

GLOBAL HR FORUM

BIG DATA AND SKILLS

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OECD Centre for Skills

<https://www.oecd.org/skills/centre-for-skills>



Labour market transformations

➤ Climate change



Rotation of 18 million jobs globally

Source: Chateau, J. and E. Mavroeidi (2020), "The jobs potential of a transition towards a resource efficient and circular economy"

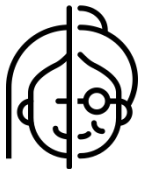
➤ Digitalisation



15% of existing jobs disappear because of automation over the next 15-20 years, and another 32% undergo radical changes

Source: OECD (2019), OECD Employment Outlook 2019: The Future of Work

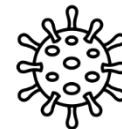
➤ Demographic change



An ageing population will increase demand of healthcare and personal services

Source: OECD (2019), OECD Skills Strategy 2019: Skills to Shape a Better Future

➤ Covid-19

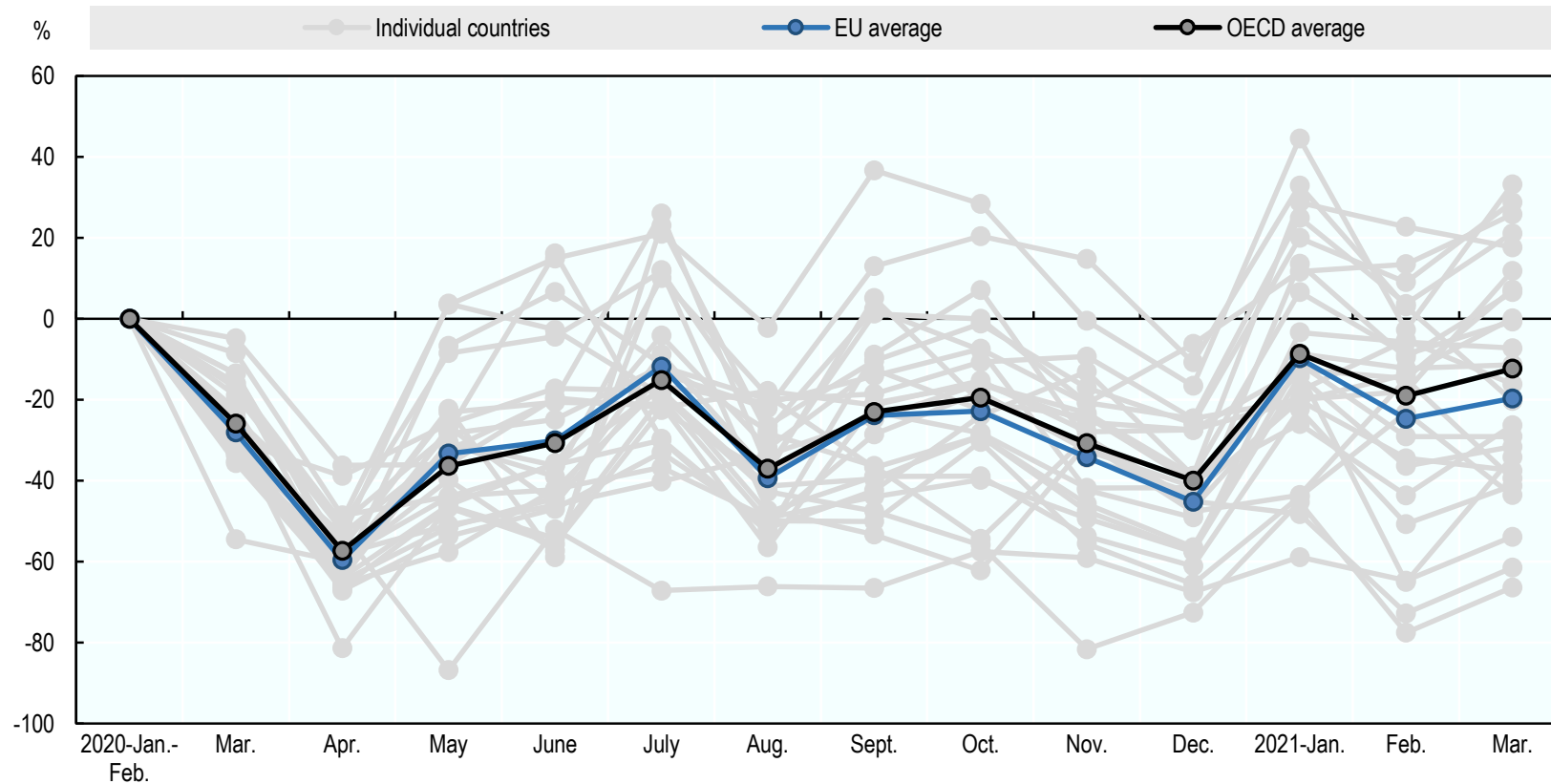


Vacancies for educational, guidance and career counsellors have plummeted (-49%), while demand for community health workers has increased by 11%

Source: OECD (2021), Skills Outlook 2021



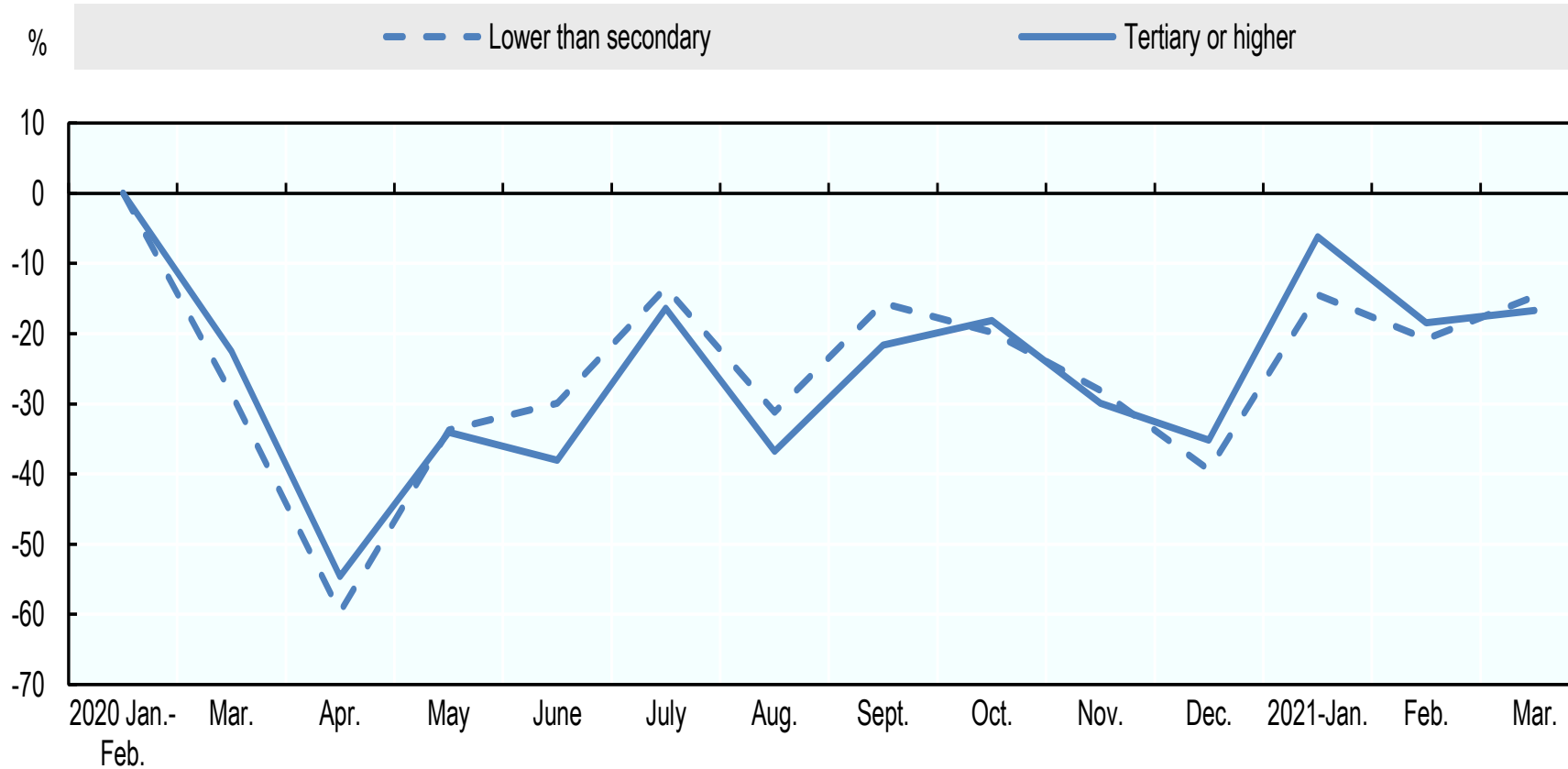
Evolution of online job postings during the COVID-19 pandemic



