Entrepreneurship Education in Secondary Schools

Partnerships with Industry

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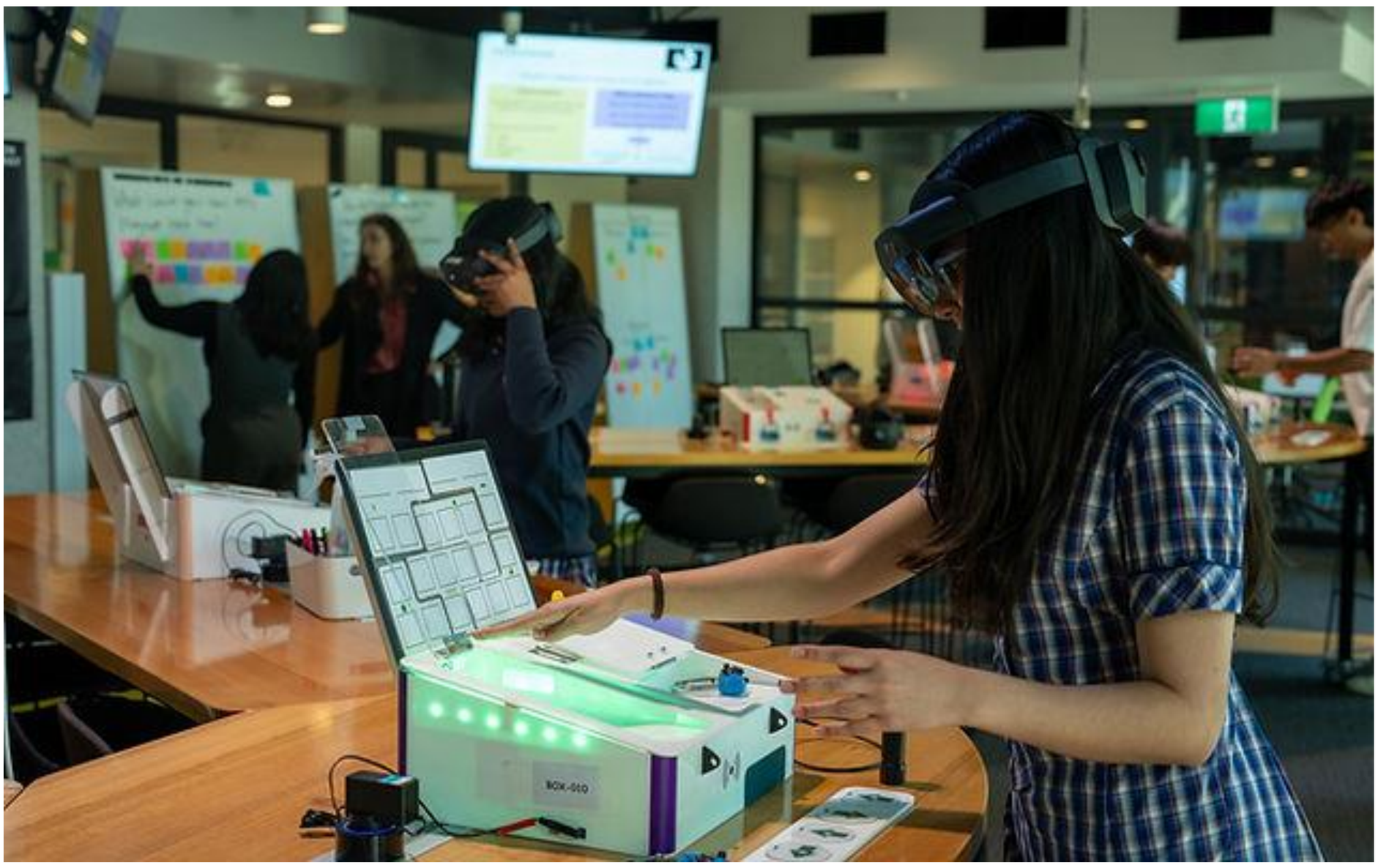
Abstract
Entrepreneurship is increasingly viewed as a critical 21st-century capability, yet in secondary schools, programs are limited and fragmented. Design thinking and experiential learning are promising pedagogies for entrepreneurship education, but require time, expertise, and industry links. These are things traditional schools often lack. Tech Schools in Victoria, Australia address this gap through flexible, industry-connected programs.

