

# MAKING WORK-BASED LEARNING WORK FOR DISCONNECTED YOUTH

## DISCUSSION PAPER

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### Summary

Work-based learning can be a powerful tool to engage disconnected youth, connecting them to jobs and developing job-relevant skills. Yet disconnected youth might find it particularly difficult to access and succeed in work-based learning programmes. This paper looks at the challenges that arise with securing constructive work-based learning opportunities for disconnected youth and describes policy tools that may address these. Such policy tools include initiatives that prepare young people for work-based learning programmes, additional support provided to young people enrolled in work-based learning, financial incentives offered to firms that engage disconnected youth and programmes that allow additional time for completion when needed. The paper draws on a theoretical framework, which uses economic analysis of the mechanisms that drive the provision of work-based learning by employers and is enriched with examples of initiatives from various OECD countries.

Comments on this paper and suggestions for improvement are welcome and should be addressed to the author: [viktoria.kis@oecd.org](mailto:viktoria.kis@oecd.org)

## **Introduction: what this paper aims to achieve**

1. Work-based learning can be a powerful tool to engage disconnected youth, as it offers an opportunity to learn and connect to the world of work. Yet those most in need are likely to find it particularly difficult to find a work placement and successfully complete a work-based learning programme. This paper discusses the challenges that arise in engaging disconnected youth in work-based learning and policy tools used across OECD countries to address these. This paper was prepared for a Department of Education – OECD event entitled “Strengthening Work-based Learning in Education and Transition to Careers” held in Baltimore, United States on 26-27 July 2016. An extended version of this paper will be published in early 2017.

*The period of transition from education to work is a crucial moment – but one in eight young people across OECD countries struggle*

2. One in eight young people aged 16-24 in OECD countries are not in education, training or employment (OECD 2014). Soaring unemployment rates hit youth particularly hard in a number of countries in the aftermath of the economic crisis. This raises challenges both immediately and in the longer term. First experiences of the labour market are crucial and the consequences can be long lasting. Those who go through spells of joblessness at early stages of their careers tend to suffer from a “scarring effect”, leading to higher chances of unemployment and lower earnings later on in life than their peers with similar backgrounds and abilities (e.g. Bell and Blanchflower 2010; Gregg and Tominey 2005; Nordström Skans 2004; Möller and Umkehrer 2014; Helbling and Sacchi 2014).

*Work-based learning is used in different forms across OECD countries*

3. There is much variation across OECD countries in the form of work-based learning opportunities and the age of people benefitting from these. In various European countries, such as Austria, Denmark, Germany, the Netherlands and Switzerland, a high share of teenagers enrol in apprenticeship at high school level. The picture is different in the United States, where registered apprenticeships enrol a small share of the cohort and engage mostly adults. At the same time various other forms of work-based learning are available to young people in the US, such as internships or cooperative education. This paper aims to identify policy levers that may be applied in the US context, based on research and policy experience from different OECD countries.

4. The focus of this paper is on work-based learning programmes with explicit learning outcomes that typically lead to a qualification, such as apprenticeships, work placements and internships as part of formal education and training programmes (see definitions in Annex 1). Informal and non-formal learning in workplaces is beyond the scope of this paper.

*Work-based learning is a promising approach to engage disconnected youth and improve their job and life prospects*

5. Work-based learning has attracted much attention worldwide, as a tool for smoothing school-to-work transition and tackling high youth unemployment rates. It can motivate young people to learn, in particular those who might be disengaged from academic styles of learning. It can provide a bridge into careers, equipping young people with skills that are in demand in the labour market and connecting them to potential employers. The potential benefits are particularly large for disconnected youth – those most in need of connecting to the labour market and accessing good learning opportunities.

6. Estimating the impact of work-based learning on job and life prospects is hard, because data rarely allow the isolation of the effect of work-based learning from the influence of other factors, like basic skills or motivation. But some studies have been able to avoid this problem, drawing on random assignment of participants to programmes. A review of a diverse range of work experience programmes in the US (Sattar 2010) found that *all* programmes targeting youth that have strong impact included academic and vocational training, job search and placement assistance and other support. It also found that vocational training combined with work placements can improve employment, earnings and academic outcomes for young people. Importantly it also found that some work experience programmes failed to improve young people's prospects. Local implementation matters – several studies found impacts at some sites but not others.

7. Some of potential benefits of work-based learning programmes are not employment related. For example a recent study (Gelber, Isen, and Kessler 2014) of New York City's Summer Youth Employment Program (SYEP) found that while the programme did not improve subsequent earnings or college enrolment, it did keep youth "out of trouble" and reduced incarceration and mortality rates. Similarly, various studies reviewed by Satter (2010) found a positive impact in terms of arrest, conviction and incarceration rates.

