Examples of digital technology that can build career adaptability and / or improve learner motivation

This resource is intended to give applicants for the CareerTech Challenge Fund inspiration about the sorts of innovative tech innovations that have potential to build career adaptability skills and / or motivation to learn. Although career adaptability and motivation to learn are different, there is a crossover in the kind of tech solution that address both. For example:

- **Use of artificial intelligence (AI) and machine learning**

Thoughtful use of AI can be an enabler for learners in its ability to deeply personalise content, timing, sequencing and responsiveness of learning. It can also play a role in helping remove some of the barriers to learning and improve motivation

AI and machine learning are already taking hold in the education world to understand and guide learning, as well as reduce teacher workload. Examples include ***Century Tech***, one of a number of AI-driven solutions aimed at compulsory education, and ***IBM's collaboration with Pearson*** that can quiz students at personalised points, and have a dialogue with students about comprehension.

Beacon, a technology developed by ANS, is being deployed at Bolton University to support learners with routine curriculum questions, prompt learners to focus or strive for that next step, and even remove some of the life administration that is an obstacle or distraction to learning, for example applying for council tax exemption.

There is potential for AI to be used to further personalise learning as a way to build career adaptability and sustain learner engagement. Learners seeing content relevant to them, which takes into context that particular learner's previous experience or norms could be a powerful tool to build curiosity, confidence and improve intrinsic motivation.

One interesting example from beyond CareerTech and EdTech is ***Netflix's*** personalisation of new adverts to pique interest from new audiences. To attract viewers to watch new, less familiar content, Netflix is starting to create different homepage imagery tailored to specific viewer preferences. For example, to entice the viewer to watch, say Stranger Things, when their normal viewing preference was for teen romance show, Netflix will create artwork emphasising these relationships in the series and load this onto the viewer's listing page.

Applying a similar process to learning content might then mean content and examples for learners could be adapted based on their preferences, piquing curiosity to explore something different or novel, enticing them to learn a new skill.

- **Virtual reality (VR) and augmented reality (AR)**

Augmented and virtual reality can engage a learner's sense of curiosity, help them explore different options and choices, thereby tapping into intrinsic and extrinsic motivation.

Some examples that point to potential AR or VR solutions to build career adaptability and / or learner motivation are:

Researchers from Texas A&M University and Florida Institute of Technology are exploring how ***Second Life*** can facilitate and enhance the learning process. Second Life has been used to provide an online, virtual alternative for chemistry teaching. In a small randomised-control trial, researchers found students felt less distracted and preferred learning in the virtual world compared to the physical environment.

Augmented reality apps, like ***Daqri***, could provide an interesting opportunity for putting learning and reflection into context, and improve the relevance of learning to everyday life. They are likely to have particular relevance to the development of adaptability and motivation to build technical skills as learners can explore, test and practice in contexts akin to real life without perceived stigma of failure.

- **Gamification**

Online games can play a role in boosting curiosity and commitment as well as intrinsic and extrinsic (in the instance of team games) motivation.

For example, ***Gamelearn***'s Pacific survival adventure challenges the student to escape with a team from a deserted island where they are stranded following a plane crash. The chances of escaping with their lives will depend on the student's ability to manage and motivate the team. Gamelearn has very strong completion rates and 99% of students think that they can apply the contents of what they have learned to their jobs.

Elderquest is a SIM game developed by Florida State University where students roleplay to support a powerful wizard back to good health. In addition to building and testing students' medical knowledge, one assessment found that this method provided medical students with a fun and structured experience that had an effect not only on their learning, but also on their understanding of the particular needs of the elderly population.

- **Digitally enabled collaboration**

Digital tools are able to intelligently pair people and groups together, that in the context of learning and career development can build commitment and extrinsic motivation.

While digital-enabled peer learning already exists in the online learning sector, matching people to provide support based on shared experiences can be particularly powerful. In the health sector, thoughtful and well planned digital pairing has been used to measurable effect in mental health (e.g ***Moodscape***).

In this category we are especially interested in examples that pair learners with others who they are likely to feel a sense of connection to.

- **Machine Vision**

Machine vision can be used to understand people's responsiveness and engagement. This technology has the potential to be used for online learning to be better adapted to individual needs, thereby building intrinsic motivation and curiosity.

For example London-based startup ***Shoppar*** uses computer vision to understand a customer's age, gender, mood, attention and interest so retailers can learn what piques interest with whom. This can build a richer understanding of responsiveness to content so it can be better targeted to different audiences. Chinese tech company, ***AL07*** is experimenting with machine vision and speech recognition in under 18 education to get a sense of learner engagement and enjoyment.