

AI ~~and~~ Teaching and **in** Learning in the Future University

Considerations for developers of AI technologies

Advocating for an intentional focus on

Disability and Transformation

Consideration S

1. South African socio-economic realities may hinder the extent to which artificial intelligence can be integrated into higher education?
1. Commitment towards principles of universal design and Web Content Accessibility Guidelines (WCAGS) as the basis for any Artificial Intelligence integration in teaching and learning
1. Responsive curriculum: The future of the university in relation to the needs of the labour force

Socio-economic realities that affect teaching and learning

1. Internet access (at home) : 10% of Households do not have fibre-based home connections (Census 2022)
2. 1% of rural households have fibre connection (ICASA 2023)
3. Usage gap persists across income levels; location and by gender (ICASA, 2023)
4. SA Connect - decentralizing internet access to community
5. Access to learning hindered by gender-based violence in community and in universities

Provocation

AI does offer opportunity to higher education and is changing how we learn and produce knowledge

South Africa's inequalities will be exacerbated by AI if there is not a simultaneous focus and response

However, AI provides a strategic opportunity to conduct big data intersectional analysis between teaching, learning, operations, health, wellness and social inclusion in order to address inequality as experienced on campus

AI and Considerations for Students with Disability



Learning from current challenges

Web Content Accessibility Guidelines



Costly omission



Designing for all students

Adopting the UDL and WCAG principles from the point of design through to launch of the tool

AI can be a powerful tool in teaching and learning for students with disabilities in several ways:

1. **Personalized Learning:** AI-driven platforms can adapt content to meet individual learning needs, providing tailored resources that align with each student's abilities and learning pace.
2. **Speech Recognition and Synthesis:** Tools like speech-to-text can assist students with writing difficulties, while text-to-speech can help those with reading challenges.
3. **Visual Supports:** AI can create visual aids and interactive content that help students better understand complex concepts, particularly for those with autism or other learning disabilities.

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4. Behavioural Tracking: AI systems can monitor student engagement and behaviour, providing insights that help educators adjust strategies and support.
5. Virtual Assistants: AI-powered chatbots and virtual tutors can offer additional support outside of classroom hours, answering questions and providing resources tailored to the student's needs.

AI can be a powerful tool in teaching and learning for students with disabilities in several ways:

6. Accessibility Tools: AI can enhance accessibility features in educational software, making materials more usable for students with various disabilities.

