

The development of markers of personalisation— *harnessing the power of digital technologies*

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KEY POINTS

- A team at Paraparaumu College and Kenakena School, with support from the Teacher-led Innovation Fund (TLIF), explored ways to use digital technology to personalise students' learning.
- Teachers engaged in inquiries to investigate what effective personalised pedagogies look like when combined with e-learning opportunities.
- An outcome of the project was the development of a set of markers of personalisation by which teachers can ensure that digital technology is being adopted based on its learning pedagogy, rather than as a gimmick or to fill a gap.

In June 2016, Paraparaumu College and Kenakena School, from the Kāpiti Coast, investigated the use of digital technology in supporting a personalised learning framework. This article presents three case studies of how personalisation was used, and explains the development of markers of personalisation for the two schools.

Our project involved Paraparaumu College and Kenakena School working together both to examine how the application of digital technologies could foster greater personalisation for students, and to investigate the impact on student engagement in learning. Many studies have highlighted the positive relationship between engagement and achievement (Lee, 2013). The intention of the project was to transform existing practices and build our collective understanding of effective approaches to integrate digital technology into our curriculum, with the aim of engaging students and thus developing their achievement capabilities.

What is personalised learning?

Although *personalisation* might sound like a simple concept, finding a single definition is not an easy process. The term is common in educational settings, yet its usage is complex and varied. The terms *active learner*, *metacognition*, *self-motivation*, *collaborative learning*, *differentiation*, *choice-based learning*, *self-regulated learner*, and *individualisation* all appear in the literature. Aspects of each of the above have links to personalisation pedagogy, yet a single overlap of ideas is not apparent. *Personalised learning* can also be

defined as helping students discover what makes them want to learn.

For the purposes of this project we considered personalised learning to mean students understanding how they learn, owning and driving their learning, and having a voice in the construction of the curriculum and their learning environment. This also encompasses the need for learning to target students' individual strengths, interests, and needs. We see personalisation as a collective process. It is not to be confused with individualised learning, where students sit alone in front of a computer. However, the act of working together can help lead to individual growth in learning. It is important to understand that actions and choices of the teacher remain critical because it is through the teachers' understanding of learning that opportunities are opened up to which the students can respond.

The type of personalised learning we espouse is based on the strengths and needs of students in a setting that offers choice. Reinforcing the notion that personalisation is not synonymous with individualisation, Johnson (2004) states that within a personalised-learning framework, there is greater opportunity for collaboration and connected learning.

Why focus on personalisation?

Developing a personalised-learning approach enables teachers to help students master the process of learning (Fullan & Langworthy, 2014). This involves: making the learning process visible (Hattie, 2009); integrating learning areas, and allowing students to have a voice in determining their own projects (Rosenstock & Kluver, 2003); connecting to the students' interests and aspirations (Fullan & Langworthy, 2014); and evaluating the learning process to ensure that learning is taking place and adapting pedagogy as necessary.

Personalised learning puts the child at the centre of the learning by shaping the teaching around the way young people learn (Padget, 2010). This involves planning for a combination of collaborative opportunities and independent learning, while using the strengths and needs of students to guide

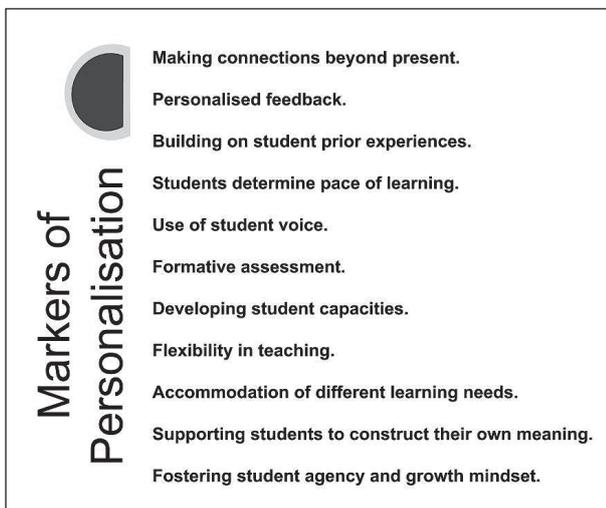


FIGURE 1. MARKERS OF PERSONALISATION

decision making. When a teacher is willing to incorporate student input into the learning, and to relate the learning experience to the needs of the students, there will be benefits for the student (Burger, 2007).