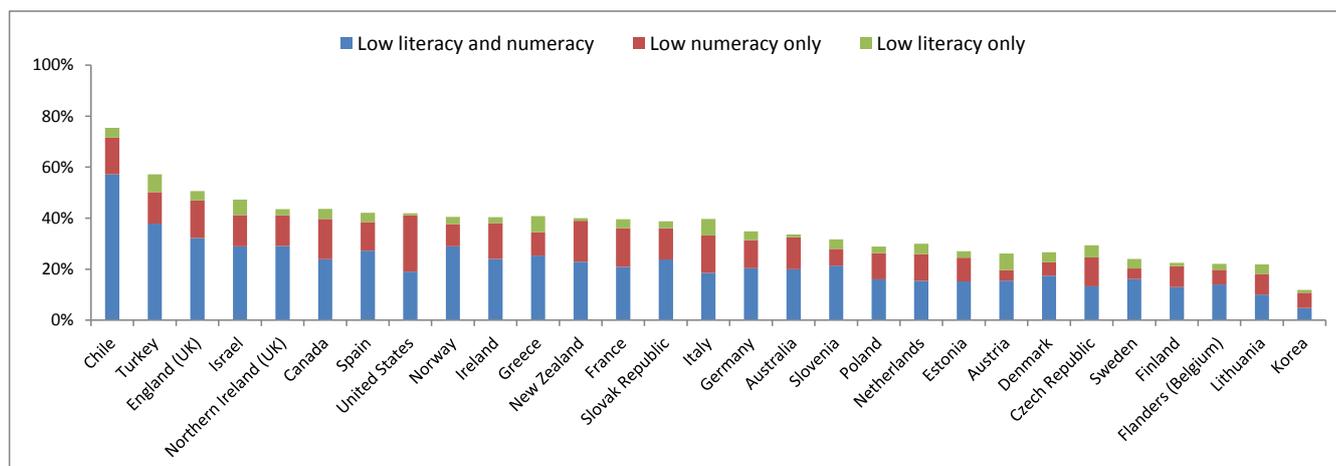
*Disconnected youth might find it particularly hard to find good learning opportunities*

8. Despite widespread policy interest in apprenticeships and other forms work-based learning, accessing those opportunities is hard for many young people – especially for those who would most need it. Getting employers on board and ensuring that they offer work-based learning opportunities to disconnected youth can be particularly challenging. Employers understandably seek applicants with the strongest academic background and prior work experience, whether it is for an apprenticeship, other work-placement or a job. Indeed when asked in surveys, employers often say they would offer more apprenticeships and other work-based learning opportunities if they had applicants with stronger basic skills (Bonin et al., 2013). This is hardly surprising, but it also means that encouraging employers to offer work-based learning opportunities to disconnected youth is often challenging.

*Disconnected youth face more difficulties with basic skills than their peers, limiting access to and success in work-based learning*

9. Disconnected youth tend to have more difficulties with basic skills than their peers (OECD, 2013). In the US, similarly to the average across OECD countries around four out of ten of disconnected youth have low literacy or numeracy skills (among youth who are not disconnected the figure is about two out of ten). These young people have difficulty with quantitative reasoning or understanding simple written information. For example, they might struggle to estimate how much petrol is left in the petrol tank from a sight of the gauge, or not be able to fully understand instructions on a bottle of aspirin. This not only affects their chances of success in the labour market, but it also risks hindering their capacity to access work-based learning opportunities and succeed in them.

**Figure 1. Four in ten disconnected youth in the US face difficulties with basic skills**



Note: The reference year is 2012 for all countries except Chile, Greece, Israel, Lithuania, New Zealand, Slovenia and Turkey, for which it is 2015.

Source: OECD Survey of Adult Skills.

## What do firms gain from offering work-based learning – and how understanding this can help disconnected youth

*Firms will be easier to engage if they see practical benefits from offering work-based learning*

10. Firms may have diverse reasons for offering work-based learning. Some reasons reported firms are unrelated to financial calculations, like helping young people or fostering social cohesion in the community. But financial motives are commonly reported by firms, such as trainee contributions to productive work and the prospects of recruitment. These reflect financial benefits the firm expects to reap from providing work-based learning. Some benefits emerge during the work-based learning programme itself, as trainees become skilled and contribute to productive work, but cost less than regular workers to the firm. Sometimes those benefits come after the end of the work-based learning scheme – for example in highly technical occupations where qualified workers are hard to find, firms are more willing to take on apprentices despite net costs, because they expect to retain good apprentices and save on recruitment costs (see Annex 2 on the theoretical background). Making work-based learning financially more appealing to employers can help encourage them offer work placements.

*Research on the costs and benefits of apprenticeship can be harnessed to inform the design of work-based learning programmes for disconnected youth*

11. There is a rich theoretical and empirical research literature on the costs and benefits of apprenticeships to employers. Relevant data have been collected in Germany and Switzerland since 2000, and more recently also in Austria. The analysis of these data and of the underlying mechanisms helps advance our understanding of the factors that drive the provision of work-based learning opportunities by employers (see Muehleemann, forthcoming for a review). This can be harnessed to inform policy makers who seek to promote access to high-quality work-based learning for disconnected youth, while carefully using public resources.

*The basics of costs and benefits: employers invest first, then benefit when skilled trainees produce more than what they cost*

12. Initially trainees can contribute only little to productive work and tend to cost more than they produce at this stage. Employers make an investment – as trainees’ skills develop during the work-based learning scheme, they can contribute more and more to skilled productive work. At the final stages, trainees are nearly as productive as skilled workers, but still cost less. The benefit this creates is important, as it compensates for the initial investment made by employers.

