
Lifelong learning in the Netherlands

How to stay relevant in the digital age





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Introduction

Despite the availability of many new technologies, labour productivity growth is slowing down. In fact, we are becoming less able to effectively adopt new technologies. This finding is particularly worrying since the world is digitalising faster than ever.

Digitalisation and automation are fundamentally transforming the way we work. This will have a profound effect on the tasks we perform and the skills we will need in the future. Our knowledge and skills are becoming obsolete in a terrifying pace. Research indicates that 25% of everything you know now is no longer relevant after two years.

While many employees currently participate in formal education to further their careers, it might be the case that within ten years' time we will all be forced to participate in education and training just to keep our jobs.

If we want to stay relevant in the digital age, we need a paradigm shift. Despite the fact that the Netherlands scores fairly well on lifelong learning compared to most other European countries, we still don't use all the money available for lifelong learning.

The majority of workers participate in lifelong learning to perform better in their current jobs; only few participate in education or training with their future job in mind. We need to shift from incidental to continuous learning. This also includes training on the job, feedback and the availability of digital learning tools.

More importantly, we will have to develop the awareness that staying relevant is important and develop the right mindset to act on this. We need to ask ourselves how we can keep doing relevant things that are also fun and interesting to us. At PwC, we regularly ask ourselves, 'what can I learn today and what am I good at?' These are the key questions to stay relevant in the digital age.

We have created a future outlook on lifelong learning – or rather on continuous development. We feel that both employers and employees need to step up and take responsibility – for a future-proof labour market and future-proof economic growth.

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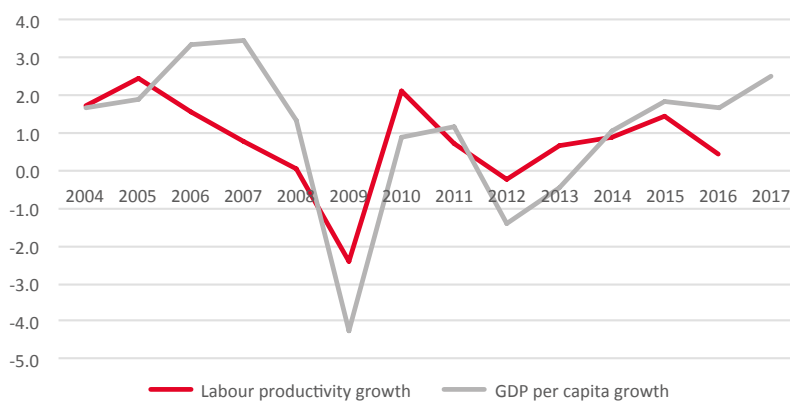
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Different skills to stimulate labour productivity growth

Despite ranking sixth in a global ranking of labour productivity, growth of the Dutch labour productivity – an important indicator of economic growth – has been slow (see figure 1). Since the beginning of the economic crisis in 2008, labour productivity growth has been well below the historical average. Evidence shows that the slowdown of productivity growth is caused by a reduction in the ability to effectively adopt new technologies. This finding is particularly worrying since the world is digitalising faster than ever and the biggest changes are probably yet to come.

The most important determinant of economic growth is labour productivity. Labour productivity measures the amount of goods or services that each member of the labour force produces. It is an indicator of the efficiency of the labour market and is therefore an important driver of economic growth and prosperity.

Figure 1 Labour productivity growth (in GDP per hour worked) and economic growth (in GDP per capita) in the Netherlands, in %



Source: OECD

Research by the IMF¹, the OECD² and, for the Netherlands, the CPB³ suggests that the Netherlands and other economies do not succeed in effectively adopting new technologies and innovation.

Research focused specifically on the Netherlands⁴ confirms that a possible explanation for the slowdown in productivity growth is the slow transmission of successful technologies employed by the frontier firms to the other firms in the economy. Also, the slowing accumulation of human capital and the possible mismatch in skills seem to have played an important role in the slowdown. An illustrative calculation by the IMF suggests that on average 0.3 percentage point per year of the decline in productivity in advanced and emerging market economies since the 2000s can be explained by the slowing down of human capital accumulation⁵.

