

## **Gamification, coding and crossing the road: Innovation in school road safety education in Queensland**

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### **Abstract**

The Queensland Department of Transport and Main Roads (TMR) aims to drive culture change in road safety, including through whole-of-life education. Schools are an essential channel. In Queensland, road safety is an optional part of the curriculum. In 2015, TMR reviewed its resource offering and determined a new approach was needed. The new online program *Journi* was designed to address customer needs through at least three innovative approaches: gamification to promote engagement; links to new curriculum requirements for digital technologies; and provision of practical tools for teachers. TMR is monitoring *Journi* and planning an evaluation. Results will inform further development.

### **Background**

Under the *Queensland Road Safety Strategy 2015-21*, culture change is one of the four principles guiding efforts to reduce serious road trauma (TMR, 2015). In support of this, the Queensland Department of Transport and Main Roads (TMR) is adopting a whole-of-life approach to road safety education. Schools are an essential channel, providing a context to reach young people with repeated messages and equip them to be safe and responsible road users as they mature.

TMR has previously developed curriculum-linked materials to enable Queensland teachers to integrate road safety messages into class time. However, unlike in some other Australian states and territories, road safety is not a mandatory part of the curriculum taught in Queensland (ACARA, 2018). In 2015, TMR reviewed its resources and determined a new, customer-focused approach was needed to drive take-up in the absence of a mandatory requirement.

### **Development of Journi**

Market research was conducted with Queensland teachers to identify factors influencing take-up. Among the most important factors identified were: robust curriculum links, engaging and motivating assessment tasks and support for delivering new curriculum requirements for digital technologies.

The result was the online program *Journi*. Queensland teachers and students can log in to the *Journi* website to complete activities and assessment, linked to the curriculum. Student activities include designing a survey and infographic and coding a digital game or quiz, alongside quizzes, games and videos featuring Queensland experts in statistics, games design and surgery.

*Journi* was designed to address these customer needs through at least three innovative approaches. First, *Journi* uses gamification. A novel concept in education, gamification is theorised to promote engagement by allowing learners freedom to experiment and fail, try on identities and apply effort and reflection in way that works for them (Klopfer et al., 2009). In *Journi*, gamification aims to encourage long-term and repeated engagement with the program and hence exposure to the road safety messages.

Second, *Journi* targets Science, Technology, Engineering and Maths (STEM). Most road safety curriculum resources link to Health and Physical Education (HPE), whereas *Journi* links to the Digital

Technologies as well as HPE. Coding is a new area for many teachers and there is demand for easy to use resources, offering another 'hook' to encourage Journi take-up.

Third, Journi provides in-depth support for teachers. Journi has a dedicated section for teachers where they may access detailed links to content descriptions and achievement standards, lesson plans, printable resources and a dashboard to mark assessment.

### **Conclusion & next steps**

With schools under pressure to teach a range of life skills, programs must be educationally rigorous while being engaging and accessible. In Journi, TMR aims to realise the benefits of a digital, interactive platform to meet customer needs.

TMR is currently monitoring Journi take-up. It is further considering options to evaluate usability and technical issues experienced by users. Results will inform further development, including development of content for other year levels.

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