

Skills matching

- The potential of shifting from a diploma market to a skills market -

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 ERSA CONGRESS, 25-08-2022



Topics of today

- What is skills matching?
- Human Capital Theory, asymmetric information
- Definitions & classifications of skills
- Theoretical potential, dilemmas & overview of current evidence

Note: research in process, findings are preliminary

What is skill matching (short)?

- Bringing together suppliers (employees) and demanders (employers) of labour together based on skills
- Academic interest in skills matching & skills utilization is of a relative recent **origin** (Buchanan et al., 2017; Green, 2013)
 - “Lack of empirical standards is hindering a focused discussion about skills, skill passports and the desired transition to a skills-based labour market” (Ballafkih et al., 2022: 5).
 - Gap → theoretical overview of the potential of skills matching is missing



Research question

What is the potential of skills matching for employers, suppliers of labour and the regional labour market?

Why is skills matching important?

Well-fitted skills matches contribute to individual:

- wages (Fregin, 2019; Perry et al., 2014; OECD, 2016)
- job satisfaction (Fregin et al., 2018; OECD, 2016; Perry et al., 2014)
- employability (Montt, 2015)
- prevention of skill depreciation (OECD, 2012)

From a macroeconomic perspective to:

- productivity (Quintini, 2011)
- a faster adaptation to technological progress (OECD, 2012)

Example: Sanne is looking for a new job

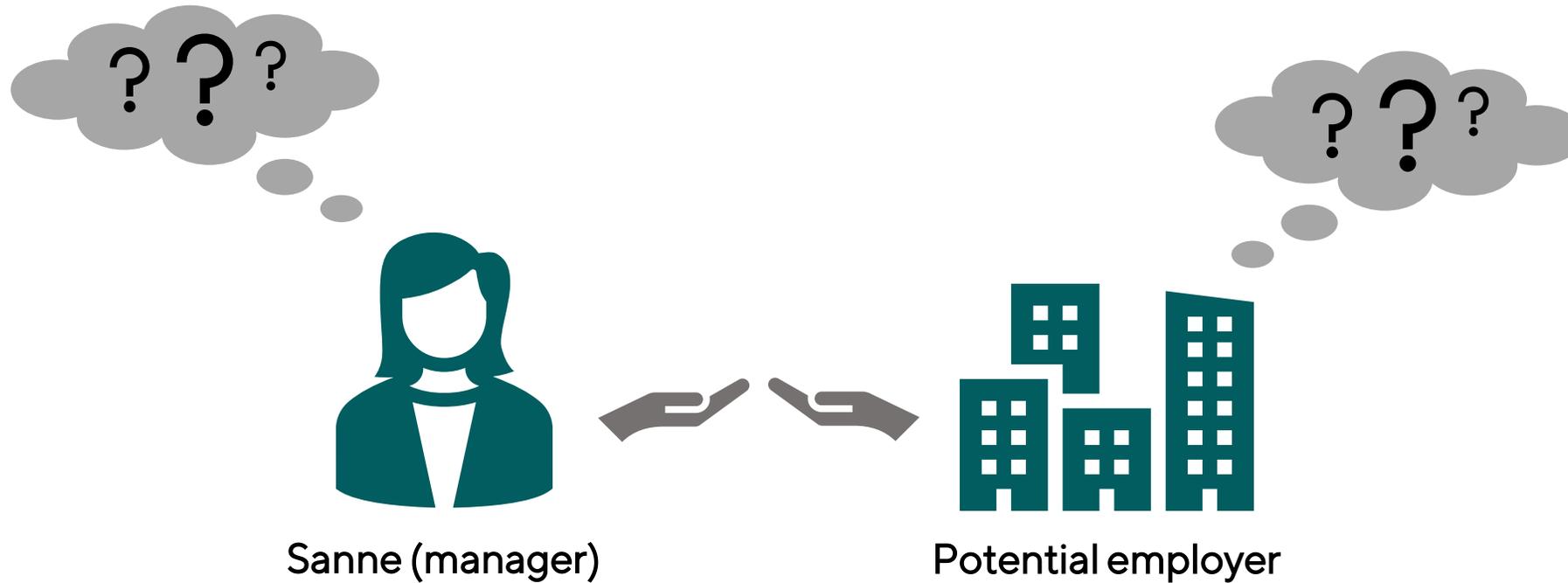


Sanne (manager)



Potential employer

How does one party assess the other?



