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Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Enhancing productivity with custom GPTs to support curriculum development

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At the Centre for Digital Transformation of Health, we develop a range of postgraduate and professional development courses designed to upskill the healthcare workforce in digital transformation. Our course development is informed by the ADDIE framework (Branch, 2009). During the *design* stage, we leverage the Understanding by Design (UbD) framework by Wiggins and McTighe (2005). UbD uses a backwards design process that starts with the outcomes in mind that constructively align with the assessment and learning activities. This process can be challenging for subject matter experts (SMEs) with little pedagogical training (Cho and Trent, 2005; Michael and Libarkin, 2016), particularly in designing topic-level learning outcomes using Bloom's Taxonomy (Bloom et al., 1956); outlining key understandings, the big ideas and their practical applications (Wiggins & McTighe, 2005); and separating what learners should know from how that knowledge will be applied. Consequently, substantial hours are dedicated to 1:1 coaching sessions to ensure effective development of learning outcomes and content. Our driving research question is how can generative AI improve our efficiency of working with SMEs with little pedagogical knowledge?

We therefore integrated ChatGPT into the curriculum design process (Conrad and Hall, 2024). However, instead of using a standard instance of ChatGPT that relies on effective prompt engineering by the user, we iteratively developed two custom GPTs ([Bloomify](#) and [UnderstandMe](#)), using OpenAI's *GPTbuilder*. These GPTs constrain and customise ChatGPT's output without requiring coding knowledge. The build process starts by explaining to the *GPTbuilder* what you would like your custom GPT to help with, followed by iterative prompting about specific functions, behaviours, and additional materials to constrain the GPT's responses. *Bloomify* translates unrefined topic aims from SMEs into three *bloomified* learning outcomes across three Bloom's levels for the SME to consider, iterate and improve upon. *UnderstandMe* uses the topic outcome created by *Bloomify* and helps the SME conceptualise the big ideas, key understandings, and the practical application of the knowledge they will learn in the topic. This approach keeps the SME at the centre of the process, rather than offloading the entire curriculum design process to ChatGPT, which was described by Conrad & Hall (2024).

Early results of implementing the GPTs are promising. We observed a significant boost in efficiency, enabling us to complete twice as many UbD templates per hour of coaching. This suggests that GPTs could offer a substantial improvement in time efficiency and offer a simple way of reducing the cognitive burden of the backwards design process for SMEs and learning designers. These time savings are then reallocated to other aspects of the course development process providing the opportunity for richer collaboration between SME and learning designer. We have provided links to both GPTs, both of which are discipline-agnostic, to support the broader learning design and academic community through the backwards design process within their respective disciplines. Further evaluation of these tools will focus SME perspectives of using the GPT during collaborative course development and to investigate how these tools will influence the social norms of course design in the future.

Keywords: ChatGPT, generative AI, backwards design, educational design, learning designer

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