At first glance, there seems to be no reason to doubt the long-term potential of digitalisation for economic growth and prosperity. Historical evidence has shown that the productivity-enhancing potential of technological progress is high. There are ample examples of disruptive inventions that have significantly increased productivity and fostered long-term economic growth.

However, in the short term, digitalisation is quite a game changer. Digitalisation has a disruptive impact on labour markets and is rapidly changing job requirements. Digitalisation and automation are fundamentally transforming the way we work. This will have a profound effect on the structure of employment: in which industries we work, which tasks we perform and which skills are required. Digitalisation and smart automation – combinations of artificial intelligence, robotics and other

1 IMF (2017) Gone with the Headwinds: Global Productivity. Available at: <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2017/04/03/Gone-with-the-Headwinds-Global-Productivity-44758>

2 OECD (2017) OECD Compendium of Productivity Indicators 2017. Available at: <http://dx.doi.org/10.1787/ptdty-2017-en>

3 CPB (2017) Productivity Slowdown – Evidence for the Netherlands. Available at: <https://www.cpb.nl/sites/default/files/omnidownload/CPB-Communication-7march2017-Productivity-Slowdown.pdf>

4 CPB (2017) Productivity Slowdown – Evidence for the Netherlands. Available at: <https://www.cpb.nl/sites/default/files/omnidownload/CPB-Communication-7march2017-Productivity-Slowdown.pdf>

5 IMF defines human capital accumulation as the 'rising number of (higher) educated and trained workers'.

In PwC's most recent CEO Survey, 91% of Dutch CEOs indicated that besides digital skills, soft skills should be strengthened too.

technologies – rapidly make the execution of more sophisticated tasks possible. According to Autor, Levy and Murnane, ‘routine tasks that are either manual or cognitive are more susceptible to automation than non-routine manual and cognitive tasks’⁶. Smart automation, computer algorithms and deep learning allow computers to automate routine manual and cognitive tasks previously performed by humans.

Many will see their jobs change as digitalisation and smart automation progress. Technology is increasingly feeding into job requirements. The skills needed to perform the job may significantly change in the near future. Within the next ten years, people will increasingly work side by side with robots, smart automation and artificial intelligence, performing the tasks technology struggles to do. Many of these will be non-routine tasks. Moreover, digitalisation will create jobs that do not exist yet.

This digital disruption is likely to have a significant impact on the required skill set of the workforce. Skills acquired in initial education become obsolete more rapidly as technological breakthroughs speed up.

Competencies such as problem-solving and communication are already very important in many jobs, and being able to critically evaluate and transfer knowledge, as well as collaborating in a team, has become the norm in many organisations. Both the World Economic Forum and the Sociaal Cultureel Planbureau⁷ have added character qualities such as curiosity, adaptability and emotional agility to the list of necessary skills in the future (*see figure 2*). These qualities ensure greater resilience and success in the face of a changing work and social environment. They also provide a fertile environment for lifelong learning.

Figure 2 21st-century skills



Source: World Economic Forum (2016), PwC insights

In PwC's most recent CEO Survey, 91% of Dutch CEOs indicated that besides digital skills, soft skills should be strengthened too. Respondents indicated that soft skills are considered very important and tend to be relatively hard to find. For instance, 85% of the Dutch CEOs surveyed considered problem-solving skills to be ‘very important’, while 18% found it very difficult to recruit people with these skills.

⁶ Autor, Levy & Murnane (2003) Skill Content of Recent Technological Change

⁷ Sociaal Cultureel Planbureau (2016) Toekomstbeeld Leren



Figure 3 Main skills targeted by formal and non-formal learning,
% of enterprises providing lifelong learning, 2015



Source: Eurostat

Note: latest data available

Although recent data regarding the kind of skills that most corporate trainings are focused on is not available for the Netherlands, data at hand shows that mathematical, problem-solving and collaborative skills have relatively low shares in trainings given (*see figure 3*).

