

Understanding the construct of ‘future skills’: some critical reflections emerging from a comparison of recent and older future skills frameworks

Conference abstract

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Abstract

A key mission of education is to equip learners with ‘future skills’, that is, skills which are essential for navigating both the challenges and opportunities of the future (e.g., critical thinking, problem solving, communication skills, collaboration skills, digital literacy) (Elhussein, 2023; OECD, 2019). To be able to evaluate the extent to which education has succeeded in achieving this mission, appropriate assessment instruments need to be developed. This paper seeks to inform the process of assessing students’ preparedness for the future by sharing some critical reflections on the construct of future skills. These reflections, which were systematised into a typology of future skills attributes, help to enhance our understanding of the nature of the target construct, while contributing a critical perspective to the relevant field. Rendering the construct of future skills more transparent is arguably a key prerequisite for assessing it more effectively.

The reflections shared as part of this presentation emerged from a study which aimed to investigate whether any new future skills have arisen in recent years (2021-2024). During 2021-2024, unprecedented developments took place which have reinvigorated the discourse on future skills (e.g., COVID-19 pandemic, launch of ChatGPT and of other similar chatbots), potentially leading to new skills being viewed as essential for the future. The study we conducted took the form of a systematic review of both academic and grey literature on future skills frameworks. Three commonly used academic databases in the education field were searched (i.e., Scopus, Education Resources Information Center [ERIC], and British Education Index [BEI]), as well as the websites of various institutions (e.g., OECD, UNESCO, UNICEF, ETS). The review led to the identification of 35 future skills frameworks developed or updated between 2021 and 2024. Overall, these consisted of 562 skills. To assess their degree of novelty, these skills were mapped to an existing meta-framework of future skills developed by Kotsiou et al. (2022). The reference meta-framework resulted from the analysis of 99 future skills frameworks that spanned a 20-year period, from 2002 up to 2021. As such, this meta-framework served as a useful benchmark for our comparison.

The analysis of the corpus of 35 frameworks and the mapping of its constituent 562 skills to Kotsiou et al.’s meta-framework led to a number of interesting observations about the nature of the construct of future skills. These observations were subsequently synthesised into a typology of attributes that helped to further clarify the nature of the target construct. These attributes included: *responsive*, *evolving*, *heterogeneous*, *engineered*, *atheoretical*, *open-ended*, *elusive* and *repetitive*. For example, the mapping process revealed a number of skills which did not seem to align fully or at all with the reference meta-framework (i.e., ‘partially aligned skills’ and ‘non-aligned skills’). These represented instances of divergence between the two corpora of frameworks and helped to capture a series of ‘emerging future skills’, that is, skills arising from 2021 onwards (e.g., ‘coping with uncertainty’; ‘AI literacy’; ‘digital ethics literacy’; ‘fact-checking skills’; ‘understanding biases’). A closer look at these skills suggests that these may have emerged in response to recent developments (e.g., COVID-19 pandemic; advent of advanced generative AI chatbots; spread of misinformation due to the extensive use of social media), illustrating the *responsive* nature of the construct of future skills. The majority of these emerging future skills did not constitute entirely new, stand-alone skills but were, in fact, subsets, or sub-skills, of existing skills. These sub-skills largely represented either new or less acknowledged dimensions of already established constructs. Through their introduction into future skills frameworks, these sub-skills arguably helped to

refine, further clarify, or enrich existing constructs by illuminating or highlighting additional facets of them. For instance, 'AI literacy' and 'digital ethics literacy' represented additional aspects of 'digital literacy', resulting in 'digital literacy' becoming a broader, more intricate, more multifaceted, and ultimately more complex construct. This is arguably illustrative of the *evolving* nature of the construct of future skills.

This presentation will introduce and exemplify the typology of future skills attributes emerging from this study. It will also reflect on the implications of these attributes for the assessment process.

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