to the permeability of vocational and general education in 2009. Learners who completed an apprenticeship in the dual system and acquired a degree as a master craftsman, technician or business administrator had access to higher education. Transition from pre-vocational to vocational training in the dual system is also of concern; about 40% of school graduates entering the differentiated VET system do not get a chance to enter the dual system of vocational training under an apprenticeship in firm for lack of apprenticeship training positions (Autorengruppe Bildungsberichterstattung, 2008).

The possibilities for education progression need to be not only related to the achievement of qualifications as part of continuing full-time education or early transitions, but also available during the life course of individuals. De Coulon and Vignoles (2008) found that, in the UK, adults who had acquired a national vocational qualification at upper secondary level (NVQ2) were more likely to go on to further learning, particularly accredited, than those not taking an NVQ2 qualification. Of those with a vocational qualification, 60% went on to further accredited learning, while just over 20% who had not achieved a vocational qualification in the same period went on to accredited learning. Further analysis showed that adults who undertook NVQ2 in the first period of learning (between 1996 and 2000) were 40% more likely to undertake further accredited learning in the second period (between 2000 and 2004). Sabates et al. (2007) found that educational experiences and training predicted progression in education during adulthood in Britain. Using data from the *National child development study*, the

authors found that cohort members who were enrolled in training between the ages of 16 and 23 had 7% higher probability of achieving a level 2 qualification (the equivalent to five GCSEs or, in international terms, a certificate of secondary education) by age 33. Taking a course leading to a qualification increased progression by 3.2%. Similarly, being enrolled in courses not leading to qualifications increased the likelihood of achieving a level 2 qualification by six percentage points. Continuing learning between the ages of 23 and 33 was associated with progression to level 2 by age 42. The authors found that each additional training episode lasting three or more days taken between 23 and 33 improved the likelihood of achieving level 2 by the age of 42 by one percentage point.

3.6. Potential for success in the labour market

The sixth main feature for VET to lead to social benefits is the possibility of success in the labour market, with access, integration, stability and mobility. Recent studies have shown that individuals with higher levels of education have more control over their work, with a sense of agency and autonomy which results in increased self-esteem and overall physical and psychological well-being (Field and Malcolm, 2010). It is our premise that there is a dual relationship between these factors and the possibilities of labour-market success for individuals engaged in VET. For example, in the German dual system we see an interaction between the benefits of VET for individuals (agency, self-esteem, autonomy, overall physical and psychological well-being) and the benefits of VET for firms and industries (more engaged workforce, mobility based on performance).

The German vocational training system, with subsequent training for promotion, produces workers who are better equipped for middle management positions than university graduates, according to several comparative studies of German, British and American companies. This research indicates that the standard form of work organisation in Germany, with its high share of skilled workers and middle managers recruited from the shop floor, has proved to be more efficient than a more hierarchical form of work organisation with polarised qualification structures (Prais and Wagner, 1983; Wagner and Finegold, 1997). Bosch and Kalina (2007) showed that the income distribution of workers with a vocational qualification has a second peak above the average income bracket (EUR 5 000 to 5 099 gross income per month in 2003) which reflects successful careers into middle management. At the same time, the German system of VET is often seen as operating on social selection by screening applicants according

to their level of education and gender. This might be associated with the fact that decisions on vertical mobility take place most notably in firms, with employers taking the final decision on careers. These processes, however, tend to reproduce social and gender inequalities.

According to Heinz et al. (1998) the apprenticeship system also provides mobility opportunities that depend on the specific training occupations, with more opportunities for career development among bank employees but fewer for car mechanics, hairdressers, and industrial mechanics: 'moving along a certain occupational pathway results from an interplay between the structural opportunities and constraints of occupational contexts, on the one hand, and the young workers' aspirations and orientations, on the other' (Heinz et al., 1998, p. 99). The authors cite the example of one female worker who had the opportunity to undertake formal CVET and move upwards in her employment, but it was not until she accepted this offer that personal barriers to training were lifted and possibilities for upward mobility realised.

A German study by Heise and Meyer (2004) cites research on the relative advantages of different types of job training for promotion and job mobility. For example, Pannenberg (1996) found that further training on the job lasting either two to seven days, or a week to a month, was significantly associated with increased upward job mobility. Shorter training programmes were associated with in-company mobility and longer ones with inter-company mobility. Off-the-job training for six to 12 months improved the chances of employment, whereas longer-term training was associated with remaining unemployed. Bosch (2009) states that occupational training for the unemployed has a considerable positive effect on their perspectives for labour-market integration. Fitzenberger and Prey (1999) showed training on-the-job increased job stability, and Schaeper et al. (2000) found that initial training directly affected successful career development, with educational background having an indirect effect.

In the UK, Booth and Francesconi (1999) used the British household panel survey (BHPS) to investigate the gendered nature of job mobility in the UK. They found that, for men, the highest qualification had no significant effect on promotion, but a vocational qualification achieved recently did have a significant effect (Booth and Francesconi, 1999). Tennant (2005) found positive impacts on businesses in terms of staff recruitment and retention, as well as performance for learners with vocational qualifications. Dronkers (1993) showed that within the Dutch education system, vocational education gives graduates better opportunities in the labour market than general education, although this varies by the discipline studied. His findings are based on the amount of time school leavers remain unemployed before they find their first job. General education,

however, provides a wider range of life-chances than vocational education. There is a danger that students are attracted to general education in the belief that it will help them achieve the highest range of life chances (Dronkers, 1993) ⁽¹⁴⁾.

3.7. Summary

This section reviewed the main features that VET experience should have for individuals to experience benefits beyond income and employment. Among these features we examined the content of learning: what is taught in VET contexts, and whether the learning experience that results from VET has the potential to increase individuals' knowledge and skills, social networks, peers, teachers and employers, and their psychosocial assets, such as self-esteem, autonomy, and confidence. Formal VET experiences, as defined in Chapter 1, result in certificates or qualifications with labour market value. When such a qualification has been devalued or thought as a 'second best' option, the potential for VET to generate social benefits may be jeopardised. Similarly, possibilities for further learning and training opportunities which may be opened as the result of VET, as well as mobility and flexibility in the labour market, are important features for the generation of social benefits.

Most of these features have an overarching theme, related to how VET is embedded within national systems, both social and economic. Integrating VET and general education, tracking pupils by capabilities, the institutional possibilities for easing school-to-work transitions, links with the labour market and the political climate are all features of VET within the national context. This is developed in greater detail in Chapter 4.

⁽¹⁴⁾ There are numerous commission projects and reports on mobility ranging from pilot projects to national initiatives (see Cedefop for European VET policy and ReferNet reports for more information).

CHAPTER 4

IVET national context differences

Research on national economic systems (Hall and Soskice, 2001) or national systems of innovation (Lundvall, 1992) highlights the importance of national systems and institutions within systems. Systems of education are influenced by national institutions as well (Müller and Gangl, 2003). At macro level, education systems shape the skill and knowledge formation of a society but may also have an effect on the agency, identity or social capital of individuals. In the context of analyses of the relationship between VET and social benefits, this chapter presents some basic typologies of national systems of IVET and patterns of stratification within education and training systems.

For our empirical analysis on the relationship between IVET and social outcomes we reverted to existing typologies of IVET. We present a heuristic typology of IVET in the 15 countries covered in the dataset of the EHCP, expecting similar social outcomes within groups of countries. For CVET we undertook country-specific empirical analyses to determine whether there are similar country patterns with regard to social outcomes. Per country analyses were carried out as we could not assume that country typologies for IVET could simply be devolved to CVET. While IVET in most of the European countries under review is somehow institutionalised as a plank of the education system, patterns of CVET within and across countries are highly diverse, for instance, in terms of place of learning, degree of formalisation or expenditure of time and intensity (Cedefop, 2010). Diverse patterns in adult learning and education are also observed with regard to the previous attained level of education, age of participants, industry and different occupations (OECD, 2010a, p. 85 et seq).

4.1. Typologies of IVET system

Typologies of IVET system aim to highlight commonalities and differences between IVET systems within national models of education and training. Like other institutional arrangements, national systems of IVET are the result of historical processes, in which national specific constellations of social actors

pursue their interests⁽¹⁵⁾. This implies that national systems are dynamic, changing over time. Most typologies tend to be static and do not reflect changes in the systems or social actors but they are important for improving our understanding of how IVET is conceptualised, planned and delivered in different countries. There are several typologies of IVET system: in this section we present a selection of typologies that relate to general characteristics of IVET regulation.

One typology of IVET systems is offered by Rubery and Grimshaw (2003) (Table 1). They differentiate national systems of vocational training by the type of labour market model and the form of IVET regulation. The type of labour market model has two oppositional characteristics: occupational and internal labour markets. The authors state the existence of vocational training systems with high enrolment rates and nationwide standardised and recognised occupational skills as precondition for the existence of occupational labour markets (OLM). A typical feature of OLM is the provision of training to develop a broad set of skills and competences for a specific occupation. Internal labour markets (ILM) are characterised by company specific (formal or informal) training programmes, with skills and competences developed specifically to the needs of the company and building on general education. The three characteristics market-led, consensus-led or State-led refer to the main actors and places where system regulation takes place.

Table 1. **Typology of national IVET systems**

		Form of regulation		
		Market-led	Consensus-led	State-led
Labour market model	Occupational labour market (OLM)		Germany	
	Features of both OLM and ILM	UK, US		
	Internal labour market (ILM)		Japan	France

Source: Rubery and Grimshaw, 2003, p. 112.

Preston and Green (2008) offer a similar classification. Referring to the typology of Greinert (2004), who distinguishes three historical models of IVET, Preston and Green find three basic forms of regulation: societal (e.g. Germany), market (e.g. England) and State (e.g. France). Preston and Green acknowledge that not all European countries fit neatly into one of the categories, with particular

⁽¹⁵⁾ Ashton and Green (1996); Ashton et al. (2000); Thelen (2004); Bosch and Charest (2010).

distinctions to be made in the Nordic context, and with adaptations of the French system in south European countries (e.g. Portugal).

Rubery and Grimshaw (2003) assess the performance of national training systems with some of the aspects being relevant for effects of IVET on non-economic benefits. They state that, in market-led systems with the UK as an example, the absence of long-term coordinated strategies of vocational training makes the training situation hard to assess for school leavers. Vocational training is mainly employer-led, dominated by firm-specific training into specific tasks rather than flexible skills, leading to various training standards in qualitative and quantitative terms. In consensus-led systems, occupational skills tend to be recognised in the labour market due to general and sector-wide standards of an occupational field agreed by social partners. Germany is an example, with its traditional approach to skill and a large share of school leavers from the dual system of vocational training. This form of regulation implies a specific pattern of mobility on the labour market. On occupational labour markets, mobility patterns are more likely to involve inter-firm transfers, that is horizontal mobility, but do not necessarily exclude vertical mobility if procedures for internal advancement based on broad occupations are provided. In State-led systems — with France as an example — the State plays a strong and active role in the provision of general and academic training with less emphasis on vocational training. While workplace apprenticeships are uncommon, workplace oriented training within the firm after leaving the education system is the rule. As a consequence, internal labour markets dominate with a tendency to offer opportunities for internal advancement and to create incentives for further firm-specific qualifications. Therefore, vertical mobility is likely to be the focus of systems based on internal labour market (ILM).

Another aspect in assessing national IVET systems is the pattern and duration of school-to-work transitions. According to Rubery and Grimshaw (2003), school-to-work transition in countries with a market-led form of regulation is generally short. At the same time it is associated with a high degree of uncertainty concerning quality and quantity of training provision and characterised by frequent job changes and recurrent periods of unemployment. In countries with a consensus-led form of regulation, transition to paid employment takes longer due to the fixed duration of vocational training, mostly in the form of an apprenticeship, with a minimum of two years. The school-to-work transition is more structured and it offers easier access to the labour market.

Rubery and Grimshaw (2003) argue that the ability of firms to adapt to change within a national system tends to be stronger in market-led systems, as

decentralised decision-making allows companies to react independently and smoothly to a changing environment. In consensus-led systems, negotiations and bargaining procedures may slow down processes of change. At the same time, involving social actors and the State in modernising, and even creating new occupations, might be an advantage in disseminating modernised IVET curricula in the labour market (Bosch and Charest, 2010). A comparative study on the introduction of apprentices into the IT industry showed that, in Germany, certificates from apprenticeships were recognised by IT companies, presumably because employer associations, unions and the State spread information about newly-created occupations and offered assistance to companies introducing them. In the UK, certificates from IVET in the IT sector never achieved wide acceptance in the industry, so companies were more likely to employ graduates from universities with general degrees and offer training while on the job (Steedman et al., 2003).

The typology of Iversen and Stephens (2008) refers to the ‘varieties of capitalism’ since it distinguishes between liberal market economies (LMEs) and coordinated market economies (CMEs)⁽¹⁶⁾. The motive for creating the typology is to summarise groups of countries with similar political profiles of human capital formation. Iversen and Stephens (2008) state that support for vocational education is rather high within CME countries with a social democratic orientation and lower within CME countries with a Christian democratic orientation as well as in LME countries (Table 2).