To keep pace with technological changes, we should continuously assess which skills are relevant. A looming mismatch of skills is likely to further increase the inability to effectively adopt new technologies and will further hamper technological spillovers to other firms, thereby negatively impacting labour productivity. In order to prevent a decline in labour productivity – and in its wake economic growth –, a smooth transition of skills is needed. Lifelong learning is one of the key instruments for employees and workers to increase their skills.

Why we are good but not great at lifelong learning

As technological progress transforms the labour market, lifelong learning is an important tool for people to continue to update and develop their skills and to increase productivity and economic growth. The key question is: are we willing and able to use the lifelong learning opportunities provided by our employees and the government? According to Eurostat, the Netherlands scores fairly well compared to most other European countries. In 2016, 18.8% of working men and women in the age group of 25 to 64 years old participated in education or training, which is close to the 20% target that the Dutch government aspires to reach in 2020⁸. But will this be sufficient to update and develop skills for the future labour market?

What is lifelong learning?

Lifelong learning consists of three ways of learning:

- Formal learning: organised learning leading to a diploma or certificate
- Non-formal learning: organised learning without a diploma
- Informal learning: learning by doing

The term lifelong learning can be defined as 'all purposeful learning activities, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence'. Lifelong learning doesn't finish after one's initial education, but continues throughout one's life.

Lifelong learning implies not only the acquisition of knowledge about a particular topic, but also the skills to carry out a specific task and changes in attitude, values, beliefs etc.

Lifelong learning has a purpose, for example to increase one's ability to find relevant work, carry out more complex work, change or contribute more to society.

Age, gender and level of education determine participation in lifelong learning

If we take a closer look at the Dutch participants of lifelong learning, we see differences in age, gender and level of education. Participation rates in lifelong learning gradually decline as people become older. People aged 55 to 64 participate significantly less in formal and non-formal learning compared to other age groups. However, compared to 2007 and 2011, their participation has increased significantly. The repeal of the early-retirement regulation has increased the participation in lifelong learning in the Netherlands⁹. The increased payback period for older workers has made investments in human capital more profitable. In the next years, we expect an increasing participation in lifelong learning of older workers due to the increased retirement age.

A study by CBS¹⁰ has shown that, from the age of 35 onwards, women participate in non-formal learning more than men. This is partly due to the sectors they work in: many women work in education or healthcare, where training is necessary to keep up with new technology or methodology.

Participation in lifelong learning varies per educational attainment level, but rises with the attainment level. In 2016, only 36% of lower-educated workers participated in lifelong learning, compared to 80% of higher-educated workers. Differences in the type of work lower and higher educated people do explain the differences in participation. Many higher-educated workers, such as accountants, architects or notaries, perform tasks that are non-routine, change regularly or require mandatory training.

8 Theo van Delle (2015) The Dutch Lifelong Learning Scene; Continuing Unresolved Issues and Two Alternative Perspectives, page 10.

9 ROA (2014) Leren en werken in Nederland

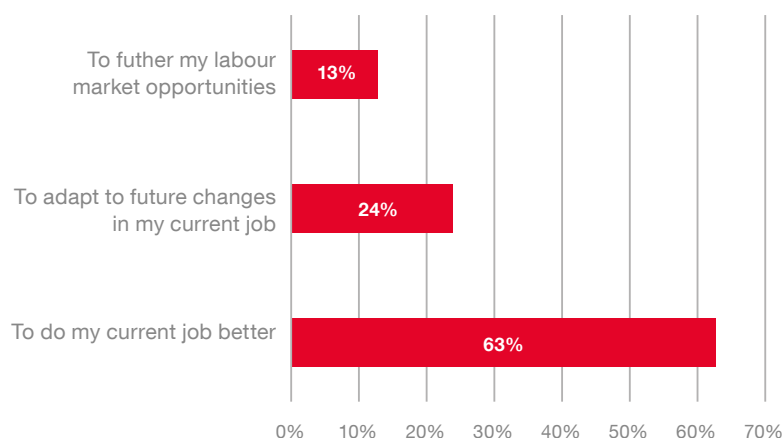
10 CBS (2016) Een leven lang leren in Nederland: een overzicht

Training not only affects the trainee, it also affects co-workers.