Victorian Tech Schools
Established by the Victorian government in 2014, Tech Schools provide high-tech STEM programs for local secondary school students and teachers. The primary purpose of the Tech School Initiative is to increase student engagement in STEM knowledge and skills, and link education with emerging industries. Funded by the Department of Education, but hosted and operated by tertiary institutions, Tech Schools occupy a unique position, straddling the space between traditional schools and industry, which grants them the freedom to innovate and experiment with educational approaches that might be otherwise constrained by conventional school structures or curriculum demands. Tech Schools are also afforded additional resources, such as purpose-built technology centres, recurring budgets for emerging technologies and time allowances for educators to develop ties to industry. Mediation between schools and industry enables industry-generated problems are aligned with students' needs, interests, and local contexts. (https://www.vic.gov.au/tech-schools).



Entrepreneurship as an Extension of Design Thinking

Bluebell Hill uses design thinking as a pedagogical framework for their entrepreneurship program where entrepreneurship bookends the design thinking cycle. The program begins with students conducting an empathy interview with a peer to uncover a specific need as a foundation for a future business or not-for-profit endeavour.

Once a need or gap is identified, students are guided through ideation and prototyping stages, from which they present their ideas to their peers for testing and feedback. Based on the feedback received, students iterate through the design thinking stages to refine and improve their design.

Thus, entrepreneurship within this program was perceived as the set of skills needed to understand the post-design thinking process, particularly, the steps involved in introducing solutions to consumers after the creation of a product: "taking that idea to the next step" (Director).

From Idea to Launch

Jacaranda Vale offers entrepreneurship programs that take students through the entire cycle of product development, from idea generation through to launch: "we're taking a discovery approach, that experiential approach to figuring out what the business is" (Facilitator).

An introduction to entrepreneurship is designed for all year levels and subjects, and delivered in a variety of forms a one or two-day sprint conducted at the tech school, or spanning across an entire term in-school, with specialised sessions at the tech school. "Students will come up with an idea or bring an idea from one of our other inquiry programs" (Director).

Students who need specialised knowledge or skills take part in a supplementary Tech Tutorial to learn how to use the equipment: "The tech of today is not going to be the tech of tomorrow … It is metacognition. It is moving out your comfort zone and learning something new" (Director).

Modelling Enterprise Skills

Wattle Grove offers industry focused programs which integrate real-world contexts and simulated business scenarios. For Wattle Grove, entrepreneurship brings real-world relevance into programs: "entrepreneurship is … a context in which problem solving occurs" (Facilitator).

The entrepreneurship programs emphasise experiential learning and are structured to provide students with firsthand experience of adopting business roles, for example, taking on the role of the CEO or project manager.

> It's a team based collaborative program where students have to form a company, allocate roles and responsibilities within the company, and the outcome is supposed to be the project management of a competitive gaming experience for an audience. So that would involve the planning, the marketing, the branding, the project logistics, and the management. (Director)

Engaging with Industry

Eucalypt Springs has two four-day programs in which students, working in collaboration with either local nurseries or Parks Victoria, apply the design thinking process to consider the future of food production and conservation. Programs are designed around the design thinking cycle: students engage in empathy, designing and building prototypes, and pitching of an idea. Representatives from a local nursery and conservation staff provide students with a design brief, from which students must create a prototype for their given problem and pitch back to industry.

Engagement with industry is at the heart of these programs which are "co-designed with industry. At the start of the week students visit the industries and are challenged by the problem and which they work on at the Tech School, and on the final day students present back to the industry" (Director).

> When they come in and do two days of robotics honestly, who cares? It's just robotics. But they are coming in to do robotics, because [the local water provider] have a problem with blocked pipes because people put things down the toilet. And therefore, I'm going to build a robotic mechanism to unblock the pipe and gather intel. (Director)

Findings Tech Schools offer:

- a mediator between local schools and industry facilitates authentic entrepreneurship education;
- dedicated time and staffing for partnership development address challenges that are often beyond the capacity of individual teachers;
- collaboration with external providers such as startup incubators, to bring firsthand experience and specialised knowledge; and
- design thinking that can be used as a framework to guide students through the entrepreneurial process.

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