Table 2. **Expected policy profiles of different worlds of human capital formation**

	Coordinated market economies and proportional representation		Liberal market economies and majoritarian representation
	Social democratic	Christian democratic	Liberal
Day care or preschool	High	Low	Low (but substantial private provision)
Primary and secondary	High	Medium	Medium
Higher education	High	Medium	Medium (but substantial private component)
Active labour market policy	High	Low	Low
Vocational education	High	High	Low

Source: Iversen and Stephens, 2008, p. 614

⁽¹⁶⁾ Approach based on Hall and Soskice, 2001.

Iversen and Stephens (2008) make statements about skill structures in the different groups of countries. In liberal market economies, relatively low support for public education results in a highly divergent skill and wage structure. The middle and upper-middle class invest privately in general education to increase their labour-market flexibility. Those at the bottom third of the ability distribution have few opportunities to acquire valuable skills and also have few incentives for social advancement through investment in education.

In coordinated market economies with a strong social democratic party, high public spending on all levels of education results in a much more compressed skill structure compared to liberal market economies. In these countries, workers are encouraged to acquire a solid basic education (general skills) as well as rich industry-specific skills. At the same time, these countries allow labour-market flexibility through inter-company mobility and extensive spending on retraining and public employment. In coordinated market economies with a strong Christian democratic party the IVET system offers opportunities for skill acquisition that are missing in liberal market economies. High employment protection aids investment in company- and industry-specific skills. However, opportunities for skill acquisition for low- and semi-skilled workers are largely absent in these countries.

Winterton (2007) presents a typology of IVET systems distinguishing the mode of regulation, market-led or State-led, and focus of skill formation, workplace or school (Table 3). Winterton states that State-regulated IVET with a school focus guarantees an adequate volume of training but is not necessarily well adapted to labour-market needs. State-regulated systems with a workplace focus are widely seen as the 'gold standard' of IVET. In market-regulated IVET systems with a school focus, the absence of a binding legislative framework and of obligations on employers to provide training leads to an ineffective IVET system. In countries with a market-regulated IVET system with a workplace focus, market regulation creates uneven training provision, periodic skill shortages and poaching of skilled labour. The workplace focus makes employers provide short-term adaptive CVET to support flexibility, even if this rarely results in a portable qualification.

Table 3. **Typology of IVET systems by Winterton**

		Mode of regulation	
		Market-led	State-led
Focus	Workplace	Ireland, Netherlands, Austria, Germany, Denmark, UK	
	School	Italy	Belgium, Finland, France, Iceland, Norway, Portugal, Spain, Sweden

Source: Winterton, 2007, p. 284.

In sum, educational systems, IVET systems in particular, are diverse across Europe. Typologies stress constitutive features and distinctions between national IVET systems and do not deal directly with the relationship between IVET systems and social benefits. We turn now to different pathways of educational progression, strands and tracks of academic and vocational routes that exist within countries. As established in Chapter 3, one of the main features of IVET is the opportunities for education progression, which are linked to national education systems.

4.2. Stratification within IVET systems

With regard to the research question of our project — the influence of IVET on social benefits — a concept of Shavit and Müller (1998) helps gain more insight into different pillars of education and training systems within countries⁽¹⁷⁾. Shavit and Müller (1998) show that beside occupational specificity⁽¹⁸⁾ the degree of stratification within education and training systems — referring to the extent and form of tracking in educational systems with clearly distinct forms of learning and training — has significant effects on the individual positions and opportunities for enhancement.

First, distinction can be made between two strands of education. In most European countries two routes can be pursued at the upper secondary level: general programmes or pre-vocational/vocational programmes (Table 4). The latter category can include school-based models or models that combine school and work-based training.

⁽¹⁷⁾ See also Shavit and Müller (2000); Müller (2005).

⁽¹⁸⁾ The degree of occupational specificity relates to the extent to which training emphasises broad occupational competences for a range of different activities rather than job specific or general competences (Shavit and Müller, 1998).

Table 4. **Enrolment in upper secondary programmes in public and private institutions by programme destination and orientation (2008)**

	Distribution of enrolment by programme orientation		
	General programmes	Vocational programmes	
		All programmes	Of which: combined school and work-based
OECD average	54.9	43.5	11.7
EU-19 average	47.3	47.9	16.1
Belgium	27.1	72.9	3.2
Denmark	52.0	48.0	47.5
Germany	42.5	57.5	42.8
Ireland	66.1	2.1	2.1
Greece	69.1	30.9	a
Spain	56.2	43.8	1.8
France	55.8	44.2	12.4
Italy	40.6	26.7	a
Luxembourg	37.9	62.1	14.3
Netherlands	32.9	67.1	20.2
Austria	22.9	70.8	35.0
Portugal	69.3	22.2	m
Finland	32.1	67.9	13.4
Sweden	43.2	55.7	a
UK	68.6	31.4	m

Source: OECD (2010a Table C1.4.) m = missing; a = not applicable

Some countries display a high proportion of general programmes (e.g. Greece, Spain, Portugal) while in other countries vocational programmes with apprenticeship systems have high enrolment rates (e.g. Denmark, Germany, Austria). For Moodie (2008) a high proportion of general programmes indicates generalist systems while differentiated systems with different pillars within the system indicate tracked systems.

Some literature points to the relationship between the degree of stratification and the likelihood of education progression. The question is whether a higher degree of stratification automatically leads to less access to higher education, in particular for those engaged in IVET. Lasonen and Manning (2001) provide a scheme on strategies to enhance the links between academic and vocational routes prevailing in different countries:

(a) vocational enhancement:

- (i) promoting access to higher education through IVET (Denmark, Germany, Austria);
- (ii) enhance IVET starting from traditions of low status (Greece, Spain);
- (iii) transition from IVET developed under planned economy to market economy (Estonia, Hungary);

- (b) mutual enrichment of general education and IVET (Finland, Norway);
- (c) linking IVET with general education (France, UK-England);
- (d) unifying IVET and general education (Sweden, UK-Scotland).

These categories do not reflect the relative strengths and weaknesses of the different countries, nor the degree of variation between countries with similar strategies. For example, Germany, Hungary, Austria and the Netherlands are found to have stronger IVET programmes than those which exist in Estonia, Greece, Spain, Portugal, and UK-England. But Lasonen and Manning (2001) point out that flexible access to higher education differs between countries, with Austria and the Netherlands creating several paths for progression from IVET to higher education, followed by Germany and Hungary. Lasonen and Manning state that this difference is reflected in the proportion of students enrolling in IVET programmes compared with general education programmes (Table 4).

Germany is an example with a clear dominance of the dual system of vocational training. Access to higher education is given within the IVET system via legal regulation that promotes training for further career advancement within the field of occupation. Germany is also an example of a national tracked system of education. As early as secondary education, students are tracked into three different strands according to their capabilities. The degree of stratification is deepened by a division in upper secondary education between those who follow the apprenticeship route and those who continue in general education programmes.

4.3. A heuristic typology of IVET systems

For the purpose of analysing the social benefits of IVET empirically, we introduce a heuristic typology that comprises the 15 countries covered by ECHP data set, forming five groups of countries, calling them systems 1 to 5 (Table 5). Features such as the form of regulation of IVET systems and the labour-market model have been taken as criteria for grouping the countries (cf. Table 1).

Table 5. **Heuristic typology of IVET systems covering 15 countries in ECHP data set**

Type of IVET system	Countries	System
Apprenticeship-based	Denmark, Germany, Luxembourg, Austria	system 1
Continental school-based	Belgium, France, Netherlands	system 2
Market-led	Ireland, UK	system 3
General education	Greece, Spain, Italy, Portugal,	system 4
Egalitarian school-based	Finland, Sweden	system 5

4.3.1. Apprenticeship-based system

A common feature of Denmark, Germany, Luxembourg and Austria is that IVET is widespread in terms of enrolment rates and often takes place in the framework of an apprenticeship system (Table 4). In these countries, apprenticeship systems are characterised by an alternating structure of places of learning. Theoretical aspects of the occupational field and general contents are imparted in school while practical skills and competences are provided at the workplace. Occupational profiles, compulsory examinations and certified degrees are regulated in a tripartite system with the State, the unions and employers' associations as central actors; in some countries this occurs at decentralised levels. Within this system, occupational profiles are monitored with an option to modernise occupations and link them to industry needs. Vocational degrees are recognised as a signal for both employees and employers, improving options for horizontal mobility on occupational labour markets. Within this system, social benefits derived from an episode of IVET may come from being integrated in a community of practice within an occupational field. Also, a certificate from IVET could create prospects for horizontal mobility on occupational labour markets. This might support civic participation and engagement in voluntary organisations to deepen social networks within and beyond the occupational group.

4.3.2. Continental school-based system

IVET systems in Belgium, France and the Netherlands represent a continental version of a school-based system; there are some differences within this group. In France, national standardisation and central coordination in IVET is widespread due to the strong meritocratic orientation, expressing a deeply-rooted ideal of academic education in combination with a pronounced hierarchy of qualification levels, with lower reputation for formal IVET. In the Netherlands, school-based IVET is dominant, but with higher shares of workplace learning. Within this system, social benefits derived from an episode of IVET may be negative due to the low status of those with IVET certificates in the hierarchy of qualification levels. This might lead to a corresponding lower social status of graduates from vocational training routes and, in turn, to health related problems and lower rates of civic participation.

4.3.3. Market-led system

IVET systems can be characterised as market-led in the UK and, to some extent, in Ireland. Although most IVET is provided by the State (as in other countries) there is less regulation and State intervention. For example, the bodies which supply IVET qualifications are independent entities subject to State regulation

rather than part of the central government. IVET is also employer-led, with the involvement of employers, rather than other social partners, at all levels. Impacts on social benefits might be that firm-specific IVET activities could open up options for vertical mobility and thus have a positive impact on physical and psychological health and self-reported satisfaction with the main activity. However, transferability of skills across firms is limited in this system due to a lack of standardised certificates from IVET which can reduce job satisfaction as well as civic participation.

4.3.4. System of general education

In south European countries (Greece, Spain, Italy and Portugal) general education is the prevailing strand in the education system. In the absence of institutions that shape and enhance IVET systems, students acquire general knowledge and abilities in schools. If IVET takes place, it is usually in form of on-the-job training at the workplace. These countries are economically poorer than others in the data set (low GDP per capita) and usually have low levels of participation in IVET. Social benefits can be assumed in two different ways depending on how individuals define their relative position in society and on the labour market: As social protection in these countries is rather low and unemployment high, participants in IVET are likely to build up social capital as a way to improve employability, in line with the economic and social situation. But since IVET is mostly firm specific, and not generally widespread, social benefits might be rather low due to the narrow usability of certificates of IVET outside the firm.

4.3.5. Egalitarian school-based system

In Finland and Sweden, the IVET system is embedded in a national system of education that strives for equal opportunities in accessing education for all citizens. To avoid negative consequences of early tracking and enable individuals to continue in education, these countries have created an integrated school system with general and vocational tracks in the same school, with opportunities to acquire certificates that provide access to tertiary education. Given this low degree of stratification within education, social benefits might not be attributed to IVET in particular but to an education system which offers multiple options for personal enhancement. In this system we expect social benefits, for instance on health and civic participation, to be mediated by the developed welfare state which is a typical feature of Scandinavian countries.

4.4. Summary

In this section we reviewed different typologies of IVET systems, focusing on the commonalities and differences of these systems according to regulations, transitions into the labour market, opportunities for mobility within the labour market, and the adaptability of the IVET system to national and supranational changes. We also reviewed the degree of stratification of IVET within education and training, referring to the degree of tracking in educational systems, and the role of this stratification in generating opportunities for enhancement for individuals. A heuristic typology of IVET systems was then introduced to be used in an estimation strategy geared at investigating whether the social benefits of learning are linked to particular systems of IVET. This is one way to assess complementarities between macro-level institutional factors and the social benefits of IVET at micro level.

The heuristic typology is not used here for analysing social benefits of CVET: our data analysis was carried out nationally. We cannot revert to existing literature on country models or typologies focusing on similar institutional structures for the provision of CVET. Nevertheless, we considered the few studies which have tried to address dimensions which influence the pattern of CVET. For example, Green et al. (2006) characterise models of lifelong learning which also include dimensions of the adult learning system, the results of the learning system on the skills distribution and economic and social outcomes achieved by the various models. We also considered the results of the third continuing vocational training survey, showing that countries can be distinguished as high-, average- and low-performers in terms of incidence, participation, intensity and time investment in employer-provided continuing vocational training.

