



Nordic Network for
Lifelong Learning

Making AI work the Nordic way

Recommendations for working life,
teachers and providers of lifelong learning

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Introduction

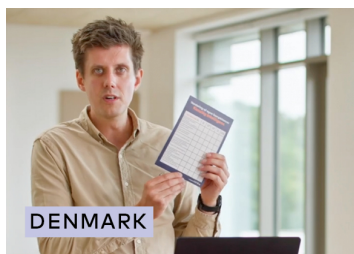
The Nordic expert network *NVL Digital Worklife* presents a set of recommendations for companies, enterprises and organisations within working life, as well as teachers and providers of education, courses, training and lifelong learning.

Main goal

The main goal is to facilitate processes of exploring, implementing and utilizing Artificial Intelligence (AI) within working life in the Nordic region.

The recommendations presented in this paper are based on the network's analysis of the OECD-report [Employment outlook 2023: Artificial intelligence and the labour market](#) within a Nordic context, and on reflections and findings from the report [The role of lifelong learning for inclusion in the digital transformation](#) (Buhl, Dille et. Al. 2023).

The recommendations are presented in detail by experts in a series of five videos produced by the network:



Main messages

It is crucial to involve the social partners to ensure that the interests and perspectives of both owners, managers and employees are taken into consideration when new digital tools such as AI are implemented. The social partners are experts on competence and skills needs within working life.

It is important to integrate Nordic pedagogical perspectives into courses, training, education and lifelong learning when tools such as AI are developed in other continents with different pedagogical models and perspectives.

Target groups

Employers/management, employees and different worklife organisations as well as teachers and providers of education, courses, training and lifelong learning for adults within working life.

NVL Digital Worklife

The Nordic expert network was established in January 2022. The members represent the social partners in Denmark, Finland, Iceland, Norway and Sweden as well as representatives from educational authorities in these countries.

Background

A call for social dialogue, collective bargaining and appropriate skills

National policies and social dialogue will play a key role when tools such as AI are implemented, and when the new tools and working methods are being tested and evaluated. Social dialogue is crucial when it comes to defining new skills and competence needs. AI is already significantly expanding the range of tasks that can be automated beyond just routine, non-cognitive tasks. Being a general-purpose technology, AI means that nearly every sector and occupation will be affected. The speed of development is unprecedented. Collective bargaining and social dialogue are means of supporting workers and businesses in these kinds of transitions. The lack of AI expertise among social partners, the lack of skills and competences regarding AI in general and the lack of legislation and national as well as international strategies are among the challenges.

Both the specialists, who develop the new technology, and all other users of new technology will have to develop their digital skills and knowledge. There is a need for both formal education and shorter courses as well as for soft skills (EU 2020). Cooperation skills, conscientiousness and the ability of learning to learn as well as to teach others at the workplace will be more important than ever. Informal learning connected to daily working tasks is necessary for both those developing new technology and for the users of new tools and new systems.

Skills needs

As concluded in OECD's *Employment outlook 2023: Artificial intelligence and the labour market*, AI is likely to have a significant impact on the labour market (OECD 2023). The lack of appropriate skills is a major barrier to AI adoption. In the report, OECD refers to different types of skills (OECD 2023, p. 163: Table 5.1 Skill needs in the age of AI), as shown below:

Skills to develop and maintain AI Systems	
Types of skill	Examples
Specialised skills	General knowledge of AI, specific knowledge of AI models, AI tools and software
Data Science skills	Data analysis, software, programming languages, data visualization, cloud computing
Other cognitive skills	Social skills, management skills
Transversal skills	Creative problem solving

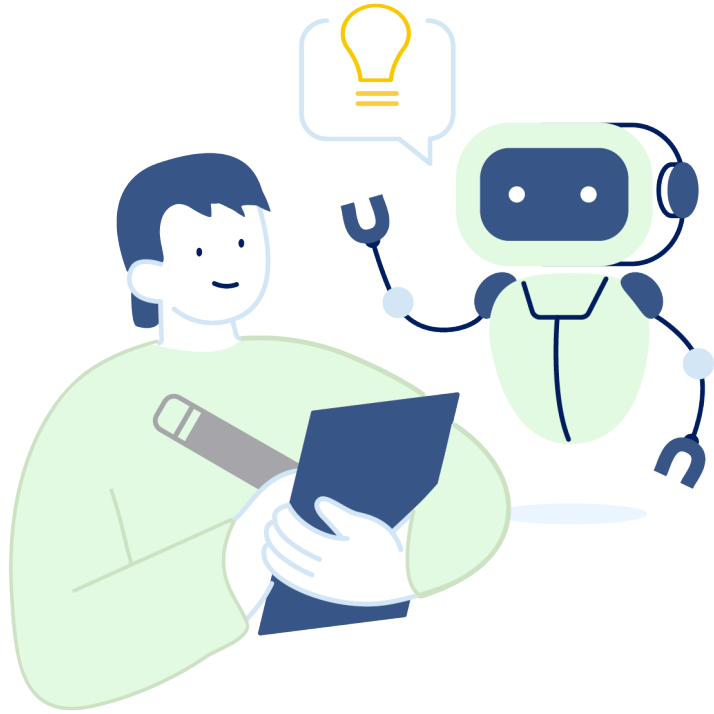
Skills to adopt, use and interact with AI	
Types of skill	Examples
Elementary AI knowledge	Principles of machine learning
Digital skills	Ability to use computer, smartphone etc.
Other cognitive skills	Analytical skills, problem solving, critical thinking, judgement
Transversal skills	Creativity, communication, teamwork, multitasking