Focus on the short term

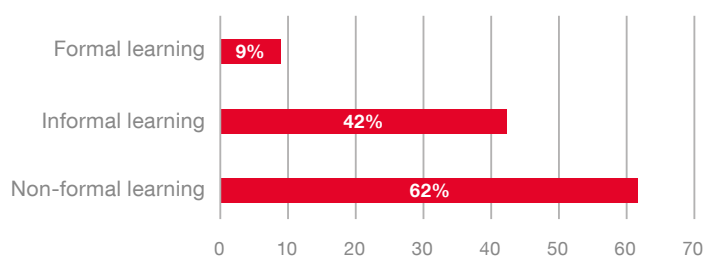
Research performed by TNO¹¹ shows that the majority of workers participate in formal or non-formal learning to be able to perform better in their current job. One third of the respondents indicated that future prospects were the main reason to participate in learning: 24% indicated that being able to cope with future changes in their current job was the major reason for participating in learning; 13% said that their main reason for participating in learning was to increase their job opportunities in the future (see figure 4). The majority of workers participating in lifelong learning focus on the short term – their current job – instead of focusing on the long term: their future employability.

Figure 4 Employees' education and training goals (in 2016)



Source: TNO

Figure 5 Percentage of workers participating in lifelong learning, in the past twelve months (in 2016)



Source: Eurostat

Informal learning most important

Government policies focus on formal and non-formal education and training, resulting in a participation rate of 9% in formal learning and a majority (62%) of Dutch workers annually participating in non-formal learning, i.e. participating in a training at work (see figure 5). However, workers only spend approximately 3 to 5% of their time on formal and non-formal learning¹².

According to the Dutch Bureau of Statistics (CBS), 34% of the 25- to 35-year-olds participate in informal learning as opposed to only 2% of the 55- to 65-year-olds. Workers in industries subject to high-paced technological change are better able to retain their productivity at an older age than workers in less dynamic industries. In these dynamic industries, workers continuously learn skills related to new technologies in the workplace and participate in training. This means that continuous learning – formal, non-formal and informal – is a precondition to remain productive and employable, even at an older age.

The largest part of learning in workplaces consists of informal learning or learning on the job. For many, this would be the most important source of new knowledge and skills. Research by ROA¹³ showed that lower-educated workers spend at least 20% of their time on activities from which they learn. Highly educated workers spend on average 28% of their working time on activities from which they learn (see figure 6). Many lower-educated workers generally perform more routine manual tasks, while higher-educated workers tend to perform more cognitive non-routine tasks and have a much steeper learning curve.

The most powerful way of learning is when you engage multiple senses, which is why training on the job creates the most impact. Some organisations purposely create a work environment in which employees have as many learning opportunities as possible. Their employees regularly switch teams, jobs and tasks, thus creating an even steeper learning curve.

11 TNO (2016) Nationale enquête arbeidsomstandigheden

12 PwC analysis based on ROA (2017) ROA Factsheet



Figure 6 Percentage of working hours spent on tasks from which people learn (informal learning), by ISCED level¹³, in 2017

ISCED level 1-2¹⁴

20%

ISCED level 3

22%

ISCED level 5-7

28%

Source: ROA

¹³ ISCED level 1-2 is related to primary and lower secondary education, ISCED level 3 is related to mbo and class 4, 5, 6 of havo and vwo. ISCED level 5-7 is related to tertiary education.

¹⁴ ROA (2017) ROA Factsheet

Staying relevant in the digital age

Although the Netherlands is performing rather well on lifelong learning, the participation in lifelong learning of lower-educated employees and older workers is lagging behind. On the positive side, women are catching up and older workers are likely to do so as well. Although lifelong learning is vital for our labour productivity and future labour market position, workers tend to focus on the short term to improve their performance in their current position, instead of focusing on long-term employability. How can we switch to a mindset and behaviour in which lifelong learning is incorporated?