13. The story will be similar for all kinds of work-based learning programmes, whether they last just a few weeks and target mainly social skills (e.g. arriving on time, working with colleagues) or last several years like apprenticeships, developing technical skills and offering higher wages. Simply the characteristics of the programme will affect how high those initial net costs are and how much net benefits the firms will reap at later stages. Some complications to this story are that work-based learning schemes involve costs other than wages, benefits that firms reap when they retain trainees upon completion, firms might receive subsidies or benefit from tax credits, or some trainees have wages that rise through the period of the work-based learning scheme (see Annex 2 for a more detailed description and Kuczera, forthcoming for further analysis of these issues).

*Designing work-based learning schemes: one size does not fit all*

14. Whether employers will find it financially worthwhile to hire a trainee or apprentice will depend on many factors, such as trainee or apprentice characteristics, the wage they receive, subsidies available, programme length and content etc. One key challenge is to design programmes in a way that ensure that employers find the programme attractive, encouraging them to offer work placements. Carefully designing schemes and adapting them to the features of the firm, trainee and occupation can help make work-based learning attractive both for employers and trainees.

15. How trainee’s productivity evolves over the training period will vary across occupations – a trainee retail assistant might become quickly productive, while a would-be electrician might need substantial training before touching the wires (see Annex 3 for data from Switzerland and Germany). Trainee characteristics also matter – some might have stronger academic skills or technical background, allowing them to be productive early on, others may start with a weaker initial skill set, so that there will be a need for a longer period of “investment” before trainees can do productive work. The pace of learning may also vary, with some fast learners and others needing more time and support – just like in a school context.

*Work-based learning for disconnected youth is likely to be less appealing financially to firms, because disconnected youth might have weaker initial skills and might need more time and support to learn*

16. Employers are likely to find that taking on disconnected youth for a work placement is associated with higher initial costs and less room for benefits than it would be when taking on an average young person. There are two reasons for this. First, disconnected youth are likely to have a lower starting point in terms of productivity than the general youth population. Disconnected youth tend to have benefitted from less or lower quality schooling and have weaker basic skills than their peers (see Figure 1), less technical knowledge (e.g. weaker academic knowledge about physics for a trainee electrician) or weaker soft skills (e.g. difficulties to resolve conflict). Second, disconnected youth might need more time and support to learn and develop their skills than their peers. For example, in the UK nearly one in seven NEETs has learning difficulties (Paul Sissons and Jones 2012).

*This paper looks at ways of designing work-based learning schemes that work for disconnected youth*

17. Understanding the mechanisms that drive work-based learning provision by employers helps identify opportunities to take action and inform the design of programmes targeting disconnected youth. The following sections of this paper look at initiatives designed for such purposes (the theoretical framework underpinning each tool is described in Annex 2). In particular it focuses on four types of policy tool:

- Policy tool 1: Helping disconnected youth get ready for work-based learning
- Policy tool 2: Supporting disconnected youth in work-based learning
- Policy tool 3: Offering targeted financial incentives to employers
- Policy tool 4: Adapting programme length to the needs of disconnected youth

18. Some national initiatives contain one of the components described below, others combine several of these. Detailed descriptions of initiatives from different countries are provided in a separate document entitled “Description of country initiatives”.

## **Policy tool 1: Helping disconnected youth get ready for work-based learning**

*Raising the starting point by helping young people become ready for work-based learning can encourage employers offer work-based learning to this target group*

19. One way of fostering the provision of work-based learning opportunities to disconnected youth is to strengthen to pool of candidates. Employers faced with better prepared candidates should find it easier to take on young people for work-based learning and find it a worthwhile investment. This might include efforts to improve young people's academic (literacy, numeracy etc.) skills, technical background or social skills, making them ready for work-based learning.

*Across OECD countries pre-apprenticeship type initiatives are common tool, often implemented through a diverse mix of national offerings*

20. Across OECD countries a wide range of initiatives have been implemented preparing disadvantaged young people for apprenticeships and other work-based learning programmes. The aim is to build a bridge into work-based learning by developing the academic, technical and social skills that enable young people to find a work-based learning opportunity and successfully complete it. Often within a single country various types of pre-apprenticeship programmes co-exist, sometimes with different tools available in different regions, as described below (for longer descriptions of country approaches see Annex 4).

*Pre-apprenticeship type programmes: country examples*

21. **Switzerland.** So-called **bridging measures** are designed to help young people at the end of compulsory schooling transition into apprenticeships (or other education programmes). Bridging measures are developed and implemented by regional authorities (cantons) without federal involvement. Target groups include youth with weak language and other basic skills, those with learning difficulties, lack of interest and engagement in training and careers. Most cantons have implemented tools to identify those who might need such bridging measures at an early stage (from around age 12-13), using tests and evaluations. There are three main variants of bridging measures. First, participants may enrol in school-based education with a strong career guidance component. The total public cost of a school-based bridging programme is CHF 18-23K. The second option is similar to apprenticeships, so-called pre-apprenticeships combine 1-2 days at school and 3-4 days in a company, with much lower public costs (CHF 5-10K per participant). A third option targets specifically recently arrived young immigrants (Landert and Eberli, 2015).

