The tightening noose: Scientific management and early childhood education

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Abstract

The scientific management of compulsory education in Aotearoa New Zealand has been well documented and it appears that it is being extended to early childhood education (ECE). Using the language of scientific management as a default language for describing the purpose and function of education is a key means for the enculturation of scientific management practices in ECE and compulsory schooling sectors. This article advances the argument that the scientific management of compulsory schooling is well established, and that unless the early childhood education sector is careful, it will follow suit. This article extends Jim Neyland's critique of scientific management in education to early childhood education to sound a warning about this all-too-easy turn in language and concept, proposing that it needs to be challenged.

Introduction

Several writers have been concerned with the increasing drift toward managerialism in early childhood education (ECE), internationally (e.g., Moss, 2009), and nationally (e.g., Moss & Dahlberg, 2008). This article uses the line of reasoning developed by James (Jim) Neyland (1953–2010), to argue that the language of curriculum provision in early childhood education has joined this drift toward scientific managerialism. Farquhar (2008), Gibbons (2007), and Duhn (2010) have presented similar arguments that are critical of the neoliberal agenda which underpins the rise of managerialism in education. They offer a critique of identity as formed by economic narrative, the commodification of children in educational space, and the privatisation of early childhood curriculum provision, respectively. This article takes similar aim, problematising the increasing normalisation of the language of scientific management in early childhood curriculum provision in Aotearoa New Zealand.

This article uses Neyland's (2001, 2007a, 2007b, 2010) objection to the scientific management of education, extending it to the language of curriculum provision in early childhood education. In doing so, this article shares Farquhar's (2008) assumption that language use defines identity: in this case, the identity of an entire sector. The goal here is to recognise the increasing normalisation of the language of scientific management in early childhood curriculum provision, so that it appears arbitrary, and therefore open to change. This aim corresponds to a broader hope that the words we currently use to talk about curriculum provision in early childhood education in Aotearoa New Zealand by no means comprises a final vocabulary (Rorty, 1989), but rather, a mere glitch in our collective imagination.

This article has four parts. First, it sets out the language and agenda of scientific management, drawing on Neyland's (2007a, 2010) critical analysis. Secondly, it argues that early childhood curriculum provision in Aotearoa New Zealand is increasingly using a language of scientific management to describe goals and processes. Next, it sketches out the increasing normality of scientific management in the broader educational environment to show that general curriculum provision in Aotearoa New Zealand is increasingly coming under the yoke of scientific management theory. Finally, it mentions an alternative vocabulary that might be of use when thinking of the language used to describe curriculum provision in the early childhood sector.

Scientific management theory

Scientific management is a theory originated by American engineer Fredrick Taylor (1911/2011). It was intended to signal a departure from *ordinary* management in which "the [employees] give their best initiative and in return receive some special incentive from their employers" (Taylor, 1911/2011, Chapter 2, para. 7). According to Taylor's ordinary model of management, employees own the whole of the problem of production; in other words, employees self-manage and are therefore custodians of their own output. For Taylor, this form of management works best when employees have a high level of initiative and incentive in their work.

Taylor's (1911/2011) alternative to this high-trust model is scientific management. Under scientific-management theory, management is organised by four theses:

> First. They develop a science for each element of a man's work, which replaces the old rule-of-thumb method.
>
> Second. They scientifically select and then train, teach, and develop the workman, whereas in the past he chose his own work and trained himself as best he could.
>
> Third. They heartily cooperate with the men so as to insure all of the work being done in accordance with the principles of the science which has been developed.
>
> Fourth. There is an almost equal division of the work and the responsibility between the management and the workmen. The management take over all work for which they are better fitted than the workmen, while in the past almost all of the work and the greater part of the responsibility were thrown upon the men. (Taylor, 1911/2011, Chapter 2, para. 11)

Taylor's (1911/2011) vision of the scientific manager is one that combines narratives of control and rescue. The scientific manager is adept in techniques which control (and maximise) the output of employees, while at the same time rescuing them from the heavy burden of managing themselves and their labour. In Taylor (1911/2011, Chapter 2, para. 14), it is "the establishment of many rules, laws, and formulae which replace the judgment of the individual [employee]" that gives his theory of management its scientific veneer. Science, in this case, signifies the ability to impose a framework and measure behaviour and outputs against that framework to identify areas for improvement (in terms of skill-base, productivity, and output).