We took differences in national contexts as a starting point to analyse whether different systems (or models) of IVET may help to improve or reduce the benefits for individuals that arise from IVET experiences. We did the same for CVET but on a country level. We assumed that IVET and CVET are immersed within other national institutions and policy frameworks that mainly affect the labour demand and access to other institutions. For example, we expected that a national system that enables a smooth transition from IVET into the labour market, as well as CVET activities, would have direct impacts in terms of employability. We expected institutions to complement indirectly the social benefits of VET as well, since complementing institutions may enable individuals to maintain self-esteem and confidence gained through learning experience. A strong welfare State provides the mechanisms, such as access to health services, through which the health benefits of VET may be complemented and materialise.

CHAPTER 5

Methodology: variable selection and estimation strategy

5.1. Social outcomes for individuals

Our empirical model is based on data collected in several European countries, the European Community household panel (ECHP, see Box 2 for a description). These data contain information on individuals' life circumstances, including health and health behaviours as well as social and civic engagement. From the data, we selected private and social outcomes, both important for the individual and for society; for these we do not quantify economic value. We have chosen indicators covering aspects of health and well-being, as well as civic participation. Two key aspects were considered in selecting indicators. First, indicators had to be comparable across countries over time: the design of the ECHP enables this. The second aspect was variation of the indicators over time; we selected indicators that would show some variation in individuals over the eight years of data collection. For example, we would expect that health could vary during this time period; voting or not voting in an election is unlikely to show variation, unless several elections take place during the time of the interview.

In the health domain, we selected three indicators: self-rated health, chronic health conditions and body mass index (BMI) ⁽¹⁹⁾. Self-rated health was obtained from the question 'how is your health in general?' with five possible responses from 'very bad' to 'very good'. Figure 2 shows the proportion of individuals with very good health and with bad and very bad health by country in 2001. We can see a great deal of heterogeneity in responses, from a high of 95% of individuals reporting very good health in Ireland in 2001 to a low of 35% in Germany (this information was not available for Luxembourg in 2001).

⁽¹⁹⁾ In this project we are mainly interested in the association between an episode of vocational education or training with a change in health or social outcomes. Although the ECHP contains information on smoking, the data do not allow us to differentiate current smoking habits from previous smoking habits and it is not possible to construct a change in smoking habits from the information provided.

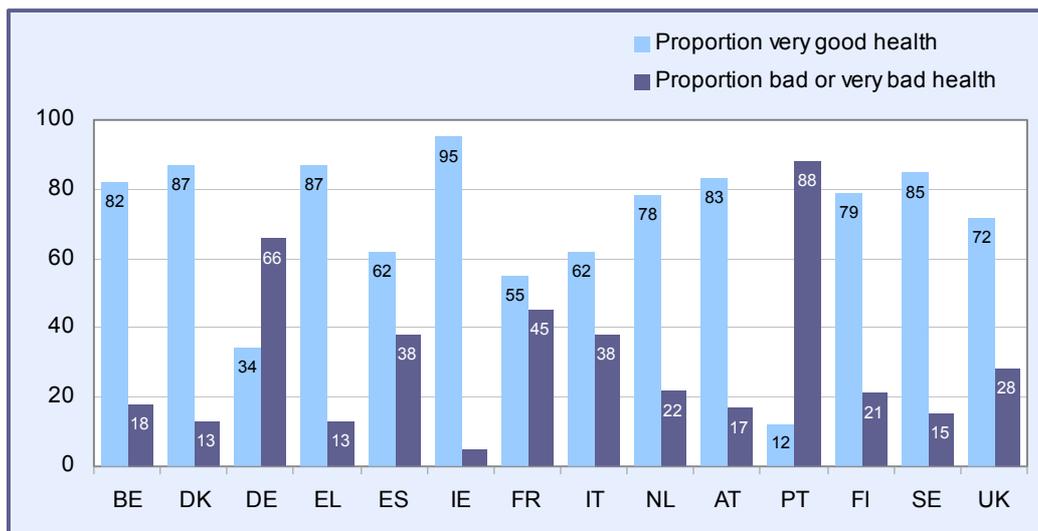
Box 2 The data set: the European Community household panel (ECHP).

Data for this report come from the ECHP, a longitudinal panel survey designed to enable comparisons to be made between EU Member States on a number of social and economic indicators. In the first wave of annual data collection (1994) 60 500 interviews were conducted with nationally representative households (approximately 130 000 adults aged 16 years and over) in the then 12 Member States ^(a). Austria joined the project in 1995 and Finland in 1996. Similar data has been included in the Swedish living conditions survey since 1997. For the fourth wave of the ECHP (in 1997), the original ECHP surveys stopped in Germany, Luxembourg and the UK and existing national panel surveys were then used. The eighth and final wave of the ECHP took place in 2001.

There are several reasons why we chose the ECHP over other potential sources of data, such as the labour force survey, for this project. First, the ECHP is a longitudinal data set which enables us to follow the same individuals over time and allows researchers to measure changes in the outcomes as well as changes in the episodes of VET. Second, the ECHP has been homogenised across European countries to enable comparability of indicators. This is not always the case with other national data sets. Third, the ECHP contains all the information in one file, reducing the time needed for data management, and has already been translated into a single language (English): we do not have the range of languages required to carry out an analysis that compares so many countries. Finally, the ECHP contains key variables that can be used in the analysis, in particular with respect to social outcomes and with indicators of VET. Unfortunately, the ECHP does not contain recent information on these indicators, and this study is confined to the period 1994 to 2001.

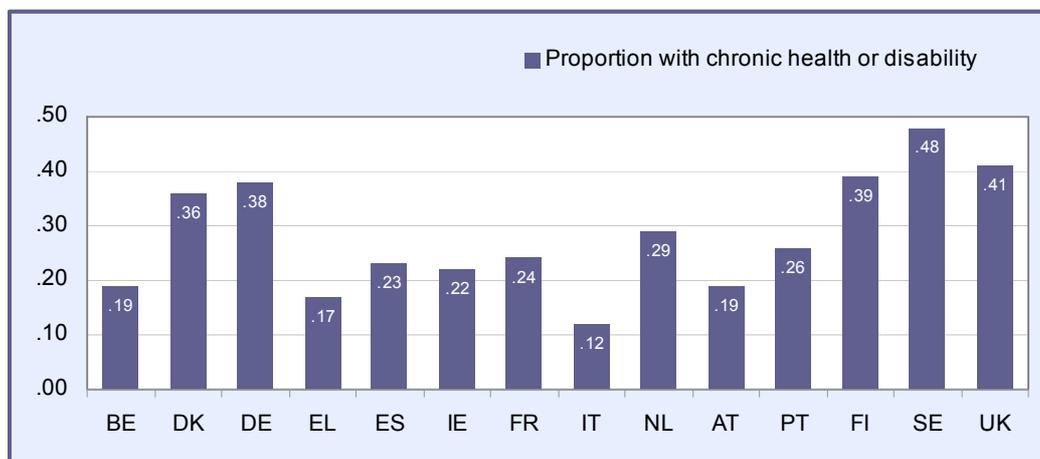
^(a) Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, the Netherlands, Portugal and the UK.

Figure 2. Self-rated health in ECHP by country in 2001



For chronic health conditions we used the question ‘are you hampered in your daily activities by any chronic physical or mental health problem, illness or disability?’ This information was only collected from 1995, so one less year of information is available compared with self-rated health. Figure 3 shows the proportion of individuals who were hampered in their daily activities by any chronic physical or mental health problem, illness or disability in each of the countries in 2001. Italy shows the lowest proportion of individuals, with only 12% of participants reporting limiting chronic health conditions. Sweden shows the highest 48% ⁽²⁰⁾.

Figure 3. **Proportion of individuals who are hampered in daily activities by any chronic physical or mental health problem, illness or disability by country in 2001**



Body mass index (BMI) was constructed using the individual’s weight and height, and this variable was already contained in the ECHP. Information on BMI was only available from wave 5 in 10 of the 15 countries. Countries not included were Denmark, Luxembourg, the Netherlands, Finland, and the UK. Table 6 shows the average BMI for the 10 countries with information. We can see an increasing trend in BMI over the four-year period, which replicates global trends towards an overweight population.

⁽²⁰⁾ To standardise this outcome with self-rated health, we recoded this variable so that a higher value indicates absence of chronic health conditions, illnesses or disabilities.

Table 6. **Average BMI by year and country**

	1998	1999	2000	2001
BE	24.6	24.7	24.7	24.8
DK	24.5	24.6	24.7	24.7
IE	24.6	24.7	24.7	24.8
EL	25.4	25.5	25.5	25.5
ES	25.2	25.2	25.1	25.4
IT	24.4	24.4	24.4	24.5
AT	24.9	24.9	25.0	25.0
PT	25.0	25.1	25.1	25.2
FI	25.0	25.1	25.3	25.3
SE		24.6	24.7	24.8

Source: ECHP.

We selected only one indicator of civic participation: membership of civic organisations. ECHP contains information on whether the individual is a member of a club (sports or entertainment), local or neighbourhood group or a political party. The information is contained in one single question, so it is not possible to differentiate between the different indicators used to generate this variable. Information is available in all waves in all countries, except for Luxembourg (which contains only information for the first three years), Austria (which does not contain information for 1994), Finland and Sweden (with information missing in the first two and three years, respectively) and the UK (which has no information on 1998, 2000 or 2001). Table 7 shows the proportion of individuals who are members of civic organisations in all countries by year. There are large differences by country, with a higher proportion of membership in the UK and Denmark and lower participation in south European countries such as Greece, Italy, Portugal, and, to a lesser extent, Spain.

Table 7. **Membership of civic organisations (proportion) by country over time**

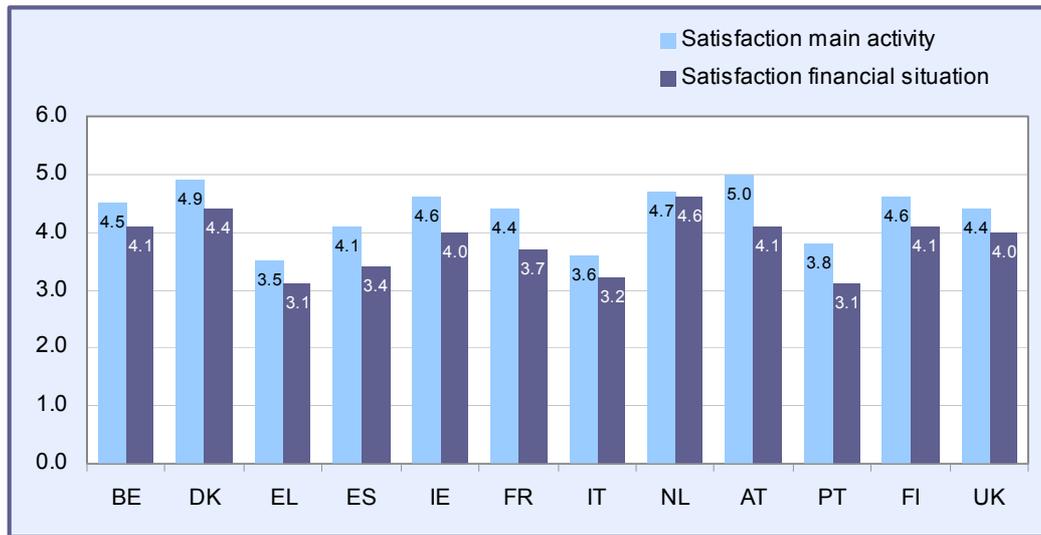
	1994	1995	1996	1997	1998	1999	2000	2001
BE	0.36	0.37	0.37	0.37	0.38	0.38	0.38	0.38
DK	0.57	0.59	0.60	0.60	0.63	0.65	0.64	0.65
DE	0.25	0.25	0.29	0.28	0.27	0.29		
IE	0.43	0.45	0.45	0.44	0.45	0.46	0.47	0.48
EL	0.10	0.09	0.08	0.08	0.09	0.09	0.09	0.10
ES	0.27	0.27	0.25	0.27	0.26	0.25	0.25	0.26
FR	0.28	0.26	0.27	0.28	0.28	0.27	0.29	0.29
IT	0.15	0.16	0.18	0.18	0.18	0.24	0.25	0.25
LU	0.39	0.40	0.41					
NL	0.45	0.45	0.45	0.45	0.44	0.45	0.45	0.46
AT		0.44	0.46	0.48	0.48	0.48	0.48	0.48
PT	0.14	0.15	0.15	0.16	0.18	0.18	0.19	0.20
FI			0.55	0.54	0.56	0.55	0.56	0.57
SE				0.67	0.65	0.66	0.68	0.82
UK	0.60	0.60	0.61	0.58		0.56		

NB: There is a large increase in membership of civic organisations in Sweden between 2000 and 2001. This may be due to a country level change in the definition of this indicator. We will include yearly controls in all estimations to deal with this issue.

Source: ECHP.