22. In addition **motivational semesters** reach out to unemployed youth (aged less than 25) who have completed compulsory education, but have failed to find an apprenticeship or dropped out. Motivational semesters are funded by unemployment insurance contributions and are organised by cantonal employment authorities under a national framework. The cost per participant is around CHF 24K 2012/13. The aim of these semesters, similarly to bridging programmes, is to transition young people into a training programme. But motivational semesters are shorter (typically six months, with the possibility of extension) and may be started at any time of the year. There is often sustained link between cantonal authorities and the firms offering work placements as part of motivational semesters (Landert and Eberli, 2015).

23. In **Australia** so-called pre-apprenticeships have long existed and constitute a diverse mix of programmes. There is no agreed definition of what constitutes a pre-apprenticeship course, but generally they include courses that target general employability skills and courses that develop skills specific to a particular occupation. These are currently implemented without funding from the Commonwealth, though there have been several Commonwealth funded pre-apprenticeship programmes in recent years, which

were subsequently discontinued (see description in Annex 4). The lack of agreed definition and comprehensive data make it hard to evaluate Australian pre-apprenticeships. One potential positive outcome is successful transition into an apprenticeship. Evaluations of Commonwealth funded pre-apprenticeship programmes found a transition rate into apprenticeship of between 22 and 38 percent. Another potential positive outcome would be improved chances of completion among those who have completed a pre-apprenticeship programme – but the evidence on this is not clear. One study found that it did in some trades, while in others the opposite was true (Karmel and Oliver 2011). Another study (Foley and Blomberg 2011) argued that it is hard to identify the impact of pre-apprenticeships on completion due to the lack of suitable comparison group (there are more disadvantaged students and early school leavers among pre-apprentices than on average across vocational programmes).

24. In **Germany** the so-called **transition system** (*Übergangssystem*) includes different programmes that provide a bridge into apprenticeships (or school-based training). It targets young people who have not found an apprenticeship placement and/or have not completed compulsory schooling. Programmes typically last a year and do not lead to recognised vocational qualifications, instead the aim is to help participants catch up on academic skills and receive initial technical training, preparing them for vocational training (Kühnlein, 2008). The system is composed of diverse mix of programmes, with variation across federal states in the range of programmes available. Typically students attend a vocational school (studying general subjects and vocational theory) and there is often an element of work-based learning – either work placements, traineeships or in the case of “dual basic vocational year” programmes three days a week spent in a company. The “dual basic vocational year” may be recognised as equivalent of the first year of apprenticeships (BA, 2016s).

25. In **Austria** young people who fail to find an apprenticeship placement may enrol in so-called “supra-company training” (*überbetriebliche Ausbildung, ÜBA*). These programmes combine classroom learning and practical training, typically with personal guidance, socio-pedagogical counselling, learning support and assistance with job search. If possible participants progress into a regular apprenticeship after the first year, though those who are not able to transfer can complete their training in the ÜBA programme instead.

26. In the **UK** **traineeships** are available to youth aged 16-24 who would like to start an apprenticeship but lack appropriate skills or experience. Traineeships last up to six months, with variable content, tailored to the needs of the individual and employer. The three core elements of traineeships are a work placement, work preparation training and English and maths support provided by a training organisation ([www.gov.uk](http://www.gov.uk)).

27. In the **United States** pre-apprenticeships are programmes or sets of strategies designed to prepare individuals to enter and succeed in Registered Apprenticeship programmes. They have a documented partnership with at least one Registered Apprenticeship program sponsor and together, they expand the participant's career pathway opportunities with industry-based training coupled with classroom instruction. Programmes can be adapted to the specific needs of individuals participating in training, employers, sponsors and local labour market needs (US Department of Education, 2016).

### Workshop questions n°1-2

1. How to identify and reach out to young people who could benefit from programmes that prepare for entry into a work-based learning scheme?
2. What skills should be targeted by these programmes?

## Policy tool 2: Supporting disconnected youth during work-based learning

*Helping disconnected youth engaged in work-based learning progress faster can make provision more appealing to employers*

28. Providing additional support to young people enrolled in work-based learning should, in principle, facilitate and accelerate their skills development. The support may be academic, for example extra maths support makes it easier for a trainee carpenter to understand and later on work out by themselves the rise and run for a staircase. Additional technical instruction can also help – this may be offered either at the training company or at school premises. This kind of support benefits the trainee, who should learn easier and have a lower risk of dropping out. At the same time it should also benefit employers financially, as trainees become skilled more quickly and can contribute to skilled work.

*Some OECD countries have implemented programmes that involve additional support to trainees and apprentices who need it*

29. Across OECD countries various measures aim to support young people throughout apprenticeship and other work-based learning programmes. Here again there is often regional variation in implementation. Support commonly includes basic skills instruction in schools (or elsewhere, like the teacher's home under some Swiss initiatives (Puipe 2006)) and some countries have dedicated coaches or assistants who help with the firm-based component – getting things ready for the apprentice's arrival, helping in case problems arise during work placement.

*Brief description of country initiatives*

30. In **Switzerland** young people enrolled in two-year apprenticeships can receive **individual coaching** (*Fachkundige individuelle Begleitung*), designed to help them improve academic, technical and social skills. Swiss cantons (subnational entities) are responsible for implementation under a national framework and guidelines. Around half of two-year apprentices take up this opportunity (SBFI, 2014), mostly to tackle weak language skills, learning difficulties or psychological problems. Most coaches are former teachers (of vocational or special needs education), learning and speech therapists or social workers (Häferli, Hofmann and Studer, 2012). They receive targeted training, which may vary across cantons – for example in Zürich they must attend a 300-hour course and participate in regular team-coaching sessions (Kanton Zürich, 2016). Apprentices may also attend remedial lessons at vocational schools – for example, in Vaud canton apprentices may take time off during their work placement to attend school for such remedial classes.