As new technologies are already changing industries, and labour markets in their wake, many organisations struggle with the transformation of their workforce. What skill sets should employees ideally have in the near and distant future, and what is needed to

develop these? Many uncertainties make it difficult to assess what will happen, and answers require both detailed knowledge of the current workforce and an idea of the required future capabilities. Predictive and prescriptive analytics can offer insights into both historical and future workforce changes. On the basis of such analyses, you can select different scenarios that are most relevant to your organisation. Investigation of these scenarios will show the gaps between your expected future workforce and your desired workforce. Communication about your desired future capabilities and workforce will give your employees clarity and guidance on what the future of their jobs will look like. By doing so, you will create an environment in which adaptability and learning will become more obvious.

A future-proof workforce starts with planning

Strategic Workforce Planning (SWP) has increasingly become a hot topic, as digitalisation and smart automation, but also demographic shifts, impact on the current workforce. For example in the healthcare sector and in industries that depend on manual labour - with typically an aging workforce and changing business requirements - we see that organisations are looking for ways to get a grip on how their workforce is developing.

We believe that workforce planning should be data-driven, combined with business insights. Always start with a strategic dialogue to understand the biggest workforce concerns and identify workforce issues. In line with this, analyse data and provide insights in the current workforce, workforce development and workforce dynamics, such as recruitment, promotion and employee turnover. These insights should form the basis of your views and ideas about how you want the future workforce to look like. Since there is not just one scenario, formulate multiple scenarios,

taking into account your strategy and ambitions, but also the key developments in your industries. Then create models for those future scenarios: use historical trends to demonstrate how the workforce will develop without interventions, and demonstrate what needs to be done to reach a preferable future state. Formulate HR interventions based on data analysis. These could include, for instance, recruitment, retention, promotion, upskilling and internal mobility.

A recent client case: we found that a client had a great need for data scientists (over two hundred). Yet, since a great part of the population will go on retirement in the next five to seven years, the organisation needed to act immediately to be able to realise their ambitions for the next five years.

With technology progressing faster than ever, and jobs being more fluid than before, we need more insights into the competencies of an organisation's human capital. Wouldn't it be great to have reliable data on what people's competencies are, instead of just looking at their current jobs? Therefore, we invest in developing methodologies that will help your organisation become future proof.

The most powerful way of learning is when you engage multiple senses, which is why training on the job creates the most impact.

Stimulating learning behaviour is key

For some, the desire to learn might be in their DNA; for others, it might be difficult to adapt. Organisations should stimulate behaviour related to learning, for example by taking away barriers and offering fun and easy learning opportunities.

In the previous chapter, we concluded that older and lower-educated workers participate significantly less in training and education, and that women are finally catching up with men. We believe that organisations should take these differences into account when they develop lifelong learning for their employees. We believe organisations should offer customised trainings to their employees based on their preferences, their personal characteristics and the stage of life they are in. Older employees, for example, tend to participate in lifelong learning significantly less, for many reasons. However, a study by ROA has shown that supportive HR policies stimulate the participation in training and education of older workers¹⁵. Self-induced training and training on the job are more effective for older employees than formal education or training¹⁶. Currently, many organisation do not offer these more effective training forms to their older employees.

Informal learning or learning as a team might be beneficial for those not inclined to participate in lifelong learning. Training not only affects the trainee, it also affects co-workers. Research by De Grip and Sauermann¹⁷ suggests that participating in a training can have informal knowledge spillover effects on co-workers. This study found that call centre agents who had participated in a training improved their performance by 10%. Once half of the team was trained, the performance of the untrained team members improved by 2.5%. This study suggests that organisations might benefit from smart training policies that include knowledge spillover effects. Similarly, hiring and retaining curious and adaptable employees can stimulate other workers to adopt continuous learning behaviour as well.

Organisations can provide the opportunities for lifelong learning, but some employees will not embrace those opportunities. Adding lifelong learning to performance management and HR policies will ensure lifelong learning is no longer non-committal. We believe that talking about what makes an employee 'future fit' to the company, translated into clear KPIs and learning opportunities, should be an integral part of the performance management cycle.

As we mentioned before, some employers create a working environment in which employees regularly switch teams, jobs and tasks. This creates a steep learning curve and an environment in which learning is integrated in the daily business.

