The Digital Passport - www.digitalpassport.co.nz

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Abstract

In 2017 the New Zealand Ministry of Education announced the Digital Technologies Curriculum as a mandatory part of the national curriculum by 2020. The Digital Passport is an innovative e-Learning platform that empowers teachers to confidently meet this challenge.

The platform unpacks the complex jargon of the digital curriculum and is specifically designed for New Zealand teachers to help them understand how to implement new content. The design is clean, fresh and uncluttered to allow for ease of access. Following an introduction, teachers can choose from four video workshops each focused on different stages of the child's school career. Each workshop involves an introduction that links learning to the curriculum documents. Quizzes test understanding while teachers gain access to classroom activities to implement quickly and simply. Additional learning modules are also available on ideas such as web design, mixed reality and robotics.

It is the deep focus on meeting the needs of our teacher users that makes the Digital Passport an exceptional learning tool. Every part of delivery, from learning resource design to the user interface has been focused on creating an accessible, engaging platform to empower teachers and allow them opportunities to embed the Digital Technologies Curriculum in their classrooms. The Mind Lab by Unitec engages with teachers and schools to transform education. We envision a sector that embraces the best in technology, new thinking, research and affordable and accessible resources to prepare the next generation of New Zealanders for success. We also value the importance of affordable and accessible resources.

When the Ministry of Education issued the new digital curriculum we wanted to create a programme that was accessible to all teachers. Our purpose for the programme was to help teachers develop an understanding of the curriculum and confidently implement it in the classroom. We understood that it was unrealistic to have in-person sessions with every New Zealand teacher therefore we designed and created an e-Learning platform that is also mobile enabled. Through a partnership with the Next Foundation the programme is free of change to all registered teachers.

The Digital Passport has had significant impact within the teaching community in the two months since its release. 5,000 teachers from Kaitaia to Invercargill have signed up, with over

1,000 already completing the learning and achieving certification. Teachers have also taken the step towards digital fluency since they have viewed the additional learning modules over 3,000 times.

We used the Design Thinking process to move from vision to delivery. Our team created personas as our target audience and we designed the website to address their motivations, needs and pain points. We organised a series of design sprints in order to complete the script writing, filming, editing and motion design/graphics. After completing the first draft of our platform, we performed numerous tests with our target audience and used their feedback as a foundation for further iterations.

Our biggest challenge was to create a simple user experience. The Digital Technologies Curriculum is broken up into two key learning areas: Computational Thinking (CT) and Designing and Developing Digital Outcomes (DDDO). The Ministry of Education has created Progress Outcomes for each to define learning objectives. However, the Progress Outcomes for each learning area do not align in quantity or year levels since CT covers five progress outcomes and DDDO covers three. Our solution was to create four workshops each containing selected DDDO and CT Progress Outcomes appropriate to year levels 3, 5, 7 and 10. Teachers have the opportunity to watch the workshop that specifically addresses their year level or they can watch every workshop to understand the whole curriculum.

The Digital Passport is a bespoke e-Learning platform built on the Angular open-source code framework. The Drupal Content Management System is utilised to handle user management and store each user's progress and achievements, with the Angular front-end fetching the data via an Application Programming Interface (API) to connect between layers. Angular features allow each user to maintain their unique learning experience, picking up where they left off last time, no matter what device they are logged into - the Digital Passport is accessible through web browsers and adapts to mobile devices. The platform includes a custom built Amazon Web Services stack with automatic load balancing and serves video lessons through utilising Amazon Transcoder (converts video files to playback) and Amazon S3 (Simple Storage Service) buckets (cloud storage for data and metadata). The videos on the Digital Passport platform were edited on Adobe Premiere and the motion design and graphics were created on Adobe After Effects.