AI affecting tasks and working methods

The research report, *The role of lifelong learning for inclusion in the digital transformation* (Buhl, Dille et. Al. 2023), reflects upon the need for enough time (timely slowness) when implementing new ways of working, and the need to use a broad repertoire of strategies to navigate digital transitions. It is a key recommendation in this report to create awareness of contexts and to acknowledge the many different forms of knowledge from the workforce as legitimate.

The digital transformation affects all workers in the Nordic countries. Whatever sector or type of job, the digital transformation affects us all to various degrees. This transformation does not exist in a vacuum. Global megatrends such as the ageing of the population and the green transition influence the process of digitalisation. The increasing share of seniors in society leads to fast developments concerning home and health technology. The digital and the green transformation go side by side, often referred to as "the twin transitions". The European Union calls for a learning revolution to meet the skills needs of our time (Cedefop 2022).

It is still unknown, where the digital transformation will lead us and what new kinds of jobs and tasks we will have in the Nordic labour market. What we can be sure of, though, is that skills and competence development are the answer (OECD 2019). The Nordic workforce will need both continuous formal, informal and non-formal learning. This would be a response to Buhl et al.'s recommendation of a broad repertoire of strategies (2023).



Recommendations

Recommendations for working life



AI is gradually transforming jobs and working conditions, creating new opportunities and demanding new skills. AI can take over routine tasks. Other tasks may become more versatile, meaningful and challenging.

There is a need for equal access to education and training to ensure competence building and re-training of employees. It is a social responsibility to make sure everyone benefits from AI.

The network stresses the benefits and usefulness of:

- Involving employees in the implementation process of AI
- Cooperation between employers and employees to ensure essential skills and competencies
- Making sure that leaders and union representatives have a possibility to obtain insight and knowledge about new technologies
- Small projects using a step-by-step approach is recommended when trying out new technologies such as AI. This gives an opportunity to try and fail, learn and adjust without too big and risky investments, while ensuring the employees right to codetermination. In this way, both the aim of better productivity and of good working conditions are emphasised.

Watch the videos and learn more:



[Artificial Intelligence and the Future Labour market](#) (Icelandic)



[Artificial Intelligence and the Future Labour market](#) (English)



[Will AI boost Finnish working life?](#)



[Digitalization at Work:
Hype, Revolution, or
Evolution?](#)

Recommendations for teachers



AI influences facilitation of teaching and learning in many ways. Teachers need to know more about how to use AI as a tool for themselves as teachers and about how AI can be used as a means of helping the students to learn and to reflect on their own learning processes.

The network advice teachers to:

- Reflect on and use AI in their teaching
- Learn more about AI by frequently using it and by attending courses and education
- Be aware that AI, used as a teaching tool, can serve as a
 1. a knowledgebase
 2. a sparring partner giving feedback on the actual teaching
 3. a tutor helping the students while they are working with their tasks and helping the student reflect on their own learning processes

Watch the video and learn more:



[AI assisting VET teachers](#)

Recommendations for providers of courses and education



AI will change the labour market and professional working roles. For providers of courses and training, knowledge about AI and its impact is essential.

Therefore, the network recommends that:

- Vocational and adult education has a key role when professional roles develop and business needs change due to AI
- The Nordic countries should invest in education systems that offers up-skilling and re-skilling for professionals
- Providers of courses and training are advised to monitor development and trends within different sectors in order to be able to offer courses and training, reskilling and upskilling that encourages curiosity and motivation to understand and use AI

Watch the video and learn more:



[The role of Adult and Vocational Training in a more AI-driven Labour market](#)