Information problems

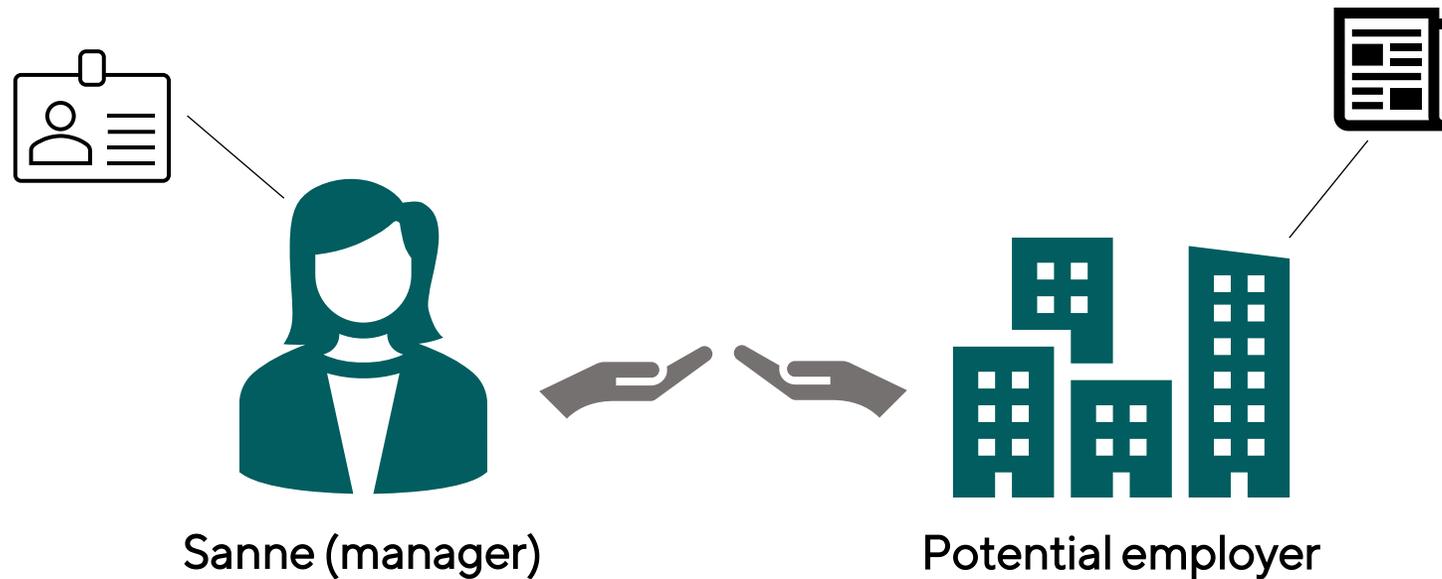
Asymmetric information = lack of unrestricted & costless information exchange (Kar & Datta, 2015)

- impedes employers by observing the expected productivity of workers (Bills, 1999; Boeri & Van Ours, 2013; Jovanovic, 1979)
- negatively affect the matching quality (Stevens, 1994)

Labour is an experience good (Nelson, 1970)

- most of the matching quality will only be revealed during matches

Current situation: exchange of resume & job description



Educational credentials / diplomas are used for:

- **Screening candidates** (Arrow, 1973; Stiglitz, 1975)
 - a pre-screening mechanism to select applicants
 - not/barely contributing to cognition?
 - indication for trainability?
- **Signalling ability** (Spence, 1973)
 - indication/proxy for productivity



But diplomas can also be:

- time consuming...
- exclusive...
- stressful...
- rapidly lose value (Post et al., 2021)



Focus on skills!



But what are skills exactly?

Ongoing academic debate about the definition since the 1960s (Smith, 2017)

Definition & description still not universally shared (De Goede et al., 2019; Fouarge, 2022; Fregin, 2019)

Problems around:

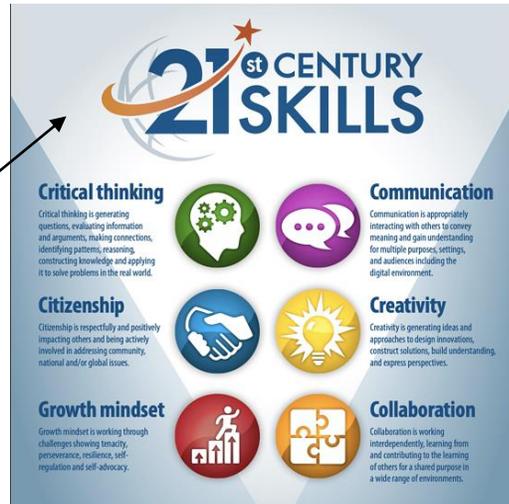
1. skills & competences are used as synonyms, but also differently (De Goede et al., 2019)
2. different scale levels (cfr. ESCO, 2022; Fregin, 2019; OECD, 2012, 2017; UWV, 2022)
3. context of work often missing
4. dynamic character often missing

But what are skills exactly?

