

ROA Research and Policy Plan

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Researchcentrum voor Onderwijs en Arbeidsmarkt | ROA
Research Centre for Education and the Labour Market | ROA

1 ROA's mission and its context

1.1 Demand for and supply of skills

The **digital and green transitions are affecting the demand for skills** in society at large as well as in education and in the labour market. From a labour market perspective, the production of goods and the delivery of services requires that a combination of tasks have to be performed. The tasks can either be performed by human labour or by machines and technologies, and the mix between the two determines the demand for skills that varies across the goods to be produced and service to be delivered and across time, e.g., as technologies evolve or environmental demand change. To perform tasks effectively and meet employers' demands, human labour needs to be equipped with skills, this is the supply side. These skills are acquired through education, lifelong learning, and experience acquired **throughout the life cycle**. The supply of skills can also change due to migration.

As the mix between human and machine tasks changes due to globalization, flexibilization, technical changes and the green transition, the demand for skills also changes with polarization on the job market and societal and regional inequalities as possible outcomes. Failure to effectively adapt to these changing demands or failure at effectively 'producing and developing' skills could result in more inequalities over the life-cycle, e.g., when the youngsters are not equipped with skills in demand, and cannot find employment, or when groups of employees fail to adapt to such changes or are not provided with opportunities to adapt and are at risk of losing employment.

1.2 ROA's mission statement

A specific focus on skills helps to better connecting various aspects of the research we do at ROA. The changing dynamics in the demand for and supply of skills raises a number of challenges that ROA wishes to address in its research. Our mission is to inform, inspire and intrigue policymakers and scientists, thus contributing to the research and societal debate. We do this from a strong scientific position in the field of education and the labour market.

With our research, we wish to contribute to:

- ❖ Knowledge of how (de)globalization, regionalization, flexibilization, technological change and the energy transition affect **the demand for skills** as production tasks are being performed elsewhere or are returning ((de)globalization), concentrated in specific regions (regionalization), outsourced to other firms (flexibilization), performed with the use of new technologies (technological change) or require new

sets of skills that make human skills redundant (labour saving technologies) or shift the demand for skills between and across jobs (labour shifting technologies). This research informs us about skills needed in the labour market and society at large.

- ❖ Knowledge of **skills formation over the life cycle**: in (early) childhood, at school and during adult life such that one is equipped with skills that matter in their current life phase and/or make them resilient in their future life. This includes developing a knowledge base on 1) optimizing skills formation in education (what skills to teach and how to teach them?) to help youngsters maneuver through education and empower them with skills needed to enter adult life and the job market, and 2) determinants and consequences of lifelong learning, what lifelong learning strategies can best be deployed for which groups of individuals to make sure they remain productive, how to further develop a learning culture at the national, regional, sectoral and organization level, and how to foster individuals' own governance.
- ❖ The **use of skills** to achieve favorable outcomes and maximize potential. This includes (a) understanding how skills can effectively be used to achieve success in education, during the school-to-work transition, and on the labor market, and (b) understanding how different skills (e.g., cognitive and non-cognitive skills) interact with each other and other individual characteristics (e.g., mental and physical health, social capital).

We address these themes from a multidisciplinary perspective in our four research themes ('Education and Transition to Work', 'Health, Skills, and Inequality', 'Labour Market and Training' and 'Human Capital in the Region'), and with the Education Lab Netherlands. The research themes 'Education and Transition to Work' and 'Health, Skills, and Inequality' focus on education and skills as point of departure and study the drivers and outcomes at the individual, organizational and societal level. The research themes 'Labour Market and Training' and 'Human Capital in the Region' focus on the developments in skill supply and demand on the labor market and the interactions between the two at the national and regional level. Education Lab Netherlands focusses on bridging scientific evidence and educational practice for a better understanding of effective interventions in education.

With this mission, ROA aims to **contribute to the well-being at the individual, meso and societal level**, which faces various challenges for which skill formation over the life course is key, such as segregation and inequality in education, adaptation to climate change and energy transition, reducing inequality and sustainable employability. We hereby contribute – directly and indirectly – to 9 Sustainable Development Goals of the United Nations:

- ❖ No poverty (SDG 1)
- ❖ Good health and well-being (SDG 3)
- ❖ Quality education (SDG 4)

- ❖ Gender equality (SDG 5)
- ❖ Decent work and economic growth (SDG 8)
- ❖ Industry, innovation and infrastructure (SDG 9)
- ❖ Reduced inequalities (SDG 10)
- ❖ Climate action (SDG 13)
- ❖ Partnerships for the SDG goals (SDG 17).

1.3 Skills are many and matter at the macro, meso and micro level

There are many typologies and classifications of skills. They are cognitive or non-cognitive, generic or specific, routine or non-routine, and can be acquired pre-birth or post-birth. We take a **broad view on skills** that include knowledge and competencies, attitudes and preferences, as well as aspects of physical, mental, and social health. These skills, and their interactions, determine performance (in school, at work, etc.) and wellbeing. Our research will consider these various facets, with specific focus depending on the research objective or policy question to answer.

