AI and Education

Teachers PD | 13 Dec 2023

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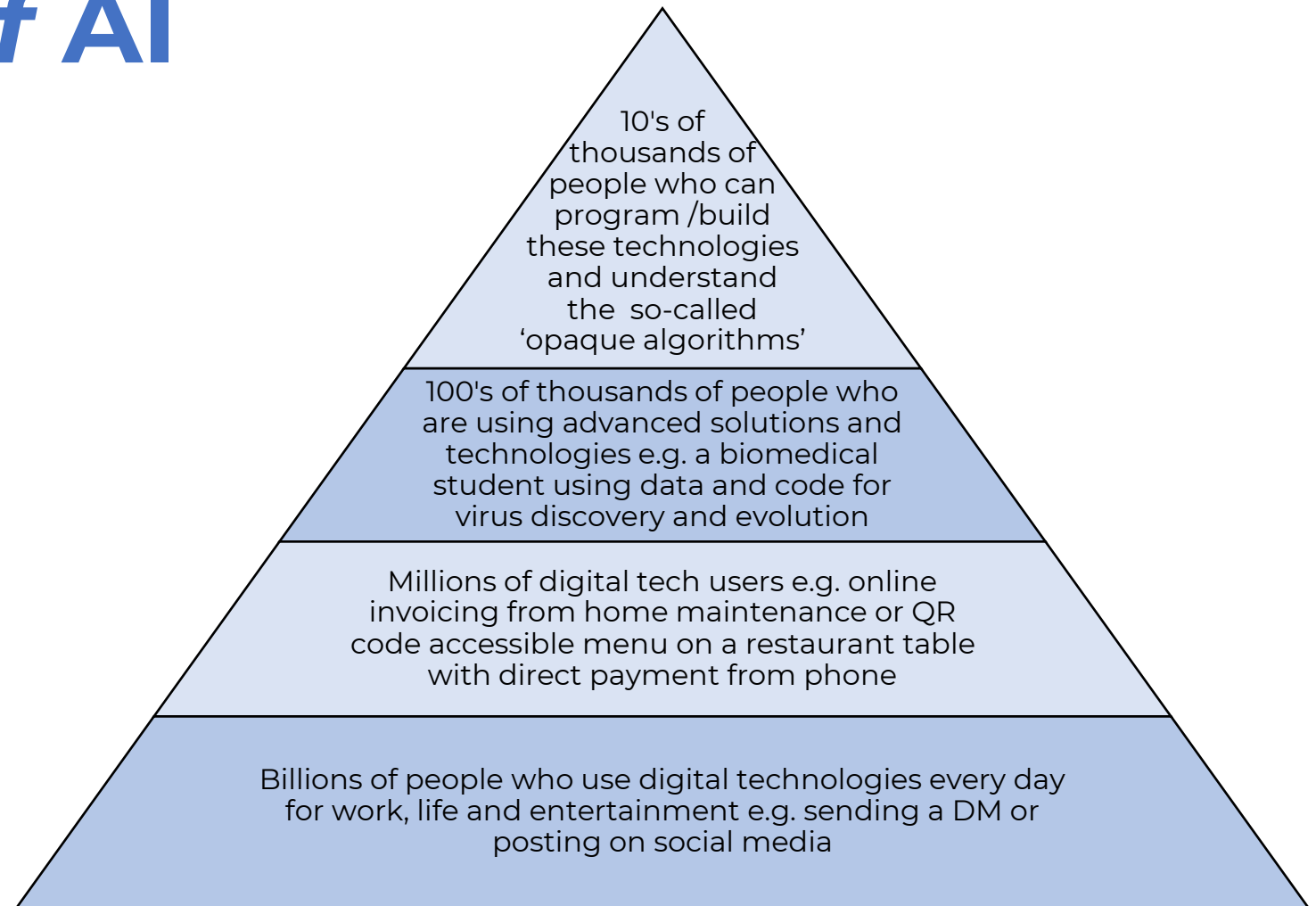
Tomorrow's Tech Leaders

Education *of* AI

Numerous reports[1] indicate acute skills shortages with demand for digitally skilled workers expected to increase to

1.2Million by 2030

10's of thousands of people who can program /build these technologies and understand the so-called 'opaque algorithms'

100's of thousands of people who are using advanced solutions and technologies e.g. a biomedical student using data and code for virus discovery and evolution

Millions of digital tech users e.g. online invoicing from home maintenance or QR code accessible menu on a restaurant table with direct payment from phone

Billions of people who use digital technologies every day for work, life and entertainment e.g. sending a DM or posting on social media