Why connect personalisation with e-learning?

Technology is a powerful tool. In the hands of capable teachers its use can result in significant achievement gains for students, enabling the realisation of the holy grail of education, personalised learning (Domenech, Brown, & Sherman, 2016). Underpinning this is the concept that technology should be considered a tool that can be utilised to achieve teaching and learning goals; this implies that positive outcomes of the use of technology should not be considered guaranteed, but are dependent on varied influencing factors. Many teachers want to embrace technology as an embedded component of a 21st-century classroom. To do this well they need to ensure that the focus is on improving engagement and learning through including students' strengths and interests, and not simply using digital tools because of their ubiquitous availability. As digital technology becomes more prevalent within teaching and learning, there is a need for evaluation of the strengths and limitations of individual tools and applications. Puentedura's (2013) SAMR model aims at transforming teaching and learning with technology, through classifying the integration of technology on a continuum of substitution, augmentation, modification, and redefinition. Puentedura (2013) puts forward that it is at the level of modification and redefinition that transformational learning takes place. In essence, teaching and learning should not be driven by the technology; technology should be selected to suit the pedagogical approach and the learning needs.

Fitzgerald et al. (2018) contend that despite the positive view of personalisation and its connection with digital technologies, it is often difficult to know how to implement personalisation effectively within education settings. Making pedagogical connections between the use of digital technologies and our desire to personalise learning for our students was a challenge experienced by all teachers involved in the inquiry. Early on in the project, it became clear that effective use of technology, as an enabler of personalising learning, required explicit planning and consideration of how technology can shape learning opportunities. Adopting technology without due consideration and evaluation of the digital tool, and the pedagogy behind the tool, meant we were not truly harnessing the power of digital technology. This led us to constructing a framework of personalisation we titled the "markers of personalisation".

Development of the markers of personalisation

At the completion of the second inquiry cycle, the teachers in the TLIF project, with support from Rosemary Hipkins, went through a reflection process to identify what their understanding of personalisation was and what they had uncovered in their own learning through the inquiry process in their own classrooms. Having engaged in two inquiries, teachers first individually then collectively identified the key areas that stood out for them as to how personalisation was now part of their class programmes.

The ideas were collated and clustered according to common themes. This process resulted in the identification of our markers of personalisation. These were identified as the key underlying principles that this TLIF team felt were the focal aspects to have at the forefront when planning for personalisation in learning. Table 1 identifies and describes the markers that the project team saw as making learning more personalised:

Marker of Personalisation	Description
Making connections beyond the present.	Explicitly linking learning beyond the present moment, by making connections to other learning and to other parts of students' lives.
Personalised feedback.	Providing individual feedback to students that targets their specific learning needs and informs their learning goals.
Building on student experience.	Enhancing students' motivation and conceptual understanding by setting up opportunities for students to activate and connect their prior knowledge to current learning.
Students determine pace of learning.	Giving students the opportunity to pace learning at a speed that allows them to achieve.
Use of student voice.	Involving students in the decision making for teaching and learning and using student voice to inform practice.
Formative assessment.	Utilising assessment to encompass not only assessment of learning, but also assessment for learning and learning through assessment.
Developing student capacities.	Developing capability and knowledge of digital technologies, while also focusing on developing the knowledge and skills to participate in a digitally connected world.
Flexibility in teaching.	Having flexibility to provide more choices for, and involvement of, students in their own learning.
Accommodation of different learning needs.	Planning for learning to meet the diverse needs of students to ensure barriers are removed for individual students.
Supporting students to construct their own meaning.	Fostering learning environments where students are supported to construct their own meaning of concepts.
Fostering student agency and growth mindset.	Developing student capacities to be effective learners and nurturing growth mindsets.

TABLE 1. PARAPARAUMU COLLEGE MARKERS OF PERSONALISATION OF LEARNING

Using the markers in practice

The following case studies highlight how the markers of personalisation were applied within our inquiries. The case studies we chose for this article highlight diverse approaches we took within our inquiries. They also illustrate a range of the markers in practice.