- Drop in new jobs posted on line by approx. 60% by April 2020
- At end March 2021, jobs posted online still considerably lower than during pre-crisis period



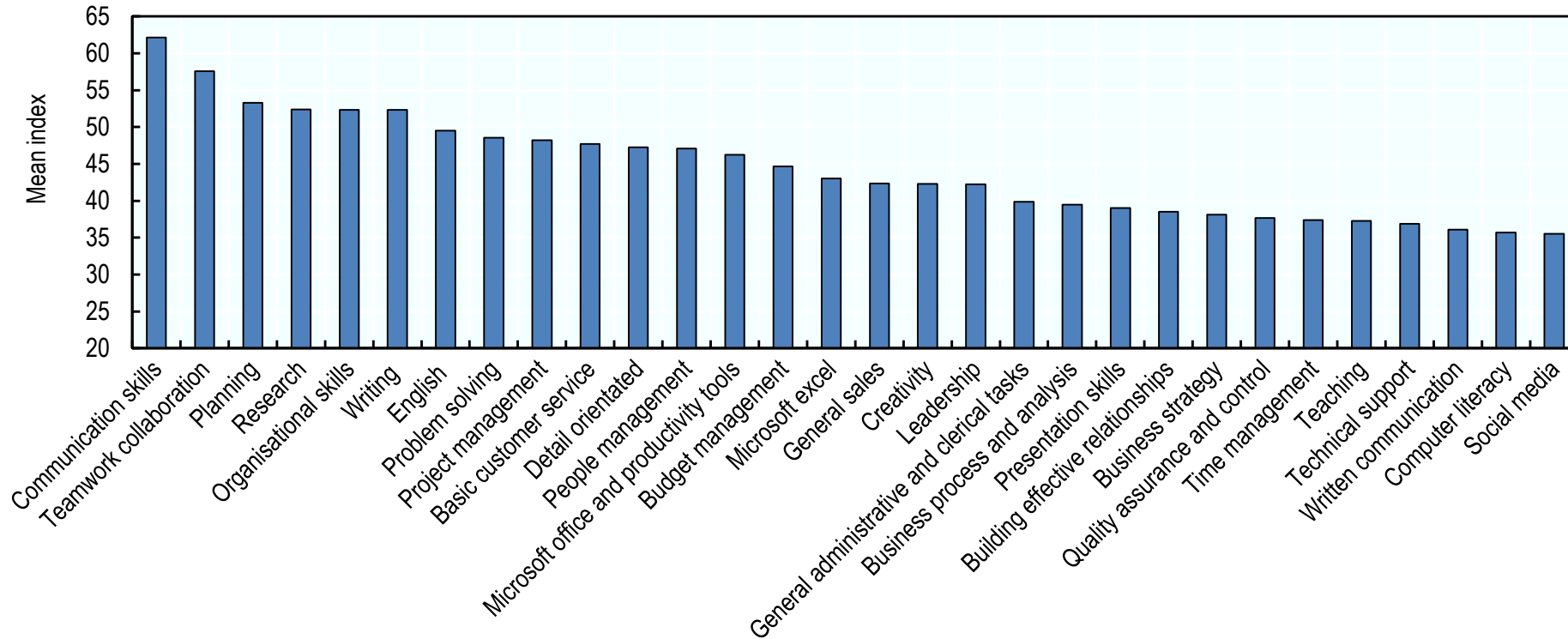
Evolution of online job postings by educational level, OECD average