31. In **Austria** integrative VET programmes (*Integrative Berufsausbildung*) are offered to young people with special needs, disabilities and those with low educational attainment. It allows young people to obtain the same qualification as regular apprentices, but involve various specific measures including extra support during the apprenticeship. First, training assistants support the company offering the apprenticeship – taking care of administrative tasks, defining the content and training contract, preparing the company for the arrival of the apprentice, finding a person of trust in the company etc. Throughout the duration of the apprenticeship training assistants act as mediators, provide tutorial support. For example, most firms contact their training assistant if difficulties arise during the work placement (e.g. apprentice arrives late, struggles to work well with others). Most training assistants have training in special education and have experience working with disadvantaged youth. Regarding the school-based component of apprenticeships, those in integrative VET attend the same classes as other apprentices, but they are helped by additional support staff and receive extra tutorials (Heckl et al. 2008).

#### Workshop questions n°3-5

3. With what skills (e.g. literacy or numeracy, technical skills, soft skills) should young people receive additional support to be able to succeed in work-based learning?
4. How to identify those who might need additional support during work-based learning?
5. How should additional support be provided (e.g. individually or in groups, at the company or at school/college)?

### **Policy tool 3: Offering targeted financial incentives to employers**

*Directly reducing the costs of hiring disconnected youth to employers through for example targeted subsidies*

32. Employers may be encouraged to offer work-based learning to disconnected youth through direct financial incentives. These might include subsidies or tax breaks (or higher tax breaks than usual) given to a firm that engages a person that fits pre-determined criteria.

*Some countries offer subsidies or tax breaks to firms engaging disconnected youth, but there are various implementation challenges*

33. Some OECD countries have implemented such initiatives, as described below. One practical implementation challenge that arises with targeted financial incentives is to how to identify those who otherwise would not have obtained a work placement. If these candidates are not appropriately identified, then the subsidy would not make any difference and public money would be given to employers who would have hired the person anyway. Another challenge is to avoid that firms take on apprentices entitled to the subsidy but cut back on placements offered to young people not entitled to the subsidy.

### *Brief description of country initiatives*

34. In **Australia** commencement incentives include the “Nominated Equity Groups Commencement Incentive”, which offers AUD 1250 for an employer who engages an apprentice who belongs to a nominated equity group at the Certificate II level qualification ([www.australianapprenticeships.gov.au](http://www.australianapprenticeships.gov.au)). These nominated equity groups include, for example, indigenous Australians, job seekers with severe barriers to employment, school-based apprentices, apprentices working in a rural or regional area, or apprentices with disability.

35. In **France** firms that offer an apprenticeship benefit from a tax break, which is higher if the apprentice is disadvantaged (e.g. unqualified, facing risk of social exclusion). ([www.impots.fr](http://www.impots.fr)).

36. In **Germany** a training bonus scheme (*Ausbildungsbonus*) was introduced by the federal government in 2008 and discontinued in 2010. It targeted youth had unsuccessfully applied for an apprenticeship, had lower secondary schooling or less or had learning difficulties or a disability (Bonin et al., 2013). Training companies received between EUR 4 000 and 6 000 per additional apprentice, half of which was paid after a four-month probationary period and the remaining half when the apprentice took their final exam (Wenzelmann, 2016). The evaluation of the bonus (Bonin et al., 2013) found that the scheme was an inefficient use of public spending, as over 90% of subsidised apprentices would have been hired even without the bonus. Companies reported that better basic skills among applicants and more support for weaker apprentices during training would be more helpful than a subsidy (Wenzelmann, 2016). While the federal scheme was discontinued in 2010, some states still have similar subsidy schemes.

#### **Workshop questions n°6-7**

6. What is the appropriate amount of financial incentive provided to firms?
7. How to ensure efficient use of public resources – e.g. avoiding subsidising placements that would have been provided anyway?

### **Policy tool 4: Adapting programme length to the needs of disconnected youth**

*Allowing extra time for disconnected youth to complete work-based learning can help employers recoup their initial investment*

37. Another way of shifting the cost-benefit balance to companies is to lengthen the duration of the work-based learning scheme. This should give trainees more time to develop their skills and contribute to skilled production and, if wages are set appropriately, this should allow for more time for employers to reap benefits at the later stages of the programme and compensate for the initial investment at the first stages.

*Some countries allow additional time for completion, either in all programmes or in those that enrol many youth at-risk of becoming disconnected*

38. Some countries allow trainees or apprentices to take longer to complete their programme. Sometimes this is implemented as an option across work-based learning programmes through competence-based completion, which also allows for faster completion for those who develop their skills faster than average. In some countries work-based learning programmes are usually not flexible and have a collectively agreed duration (time-served completion), but schemes that tend to enrol disconnected youth allow for the possibility of extension.