Digital Skills Pyramid

[1]Tech Council of Australia

Human AI Teaming

Education *for* AI

- 7 out of 10 fastest growing jobs are related to IT [1]

- More than 75% of companies are looking to adopt AI, big data and cloud technologies in the next 5 years [1]

- Structural labour market churn of 23%, (an aggregate measure of disruption with a decrease of 14 million jobs) [1]

- Need for AI-Employee Alliance and AI Aptitude to reduce digital debt [2]

- Business leaders are 2X more likely to be interested in productivity increase than headcount decrease [2]

AI isn't yet going to take your job — but you may have to work with it [3]

1. World Economic Forum. Future of Jobs report 2023
2. Microsoft 2023 Work Trend Index Annual Report. Will AI Fix Work?
3. Danielle Abril. AI isn't yet going to take your job — but you may have to work with it. Washington Post. March 20, 2023

AI in the classroom

Photo Ack: Chris Dede.
Educating in a world of AI.
Harvard EdCast. Feb 2023

Education *with* AI

By 2025, more than 1 billion students forecast as consumers of EdTech

HolonIQ 2022 North America EdTech200 https://www.holoniq.com

AIEd – Challenges & Opportunities

- Integration into educational ecosystem [3]

- Training to build educators' competence

- Lack of pedagogical soundness, inaccuracies and biases

- Social license [3] and equity concerns [2]

- AI regulation for education [1]

- Data sources, ownership and privacy [3]

- Limited research to evaluate effects on student learning and experience

- Personalised tutoring and feedback at scale [4]

- Content creation and adaptation

- Scaffolding learning activities (GenAI)
    - Class syllabus
    - Learning objectives
    - Lesson plans
    - Rubrics

- Boosting educator productivity

- Learner empowerment [3]

1. Holmes, Wayne, Jen Persson, Irene-Angelica Chounta, Barbara Wasson, and Vania Dimitrova. Artificial intelligence and education: A critical view through the lens of human rights, democracy and the rule of law. Council of Europe, 2022.
2. Judy Kay. Grand Challenges for Pervasive Technology to Transform Pervasive Education. IEEE Pervasive Computing 21, no. 3 (2022): 32-41.
3. Dragan Gašević, George Siemens, Shazia Sadiq. Empowering Learners for the age of Artificial Intelligence, Computers and Education: Artificial Intelligence. 2003
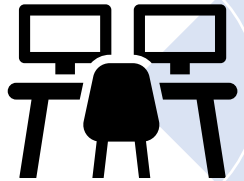4. Ali Darvishi, Hassan Khosravi, Shazia Sadiq, Dragan Gasevic: Incorporating AI and learning analytics to build trustworthy peer assessment systems. Br. J. Educ. Technol. 53(4): 844-875 (2022)
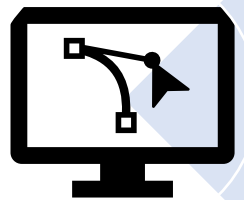
AI and Education

Education *of* AI — and implications for curriculums and cohorts

Education *for* AI — in future work environments that are inseparable from technology

Education *with* AI — technology enhanced education platforms and tools

•Ali Darvishi, Hassan Khosravi, Afshin Rahimi, Shazia Sadiq, Dragan Gasevic: **Assessing the Quality of Student-Generated Content at Scale: A Comparative Analysis of Peer-Review Models**. IEEE Trans. Learn. Technol. 16(1): 106-120 (2023)

•Hassan Khosravi, Simon Buckingham Shum, Guanliang Chen, Cristina Conati, Yi-Shan Tsai, Judy Kay, Simon Knight, Roberto Martínez Maldonado, Shazia Sadiq, Dragan Gasevic:**Explainable Artificial Intelligence in education**. Comput. Educ. Artif. Intell. 3: 100074 (2022)

•Ali Darvishi, Hassan Khosravi, Shazia Sadiq, Dragan Gasevic: **Incorporating AI and learning analytics to build trustworthy peer assessment systems.** Br. J. Educ. Technol. 53(4): 844-875 (2022)

•Shiva Shabaninejad, Hassan Khosravi, Solmaz Abdi, Marta Indulska, Shazia Sadiq: Incorporating Explainable **Learning Analytics to Assist Educators with Identifying Students in Need of Attention**. L@S 2022: 384-388

•Hassan Khosravi, Gianluca Demartini, Shazia Sadiq, Dragan Gasevic: **Charting the Design and Analytics Agenda of Learnersourcing Systems**. LAK 2021: 32-42

•Solmaz Abdi, Hassan Khosravi, Shazia Sadiq, Dragan Gasevic: **Complementing educational recommender systems with open learner models.** LAK 2020: 360-365