The Nordic way

The social partners have an active role in the Nordic skills agenda

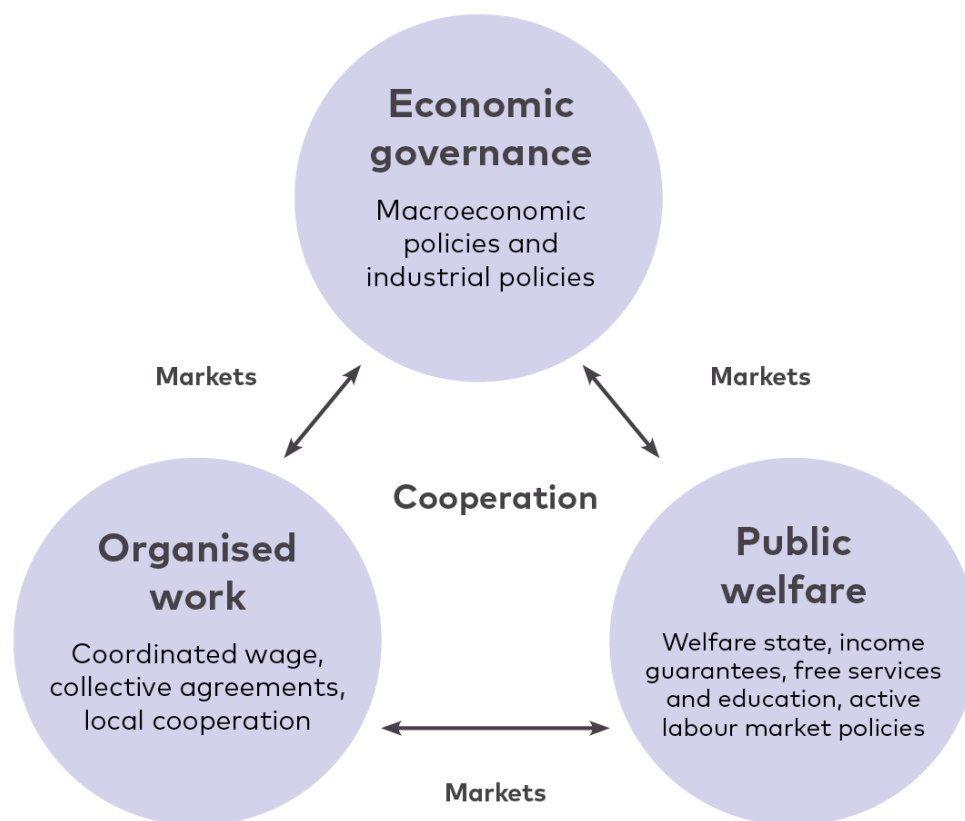
According to the European research institute [Eurofound](#), the social partners should have an active role in skills development. The involvement of the social partners could ensure that an organisation's technological development is rooted in human-centric values (2021). Social partners can help determine which AI technologies to adopt – and how. They can facilitate introduction and implementation as well as define training needs. Previous OECD analyses show that social dialogue and collective bargaining play crucial roles in changes in working life, by easing transitions and spreading best practices. OECD surveys show that trade unions are most concerned with ethical issues, while employer organisations focus on new skills requirements (OECD 2023).

A larger part of the population are members of trade unions in the Nordic countries than in the rest of the world (Logue 2019). The social partners are involved in lifelong learning in all Nordic countries: in **Iceland**, the Education and Training Service Center is a coordinating body for 14 regional lifelong learning centres. The organisation is owned by the social partners and the authorities (atvinnulífsins).

There are tripartite agreements regulating continuing education in both Denmark, Sweden, Norway and Finland: in **Sweden** and **Denmark**, in 2021 and 2023, respectively, the social partners signed tripartite agreements on continuing education and training for working life (Cedefop 2021; Undervisningsministeriet 2023). The social partners collaborate actively with the government to shape policies and strategies for adult education in **Finland**. This ensures that the education system aligns with the needs of the labour market and society (Kuusipalo et al. 2021). Among others, the social partners are involved in a continuous learning reform in Finland (Culture 2019).

The tripartite industry program in **Norway** (Bransjeprogrammet) was established in 2018, as a grant programme in which the social partners describe the competencies and skills needs (HK-dir 2024b). The authorities pay for the development of new courses and education. Employers give their employees time off to attend courses and the employees themselves spend some working hours and some private time to participate in skills and competencies development.

The three basic pillars of the Nordic model



Source: Jon Erik Dølvik (2013): Grunnpilarene i de nordiske modellene. NordMod 2030 Partial Report 1.

Well-established lifelong learning systems in the Nordic countries

The five Nordic countries have well-established public systems for lifelong learning, including general, vocational as well as continuing education and training (Berggren 2024). They also have rather updated skills strategies and analyses of skills needs. This is helpful when it comes to ensure that the population's skills match the needs of working life. In addition, all five Nordic countries have systems for career guidance and validation of prior learning (NVL 2023).



In **Sweden**, employees in the middle of their working life, who want to study to develop their skills, may apply for transitional study support (omställningsstudiestöd) (CSN, 2024). Also, the Swedish Parliament has implemented a comprehensive reform for upper secondary schools and municipal adult education. This reform includes new regulations for planning and structuring upper secondary education ('Planering- och dimensionering av gymnasial yrkesutbildning') (Skolverket, 2024).



The reform of continuous learning (Reformen av det kontinuerliga lärandet) in **Finland** also responds to skills needs (Finland 2023).



There is a reform in higher education in **Denmark** with shorter variants of master studies and a continuing vocational education programme (Science 2024).



In **Norway**, the modulization of adult learning, piloted from 2017 until 2024, has now become a permanent system (HK-dir 2024a),



while one of the pillars in the strategy *Education Policy 2030* in **Iceland** is skills for the future (OECD, 2021).

Watch the five videos about making AI work the Nordic way and learn more!



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