*Brief description of country initiatives*

39. In **Switzerland** two-year apprenticeships (leading to a federal VET certificate) were introduced in 2004 to target young people with learning difficulties (most apprenticeships last three to four years). Apprentices enrolled in these two-year programmes may take an extra year to complete.

40. In **Austria** the duration of apprenticeships is usually pre-defined, but there is a possibility of longer completion (one or two more years) for those enrolled in so-called Integrative VET. These programmes targeted disconnected youth, enrolling them in a regular apprenticeship combined with various support tools, including the possibility of longer completion. Around two-thirds of participants in Integrative VET made use of the possibility of extending the apprenticeship duration (Dornmayer, 2012).

41. More broadly, some countries have introduced the possibility of competence-based completion (or progression), which allows apprentices to complete their qualification once they have reached the targeted competences, rather than upon completion of a fixed time of on-the-job and off-the-job training. In **Australia** a nominal term is agreed for each apprenticeship or traineeship, but that may be reduced – apprentices may progress from one stage of apprenticeship to the next based on their competences rather than time served ([www.australianapprenticeships.gov.au/employers](http://www.australianapprenticeships.gov.au/employers)).

42. In the **United States** registered apprenticeship programmes range from one to six years depending on the complexity of the occupation, with the majority of programmes taking four years. Some of the programmes are competency-based or hybrid (others are time-based). In competency-based schemes apprentices may complete faster or take extra time to develop the required competences, though these schemes still have to comply with certain requirements regarding time spent on each major process. Hybrid apprenticeship programmes combine time-based and competency-based elements. ([www.doleta.gov/oa/apprentices.cfm](http://www.doleta.gov/oa/apprentices.cfm)).

**Workshop question n°9**

8. How and when to identify trainees who need additional time to complete?

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## Annex 1: Definitions

**Work-based learning:** Learning that takes place through some combination of observing, undertaking, and reflecting on productive work in real workplaces. It may be paid or unpaid and includes a diversity of arrangements as described below.

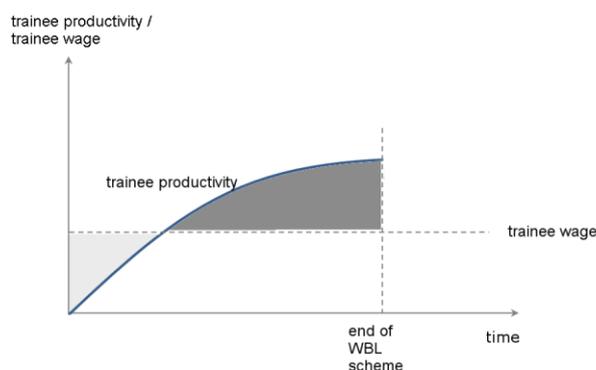
- **Structured work-based learning schemes:** Forms of work-based learning that combine on-the-job and off-the-job components, with equal importance, and typically lead to a formal qualification. Duration, learning outcomes, funding and compensation arrangements are determined through a regulatory framework and there is typically a contract between the learner and the firm. Apprenticeships or dual programmes are a classical example of such schemes, but other terms are also used across countries to refer to such schemes.
- **Work placements:** Forms of work-based learning that usually complement formal education and training programmes, are shorter and less regulated than formal structured work-based learning schemes. Examples include internships, work shadowing opportunities and other work placements used as part of school-based VET programmes.
- **Informal and non-formal work-based learning:** Forms of work-based learning that do not lead to a qualification and typically lack explicit targeted learning outcomes. This includes, for example, learning-by-doing or learning from managers or co-workers.

**Disconnected youth:** Young people neither in employment, education nor training (NEETs), sometimes also referred to as opportunity youth.

## Annex 2: Theoretical background

### Theoretical background 1: A simplified model of costs and benefits of work-based learning to firms

#### The costs and benefits of work-based learning to the firm



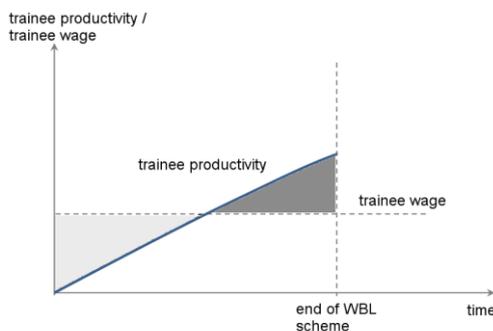
43. During a work-based learning programme trainees are initially low-skilled and have low productivity. Their wages are usually higher than their marginal product, creating net costs for the firm (light grey area). With trainee productivity increasing over time, at the final stages trainees' marginal product exceeds their wage, resulting in a net benefit for the firm (dark grey area). The lines and curves in Figure 2 will be slightly different depending on how long the programme lasts, what skills it develops and how much trainees are paid. For example some programmes might last a few weeks, target a smaller set of skills (e.g. arriving on time, working with colleagues) and offer low wages or none at all. At the other end programmes like apprenticeships take up to four years, develop complex technical skills and offer higher wages. The key challenge is to design programmes in a way that ensure that employers find the programme attractive and offer work placements (i.e. the dark grey area representing net benefits is larger than the light grey area representing net costs). These issues are discussed in greater depth in Kuczera (forthcoming).