Case studies

Case Study 1: Use of a digital learning journal in Year 9 physical education—Aaron Mead, Candace Lorcet, Katie McQuaid

The focus of the physical education unit was on invasion games with a specific focus on skill acquisition and the concept of failure. Students examined the process of learning a skill, and also explored the importance of a growth mindset (Dweck, 2017) to be able to learn from failure.

Using a digital tool, Seesaw, students built a digital learning journal (DLJ) that enabled them to independently document and complete learning activities online. For the purpose of this project the DLJ was designed to be a place for students to record and document reflections about their learning and to discuss concepts related to the learning activities.

We chose the Seesaw platform because we saw it as a means to modify and redefine the learning activities; it was also accessible from all devices and proved very effective on student mobile devices. The mechanics of the Seesaw DLJ provided flexibility for students to make posts and recordings and provided effective means for collaboration and sharing. This flexibility extended to students being able to make posts on their DLJ anywhere and at anytime.

A framework for learning was embedded within the lessons to stimulate a sense of control and involvement in the learning process for students. The framework took the form of a set of stages that we guided students through, in conjunction with the DLJ, encouraging students to construct reflections that connected past experiences and knowledge to their learning, then to build on these by making connections to the present and future.

The DLJ provided an effective tool to blend reflection and critical analysis that shifted the learning focus from skill-based or physical-performance-based outcomes towards deeper learning outcomes for the students. The marker of personalisation that was most evident through this process was the marker of enabling students to construct their own meaning. In conjunction with the learning framework, the DLJ allowed students to meaningfully reflect on past experiences and then make connections to other parts of their life. The collaborative

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nature of the Seesaw DLJ also transformed the learning experience as students were able to discuss topics and respond to questions collaboratively.

An additional marker of personalisation that was fostered through this unit was in the way students were able to explicitly link learning beyond the present moment, by making connections to other learning and to other parts of their lives. Student reflections in the form of written response and video recordings were shared with teachers and peers and a dialogue was developed to further unpack concepts and make connections.

The careful integration of the DLJ into lessons was based on a clear learning framework where students not only had clarity of what they were learning and why, but also how they were learning. Unpacking with students the rationale of why we were using a DLJ and how it could help students develop understanding and construct their own meaning was an indispensable element of learning activities. Using the DLJ in this manner was an important step to developing a digital environment which was personalised within the realm of physical education. In the end of unit survey, students strongly agreed that the Seesaw DLJ helped their thinking and enabled them to build greater understanding of the concepts in Health and Physical Education. Students also indicated that they found this process engaging and interesting.

Case Study 2: Personalised learning in a Year 7 & 8 mathematics programme—Marie Mead, Janine McDonald

Within a primary school context, a personalised maths programme was established. This involved, under the guidance of the teacher, students setting their own learning goals regarding their individual learning needs,

based on assessment, teacher feedback, and student reflection. Students personalised their learning paths by making choices on how they wanted to learn, what they wanted to learn, and from where they wanted to access support, whether peers, teachers, online tutorials, or elsewhere. Students were supported by the teacher to make decisions about when they considered their learning was successful and when they needed to revisit learning.

Underpinning this inquiry was the concern that many of our learners have a fixed mindset towards maths, believing that they cannot do maths, and as a result give up easily when doing maths problems. In addition, the issue was identified that previous approaches to maths were significantly teacher-led, with teachers making the decisions around learning and the specific areas which needed to be covered. The specific markers of personalisation that were targeted in this inquiry included allowing students to set the pace of learning and fostering student agency and growth mindset.

Students were asked to reflect on their gaps in learning by analysing their Individual Knowledge Assessment of Number (IKAN) knowledge test, Progressive Achievement Test (PAT) and our school number knowledge test. They were also asked to identify areas within number knowledge which they found challenging. As a result, students created a list of five goals that they would work towards achieving in our “personalised maths” sessions. Students then prioritised what they wanted to learn in their maths sessions, identified how they would best do this, and then were given time to learn. Teaching and scaffolding of the personalised maths process was essential. Students were made accountable for what they did during these sessions with clear goals and checkpoints established with their teachers.

Learning tasks were identified to help students effectively plan their time. These included a variety of online tutorials or videos, and online practice activities. Students were also asked to arrange a time for a conferencing with their teacher, either individually or in small groups.

