



Transforming teachers' formative assessment practices through ePortfolios



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HIGHLIGHTS

- Teachers' formative assessment practices are strengthened through using ePortfolios.
- Teachers' writing style is improved through the use of ePortfolios.
- Teachers develop collaborative practices through the use of ePortfolios.

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ABSTRACT

While common across the primary, secondary and tertiary sectors of education, ePortfolios are relatively new in early childhood education (ECE), nationally and internationally. They are, however, becoming more widespread in New Zealand as a platform to present children's assessment documentation. There is minimal documented evidence of the use of ePortfolios in ECE and as such little is known about how they can impact on teachers' formative assessment practices. This research investigated the use of ePortfolios in an ECE setting, how teachers' formative assessment practices changed through using this technology and what this means for young children's learning.

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1. Introduction

Early childhood education (ECE) plays a pivotal role in the education of many young learners in New Zealand and as such, ways to assess children's learning is an important factor for teachers and parents. The use of online ePortfolios which contain pedagogical documentation (Buldu, 2010; MacDonald, 2007; Moss & Dahlberg, 2008) are becoming more common; this research was concerned with whether this new technology enables busy parents and families to have enhanced engagement in their children's learning. It also sought to explore whether children engage in a different way with their own learning and that of their peers because of ePortfolios. Finally, it investigated whether the formative assessment practices of teachers changed through using this new technology. This article will focus on the changes to teachers' formative assessment practices. It draws on data from several case studies as well as surveys completed by parents and teachers from the ECE setting.

The aforementioned study is both important and timely. The use of ICT in ECE settings and children's homes is both increasing and becoming more acceptable. Children of the 21st century are being continually exposed to an ever evolving array of technology (Bennett, Arvidson, & Giorgetti, 2004; Ching, Wang, Shih, & Kedem, 2006; Dooley, Flint, Holbrook, May, & Albers, 2011; Grey, 2011; Kankaanranta, 2001). Therefore, the rationale for this research was as follows:

- EPortfolios are here – they have become a feature of a significant number of early childhood education services. EPortfolio providers, such as the one used in this study, are becoming established and their tools are influencing the ways in which teaching and learning are documented.
- It was not known what the effects of ePortfolios would be on teachers' formative assessment practices.
- Although some research had been undertaken which investigated children's use of computers and other forms of digital technology in ECE (Dodge, Husain, & Duke, 2011; Grey, 2011; Pohio, 2009; Stephen & Plowman, 2008; Wood, Specht,

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Willoughby, & Mueller, 2008; Yurt & Cevher-Kalburan, 2011), only a handful of studies have investigated the use of ePortfolios (Goodman & Cherrington, 2015; Ministry of Education, 2014; Schallhart & Wieden-Bischof, 2010).

1.1. Pedagogical documentation and formative assessment

Formative assessment can make a difference to learning outcomes for learners of all ages. Paul Black and Dylan Wiliam have written extensively about the role of formative assessment in education, influenced by the work of Royce Sadler (1989; 1998). Sadler argued that formative assessment must be about children contributing to their own learning. Black (2001) described formative assessment as a tool for educational reform, as opposed to summative assessment which, he supposed, has negative effects on learning. Black and Wiliam suggest that formative assessment is in fact 'the heart of teaching' (Black & Wiliam, 1998b). Furthermore these authors argue that teaching and learning must be a co-operative venture; there needs to be interaction between the teacher and the student, the student and teacher and the student and their peers for learning to take place (Black & Wiliam, 1998b). Black, Harrison, Lee, Marshall, and Wiliam (2004) defined assessment for learning, or formative assessment, as follows:

Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting students' learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence. An assessment activity can help learning if it provides information that teachers and their students can use as feedback in assessing themselves and one another and in modifying the teaching and learning activities in which they are engaged. Such assessment becomes "formative assessment" when the evidence is actually used to adapt the teaching work to meet the learning needs. (p. 10)

Black and Wiliam's work (and that of other researchers investigating formative assessment) sits predominantly in the primary, secondary and tertiary education sectors and focuses on enabling teachers to carry out formative assessment practices (Bell & Cowie, 2001; Black & Wiliam, 1998b; Black et al., 2004; Clarke, Timperley, & Hattie, 2003; Crooks, 1988, 2002; Havnes, Smith, Dysthe, & Ludvigsen, 2012; Hill, Cowie, Gilmore, & Smith, 2010). The present study focussed on the smallest learners – children attending an ECE setting and as such, it addresses a gap in the literature about the impact of ePortfolios on ECE teachers' formative assessment practices.