Focus on continuous development

We expect that learning within organisations will become a continuous process based on learning paths and that organisations will train workers for several years for a specific career path. In the coming years, non-formal and informal learning activities will become more seamlessly incorporated in the day-to-day practice of workers. We expect that artificial intelligence will be able to detect when an employee needs training and automatically provide that training (think of microlearning, such as a quick e-learning, or more elaborate types of training or courses). Virtual or augmented reality could support this continuous learning process.

Connect lifelong learning with purpose and values

Millennials and centennials may change the lifelong learning conundrum. They want to do something that feels worthwhile and take into account the values of a company when considering a job. Millennials expect to spend a high proportion of their time gaining new experiences and absorbing new information. They are therefore attracted to employers who offer excellent training and development programmes and see this as the top benefit they want from an employer¹⁸.

15 ROA (2014) Werken en leren in Nederland

16 ZEW (2011) Why Training Older Employees is Less Effective

17 De Grip and Sauermann (2012) The effects of training on own and co-worker productivity: evidence from a field experiment

18 PwC (2011) Millennials at work: Reshaping the workplace

Millennials are personally engaged people. For them, their personal purpose and their work purpose are intertwined. For employers, this means that being clear about your purpose and values, and what you can offer your employees becomes more important. Some organisations have included lifelong learning in their employee value proposition: if your main goal of working with us is learning, then you've come to the right place. Keep in mind though that the transformation towards personal engagement has consequences for your organisation: building and maintaining your brand reputation will become more important.

Taking responsibility as an employee

Currently, many people identify themselves with their current jobs. This, however, limits their thinking. In the next ten years, many jobs will change due to automation and digitalisation. When you focus on the skills you are good at and enjoy using, it is much easier to find a job you will like. The following steps may assist you in remaining adaptable and open towards learning:

- Frequently take the time to consider your current work and how it may change in the future. Ask yourself questions like: am I still sufficiently motivated? Is my work repetitive in nature and therefore vulnerable to automation in the future? If you suddenly had to find other employment, what would you do? You can use scenarios to gain insight and prepare yourself for various outcomes.
- Identify skills that you enjoy using and would like to use more. Skills that are distinctive in nature and are hard to replicate by automated systems, such as creativity and empathy.
- When you are motivated and set realistic goals, much can be achieved. Talk to others about your

ambitions, e.g. colleagues in the role you are interested in, human resources employees and external experts. They may advise you on what is required to attain your goal. Above all, dare to dream.

- Take action by taking courses, following colleagues on the job, expanding your current set of tasks, or by switching to another function. These actions, or a combination of them, will lead to new experiences, knowledge, skills and, last but not least, fulfilment in what you do and are able to do. This will also make you adaptable, a key skill for dealing with change.
- Do not forget to improve your ability to demonstrate and convince others of your capabilities. Certifications, recommendations and assessments may be of help. This will also have a positive effect on your self-esteem and motivation to accomplish more.

Most of all, you need to adopt the mindset that you as an employee need to invest time and energy in staying relevant and reach out to your employer to get the support you need to stay relevant; firstly for your employer, secondly to stay relevant in the labour market.

Keep in mind that the transformation towards personal engagement has consequences for your organisation: building and maintaining your brand reputation will become more important.

PwC walks the walk

As we have indicated in this report, the various types of education and training for workers are primarily focused on the short term, on maintaining or improving current job performance. However, from a societal and individual perspective, organisations will really have to change course and provide more future-oriented education and training. At PwC, we focus on continuous development and sustainable employability to prepare our employees for the future.

We've incorporated quick and easy feedback in our performance management system. Our employees regularly ask for and provide their colleagues with feedback, increasing the learning curve.

We offer several types of training, such as classroom learning, e-learning and mobile learning. The latter two are self-directed learning: our employees can choose their momentum, topic and type of training. At PwC we have an innovative learning tool, where employees can search for a topic and choose their type of training, such as classroom learning, using an app, video learning, reading an article, job-aids, etc.

Employability is a major driver in our organisation. We stimulate our employees to change jobs, teams and projects regularly as training on the job provides great learning opportunities.

More information



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