A personalised session of maths learning could involve students completing any number of the following based on their learning needs for the day: watching a tutorial online; completing practice activities in class; working with a peer; a teacher workshop or conference; and filling in their learning journal. Students determined the focus of the sessions and controlled the pace of learning. At the completion of the learning sessions, students reflected in their DLJs about what they had achieved in the session, what resources they needed, and what help they required for future learning.

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The classroom teacher’s role shifted through this inquiry to one of facilitator and coach with a greater focus on individual conferences with students as opposed to full class instruction. Teaching and scaffolding of the process of personalised maths was essential. Looking at the concept of a growth mindset and how students learn was also a big part of programme. Students were made accountable for what they did during these sessions with clear goals and checkpoints.

At the completion of the inquiry, teachers saw a significant positive impact on students’ feelings about maths. This was evident in their end-of-term survey, with a high percentage of students stating they felt very engaged in the personalised maths programme. The difference to student engagement and attitudes in maths was coupled with the development of students’ willingness to persevere with maths challenges and their willingness to accept failure as part of the learning process and not an endpoint.

Case Study 3: Using the digital tool *Actively Learn* to build reading comprehension skills in Year 9 and 10 students—Fiona Jeffries, Cath Braddock, Kim Kelly, Penny Ray

After analysing our PAT Reading Comprehension results, we discovered that almost a third of our Year 9 and 10 students were at stanine 4 or below. We were concerned that our students may have learnt to read when they were younger, but many had not developed the skills of “reading to learn”. Four English teachers at Paraparaumu College chose the online tool *Actively Learn* because of its focus on reading comprehension and its ability for teachers to tailor the learning to their own classes and thus personalise the learning. It also helped that it was free.

When using *Actively Learn*, teachers are able to upload three texts a month (in the free version) or use a catalogue of texts. We enquired as to the interests of the students, or chose texts that were topical at the time

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and relevant to teenagers. Personalisation took many forms. The tool enabled us to select a text, chunk the text into manageable excerpts and insert questions to develop metacognitive skills during the reading process, rather than the usual “read a passage and then answer comprehension questions at the end”. Many questions were aimed at developing thinking skills so were not simply “retrieval” questions. Students were able to make connections to themselves and beyond the text. Many students stated they preferred this type of questioning, where they were given a chance to have an opinion and share it digitally with the class.

The specific markers of personalisation fostered through the use of Actively Learn included personalised feedback and the accommodation of different learning needs. Features such as text-to-speech, word definition, making a note to which other students could respond, changing the background colour or the font and, for ESOL students, a translation tool was available. These tools allowed students to work at their own pace, have immediate feedback from the teacher who could see students’ answers as they were done and respond, and also see the answers of other students. As the project developed, two teachers created further opportunities for personalisation by providing students with a choice of text each week. In end-of-year feedback, many students self-reported that this tool had an a positive influence on their learning. In end-of-year PAT results, almost 60 % of students in stanines 3 and 4 at the start of the year had gained a scale score difference showing improvement beyond that which could be accounted for by maturation. The interesting finding was that this same level of growth also occurred for students who began the year at stanines 5 and 6. The full effect of achievement will need to be gathered over time. However, using Actively Learn to personalise the reading process and develop strategic skills appears to be promising.

In conclusion

A key area of learning for the project teachers was that to harness the potential of digital technology within education, it is imperative the focus is placed on how the use of technology can support pedagogy and learning frameworks. Adopting an endpoint focus where digital tools are only considered as additions to learning activities, or substitutions to learning tasks, limits the potential of technology to transform learning experiences. Starkey (2012) asserts that “the design of the digital age school will be cognisant of developing a focus on pedagogical approaches for learning concepts and skills and knowledge creation” (p. 119). A starting point to achieve this is to ask how we can raise the level of personalisation in education so that each and every child learns to the highest, deepest, and broadest possible level? We must then consider how digital technology can be utilised to add value to this process. Personalisation involves tailoring the curriculum and teaching methods to allow all students to achieve, progress, and participate; it involves moving away from teaching to the average in a one-size-fits-all environment, and moving towards having the needs and interests of all students at the heart of learning.

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