The final domain is well-being, for which we obtain two indicators: self-reported satisfaction with work or current main activity and self-reported satisfaction with current financial situation. The rating of self-reported satisfaction used a scale of 1 to 6, where 1 was not satisfied and 6 was fully satisfied. Satisfaction with work or main activity and satisfaction with financial situation were available in all waves in all countries, except Sweden (no information), Germany and Luxembourg (information was available in waves 1 to 3 and 7 only). Figure 4 shows the average value of self-reported satisfaction with main activity and financial situation by country in 2001. North European countries, such as Belgium, Denmark and the Netherlands showed higher values of satisfaction with main activity and financial situation than south European countries, such as Greece, Spain, Italy and Portugal. In all countries, individuals reported higher satisfaction with main activity than with current financial situation. This issue may reflect the wording of the question for main activity, which includes all individuals who are in paid and non-paid employment. Those individuals working in non-paid activities may report high satisfaction with current activity but low satisfaction with financial situation.

Figure 4. **Average self-reported satisfaction with main activity and financial situation by country in 2001.**



5.2. Educational variables

Key to this report is the categorisation of education that enables us to differentiate between academic and vocational qualifications and also within vocational qualifications; in the latter we cover those obtained directly after completing compulsory education and before entering full-time employment (which is regarded as IVET) or after entering full-time employment (CVET). Following the Cedefop definition, IVET can only be formal, within the education and training system, whereas CVET can be formal, non-formal or informal ⁽²¹⁾.

ECHP contains information on the highest qualifications achieved by the individual, collected during the first interview. Although the documentation shows that detailed information was collected on the type of qualifications, archived data contain only a derived variable which classifies the highest educational qualifications achieved into the following four categories:

- (a) recognised third level education,
- (b) second stage of secondary level,
- (c) first stage of secondary level,
- (d) less than secondary education ⁽²²⁾.

⁽²¹⁾ Please refer to Chapter 1 for definitions.

⁽²²⁾ Available in all countries except for Luxembourg in wave 1.

We were unable to differentiate whether these highest qualifications were obtained from a vocational or an academic route or a combination of these. Across the whole sample of European countries in the ECHP, 51% of individuals had achieved lower secondary schooling (that is at least first stage of secondary school) in 1994, 32% had upper secondary schooling (second stage of secondary level) and 17% had tertiary education.

Aside from the highest qualifications achieved, ECHP contains information on the episodes of education and training that took place during the year previous to the interview. Education and training was classified into general education, vocational education or language courses (or other adult education courses) as well as all the combinations of these learning episodes.

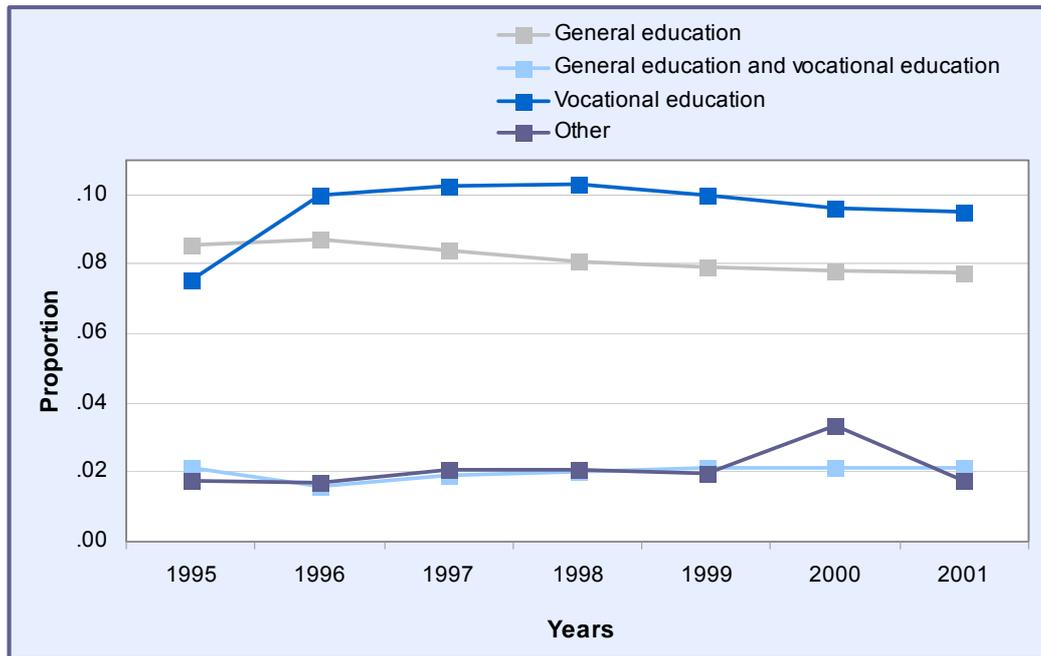
For the purpose of this report, we reclassified this variable into the following five categories:

- (a) general education or general education and language courses;
- (b) general education and VET or general education, VET and language courses;
- (c) VET or VET and language courses;
- (d) language courses;
- (e) no education or training.

The aim of this classification is twofold: first, to try to isolate individuals who had undertaken VET courses alone (or in conjunction with language courses) and then to be able to measure the association of VET with social outcomes for these individuals compared with other individuals.

Figure 5 shows individuals' participation in different types of courses across Europe between 1995 and 2001. Around 10% of individuals participated in VET or VET and language courses and around 8% participated in general education or general education and language courses. Participation in a combination of VET and general education courses and language courses was relatively small, with only around 2% of individuals participating. Our estimation method uses variations over time in the participation of individuals in VET courses and associates these with variations on social outcomes for these same individuals.

Figure 5. **Participation in continuing education across Europe from 1995 to 2001.**



5.2.1. IVET versus CVET

To distinguish episodes of IVET from those of CVET, we divided individuals into four groups according to age and work experience. The first group contains individuals aged 25 or younger during the first interview year. Our working assumption was that any period of VET reported by these young individuals will be considered IVET⁽²³⁾. The proportion of the ECHP sample 25 years or under is 21% (Table 8). This age group contains individuals with and without work experience⁽²⁴⁾.

The second group contains individuals in their early working careers, aged between 26 and 45 years, who had had work experience by 1994. The third group contains individuals in their late careers, aged 46 to 60 who had had work experience by 1994. The fourth and final group contains individuals older than 60

⁽²³⁾ We acknowledge that some young people may have completed full-time education, joined the labour market and achieved a VET qualification while working before they were 25 years of age. This could have been considered CVET. However, our statistics showed that nearly three quarters of young people under 25 reported that they had no work experience prior to 1994.

⁽²⁴⁾ Unfortunately, three quarters of young people under 25 (16%) reported they had never worked before the interview and only 5% had worked. The latter group is too small to undertake empirical analysis. For this reason, these two groups were merged.

years of age, most of whom could be considered near retirement or already retired, and who have had work experience by 1994. Our working assumption was that any period of VET reported by these individuals will be considered CVET. In the ECHP, 44% of individuals are in their early career, 17% in their late careers and 12% near or at retirement age (Table 8).

The ECHP also contains information about the age at which individuals began their working life. For 13.8% of the sample, the response to this question was 'never worked'. Of these individuals, 63% did not do any episodes of training, 29% undertook general education, 2.4% general education and VET, 3.8% only VET courses and 0.7% other training, mainly language courses. Table 8 shows that around 5% of the ECHP sample are over 25 years and have never worked. We classified these individuals separately since any training they undertook is not related to their previous labour market experience, although it could be related to their willingness to join the labour market in the future. We also assumed that any period of training undertaken by these individuals should be considered CVET.

Table 8. **Description of life course stages using ECHP**

Group	Description	Percentage
Youth	Young people aged 25 or younger during the first interview year. Contains individuals with and without work experience.	21.1
Early career	Individuals aged 26 to 45 years when they were interviewed for the first time. Only those individuals who have had work experience.	43.9
Mid to end career	Individuals aged 46 to 60 years when they were interviewed for the first time. Only those individuals who have had work experience.	16.8
Retired	Individuals over the age of 60 years when they were interviewed for the first time. Only those individuals who have had work experience.	12.4
Never worked	Individuals older than 25 years who have never worked.	5.5

5.2.2. Formal versus non-formal CVET

Information was collected on the type of vocational education or training for each learning episode undertaken during the year prior to the interview. Possible responses for this variable were:

- (a) third level qualification, such as technical college;
- (b) specific vocational training at a vocational school or college;
- (c) specific vocational training within a system providing both work experience and a complementary instruction elsewhere;

- (d) specific vocational training in a working environment;
- (e) other type of vocational education or training ⁽²⁵⁾.

Using Cedefop (2008c) definitions, the options (a) to (c) would result in a qualification, which is the main feature assigned to formal CVET. Option (d) is assumed to be non-formal within the enterprise or organisation. Option (e) could be defined as informal, but there is not enough information about this type of training to know whether it occurred within the enterprise or outside, whether it had educational intent or not, or whether it was structured learning or not. Only 0.42% of individuals reported 'other' training. For estimation purposes, we only differentiate between formal CVET and non-formal or informal CVET ⁽²⁶⁾. Of those who reported an episode of CVET, 43% was formal, 31% non-formal or informal and 24.8% unspecified.

5.2.3. Duration of CVET

Information was also collected on duration of the VET episode. Overall duration of the course was classified into VET of less than two weeks, two to nine weeks or more than nine weeks. This information was available in all countries except in Luxembourg, and the Netherlands (only information in wave 8) and Sweden (no information). For estimation purposes we define 'short duration' as training with duration of nine weeks or fewer and 'long duration' as training with duration over nine weeks. Of those individuals who reported an episode of CVET, 60% had short duration, 20% long duration and 20% unspecified ⁽²⁷⁾.

5.2.4. Sources of funding for CVET

Funding sources were collected only for individuals whose employers paid for their education or training as opposed to self-financing. This information was

⁽²⁵⁾ Since this question asks about any training which took place since the previous year it is only available from wave 2 (1995) in all countries except Sweden. No information is available for Luxembourg in wave 4.

⁽²⁶⁾ A significant proportion of individuals (24.8%) did not provide information about the type of vocational education or training. This is because information was not collected in some countries (e.g. Sweden) and for some other countries the information was missing in certain years (e.g. Luxembourg). Rather than dropping these cases, we keep them as an additional category for analysis. In comparing the associations between type of CVET and social outcomes, it is likely that the inclusion of this variable acts more like country and year fixed effects, hence it may have a different interpretation than being a separate category for type of CVET experience.

⁽²⁷⁾ For individuals without information on duration of CVET course, we undertook the same steps as for individuals whose type of CVET was unspecified described in the footnote above.

available in all countries except for Sweden (no information), Denmark and Luxembourg (not in waves 4 to 7). This information was only available for individuals who were in employment. Of those individuals in employment who reported episodes of CVET, 68% had their training paid by their employer, 16% were self-funded and a further 16% were unspecified ⁽²⁸⁾.

5.3. Additional individual characteristics

The richness of the ECHP data set also allows us to include sociodemographic measures and income to be able to establish whether any potential association between VET and social outcomes may be the result of these factors (in particular income). Among the variables used in the analysis we include gender (48% men and 52% women) and cohabitation status (67% married/cohabiting and 33% single).

Income was constructed as log real gross hourly wage (in purchasing power parity, EUR PPP). There is no perfect income measure. The ECHP contains information on gross and net earnings per country with the exception of France and Finland where the measure is gross earnings. The variable used was gross monthly earnings for all countries except for Luxembourg and Sweden, where gross income was missing: the derived variable for total net income from work was used instead as proxy for gross earnings. The total number of hours worked per week in main and additional jobs was used to obtain hourly wage. Nominal hourly wage in national currency was converted to EUR PPP using the official PPP rates in the ECHP country file. The use of PPP rates rather than the fixed rate is in accordance with official recommendations (Eurostat, 2003, p. 10). All observations with non-positive wages were dropped as well as the top and bottom 1% within each gender, country, and year cell (to reduce the influence of outliers): this affected only 1% of the sample with information on earnings (Table 9) ⁽²⁹⁾.

We used another variable dealing with the potential income effect on social outcomes. This variable is a subjective measurement of the ability of households to make ends meet with their total monthly income. This was coded in a six-point

⁽²⁸⁾ For individuals without information on sources of funding for their CVET course, we undertook the same steps as for individuals whose type of CVET was unspecified described in footnote 21.

⁽²⁹⁾ We would like to thank Dr Yu Zhu from the Department of Economics, University of Kent, for providing us with the income variable.

scale, with lower values indicating 'great difficulty' and higher values 'very easily'. About 10% of the households had great difficulty making income from all sources meet their needs and a further 12% found it quite difficult. Of households, 15% found it easy to manage with their income but only 3% found it very easy (see Table 9 for descriptive statistics of this indicator by country). We found a 0.29 correlation between this subjective measurement of income and the income variable derived from earnings. This is a relatively low correlation which indicates that the income variable and the subjective measurement of income could capture different sources of variation in social outcomes. For example, individuals may have a wage equivalent to the average in the country, but feel that this wage is not enough to meet the financial needs of the household: this may cause stress and decrease overall well-being. Therefore, both indicators are important in the analysis.