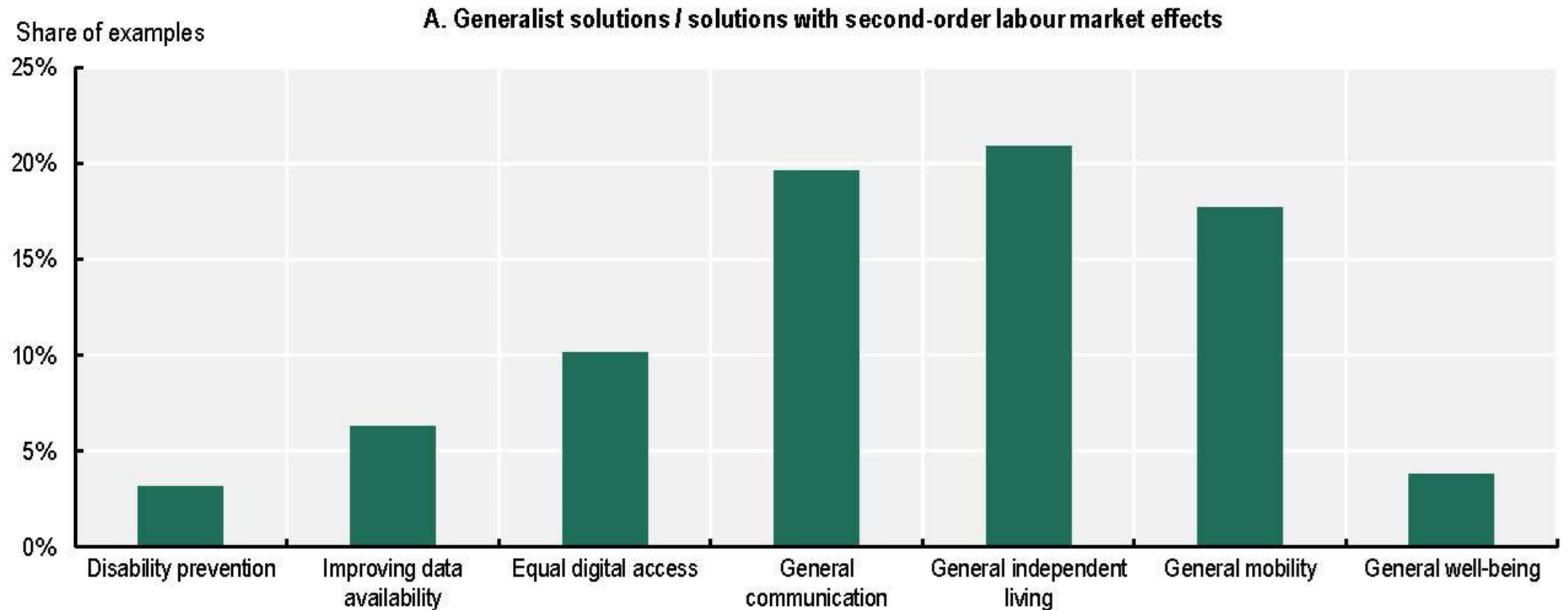
7. Gamification: AI can power educational games that adapt to students' skills and challenges, making learning more engaging and effective.

8. Collaborative Tools: AI can facilitate collaboration between students, promoting social interaction and teamwork among peers with different abilities.

Industry use of AI for Disability Inclusion

(OECD, 2023)

Figure 1.1. Where on the path to employment do most AI-powered solutions intervene?



Accessibility technologies in Education

- Speech to Text
- Read and Write Gold
- Voice it
- Euphonia (Speech)

- **Ethical considerations for procurement, investment**
- **Licensing Costs**
- **Accessibility to internet (mobile data)**



Provocation

AI technologies can create more inclusive learning environments and support students in achieving their educational goals