- COVID-19 pandemic hit all sectors of economy simultaneously
- In March/April 2020 drop in new jobs was sharper for low-skilled jobs



Data driven **Transversal Skill** approach



- List of 30 most transversal skills across online vacancies in UK between 2017 and 2019
- Digital skills or ability to operate a digital technology are competences needed across jobs



Exploiting **Big Data** Information on Labour Market

Where does the data come from?

Burning Glass Technologies (BGT)

- **100M+ online vacancies**
- **14 000 skills** (digital, technical, transversal)
- **700+ occupations** (...counselor, music teacher, wind turbine technician...)

What is the data source?

Job advertisements posted by firms

- Source not primarily designed for labour market and skill analysis
- Firms post job advertisements to attract best candidates to vacant posts



The power of **Big Data** in the labour market

Source

Primary role

Secondary role

Online job advertisements

Source for employers /
individuals in times of skill
shortages / skill
underutilization

Uncovering trends in
sectoral, occupational or
skills information

Online CV's

Source to promote
individuals to prospective
employers

Insights into jobseekers'
skills, work experience,
career paths, mobility,
engagement in training
and learning

Potential
gaps
between
education
and training
provision
and skills
needs



Value added of **Big Data**





Big Data for skills policy in practice

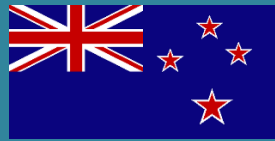


UK

Occupation shortage

Assessment of which skilled occupations are in shortage

Migration Advisory Committee (2020): Review of the Shortage Occupation List: 2020



New Zealand

Education and career

Information based on the trend in the number of online job advertisements per occupation in the mobile app *Occupation Outlook*

<https://occupationoutlook.mbie.govt.nz/>



Malawi

Education and Training

Use big data from online job portals to support evidence-based TVET policies

UNESCO (2019): TEVET Policy Review Malawi



Unleashing the full potential of **Big Data** demands awareness

➤ **Representativeness**

- Vacancies in some sectors and occupations are over-represented in online data

➤ **Completeness**

- Skills listed in a vacancy notice do not reflect the full job profile

➤ **Maturity**

- Patterns of use of online job advertisements portals differ both across and within countries

➤ **Ethical considerations**

- Ethical standard and privacy regulations need to be respected when gathering, storing, processing, analysing and presenting big data

➤ **Disclosure of information**

- Transparency of methods



What the future holds

- **So far**, much progress has been made on the **skills demand** side by exploiting online job advertisements
- **However**, much less is known about the **skills supply** side, where information from CVs could be exploited
- Combining information on **skills supply** and **demand**, information retrieved from **Big Data** has the **potential** to identify **skills gaps** and to **shaping effective education and training and skills policies in the coming years** and can **complement** traditional labour market information



Conclusions

- The expectations of web-based **Big Data** as a game changer in skills analysis are high because of its potential in offering more granular information in (quasi) real time
- The information has the **potential for labour market actors** to better understand skills demand and its dynamics in granular detail (geography, education level, occupation/sector, etc.)
- **This information can guide policy making to build more resilient Education and Training systems and support individuals in acquiring skills and competencies that are truly relevant in labour markets and society**



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