5.4. Estimation strategy

The empirical model described in Box 3 was used throughout the report. However, slightly different specifications of this workhorse model were used to investigate the social outcomes linked to IVET and CVET.

Table 9. **Descriptive statistics for gross hourly wage and household income ability to make ends meet by country**

	Log (gross hourly wage)		Ability to make ends meet	
	Mean	Standard deviation	Mean	Standard deviation
BE	11.67	6.08	3.87	1.17
DK	12.41	5.31	4.02	1.22
DE	10.25	7.60	4.17	1.19
IE	10.15	7.54	3.31	1.11
EL	6.49	4.30	2.55	1.17
ES	8.11	5.31	3.07	1.20
FR	9.51	6.98	3.51	1.05
IT	9.17	5.19	3.23	1.08
LU	13.05	8.26	4.26	1.16
NL	13.54	13.60	4.24	1.20
AT	9.23	4.85	3.52	1.18
PT	4.95	4.38	2.75	1.02
FI	9.40	5.23	3.68	1.15
SE ^(a)	5.92	3.76	3.42*	1.16*
UK	9.79	7.59	3.77	1.06

(^a) There is no information from Sweden on the ability of households to make ends meet with their total monthly income. The reported value for Sweden is inputted using the average across all other European countries.

Source: ECHP.

Box 3. Estimation model and method

Let us approximate the effects of VET on social outcomes for individuals in Europe by the function f , such that:

$$S_{itc} = f(VET_{itc}, X_{itc}, Y_{ic}, \alpha_i, \lambda_t, \beta_c, \eta_{itc}) + e_{itc} \quad (1)$$

where i denotes individuals, t stands for time and c for country. S denotes social outcome, which is a function of VET. X is a matrix of individual, demographic characteristics which change across individuals, over time and by country, for example income and marital status. Y is a matrix of variables that only change across individuals and countries, but show no fluctuations over time, for example gender, ethnicity, and prior educational qualifications. Individual time invariant fixed effects are denoted by α_i ; period heterogeneity that affects all individuals in a particular year, λ_t ; country specific fixed effects are captured by the parameter β_c . Time-varying individual heterogeneity in social outcomes, such as changes in self-efficacy, self-esteem or aspirations, is captured by the parameter η_{itc} . Measurement error is assumed random and captured by e_{itc} .

Studies using cross-sectional data (which do not contain a time dimension) or panel data (which contain a time dimension, but it is ignored in the estimation) tend to employ multivariate regression analysis to estimate the parameters of the model proposed in Equation (1). Whether the analysis is linear or non-linear depends on the nature of the outcome variable. For continuous outcome variables, the most common estimation method is linear regression, which is estimated using ordinary least squares (OLS). For dichotomous, ordered or categorical outcome variables, the most common estimation methods are non-linear and assume that the error term in Equation (1) follows a logistic distribution (logit type models) or a normal distribution (probit type models). Estimation methods which ignore the panel structure of the data may include country fixed effects, by means of individual country dummy variables to estimate β_c , and may adjust for the clustering of information around individuals by relaxing the assumption of independence of observations.

Ignoring the time dimension of the data forces the estimation of parameters to make comparisons between average levels of social outcomes for different groups of individuals. For the particular case of VET, this estimation strategy compares social outcomes for individuals who were engaged in VET against those who were not. The inclusion of a confounding variable, such as income, enables the researcher to investigate whether differences in average levels of social outcomes which were thought to be the result of VET may be due to any of these other factors. One of the main drawbacks of this approach is the fact that individuals who participate in VET may be different from those who do not. This issue is likely to bias the estimation of parameters which measure the association of VET with social outcomes.

The time dimension of the data can be used to estimate parameters that compare the average change in social outcomes with the average change in explanatory factors over time. For the particular case of VET, this method estimates whether average changes in social outcomes are associated with average changes in VET episodes for each individual. This estimation strategy only allows for the inclusion of confounding factors that change over time, for example income. The role of confounding factors in the model in changes is the same as for the model in levels. Empirically, the change model is estimated using random or fixed effects.

Fixed effects estimation absorbs the effect of time-invariant heterogeneity (α_i) with the inclusion of individual intercepts in the model. Essentially, the effect of individual time-invariant heterogeneity is cancelled out in this approach because time-invariant factors do not easily explain changes. Random effects estimation models this heterogeneity as a random disturbance. This assumes that the unobserved time-invariant heterogeneity is not related to the decision to engage in VET. For this outcome the assumption of random effects is a strong one. Mundlak (1978) proposed that the correlation between the explanatory variables and the unobserved time-invariant heterogeneity can be explicitly modelled and dealt with in the estimation. The approach is to incorporate the average value of our time-dependent variable (average levels of VET episodes over the time period) in the estimation. This takes out the bias on the estimate of VET caused by correlation of VET and unobserved time-invariant heterogeneity.

The choice of using fixed or random effects is not straight-forward when dealing with non-experimental data, as in our case ^(a). In this report we opted to use fixed effects because we wanted to make sure that we dealt as effectively as possible with the time-invariant characteristics of the sample. This is done by estimating a change model, in other words whether an individual's changes in social outcomes (whether there was an improvement in health outcomes over time) are associated with episodes of VET (whether year-on-year individuals took VET courses). A fixed effects model necessarily uses a transformation of the variables to obtain deviations from each individual's average and to difference out any time-invariant heterogeneity (Hsiao, 2003). This estimation can only be performed for individuals who have variations in their social outcomes.

Another type of unobservable heterogeneity is cross-sectional individual-invariant factors, λ_t , which affect equally all individual observations in one period but not in others. An example of this type of heterogeneity will be the introduction of a national policy that may affect social outcomes. It is relatively

straightforward to model this heterogeneity by introducing one indicator variable for each period in the panel data. This approach is similar to the inclusion of country dummy variables to condition out for country specific fixed effects in an ordinary least squares regression.

The last type of heterogeneity considered in Equation (1) is individual time-varying within country heterogeneity, η_{itc} . Motivations, locus of control, self-esteem, aspirations, agency or self-efficacy, are examples of this type of unobservable variable. These are features of the individual that may contain stable elements but also elements which can be assumed to change over time. In the ECHP there are no measurements of these variables, and, even if there were, we would not be able to include all the individual factors that may determine a person's health, involvement in civic activities or decision to undertake VET courses. Hence, we have no other option than to assume that the effect of the unobserved individual time-varying heterogeneity has the property of a random variable. Therefore, we did not model explicitly this time-varying heterogeneity but assumed that it is incorporated in the error term. This remains a limitation of this study.

The empirical equation proposed to estimate the social benefits of VET is based on contemporaneous effects, meaning that participation in training is associated to a contemporaneous change in health, civic participation or well-being outcomes. It may be the case that the social benefits of VET take time to be realised, so past training is associated with present changes in individual circumstances. One possible way to deal with this issue is to include lagged values of training to estimate social outcomes. Given the breadth of estimations proposed here between VET and social outcomes (by systems and countries, over the life course, for IVET and CVET) we opted to leave this issue as another limitation of our study.

(^a) For further details about when to use fixed versus random effects see Wooldridge (2002) and Hsiao (2003).

5.4.1. IVET

We used the sample of young people aged 25 years or younger in 1994 to estimate the association of IVET and social outcomes. There are two main models. First, we estimated average differences in levels of social outcomes using OLS or logit models. This is called 'model in levels'. Second, we estimated the average change in social outcomes over time using fixed effect linear regression or fixed effects logit models. This is called 'model in changes'. The model in changes is robust to some of the known biases explained above, in particular, biases arising from factors that do not change over time. In general, we place more emphasis on the results obtained by the model in changes, but it is important to show results from model in levels to understand better the sources of biases.

For the model in levels we explored:

- (a) base model: average differences in levels of social outcomes for individuals who participated in IVET courses and those who did not across the European countries in the sample. To estimate these average differences we controlled for year and country effects, initial educational qualifications and gender;

- (b) base model plus income: we included the logarithm of gross hourly wage, household's ability to make ends meet with monthly income and cohabitation status. This is done to investigate whether any associations between levels of social outcomes and IVET from the base model may be explained by differences in income;
- (c) base model by systems: we used the classification of systems of VET described in Chapter 3 to investigate whether any differences in levels of social outcomes and IVET arise in a particular system. This analysis was carried out by systems described in Section 4.3;
- (d) base model by systems plus income: we included income with the models estimated in (c) above. Again, the idea was to see whether income may be responsible for explaining any associations found between IVET and average levels social outcomes in each of the systems.

For the model in changes we explored:

- (a) base model: average differences in changes of social outcomes associated with changes in IVET episodes over time for individuals across the European countries in the sample. To estimate these average differences we controlled for year effects only, as other factors that do not change over time, such as gender, were dropped from the analysis;
- (b) base model plus income: we included the logarithm of gross hourly wage, household's ability to make ends meet with monthly income and cohabitation status. This is done to investigate whether any associations between changes of social outcomes and episodes of IVET from the base model may be explained by changes in income over time;
- (c) base model by systems: using the systems classification, we investigated whether associations between changes in social outcomes and episodes of IVET are found in a particular system;
- (d) base model by systems plus income: we included income to the models estimated in point (c).

5.4.2. CVET

We use the sample of individuals over 25 and information on their previous work experience to explore the association of CVET and social outcomes over the life course. The following life course groups were selected:

- (a) individuals aged 26 to 45 in 1994 with previous work experience;
- (b) individuals aged 46 to 60 in 1994 with previous work experience;
- (c) individuals over 60 with previous work experience;
- (d) individuals over 25 who have never worked.

For each of these groups, for model in levels we estimated:

- (a) base model: average differences in levels of social outcomes for individuals who participated in CVET courses and those who did not, over the life course, across the European countries in the sample. To estimate these average differences we controlled for year and country effects, initial educational qualifications, and gender;
- (b) base model plus income: we included the logarithm of gross hourly wage, household's ability to make ends meet with monthly income and cohabitation status to the base model. This was done to investigate whether any associations between levels of social outcomes and CVET over the life course from the base model may be explained by differences in income.

For each of these groups, for model in changes we estimated:

- (a) base model: average differences in changes of social outcomes associated with changes in CVET episodes over time, over the life course, for individuals across the European countries in the sample. To estimate these average differences we controlled for year effects only, as other factors that do not change over time, such as gender, were dropped from the analysis;
- (b) base model plus income: we included the logarithm of gross hourly wage, household's ability to make ends meet with monthly income and cohabitation status to the base model. This was done to investigate whether any associations between changes of social outcomes and episodes of CVET from the base model may be explained by changes in income over time.

After completing these analyses, we explored further features of the CVET experience to differentiate whether any associations found between CVET and social outcome may be the result of formal or non-formal/informal CVET, short or long duration, self-financed or employer-financed. For these analyses we used only the most robust methodology which uses the model in changes. Results are presented for the pooled sample of individuals across Europe only⁽³⁰⁾. For sources of funding to undertake CVET, we only carried out the model for individuals in employment, dropping individuals not in employment and those with no previous work experience. This analysis was only carried out for the pooled sample of individuals across Europe.

⁽³⁰⁾ We did not undertake this analysis for IVET because all IVET is formal and duration is longer than nine weeks. In addition, only individuals in employment were asked about sources of funding for VET. Although it is possible that some employers may pay for the initial training of individuals, by definition IVET occurs before the individual joins the labour market and so is funded by the person or subsidised by the State.

To further our understanding of the relationship between CVET and social outcomes in a European context we estimated models by countries. First, we estimated for which countries there is a relationship between average level of CVET and average level of social outcomes (base model and controls explained in points 1 and 2 above). Then, we estimated for which countries there is a relationship between changes in CVET episodes and changes in social outcomes (base model and controls described above). We did not undertake this analysis over the life course or features of CVET since any further subdivision of the data made it impossible to estimate the parameters of the model. Subdivision of the sample (by country and life course) and subdivision of the indicators (CVET subdivided into formal, non-formal, etc.) made the estimation of some parameters impossible.

5.5. Sensitivity analyses

Several decisions were made in undertaking the empirical analysis described in the estimation strategy: two are worth consideration. First was the age at which it could be assumed that individuals are enrolled in IVET courses. We assumed any VET episode reported by individuals younger than 25 years of age to be IVET. However, it is possible that individuals at age 25 are already working and have already completed IVET; hence reported episodes of VET may be considered CVET. To validate the reliability of our analysis, we repeated the IVET analysis with a further subdivision of the data by age of the individual: those who were aged 16 to 19 in 1994 were separated from those who were aged 20 to 25 in 1994. If the significance of our results was mainly found for the youngest cohort, then we could justify the assumption that our results were mainly for IVET. If results were not significant for this age group, then it is possible that some of the benefits of IVET are from CVET. We only use the methodology that is robust to time-invariant unobservable factors, hence the model in changes.