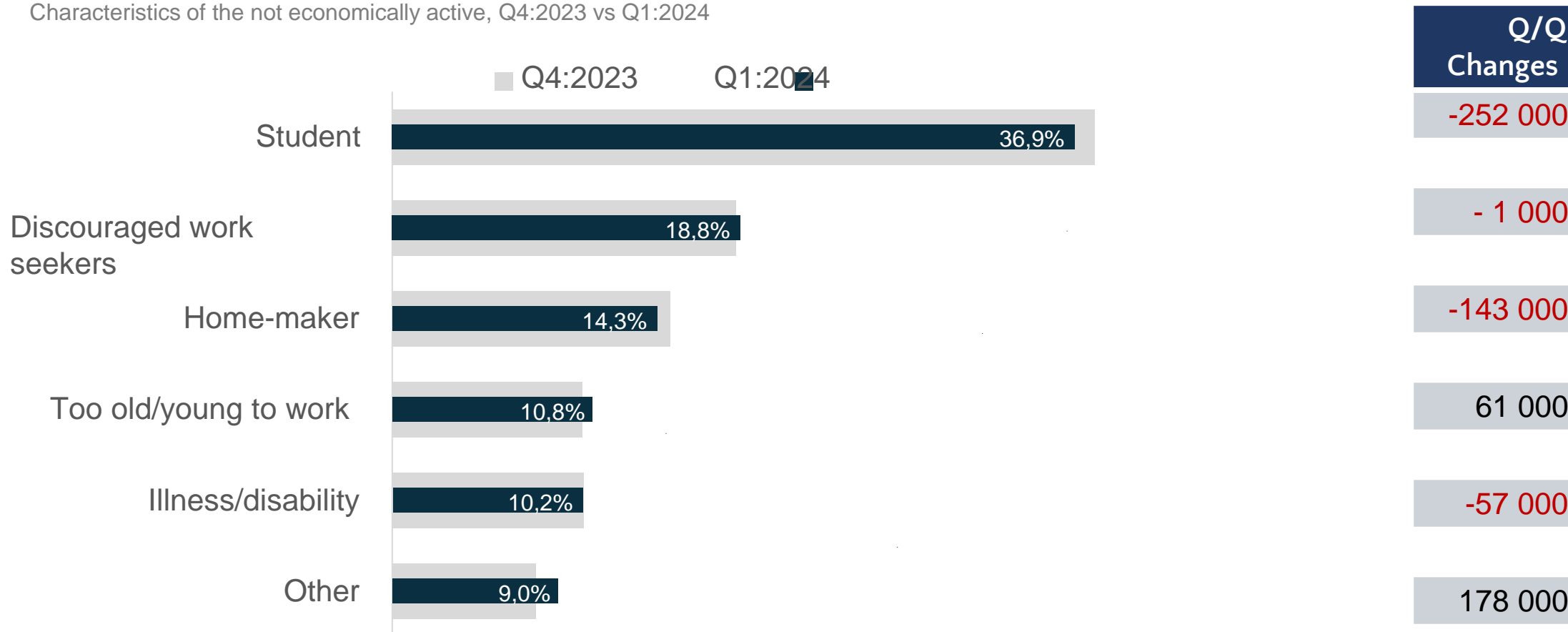
When developed on the basis of universal design for learning (WCAGS)

Where are the assistive tools designed by and for African universities in multiple languages?