**Theoretical background 2: Policy levers designed to shift the cost-benefit balance of work-based learning to firms**

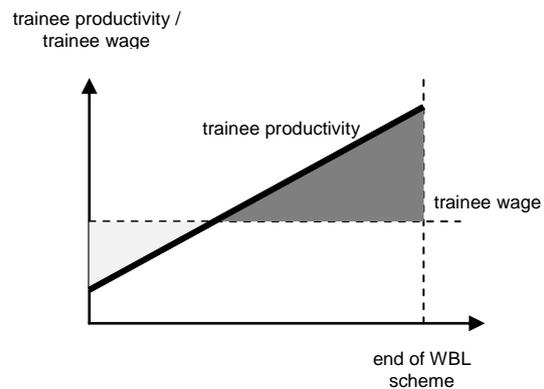
***Policy tool 1: Helping disconnected youth get ready for work-based learning***

44. Programmes that prepare for entry into work-based learning (e.g. pre-apprenticeship type programmes) help raise the initial productivity of trainees. For a given trainee wage, this means that the initial net costs (light grey area) will be lower and the net benefits (dark grey area) reaped by the firm at later stages will be higher.

**Before: The costs would be higher than the benefits for the firm**



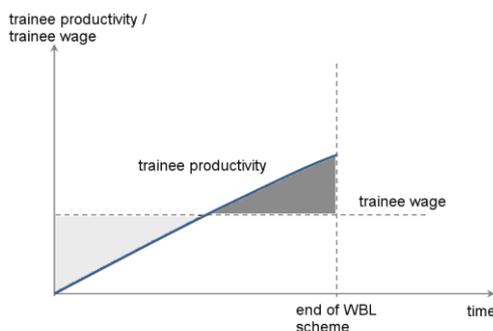
**After: trainee productivity starts at a higher point, allowing for overall benefits to outweigh costs to the firm**



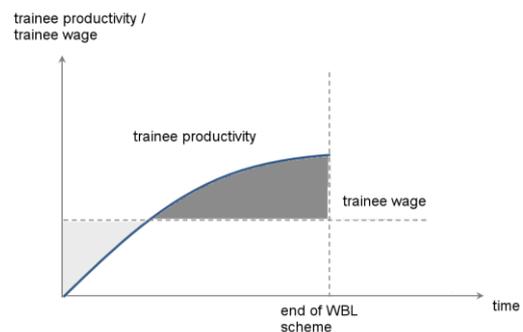
***Policy tool 2: Supporting disconnected youth during work-based learning***

45. Offering additional support to trainees allows them to develop their skills faster and their productivity will increase faster. This reduces the initial net costs (light grey area) and increases the net benefits reaped by the firm later on (dark grey area).

**Before: The costs would be higher than the benefits for the firm**



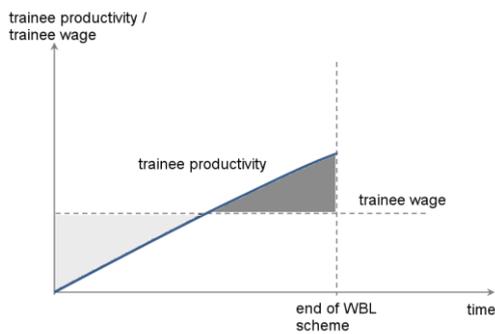
**After: Trainee productivity increases faster, increasing the overall benefits of offering work-based learning to the firm**



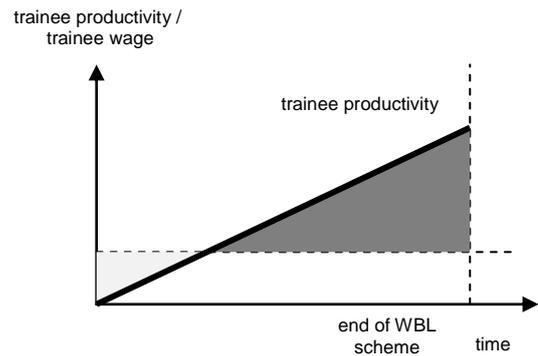
**Policy tool 3: Offering targeted financial incentives**

46. When the firm offering work-based learning receives direct financial support (e.g. subsidy, tax break), this reduces the direct costs of work-based learning represented by the trainee wage in the graph below. As a result net costs (light grey area) at the beginning decrease and net benefits (dark grey area) at later stages increase.

**Before: The costs would be higher than the benefits for the firm**



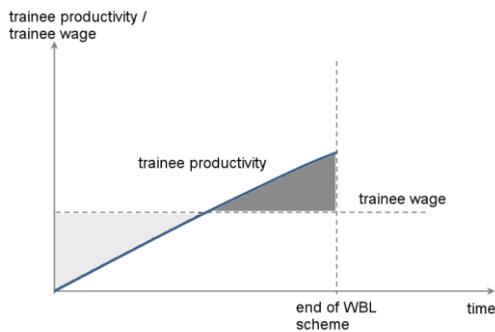
**After: The subsidy reduces the costs of work-based learning to the firm and creates more room for reaping benefits**



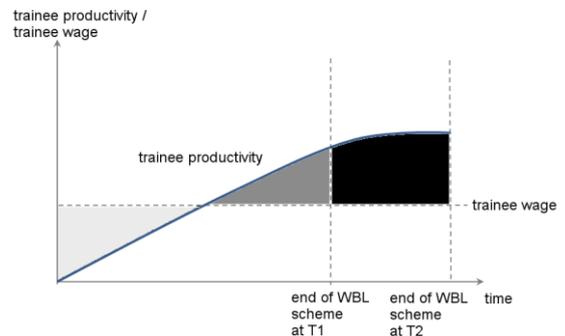
**Policy tool 4: Adapting programme length to the needs of disconnected youth**

47. Extending the duration of work-based learning allows additional time for the trainee to learn and, once they develop skills relevant to production at the company, contribute meaningfully to productive work. This creates more room for the firm to reap benefits (the additional benefits are represented by the black area).