Second, the typology of IVET systems is subject to criticism. For example, the current classification has the Netherlands as continental school and work based system, though it could also be considered an egalitarian system. This raises the question: are the results robust to the classification of countries in each of the systems? To address this issue empirically we estimated the models of IVET by country. If at the system level we found positive/negative associations between changes in IVET episodes and changes in social outcomes we expect some of the countries in the system to show positive/negative associations. More important, if the association was not statistically significant, we expect none of

the countries in the system to have a positive/negative association. If countries within a system show an association between CVET and social outcomes, while the system result is that there is no association, then the composition of the system may be questionable as well as the conclusions that can be drawn from this analysis. As above, we use the model in changes because it is robust to time-invariant unobservable factors.

CHAPTER 6

Results

In the first instance this chapter explores results that emerged from the association between IVET and social outcomes using models in levels and in changes. Tables provided in this section focus on the association between episodes of VET and social outcomes and are intended to provide a summary of all results ⁽³¹⁾.

6.1. IVET and social outcomes

Table 10 shows results for the association between IVET and average levels of social outcomes, with and without the inclusion of controls and by systems of IVET. There is a positive association between an episode of IVET (defined by individuals' participation in IVET courses during the year previous to the interview) and all social outcomes except for satisfaction with financial situation. For the pooled set of individuals across European countries, we found that IVET is associated with better self-rated health, lower likelihood of chronic health problems, lower BMI, higher likelihood of membership of voluntary organisations, and higher satisfaction with work or main activity (even after conditioning out the impact of previous educational qualifications). When income and other controls are added into the model, our results remained unchanged, indicating that the association between IVET and these social outcomes is not mediated by income (or the other controls).

For the model in changes, across all individuals living in the sample of European countries, we also found that the episode of IVET is associated with positive changes in social outcomes for self-rated health, lower likelihood of chronic health problems, greater likelihood of participation in voluntary activities and greater changes in satisfaction with work or main activity (Table 11).

We did not find that changes in BMI were associated with participation in IVET over time. This indicates the possibility that the association between BMI and IVET found for the model in levels is the result of time-invariant

⁽³¹⁾ The full set of results, i.e. 13 auxiliary Excel files containing the output of all the estimated models, can be obtained from Cedefop upon request.

heterogeneity which is captured by the model in changes. It could also indicate that there is little variation in BMI for this age group (younger than 26 years); over time we do not see that IVET is associated with changes in BMI. This latter explanation will be true if we were to find in the model that none of the factors included were associated with changes in BMI. Nonetheless, our results showed that episodes of general education and episodes of general education and IVET were associated with changes in BMI over time. We believe that the lack of association between BMI and IVET is due to unobservable time-invariant heterogeneity.

We do not find that IVET is associated with greater average level of self-rated satisfaction with current financial situation across all individuals (Table 10). When income was included as a control, we found that IVET was associated with lower average levels of satisfaction with current financial situation. For the model in changes we found that participation in IVET is associated with lower satisfaction with financial situation over time (Table 11). However, this association is mediated by the inclusion of controls; once income and other controls were included in the model, the negative association between IVET and changes in satisfaction with financial situation became statistically insignificant.

We did not find that the association of IVET and social outcomes holds in all five IVET systems. For self-rated health, for example, individuals living in Denmark, Germany, Luxembourg or Austria (system 1) who had an episode of IVET had higher levels of self-rated health than individuals who did not participate in IVET (Table 10). However, in this same system, we did not find that episodes of IVET were associated with changes in self-rated health over time (Table 11). It is possible that the association of IVET and self-rated health found in Table 10 is the result of factors that affect both IVET and health. While the model in levels shows that IVET and self-rated health are positively correlated, the model in changes indicates a lack of association between them. Other factors are potentially responsible for IVET participation and health outcomes, so changes in IVET are not associated with changes in self-rated health. The same result was found in system 2 (Belgium, France and the Netherlands) and in system 4 (Greece, Spain, Italy and Portugal). In system 5 (Finland and Sweden) we found consistent evidence that IVET was associated with improvements in self-rated health over time, while in system 3 (Ireland and the UK) we found consistent evidence that this was not the case.

Focusing on the results using the change model (Table 11), a clear pattern of results by systems of VET is the lack of association between episodes of IVET and changes in social outcomes over time in system 3 and, partly, in system

2⁽³²⁾. Similarly, another clear pattern is the positive association between episodes of IVET and changes in social outcomes over time in system 5⁽³³⁾. For individuals residing in system 1 or system 4, there is consistent evidence of the association between episodes of IVET and positive changes in membership to voluntary organisations and higher satisfaction with work or main activity over time.

⁽³²⁾ We only found evidence of the association between episodes of IVET and higher satisfaction with work or main activity over time for individuals living in system 2.

⁽³³⁾ We did not find evidence that episodes of IVET were associated with changes in satisfaction with employment or main activity or with changes in satisfaction with current financial situation in system 5 using the 5% or lower cut-off point for statistical significance. We found, however, this association to be statistically significant at 10% level. We do not have information on satisfaction with main activity or current financial situation in Sweden, so, for these outcomes, statistical significance is harder to achieve.

Table 10. **IVET: summary of estimation base and controls, for all ECHP countries and by IVET systems**

Sample	Self-rated health		Lack of chronic health problems		BMI		Civic participation		Self-rated satisfaction			
	Base	Control	Base	Control	Base	Control	Base	Control	Main activity		Finances	
									Base	Control	Base	Control
Levels												
Europe	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	(-)
VET system 1	(+)	(+)	(+)	n.s.	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	(-)
VET system 2	(+)	(+)	n.s.	n.s.	(+)	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
VET system 3	n.s.	(-)	n.s.	(-)	n.s.	n.s.	(+)	(+)	n.s.	n.s.	(+)	n.s.
VET system 4	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	n.s.
VET system 5	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	n.s.
Change												
Europe	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	(+)	(-)	n.s.
VET system 1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
VET system 2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.
VET system 3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
VET system 4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	(-)	n.s.
VET system 5	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	n.s.	n.s.	n.s.

(+) association between IVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between IVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

System 1: Denmark, Germany, Luxembourg, Austria;

System 2: Belgium, France, the Netherlands;

System 3: Ireland, UK;

System 4: Greece, Spain, Italy, Portugal;

System 5: Finland, Sweden.

Source: ECHP.

6.2. Sensitivity analyses for IVET and social outcomes

Overall, we found very little evidence that the age division of the analysis produced bias in our results. Most of the results still hold when using youth aged 16 to 19 (the most robust definition of IVET), but also for older youth (Table 12). Across Europe, we found a positive association between IVET episodes and self-rated health, lack of chronic health problems, civic participation, and satisfaction with work or main economic activity for individuals aged 16 to 19 as well as for individuals aged 20 to 25. These results are consistent when these two groups were combined into one category (as shown in Table 11). Also consistent was the lack of statistical association between IVET episodes and changes in BMI. The lack of statistical association between IVET episodes and satisfaction with financial situation is driven by the lack of statistical association for the youngest cohort of youth (16 to 19 year olds).

Turning to the sensitivity analyses by age and by systems of IVET, we found consistent results on the association between IVET episodes and social outcomes for the youngest cohorts in these systems. In particular, there are positive associations between IVET and self-rated health, lack of chronic health problems, BMI, and civic participation for the youngest cohort in system 5; for civic participation and satisfaction with work for the youngest cohort in system 4; and for satisfaction with main activity in system 1. In most of these cases, we found that the oldest cohort of youth also has positive associations with social outcomes. The positive association between episodes of IVET and satisfaction with main activity was found for the oldest cohort of youth only in system 2.

Similarly, we found very little support that the heuristic classification of IVET systems used for the empirical analysis provides inconsistent results when undertaking the analyses at country level. Table 13 shows that when there was no statistical support for the association between IVET episodes and changes in social outcomes in the system, there was not in the individual countries within the system either.

Further, when there was a positive association between IVET episodes and social outcomes in the system, there was at least one country within the system that was driving the result: an example is the relationship found between IVET episodes and health outcomes for system 5, supported mainly by Sweden. We also found homogeneity of country results for system 4, except Portugal. The relationship between IVET episodes and civic participation found in system 1 was supported by Austria, whereas the relationship between IVET episodes and satisfaction with job or main economic activity found also in system 1 was supported by Denmark. Quantitative analyses are limited in suggesting the

reasons behind such country-driven effects; a closer look at national and sectoral levels would be needed.

We found that there are positive associations of IVET episodes and civic participation and self-rated satisfaction with job or main activity in Greece, Spain and Italy. Our results give some hints to suggest that — given high unemployment among youth in those three countries — participation in IVET refers to integration in society possibly measured by social outcomes like participation and satisfaction. We consistently found a lack of associations between IVET episodes and all the other social outcomes investigated in this report (self-rated satisfaction with finances, self-rated health, lack of chronic health conditions and BMI).

Taking both sensitivity analyses together, we conclude that the system classification provides a good analytical approach to the report and the age divide does not bias the interpretation of results as being benefits potentially emerging from IVET.

Table 11. **IVET: Sensitivity analysis by age for models in ‘changes’, base and controls, for all ECHP countries, and by IVET systems**

Sample		Self-rated health		Lack of chronic health problems		BMI		Civic participation		Self-rated satisfaction			
IVET system	Age	Base	Control	Base	Control	Base	Control	Base	Control	Main activity		Finances	
										Base	Control	Base	Control
Europe	16-19	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	(+)	(-)	n.s.
	20-25	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	(+)	(-)	(-)
System 1	16-19	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.
	20-25	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	n.s.	n.s.	n.s.
System 2	16-19	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	20-25	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.
System 3	16-19	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	20-25	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
System 4	16-19	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	(-)	n.s.
	20-25	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.
System 5	16-19	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	n.s.	n.s.	n.s.
	20-25	(+)	(+)	(+)	(+)	(+)	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.

(+) association between IVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between IVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

System 1: Denmark, Germany, Luxembourg, Austria;

System 2: Belgium, France, the Netherlands;

System 3: Ireland, UK;

System 4: Greece, Spain, Italy, Portugal;

System 5: Finland, Sweden.

Source: ECHP.

Table 12. **IVET: sensitivity analysis by country for models in ‘changes’, base and controls**

Sample	Country	Self-rated health		Lack of chronic health problems		BMI		Civic Participation		Self-rated satisfaction			
		Base	Control	Base	Control	Base	Control	Base	Control	Main activity		Finances	
										Base	Control	Base	Control
System 1	DE	n.s.	n.s.	n.s.	n.s.	no data	no data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DK	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.
	LU	n.s.	n.s.	n.s.	n.s.	no data	no data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	AT	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.
System 2	NL	n.s.	n.s.	n.s.	n.s.	no data	no data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	BE	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	FR	n.s.	n.s.	n.s.	n.s.	no data	no data	n.s.	(+)	(+)	n.s.	n.s.	n.s.
System 3	UK	n.s.	n.s.	n.s.	n.s.	no data	no data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	IE	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
System 4	IT	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
	EL	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
	ES	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
	PT	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
System 5	FI	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	SE	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	no data	no data		

(+) association between IVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between IVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

No data lack of information on that particular indicator in the ECHP.

System 1: Denmark, Germany, Luxembourg, Austria;

System 2: Belgium, France, the Netherlands;

System 3: Ireland, UK;

System 4: Greece, Spain, Italy, Portugal;

System 5: Finland, Sweden.

Source: ECHP.

6.3. CVET and social outcomes

Table 14 and 15 present results on the association between CVET and social outcomes over the life course. Across the sample of European countries in the ECHP we found that individuals with previous work experience in their early career (aged 26 to 45), who had an episode of CVET, had a higher average level in most social outcomes compared with similar individuals with no CVET (Table 14). The only outcome where this result does not hold is satisfaction with financial situation, where we found a negative association between CVET and levels of satisfaction with financial situation when income is controlled for: individuals who have done CVET have lower average levels of satisfaction with their financial situation than individuals who have not undertaken any form of learning.

However, for the model in changes in social outcomes (Table 15), we still find that episodes of CVET are associated with positive changes in self-rated health, less chronic health problems, more civic participation and more satisfaction with work or economic activity. The negative association of CVET and satisfaction with financial situation for individuals in their early career found in the model in levels (Table 14) is not statistically significant in the model in changes (Table 15). Similarly, the positive association between CVET and BMI for individuals in their early career in the model in levels (Table 14) is not statistically significant in the model in changes (Table 15).

For individuals in their mid to late career and for retired individuals, an episode of CVET is also associated with higher average levels of self-rated health, lower likelihood of chronic health problems and higher likelihood of participation in voluntary organisations (Table 14). However, Table 15 indicates that an episode of CVET is associated with changes in membership of civic organisations and satisfaction with employment or main activities over time for individuals in their mid to late career only. In the model in changes we did not find that episodes of CVET were associated with social outcomes for retired individuals or those without work experience prior to 1994 (Table 15).

