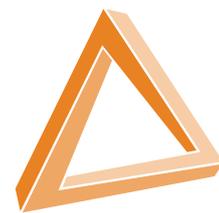


Byte-sized edtech research



Perceived credibility of educational research evidence

The hierarchy of the perceived credibility of educational research evidence



NEUROSCIENCE



EDUCATIONAL
PSYCHOLOGY



ARTIFICIAL
INTELLIGENCE

- Studying public perceptions of Artificial Intelligence (AI) is challenging for many reasons, not least because there is not a clear definition of the term 'AI'.
- Even in the narrowest definitions, AI refers to a broad constellation of computing technologies including numerous machine learning approaches.
- For AI to be adopted effectively, it is important to create a shared understanding between the key people involved, which includes educators and academia, but also the public (Cukurova et al. 2019).
- The speed of invention and application of AI, as well as the excitement around it, has led researchers to question if explanations of AI exert a "seductive allure" on people, leading them to judge bad explanations or arguments framed in AI more favourably (Giattino et al. 2019).
- In their research, Fernandez-Duque et al. (2015) concluded that there is a hierarchy of allure when it comes to superfluous information on certain sciences.
- Information from neuroscience was considered more alluring than that of social sciences, and that in turn was more alluring than information from hard sciences, such as chemistry, biology, and genetics.
- When those questioned had limited knowledge of the scientific method being reported, the credibility they awarded to neuroscience research was even bigger (Rhodes et al. 2014).
- Therefore, the familiarity of participants with a topic is a significant confounding factor that should be taken into account while investigating public perceptions of research credibility (Im et al. 2017).

“Compared to Neuroscience and Educational Psychology, AI was considered the least adherent to scientific methods by our participants”

(Cukurova/Luckin/Kent, 2019)

“Currently, in the field there appears to be a lack of engagement by academics with public, practitioners and developers, to provide accessible research evidence and guidance on AI implementations in Education”

(Cukurova/Luckin/Kent, 2019)



01 Does the credibility of educational research evidence change depending on where it's from?

When educational research evidence is framed within AI research, it is considered as less credible compared to when it is framed within neuroscience or educational psychology.

Cukurova et al. discovered that the bias in perception is still evident even when the subjects' familiarity with the topic is controlled for. This was true also for educators.

Neuroscience was considered as a more prestigious discipline than AI and Educational Psychology.

These results are aligned with previous research that showed college students perceived neuroscience as a more prestigious discipline than natural science, psychology, social psychology, and social sciences (Fernandez-Duque et al. 2015, experiment 2).

Conclusion: People appear to judge an educational evidence's credibility depending on what research field the evidence comes from. If it comes from the Neuroscience or Educational Psychology fields, educational research evidence is considered more credible than the AI field.

02 The reputation of AI in education

Perceived credibility, which is a subjective measure shaped by the impressions of the observer, can be formed in different ways and it is affected by what we already know about and our interpretations of a topic. The media attention and excitement around AI's current applications can skew the perceived credibility of educational evidence generated from this field.

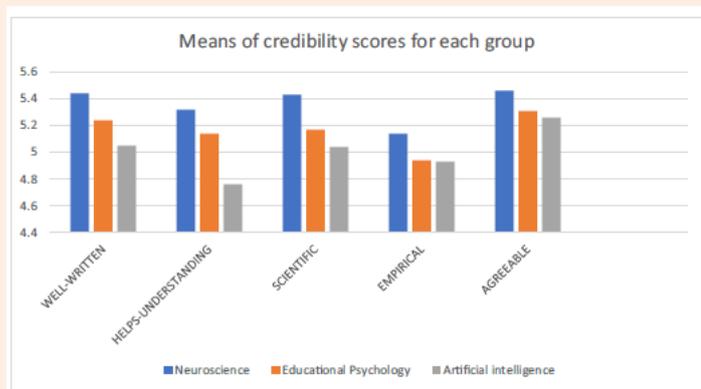


Fig 1. unadjusted means for each frame and each dependent variable, Impact of an AI Research Frame on the Perceived Credibility of Educational Research Evidence (Cukurova et al. 2019)

Conclusion: Results from the Cukurova et al. (2019) study indicate that the general public perceives AI to be: less helpful in assisting us to understand how children learn, lacking in adherence to scientific methods, and that it is less prestigious compared to neuroscience and educational psychology.

Suggestions:

- EdTech developers/researchers should consider the research framing of the evidence they are generating and presenting.
- There should be significant attempts to recover the public image of AI being less scientifically robust and less prestigious than other educational sciences.
- Key stakeholders in both AI and education must engage with one another to potentially mitigate such effects, however, there is a lack of systematically reviewed evaluation reports on AI technologies and most independent AI in Education research is not accessible to educators or the public.
- Providing training opportunities on the basics of AI might mitigate the adverse effect of AI framing.