**Before: The costs would be higher than the benefits for the firm**



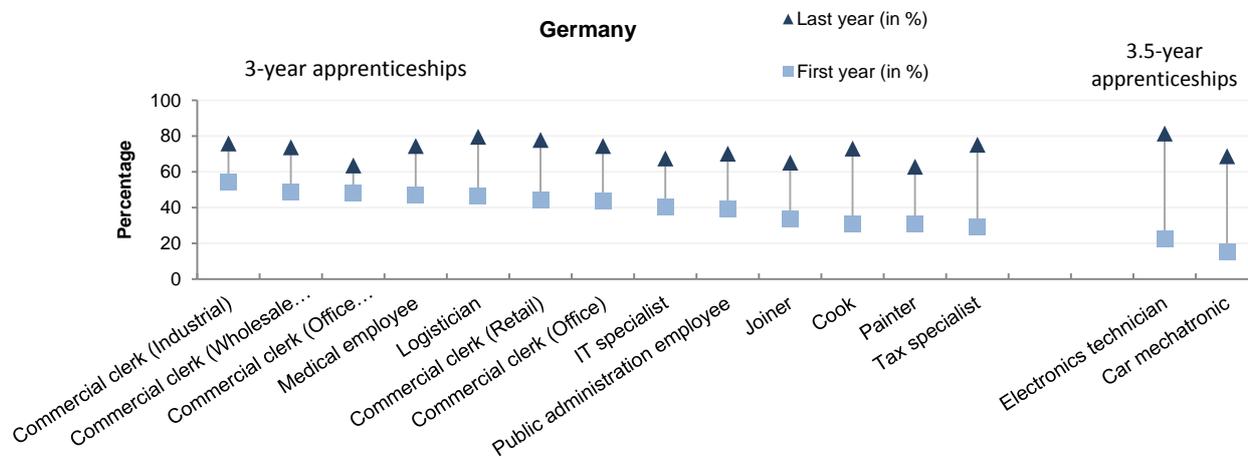
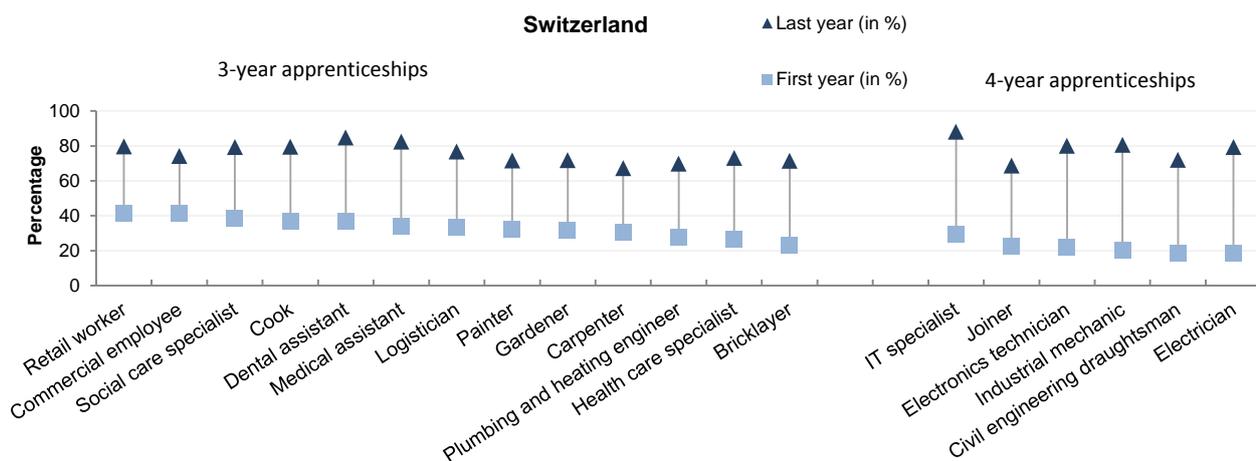
**After: With extended length, the firm can reap more benefits from offering work-based learning**



### Annex 3: Apprentice productivity relative to experienced workers

#### How does apprentices' relative productivity evolve in different occupations?

Apprentices' relative productivity in skilled tasks in the first and last year of apprenticeship by occupation



Notes: Reference year 2009 for Switzerland, 2012/13 for Germany. Relative productivity is defined in comparison to the productivity of a skilled worker in the firm performing the same skilled tasks. Data are provided in Table 1 and 2 in Annex.

Source: Calculations by Muehleemann (forthcoming) based on data from the 2009 Cost-benefit survey in Switzerland and 2012 Cost-benefit survey in Germany.