Turning to results by country, there is some evidence that CVET is associated with positive outcomes, in levels, in some countries but not in others (Table 14). For self-rated health and civic participation, we found that individuals engaged in CVET have, on average, higher levels of self-rated health and participate more in society than individuals who were not engaged in any form of learning in all countries. For lack of chronic health problems we also found a positive association with CVET in Germany, Spain, France, the Netherlands, Finland, Sweden and the UK, and for BMI in Spain and Sweden.

However, for satisfaction with work or satisfaction with finances, we found that CVET is associated positively and negatively with higher average levels of satisfaction depending on the country (Table 14). Positive associations of CVET with satisfaction with work were found in Italy and Greece and negative associations in Ireland, France and the Netherlands. Positive association of CVET with satisfaction with finances was found in Italy and negative in Belgium, Denmark, Germany, Ireland and France (Table 14).

Table 13. **Social outcomes of CVET: summary of results for model in ‘levels’, base and controls, for all ECHP countries and by country**

Sample	Life-course group	Self-rated Health		Lack of chronic health problems		BMI		Civic Participation		Self-rated satisfaction				
		Base	Control	Base	Control	Base	Control	Base	Control	Main Activity		Finances		
										Base	Control	Base	Control	
Europe	Early career	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(-)	
	Mid/late career	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	n.s.	(+)	n.s.	
	Retired	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.	
	Never work	(+)	(+)	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(-)	(-)	n.s.	(-)	
By country														
BE	Individuals over 25 years of age in all countries	(+)	(+)	(+)	n.s.	(+)	n.s.	(+)	(+)	n.s.	n.s.	n.s.	(-)	
DK		(+)	(+)	(+)	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.	(-)	(-)	
DE		(+)	(+)	(+)	(+)	No data	(+)	(+)	(+)	n.s.	n.s.	(-)		
IE		(+)	(+)	(+)	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	(-)	(-)	(-)
EL		(+)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	(+)	n.s.
ES		(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	n.s.	n.s.	n.s.
FR		(+)	(+)	(+)	(+)	No data	(+)	(+)	(-)	(-)	(-)	(-)	(-)	
IT		(+)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	(+)	(+)
LU		(+)	(+)	n.s.	n.s.	No data	(+)	(+)	n.s.	n.s.	n.s.	n.s.	n.s.	
NL		(+)	(+)	(+)	(+)	No data	(+)	(+)	(-)	(-)	n.s.	n.s.	n.s.	
AT		(+)	(+)	(+)	n.s.	(+)	n.s.	(+)	(+)	(+)	(+)	n.s.	(+)	n.s.
PT		(+)	(+)	(+)	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	n.s.	n.s.	n.s.
FI		(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	(-)	
SE		(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	No data	No data			
UK	(+)	(+)	(+)	(+)	No data	(+)	(+)	(+)	n.s.	n.s.	(+)	n.s.		

(+) association between CVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between CVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

Blank inability to estimate the parameter due to small sample.

Source: ECHP.

Life-course groups are defined as follows:

‘Early career’ for individuals aged 26 to 45 in 1994 with previous work experience;

‘Mid/late career’ for individuals aged 46 to 60 in 1994 with previous work experience;

‘Retired’ for individuals over 60 with previous work experience;

‘Never work’ for individuals over 25 who have never worked.

Table 14. **CVET: summary of results for model in ‘changes’, base and controls, for all ECHP countries and by country.**

Sample	Life-course group	Self-rated Health		Lack of chronic health problems		BMI		Civic Participation		Self-rated satisfaction			
		Base	Control	Base	Control	Base	Control	Base	Control	Main Activity		Finances	
										Base	Control	Base	Control
Europe	Early career	(+)	(+)	(+)	(+)	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
	Mid/late career	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
	Retired	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	Never work	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
By country													
BE	Individuals over 25 years of age in all countries	(+)	(+)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
DK		n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	n.s.	n.s.	n.s.
DE		n.s.	n.s.	n.s.	n.s.	No data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	
IE		n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
EL		n.s.	n.s.	(-)	(-)	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
ES		n.s.	n.s.	(-)	(-)	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.
FR		n.s.	n.s.	n.s.	n.s.	No data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
IT		n.s.	n.s.	(-)	(-)	n.s.	n.s.	(+)	(+)	(+)	(+)	n.s.	n.s.
LU		n.s.	n.s.	n.s.	n.s.	No data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
NL		n.s.	n.s.	n.s.	n.s.	No data	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
AT		n.s.	n.s.	(+)	(+)	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.
PT		n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.	n.s.	n.s.
FI		(+)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	(+)	n.s.	n.s.
SE		(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	No data	No data	
UK	n.s.	n.s.	n.s.	n.s.	No data	n.s.	n.s.	n.s.	n.s.	n.s.	(+)	n.s.	

- (+) association between CVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).
- (-) association between CVET episode and deterioration in the social outcome.
- n.s. not statistically significant at 5 or 1% level.
- Blank inability to estimate the parameter due to small sample.

Life-course groups are defined as follows:

- ‘Early career’ for individuals aged 26 to 45 in 1994 with previous work experience;
- ‘Mid/late career’ for individuals aged 46 to 60 in 1994 with previous work experience;
- ‘Retired’ for individuals over 60 with previous work experience;
- ‘Never work’ for individuals over 25 who have never worked.

Source: ECHP.

The model in changes shows that CVET episodes were associated with social outcomes only in some countries (Table 15). We found that in Sweden they were associated with positive changes in self-rated health and BMI, lack of chronic health problems, and greater civic participation. In Austria, CVET episodes were associated with lack of chronic health problems and greater civic participation. Greece and Italy indicated greater civic participation and more satisfaction with work, but more chronic health problems. Spain and Portugal suggested greater civic participation, Finland showed more satisfaction with work and Belgium positive change in self-rated health. Episodes of CVET were not associated with changes in satisfaction with finances over time in any of the countries (Table 15).

Overall, we find little evidence that CVET is associated with changes in social outcomes over time in all countries. Apart from individuals in Sweden and, to some extent, in Greece, Spain, Italy and Austria, we do not find that episodes of CVET are associated with changes in social outcomes. Sweden is also the country where we found most of the support for the positive association between IVET episodes and changes in social outcomes over time.

6.4. Features of CVET and social outcomes

Table 16 shows the results on whether different features of the CVET episode were associated with changes in social outcomes over time across all European countries in the sample. We did not find any evidence for an association between type of CVET experience and social outcomes for individuals in their mid to late career and those who did not have work experience prior to 1994. For most outcomes (all except satisfaction with main activity), we did not find evidence that type of CVET experience was associated with social outcomes for the retired. For satisfaction with main activity, we found that episodes of formal CVET courses were associated with positive changes in satisfaction with work or main activity for individuals over 60 years of age.

Any significant statistical association between type of CVET experience and social outcomes was found for individuals in their early career. Even after the inclusion of controls, individuals in their early careers who undertook a formal episode of CVET showed positive changes in self-rated health and positive changes in civic participation over time. Similarly, individuals in their early careers who undertook non-formal or informal CVET showed positive changes in civic participation and higher satisfaction with work or main activity over time.

Regarding duration of CVET episode, most statistical evidence was found for those in their early careers, with some for those in their mid- to late careers. For the former group, short duration CVET courses were associated with positive changes in self-rated health, lower BMI, higher likelihood of civic participation and more satisfaction with main activity over time. For the latter group of individuals, short duration of CVET was also associated with higher likelihood of civic participation and positive changes in their satisfaction with main activity over time.

Evidence on the association between long courses, i.e. courses lasting over nine weeks, and social outcomes is scarce and somewhat mixed. While long duration CVET courses were found to be positively associated with civic participation for individuals in their early careers, participation was negatively associated with satisfaction with financial situation for the same group of individuals. This result shows the possibility that financial remuneration for a long duration CVET course is perhaps not as high as expected by individuals. Nevertheless, the long duration CVET experience may have enabled individuals to join voluntary organisations and hence increase their civic engagement.

Table 15. Features of CVET: summary of results for model in ‘changes’, base and controls, for all ECHP countries

Life-course group	Self-rated health		Lack of chronic health problems		BMI		Civic participation		Self-rated satisfaction			
	Base	Control	Base	Control	Base	Control	Base	Control	Main Activity		Finances	
									Base	Control	Base	Control
Type CVET: formal (F), non-formal/informal (I)												
Early career	F.I.(+)	F.(+)	n.s.	n.s.	n.s.	n.s.	F.I.(+)	F.I.(+)	I.(+)	I.(+)	n.s.	n.s.
Mid/late career	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	I.(+)	n.s.	n.s.	n.s.
Retired	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	F.(+)	F.(+)	n.s.	n.s.
Never work	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Duration CVET: dhort courses (S), long courses (L)												
Early career	S.(+)	S.(+)	n.s.	n.s.	S.(+)	S.(+)	S.L.(+)	S.L.(+)	S.(+)	S.(+)	L.(-)	L.(-)
Mid/late career	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	S.(+)	S.(+)	S.(+)	S.(+)	n.s.	n.s.
Retired	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Never work	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Sources of Funding CVET: employer paid (E), own funds (O)												
Early career	E.(+)	E.(+)	E.(-)	E.(-)	n.s.	n.s.	E.O.(+)	E.O.(+)	E.(+)	E.(+)	E.(+)	n.s.
Mid/late career	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	E.(+)	E.(+)	E.(+)	E.(+)	n.s.	n.s.
Retired	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

(+) association between feature of CVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between feature of CVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

Blank inability to estimate the parameter due to small sample.

(F) formal CVET;

(i) non-formal/informal CVET;

(S) short duration of CVET,

(L) long duration of CVET

(E) employer paid CVET,

(O) self-financed CVET or own funding for CVET.

Life-course groups are defined as follows:

‘Early career’ for individuals aged 26 to 45 in 1994 with previous work experience;

‘Mid/late career’ for individuals aged 46 to 60 in 1994 with previous work experience;

‘Retired’ for individuals over 60 with previous work experience;

‘Never work’ for individuals over 25 who have never worked.

For sources of funding we only used individuals who were in employment at the time of the survey.

Source: ECHP.

Table 16. Training and general education: summary of results for model in 'changes', base and controls, for all ECHP countries

Life-course group	Self-rated health		Lack of chronic health problems		BMI		Civic participation		Self-rated satisfaction			
	Base	Control	Base	Control	Base	Control	Base	Control	Main activity		Finances	
									Base	Control	Base	Control
Types of training: training versus general education												
Early career	V (+)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	V (+)	V (+)
Mid/late career	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Retired	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Never work	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	(-)	(-)	n.s.

(+) association between CVET episode and improvement in the social outcome (so for the case of BMI, this implies a reduction in BMI).

(-) association between CVET episode and deterioration in the social outcome.

n.s. not statistically significant at 5 or 1% level.

Blank inability to estimate the parameter due to small sample.

Life-course groups are defined as follows:

'Early career' for individuals aged 26 to 45 in 1994 with previous work experience;

'Mid/late career' for individuals aged 46 to 60 in 1994 with previous work experience;

'Retired' for individuals over 60 with previous work experience;

'Never work' for individuals over 25 who have never worked.

Source: ECHP.

With respect to sources of funding, for individuals who were employed and in their early career, CVET funded by their employer was positively associated with improvements in self-rated health, higher likelihood of civic engagement and higher levels of satisfaction with employment. In contrast, CVET funded by employers was associated with more chronic health problems over time. For individuals in their mid- to late career who were employed, employer funded CVET is positively associated with civic participation and higher levels of satisfaction with job over time.

Evidence on the association between episodes of CVET funded by the individuals and social outcomes was only found for individuals in their early career and only for civic participation. For those over 60, who were in employment, we did not find evidence that episodes of CVET funded by employers or self-financed were associated with changes in social outcomes.

Analysis over the life course was used to compare whether the relationship between an episode of CVET and social outcomes for individuals was different from the relationship between an episode of general education and social outcomes. We repeated the estimates of the model in changes over the life course and used as reference category individuals who participated in general education in the year prior to the interview (Table 17). Results show little difference between CVET and social outcomes relative to general education and social outcomes over the life course, in particular in the health domain and civic participation. Individuals in their first job who participated in CVET reported lower changes in their satisfaction with work than individuals in their first job who participated in general education courses. However, individuals in their early careers who participated in CVET reported higher satisfaction with finances than those who participated in general education.

CHAPTER 7

Conclusions

In recent years European governments committed to addressing both the economic and non-economic needs of their citizens. Governments have been looking beyond the traditional measures of success — such as per capita income, or rate of employment — to non-economic aspects of well-being and societal progress: health, civic engagement, political interest, crime, family dynamics, intergenerational transmission of success, and even happiness. In parallel, education research has moved from the traditional economics of education approach towards investigating whether education may promote well-being for individuals and society.