For our purposes, we define skills as:

“the **developable knowledge and know-how** which enables suppliers of labour to perform certain **work-related tasks** and behave in certain roles in the context of **continuously changing work environments**”

Examples of classifications



Search skills

- K - knowledge +
- L - language skills and knowledge +
- S - skills +
- T - transversal skills and competences +

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Skills

ESCO

Controleer je skills

Je hebt alle skills ingevuld. Hier zie je een overzicht.

Vraag

Actief luisteren

Rekervaardigheid

Wetenschappelijk werken

Kritisch denken

Actief leren

Kennis van leren

Sociale gevoeligheid

Coördineren

Overtuigen

Bemiddelen

Instructie geven

Hulpvaardig zijn

Oplossen van ingewikkelde problemen

Ontwerpen van techniek

Kiezen van materiaal en gereedschap

Installeren

Programmeren

Bedienen van apparaten

Apparaten onderhouden

Storingen oplossen

Repareren

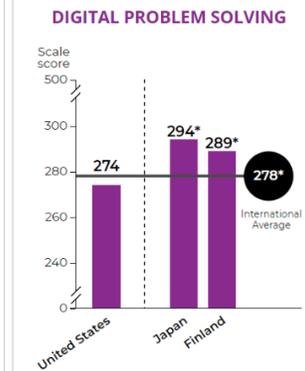
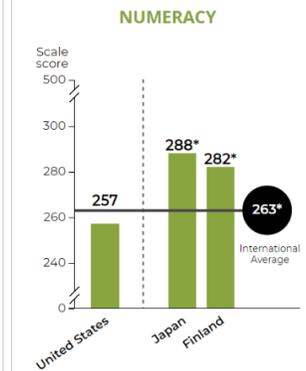
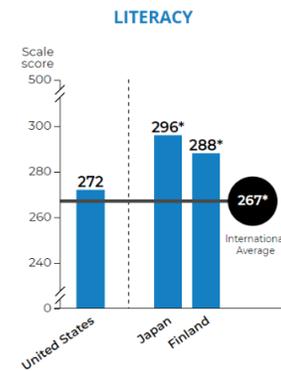
Beoordelen hoe een organisatie werkt

Oordelen en keuzes maken

Omgaan met tijd

Omgaan met geld

Omgaan met personeel

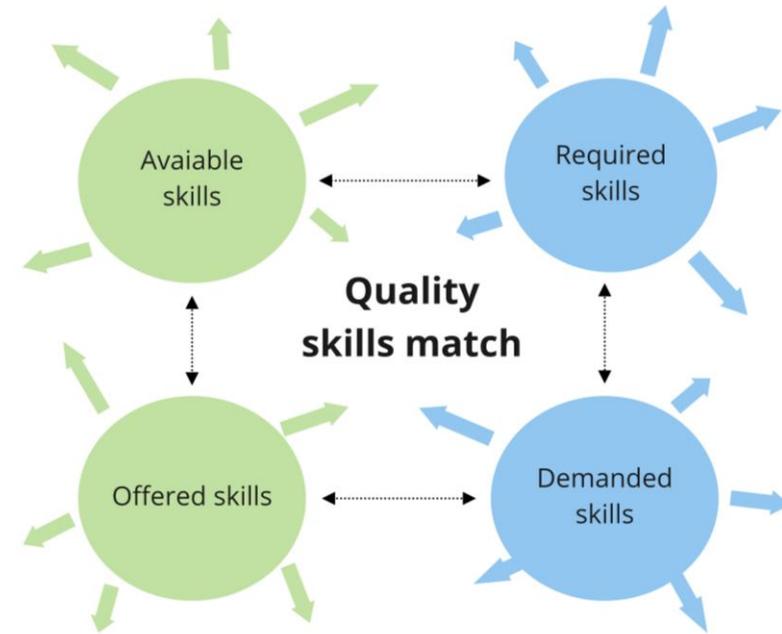


PIAAC(OECD)

...Imagine, Sanne is an excellent cook



A skills match!



Two tracks of skills matching

1. Way of thinking

- Refocus from educational credentials & work experience → to skills
- Recognition of informally learned skills

2. Supported by a data-driven approach and new digital matching technologies (Post, 2019) → skills matching

- Skill taxonomies & ontologies
- Skill registration tools / passports
- Skill matching tools
- Skill development tools / learning environments (lifelong learning)





Potential

1. Improved labour matches

- a. Better insight in demanded skills
- b. More fine-grained insight into candidates
- c. Larger pool of candidates

2. Different way of pre-selection → more objective?



Potential

3. More insight into development potential of suppliers of labour
4. Increased insight & confidence in personal skills development
→ lifelong learning
5. Insight into new / other career options
6. Improved strategic planning for organizations
7. Improved labour market intelligence

Which skills does Sanne already possess?