At the **macro** level, this focus on skills matters to better understand, e.g., the factors of growth and skills needed to face new ecological challenges. It also matters for a better understanding of the complementarities and substitution possibilities between human and machine tasks as technology evolves and the speed of deployment of AI increases, and the changing dynamics between demand for and the supply of skills that could be generator of inequalities. At the **meso** level this focus is relevant, e.g., to understand how sectors or regions in undersupply of skills need to adapt their production processes, to invest in the production of skills in their own sector or region, or make themselves more attractive to stimulate mobility to their sector or region. It is also relevant improve our understanding of how education institution respond to the changing demand for skills. At the **micro** level, the focus is relevant from the individual (e.g., how do skills develop in early childhood, and in education, what are the skill requirements of jobs in demand and how to train these skills?) and the firm perspective (e.g., as employers face societal and economic challenges, how do they go about with incumbent workers, do they adapt their make-or buy decisions?). This relates to questions whether particular skills can best be acquired at school or in the workplace. From a macro, meso and micro perspective, a focus on specific groups such as the elderly, low-educated, migrants and disabled is warranted as they might be more vulnerable to shifts in demands for skills.

1.4 Skills as a binding factor in ROA's research

Research in labour and education has mainly focused on the acquisition of education (e.g., educational credentials or years of schooling), the value of educational credential/educational degrees, and the match between education and occupational

demands. We make the topic of skills more central in our research, and hereby 1) complement our traditional way of approaching education and the labour market from the perspective of educational programmes and occupations and 2) contribute to expertise in inequality of opportunities in skills acquisition and inequalities in skills depreciation.

The choice for this focus is both externally and internally driven. From an **external perspective**, there is a growing interest for topics related to skills in the scientific literature and in policy making. Skills, more so than formal educational credentials, determine important outcomes such as participation, productivity, (intergenerational) social mobility and health. In relation to skill-biased technical change, digitalization, societal and regional inequalities and the deployment of AI, a strong focus on skills is therefore warranted. Questions that arise are: how do skills come about?; how are they developed through education?; which are most productive and contributive to economic growth?; and how do they affect economic, social and health outcomes over the life-cycle? How are they effectively used and do they interact to produce favorable outcomes? The **internal perspective** is that we already do much research on the topic of skills, within all of ROA's research programmes, but would benefit all from exchanging more knowledge with each other. Making the theme more central will help us connect our research, learn from each other's expertise, and thereby engage in new avenues for scientific and policy relevant research within and across our research programmes.

2 Vision on ROA's research and impact

Our vision is that within the next 10 years, ROA will have a leading position in research on the demand for and the supply of skills, with high quality scientific research leading to high societal impact. We do this from a position that is well-rooted within SBE, in cooperation with each other, colleagues from SBE, Maastricht University and other partners in academia and society at large.

2.1 Research

To get there, we focus on the following 4 strategic research themes to which we contribute from all of ROA's research programmes:

1. ROA leading in research on **skills demand**: in the labour market, employers' demand for skills determines which skills are valuable in the production process. This demand is dependent on the technology used and the degree of competition (globalization). We will contribute to and shape the research agenda of the changing skills demand in regional and national markets. Example of projects in this theme include Technequality, AI:economics, POA and Netherlands Skills Survey. Specific challenges include 1) the incorporation of new data (e.g., vacancies, O*NET) and methods for

more detailed and precise skills forecasts at the regional and national level, 2) the development of good measures for the substitutability of skills across jobs and complementarity of skills between jobs, 3) the assessment of job/skill creation, and 4) the development of potential scenarios for future changes in the skills demand.

2. ROA leading in research on **skills formation**: the development of skills and the maintenance of skills is key to social participation and labour market participation and productivity. ROA has a long tradition of research in this domain with example projects including NCO, HBO-monitor, PIAAC, and Intergenerational Transmission of Skills. Specific challenges include 1) understanding the process of skills formation given the many skills and their interactions, 2) the development of quantitative measures for the supply of skills from education, and 3) the matching of those skills to skills in demand.
3. ROA leading in research on the **effective utilization of skills**: skills can be of value by themselves, but most importantly they are of value because they can be used to the acquisition of other skills, to successfully transit through education, to be productive in the labour market, and to have a meaningful contribution to society at large. Specific challenges include 1) developing a good understanding of how skills can effectively be used to achieve success in education, during the school-to-work transition, and on the labor market, and 2) developing a good understanding of the cross-productivities between skills and their dynamic complementarities over time.
4. ROA leading in **experimental and other empirical studies**: understanding what works is key to policy design and the evaluation of policy interventions. Over the years, ROA's research has been focusing more and more on experimental studies. We pursue this effort, and combine this with high-quality descriptive studies since they are also valuable and informative, for a good understanding of how the implementation of new technologies affect the demand for skills (to inform ad. 1) and how changes in education affect skill formation (to inform ad. 2). Example of projects in this theme include AI:conomics, projects by Education Lab, and several (PhD) projects around study choice, lifelong learning, health and retirement. Specific challenges include 1) the timely identification of natural experiments, 2) the feasibility of field experiments and cocreation aspects, and 3) the external validity of vignette experiments.

2.2 Societal impact

ROA is strong in its societal impact and outreach to stakeholders. To further extend the societal impact of our research, we engage in the following activities:

- ❖ We engage in **teaching** that is inspired by our research in BSc and MSc programmes (including MSc thesis supervision) and executive programmes.
- ❖ We engage in **high visibility projects** (e.g., National Growth Fund).

- ❖ We aim to be more visible in **policy circles** and towards our stakeholders 1) by approaching them more proactively with our research ideas and 2) by making our research visible to them (e.g., through seminars/policy presentations).
- ❖ We organize small-scale and topical **policy events** and directly target our stakeholders (ministries, companies, schools...).
- ❖ We engage more actively with the **communication** office at SBE to generate ideas for outreach (e.g., podcasts) and get the right connection to expose our findings.