This study investigated the impact that VET may have on the realisation of social outcomes for individuals in the European context. We started with a discussion of the definition of the terms ‘VET’ and ‘social outcomes’ and then reviewed three main theoretical frameworks in literature that explain why education, or, more broadly, a learning experience, can be beneficial for individual health, family and social well-being. Major progress has been made in a theoretical approach to the social benefits of learning, through researchers working across diverse disciplines. The challenge for this project was to locate and exploit these concepts to generate a clear understanding of the main features a learning experience should contain if it is to lead to the formation of social benefits and how these relate to the specific case of VET.

We extracted the following main features that an episode of VET should have if it is to yield social benefits for individuals. First, we considered not only skills and capital formation but also aspects relating to agency, self-esteem and broader psychosocial factors that are important for the realisation of social benefits. This is because the social benefits for individuals are not only economic in nature but also psychological and social. Also, learners cannot be divorced from their institutional contexts. For this reason, relationships between learners and tutors, the value of a VET degree or diploma in the labour market, and possibilities for progression in education after participating in vocational education are also relevant for the well-being of individuals.

However, it is impossible to extract from empirical data each element of a vocational learning experience that could be important for the realisation of social benefits. This is partly due to lack of available data and of properly designed

studies to carry out this research. Nevertheless, there are differences in the ways countries develop and deliver vocational education; some have strong links with the labour market and with other educational institutions, while others do not. We used these differences to provide a heuristic typology of systems of IVET that can be used in our empirical work.

Our empirical work used data from the ECHP. From this we selected six indicators of social outcomes: three in the health domain, one in the civic domain and two in the wellbeing domain. We also classified individuals according to their highest qualifications achieved by 1994 and recorded all episodes of VET between 1994 and 2001. One key aspect of our estimation strategy was to differentiate between episodes of IVET from CVET. Since IVET is considered to be formal, taking place in the education and training systems, and is passed through before entering working life, we assumed the VET experience of all individuals aged 25 or under was initial training. All episodes of VET reported by individuals older than 25 was considered to be CVET. Sensitivity analysis was undertaken to verify these decisions. We also differentiated three stages of the life course to see whether any association between CVET and social outcomes was likely to occur at specific stages in life.

Our results showed evidence that IVET is associated with positive changes in health outcomes, such as self-rated health and lack of chronic health conditions, with membership to organisations and with satisfaction with job or main activity for individuals across Europe. Some of these associations were only found for individuals living in Finland and Sweden. Bearing in mind that the IVET system of Finland and Sweden is characterised as an egalitarian school-based system, this supports the hypothesis that an integrated school system, by offering options for personal enhancement through equal treatment of vocational and general education as well as access to higher education, affects individual well-being. One implication of this finding is that a general level of social welfare is an important mediating factor for the realisation of the health benefits of IVET. There are complementarities between institutional factors at macro level, in this case a strong welfare state, and the formation of social benefits for individuals at micro level.

We also found that IVET was associated with increased membership of voluntary organisations and with increased satisfaction with job or main activity. These results were obtained for individuals living in Denmark, Germany, Luxembourg and Austria — System 1 — and Greece, Spain, Italy and Portugal, — System 4. One possible reason for the positive relationship between membership of voluntary organisations and IVET could be that participation in civil society is rewarded in these systems and not in others; through participation

in IVET individuals may find incentives to join voluntary organisations. Reasons for a positive correlation of satisfaction with job or main activity and IVET might be different between the two groups of countries. Traditionally, in south European countries, youth unemployment is high (in 2009, for 15 to 24 year-olds, it was 31% in Greece, 39% in Spain, 29% in Italy and 35% in Portugal). Therefore, those who do not want or are not able (because of capabilities or for financial reasons) to follow the route of general education but are integrated in the labour market via IVET might derive satisfaction from IVET by comparing their situation with those who are neither in employment nor in education. A positive correlation between job satisfaction and IVET in countries where apprenticeships are widespread might derive from the multiple legal frameworks that regulate the quality of training, safety and labour provisions for apprentices as well as salaries. Hence, the regulatory framework for the integration of young people into the labour market could be seen as a mediator for the social benefits for individuals.

Lack of statistical association between IVET and social outcomes is also an important result. When undertaking our analysis by IVET system, we did not find evidence of an association between IVET and social outcomes for individuals living in Ireland or the UK and for only one outcome (satisfaction with job or main activity) for those living in Belgium, France or the Netherlands. For the UK, a possible explanation is the low transparency of the IVET system affiliated with certificates with only minor value for getting access to the labour market. The continental school-based system of IVET in Belgium, France and the Netherlands might not be associated with social outcomes for individuals because of the strong meritocratic orientation leading to a 'secondary' status for those trained in IVET. Therefore, marketised or credentialised systems of IVET are likely to fail to generate benefits for individuals that are beyond that of employment and income.

For CVET, most of the associations with social outcomes were found for individuals in their early careers, aged 26 to 45, who had working experience prior to 1994. As with IVET, we found that individuals in their early careers undertaking CVET had positive changes in self-rated health, lack of chronic health conditions, higher rate of membership of organisations and more satisfaction with job or main activity over time. This result is mainly supported by individuals living in Sweden. A possible explanation is the egalitarian work organisation in Sweden with low social distance, flat hierarchies and low income differentiation. This could suggest that the pay offs of CVET to social outcomes depend on the existence of a work organisation that enables individuals to bring in competences gained from CVET. Scandinavian countries are well known for their political effort to improve training and conditions at the workplace. In

particular, requirements to meet the challenges of an ageing workforce are discussed, for example in Finland, leading to programmes that aim to increase participation in training, to improve safety and work protection and to reward the competences of older workers. Scandinavian countries can be viewed as countries with a holistic approach to improving working conditions to preserve individuals' ability to work at a high level over the life course; this affects social outcomes for individuals positively, which is highlighted by the overall strong associations of CVET and social outcomes in Sweden.

For two social outcomes, membership of voluntary organisations and satisfaction with job or main activity, we found some evidence to suggest that individuals living in Greece and Italy who enrolled in CVET may have positive changes. In addition, individuals in Spain, Austria and Portugal had a positive relationship between CVET episodes and membership of voluntary organisations. In South European countries (except Portugal) we found evidence that CVET episodes were associated with increasing chronic health problems. In contrast, in Belgium and Austria we found that CVET episodes were associated with positive health benefits. The reasons for a contradictory effect of CVET on health by country remain open, but could probably be solved by focusing on the industry level, looking at sectors with a high share of CVET. Chronic health problems could be due to the sector-specific structure of the workforce, for example with respect to age and education level, or specific requirements of labour, such as a high risk manual job, which impacts on individual health. In other countries workplace health promotion might be part of CVET, thereby leading to positive health benefits.

Taking all our results together, there are important complementarities between the institutional arrangements of IVET and the realisation of social benefits for individuals. Strong welfare states complement the realisation of health benefits of IVET for individuals and systems that reward civic participation see more voluntarism in organisations linked to IVET. In policy terms, it is worth investing in IVET in systems that have the capacity to complement this investment. Where such institutions are absent, there is a need for policy coherence across sectors to raise the effectiveness, efficiency and sustainability of the efforts made in IVET to promote social outcomes for individuals. IVET itself cannot generate social outcomes without challenging economic and social inequalities at macro level, and stigma and disadvantage attached to the value of IVET. Tackling these issues may ensure a net positive impact of IVET for individuals.

At political level, CVET as part of lifelong learning is seen as a basic requirement for economic competitiveness, innovation and social cohesion. It,

therefore, corresponds to associations of CVET and positive social outcomes for the individual. Our empirical findings show evidence for this assumption: episodes of CVET are associated with social benefits for individuals. The positive relationship between lifelong learning and social outcomes at societal level is mirrored at individual level.

Further, country-level findings for CVET show similarities with the results for IVET systems. These similarities appear as 'clusters' of social outcomes for specific countries or country groups. With respect to social outcomes of episodes of CVET, the results show relative homogeneity of countries, in particular of system 4 and system 5: a 'Scandinavian' and a 'Mediterranean' cluster of social outcomes of CVET can be identified. We do not have enough detailed information to be able to suggest a typology of systems of CVET based on social outcomes. Nevertheless, these findings could be substantial for further CVET research leading to in-depth analyses and comparisons of specific countries with respect to homogeneity or heterogeneity in social benefits of CVET for individuals and, therefore, a systematic comparative approach.

At country level, we also found some interesting differences in the relationships between IVET, CVET and social outcomes. For example, our results showed increased job satisfaction being associated with episodes of IVET in Germany and France, but episodes of CVET were not associated with increased job satisfaction in Germany and negative job satisfaction in France. For Germany, this result could be explained by the institutional strength of IVET and the relatively weak and employer-led CVET infrastructure. In France, the positive association of IVET with job satisfaction can be explained by the possible homogenous attraction of workers to the lower reputation qualifications achieved by formal IVET routes. These workers may find satisfaction from jobs which they may not get without formal IVET. For CVET, a deeply-rooted ideal of academic education may mean that CVET courses may not derive any job satisfaction (and could be associated with dissatisfaction). At country level some policy messages may start to appear; lack of coherence of IVET and CVET may lead to differential social outcomes, hence the need to integrate lifelong learning strategies to reproduce positive benefits over the life course. Still, country-level analysis posits some interesting hypotheses which we describe below in terms of future research.

Future research is needed to deepen our understanding of how VET is embedded in the system of social and structural inequalities and how these can limit the generation of social benefits. VET itself can deepen educational inequalities if its value is not recognised both socially and monetarily and if there are strong selection effects from poor sectors of society as a route to earning a

livelihood. Previous research has mainly focused on the impact of income inequality on economic growth, crime, civic unrest, health, and well-being. Fewer studies have focused on inequalities in education. Among these studies, results have shown that increasing education inequalities are linked to more crime and reduced social cohesion (Sabates et al., 2008; Green et al., 2003). Our result on the possible links between meso-level institutions and micro-level processes by which IVET relates to social outcomes is just the beginning of this research.

IVET could have different effects on social outcomes and perhaps different from those of general education. This research suggests a possible hypothesis that will require further investigation. Starting with the theoretical basis that education could prepare individuals for their place in society (Schuller et al., 2002), in highly deregulated labour markets it is possible that general education opens up opportunities to all positions in society (McMahon, 2009). This may be due to the stereotype maintaining that VET students are less able than those studying for general education (as in France and the UK). In a highly deregulated labour market IVET would pave the road for certain occupations only, while in highly regulated ones (as in Germany) VET qualifications would pave the way for occupations that would not be accessible to pupils with general education (thus providing better outcomes for VET students). In both environments, IVET (and education in general) could bring about social outcomes because, by socialising pupils in their future position in society, education shapes people's expectations and aspirations as well as their sense of identity (Côté, 2005). Education is likely to familiarise individuals with expected behaviours, so that they are prepared to comply with societal norms. When individuals are confronted and found compliant with these norms, we may expect enhancement of their self-esteem and well-being.

The importance of the distinction between vocational and general education might become less marked as working experience accumulates. While the choice of IVET might be strongly linked to one's identity formation, it is less likely to happen for CVET: training courses are usually of shorter duration and take place when one's identity is more firmly established. In fact, we found that continuous training of a vocational nature generates social outcomes that tend to be on a par with those generated by general education courses.

Two other possible areas of research are on the external social benefits and on the relative benefits of VET. External benefits are those that indirectly benefit others in society or posterity. According to McMahon (2009) the externalities of education arise through the direct effect of education as a public good as well as on all the indirect effects of education, both marketable and non-marketable. Further analysis in this area include the benefits of VET on lowering government

health, welfare, and prison costs, strengthening democracy, human rights, political stability and social capital. The relative benefits of VET indicate that individuals will derive social outcomes depending on their social status and their relative position in the social hierarchy. This position reflects how educated individuals are compared to those around them. To this end, it will be important to investigate whether the social benefits of VET are different for men and women, for people of different ethnic groups and for individuals in different social classes.

List of abbreviations

BMI	body mass index
CVET	continuing vocational education and training
ECHP	European Community household panel
EU	European Union
GCSE	general certificate of secondary education (UK, excluding Scotland)
ISCED	international standard classification of education
IVET	initial vocational education and training
NVQ	national vocational qualification (UK)
OECD	Organisation for Economic Cooperation and Development
VET	vocational education and training

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This report investigates the social benefits of initial and continuing vocational education and training (VET) for individuals in Europe. Drawing on data from the European Community household panel, results show that initial VET is associated with positive changes in social outcomes for individuals. These social outcomes are mediated by the institutional setting in which VET takes place. Health benefits were mainly found in egalitarian contexts such as in Finland and Sweden, whereas benefits in terms of civic participation were mainly found in systems that reward participation in civil society, such as in Germany and Denmark. The benefits of continuing VET were found in systems known for their political efforts to improve training and working conditions in the workplace, such as in Scandinavian countries. Overall, the social benefits of VET for individuals materialise in all countries but their nature will change according to the institutional factors supporting the formation of certain types of benefit.

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