Chef in a restaurant Chef-koks restaurant

Geeft leiding aan keukenpersoneel van een restaurant en bereidt maaltijden.

..which are also demanded for the position of chef?



Skills (partly) informally learned

Skills used in former job



Prepare dishes
Garnish dishes

Cost-efficient working
Accounting

Place orders
Select suppliers
Negotiate contracts
Explain procedures
Make schedules
Recruit staff

Taken
 Soft skills
 Belang taak of skill
essentieel

Taakomschrijving	Belang skill
Menu's samenstellen	essentieel
Nieuwe recepten uitwerken	essentieel
Gerechten bereiden	essentieel
Gerechten opmaken	essentieel
Toezicht houden op de bereiding van gerechten	essentieel
Activiteiten van teams coördineren	essentieel
Veilig en hygiënisch werken volgens HACCP richtlijnen	essentieel
Naleving bewaken van veiligheidsprocedures	essentieel
Kostenbewust werken	essentieel
Administratie voeren	essentieel
De voorraad beheren	essentieel
Bestellingen voorbereiden	essentieel
Bestellingen plaatsen	essentieel
Leveranciers, onderaannemers of dienstverleners selecteren	essentieel
Contracten onderhandelen	essentieel
Bedrijfsprocedures en werkwijzen toelichten	essentieel
Personeelsplanning maken	essentieel
Personeel werven	essentieel



What are the main challenges?

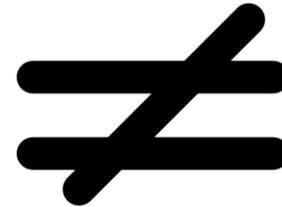
1. Proving skill levels
&
1. Weighing skills

Proving skill levels

Skill*

- Leadership
- Team Leadership
- Logistics Management
- C (Programming Language)
- Cross-functional Team Leadership
- Linux
- Leadership Development
- Python (Programming Language)
- Lean Manufacturing

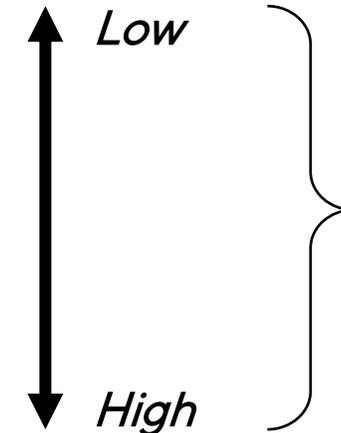
Suggested based on your profile ×



Proving skill levels

Verification dilemma: how to prove skill levels?

1. Self-assessments
2. Subscriptions (managers, teachers, etc.)
3. External assessments (tests, demonstrations, assessments)



*Badges &
skills wallets*

Reliability

But also costs, time, etc.

Weighing skills



≠



Weighing skills

1. Skills all equally, or differentially weighted?
2. Barely discussed: main focus on improvement compared to the **current practice of using tags & filters** (Ballafkih et al., 2021; Cedefop, 2012; Leroy, 2017; Post, 2019; 2022; SEO, 2022; SER, 2021)
3. Two sides of the same coin:
 1. which skills are more and which skills are less essential to employers?
 2. what is the proficiency level of suppliers of labour?

First indications

Surveys

- 59% of the Dutch employers support the idea of a skill passport (Ballafkih et al., 2022)
 - Especially organizations who experience troubles by finding staff
- 50% of the Dutch employees & self-employed workers are supporting the idea (Ballafkih et al., 2022)

Pilot

- Indications that a skill registration tool contributes → self-confidence & self-insight of employees at a Dutch airport (Ballafkih et al., 2022)

First indications

Database analyses

- High correlation between 10 experts' evaluations & the ranking of the skills2graph tool → effective in identifying the correct jobs given a set of user's skills (Giabelli et al., 2021)
- Search results based on skill-profiles → 10 times more Dutch pharmacy assistants compared to a 'classic' vacancy with strict (EQF-4/MBO-4) requirements (Sanders et al., 2022)

More experiments, pilots and (database) analyses are necessary in order to gather evidence to prove the different potential effects

Take-home message

Potential to:

- improve labour matches and careers
- decrease information problems at regional labour markets
- stimulate life-long learning
- stimulate a more inclusive labour market

But: more (academic) evidence supporting the potential of skills matching necessary

Although there are a lot of pilots & experiments with skills matching going on:

- no large-scale skill matching is finding place
- unresolved problems around proving skills levels & weighing skills

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