Responsive curriculum? The future of the university in relation to the needs of the labour force (OECD)

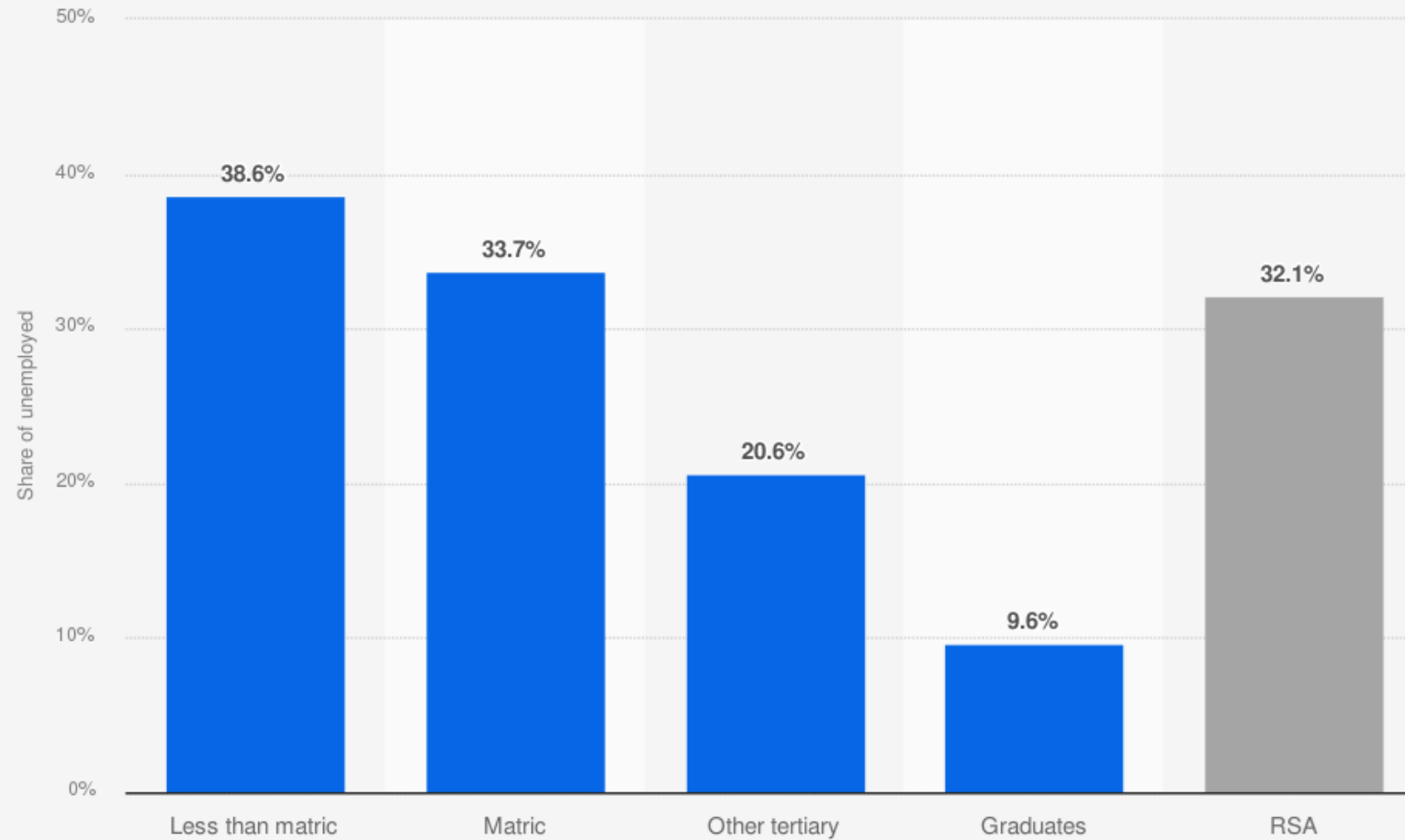
The number of Not Economically Active persons decreased by 215 000 in Q1:2024 compared to Q4:2023