Pedagogical documentation has been used in early childhood education settings as a method of formative assessment nationally and internationally for some time (Ertle, Rosenfeld, Presser, & Goldstein, 2016; Moss & Dahlberg, 2008). As Lindgren (2012) notes 'It is when documentation is used for *reflection* that it becomes *pedagogical*' (p. 330). Buldu (2010) discusses the use of pedagogical documentation as a formative assessment tool with diverse families in a Kindergarten setting in the United Arab Emirates. He discovered that formative assessment cannot be just about evaluating the product; it must also include the process to accurately demonstrate what learning has occurred. Similarly, MacDonald's (2007) study investigating the use of pedagogical documentation in elementary classrooms showed that this type of formative assessment allowed teachers (and parents) learn

more about children's learning. She noted that 'The use of pedagogical documentation allowed parents and teachers to develop a deeper understanding of the children's strengths, interests, and curiosities beyond what is traditionally assessed' (p. 241).

In New Zealand narrative formative assessments are used widely to support children's learning in ECE settings (Carr, 2009) and are forms of pedagogical documentation. Narrative assessments in this context involve a story of learning which the teacher has noticed. The teacher reflects on the learning that has occurred and then develops experiences to extend or support the learning. Here narrative assessments in ECE are called Learning Stories or learning moments (Carr & Lee, 2012; Carr, 2001, 2009). As Drummond (2012) notes "A Learning Story is first and foremost a story. The storyteller shares a tale of emergence, speaking to the child, to the child's family, to guests, and to ourselves as observers and educators' (para. 1). This type of narrative documentation enables children to revisit their learning (including opportunities to contribute and self-assess), parents and family to engage with that learning, and teachers to support current interests or plan future learning experiences.

1.2. The purpose of portfolios

The ways in which assessment is presented to children, their parents and families could affect the ways in which they engage with the assessment and subsequently the learning involved, transforming it from assessment to formative assessment (Cohen, 1999; Earl & Ussher, 2012; Jacoby, Heugh, Bax, & Branford-White, 2014; Seitz, 2008; Weldin & Tumarkin, 1998/1999). Traditionally, in New Zealand assessment documentation as described above, has been presented in a paper format, and usually contained in a portfolio which Klenowski (2010) defined as "a purposeful collection of process artefacts and products that involves selection of evidence to demonstrate achievement over time and reflection on the process and value of the learning itself" (p. 236). This definition supports the ways that portfolios are used in this country – rather than merely being a collection of assessment documentation the reflection and extension of learning means that portfolios have the potential to become formative.

Barrett (2007) noted that an educational portfolio will contain work and other artefacts that the learner (and others such as teachers) have collected over time. She suggested that the learner will have reflected on the work contained in the portfolio and the reflection will show that growth has occurred. While this is a nice suggestion, I submit, it is not yet a common enough occurrence in early childhood education. With advances in technology, more services are turning to electronic forms of documentation, such as ePortfolios, to demonstrate and document learning (H. C. Barrett & Garrett, 2009; Boardman, 2007; Dooley et al., 2011; Earl & Ussher, 2012). Klenowski (2010) further defined ePortfolios as "a digital collection of diverse evidence of an individual's achievements over time involving selection, design, and reflection for a particular purpose and presentation to one or more audiences" (p. 236).

Goldsmith (2007) suggested that educational portfolios (paper-based and ePortfolios) have three main purposes. These are:

1. They provide teachers and learners with a tool to collect documentation over time.
2. Teachers and learners then have the ability to select certain evidence and to organise it into themes.

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