Characteristics of the not economically active, Q4:2023 vs Q1:2024



Due to rounding numbers may not add up

Share of unemployed in South Africa in the fourth quarter of 2024, by education level



Source
Statistics South Africa
© Statista 2024

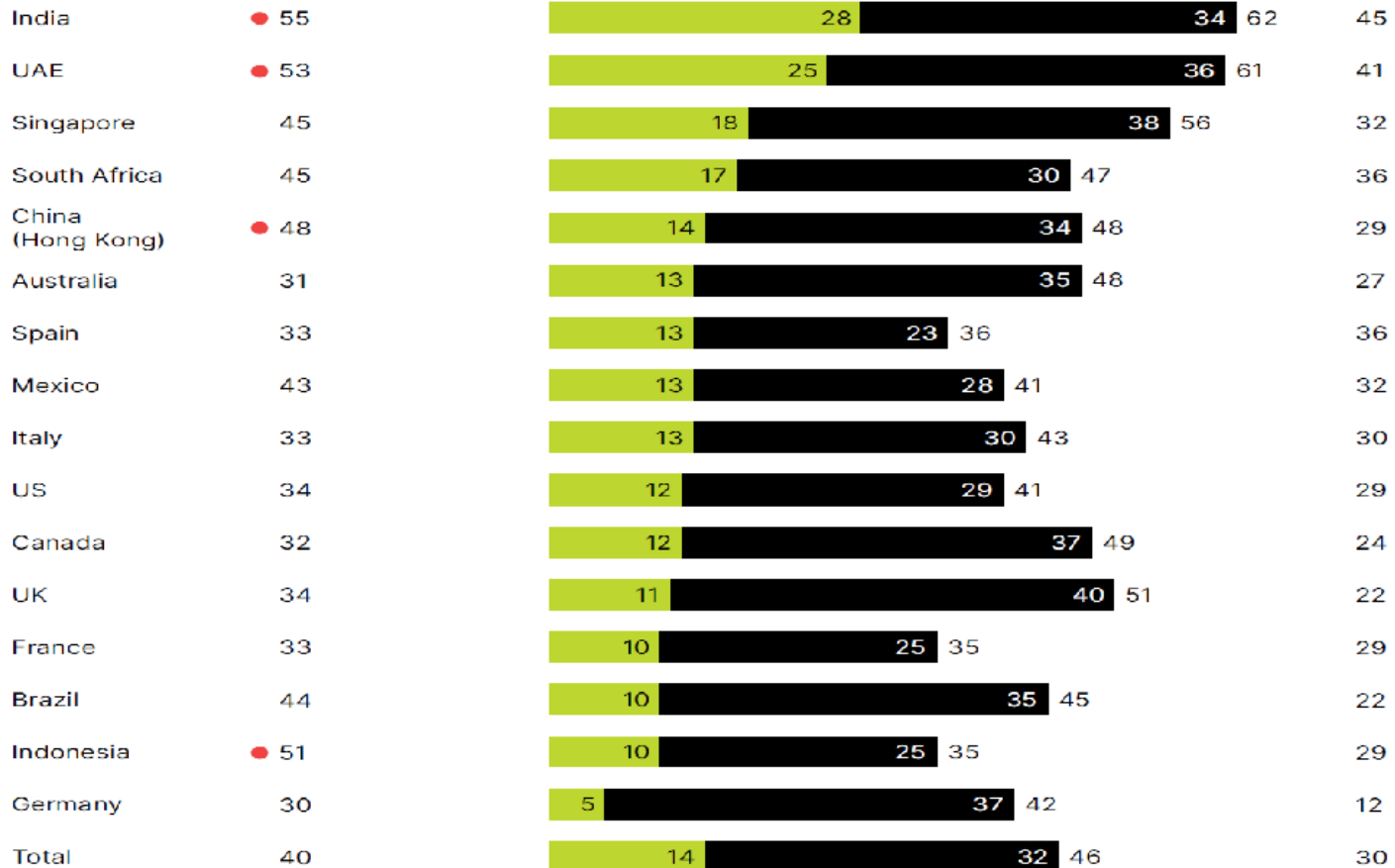
Additional Information:
South Africa; Q4 2023

Anticipated disruption due to generative AI is contributing to the global trend of job-seeking

Employees globally recognize the threat of generative AI automation...
Perceived % of own job that could be automated, by country

...which may be driving them to seek new jobs
% job-seeking employees, by country

% overall job-seeking due to generative AI



● High perceived threat

● Job-seeking due to AI disruption

● Job-seeking due to other factors

Question: "How much of your job do you think could be automated using AI?"; "Which of the following describes your current situation? — 'I am actively seeking a new job' or 'I am passively seeking a new job'"; "What actions have you taken in response to potential AI disruption in your field/industry? — 'job seeking'."

Source: Oliver Wyman Forum Generative AI Survey, October–November 2023, 16 countries, N=16,033, N=15,227 and N=16,033

Utilize the curriculum to make students aware but exercise caution and due diligence in the unethical use and benefits of technology

IMPORTANT NUMBERS

\$20 trillion

(20% boost) to global GDP by 2030

300 billion

work hours saved globally each year, equivalent to an average of roughly two hours per person weekly

More than 50%

of employees say they use generative AI weekly at work

96%

of employees say generative AI can benefit their jobs

60%

of white-collar workers say they fear their roles will become redundant or automated

57%

of employees report they are currently receiving insufficient AI training from their employer

30%

of jobseekers have begun looking for a new role due to generative AI

40%

increase in labor productivity by 2035 across developed countries

Provocation

Universities as the brain trust of the nation have to interrogate and define what drives the change AND the pace that the university intends to change

Protection of the knowledge production in the face of an urgency that has been defined for Africa by who?

Thank you