Taylor's (1911/2011) idea that work lends itself to reductive examination, measurement, and evaluation is at the heart of the scientific management project in education. From this perspective, teaching is just one more form of work to be managed. American writer Joseph Rice (1913) is a pivotal figure in bringing the idea of scientific management into the realm of education. In positing this connection, Rice (1913) writes, "scientific

management in education can only be defined as a system of management specifically directed toward the elimination of waste in teaching, so that the children attending the schools may be duly rewarded for the expenditure of their time and effort" (p. viii). More recently, scientific management theory has been identified as a key driver of educational reform in the United States, the United Kingdom, and, from the late 1980s, Aotearoa New Zealand (Elley, 2004).

In Aotearoa New Zealand educational writers such as Fountain (2008), in the context of secondary schooling, and Neyland (2007, 2010), in the context of a more general educational philosophy, have placed the role of scientific management in curriculum provision under suspicion. Fountain (2008) points out that his own discipline, history, "suffers under the [scientific management] model because its technocratic approach undermines the teacher ... The scientific management approach casts [teachers] into the role of passive implementers or managers of expert design" (p. 137). Fountain argues that scientific-management theory has marginalised history education, and he is deeply concerned about an education system that accepts an outcomes- and standards-based, audited (and auditable) education as not only normal, but state-of-the-art.

Neyland's (2010) work aligns the rise of scientific management in education with a malaise that is endemic at all levels of schooling in Aotearoa New Zealand. He points out that the dawn of scientific management in education coincided with "a dramatic new interest in assessment" which resulted in a particular normalisation of concepts native to scientific-management theory, such as "accountability, planning ... budget systems, management by objectives ... programme evaluation and review techniques [and] cost benefit analysis" to name a few (Neyland, 2010, p. 24). Neyland claims that education has come to accept these terms through an adaptive process that makes educational constructs of these terms common place, as a default language, for example: "performance based education ... assessment systems, programme evaluation, outcomes-led education, standards based education, and performance contracting (payment on results)" (Wise, as cited in Neyland, 2010, p. 27). This article argues that the normalisation of these terms in early childhood curriculum provision amounts to a creeping enculturation of a particular, scientific educational discourse.

For Neyland (2010), the normalisation of scientific management discourse in education is the result of a legislative turn in policy, curriculum, and curriculum provision. This proposition is premised on the presence of four contributing factors which he claims are now common to all education sectors in Aotearoa New Zealand:

> Each of the following is required: (i) a statement of unambiguous *outcomes*; (ii) a theory (probably implicit) of control; (iii) a system of *auditing*; and (iv) the provision for *instrumentally oriented research*. Without a clear statement of outcomes the legislation will lack focus and intent, and without a theory of compliance it will lack teeth. The need for monitoring and the demand for precise information arise from the fact that the legislation is founded upon scientific management theory. All four are unmistakably evident in contemporary education. (Neyland, 2010, p. 26)

National Standards is a powerful example of this legislative turn in action, however, the National Certificate in Educational Achievement, and the National Administration Guidelines for School Trustees each serve to reproduce a culture of scientific management through the rules and regulations that bind and shape educational practice. These points will be taken up in the third part of this article. Neyland's (2010) critique of scientific management in education, while mentioning early childhood curriculum provision, was grounded in the compulsory sector of education. This article builds on Neyland's proposition by providing examples of the rise of scientific management in the discourse of early childhood curriculum provision.

Scientific management and early childhood education in Aotearoa New Zealand

The non-compulsory nature of early childhood education in Aotearoa New Zealand has created a kind of buffer to the effects of scientific management in the sector. However, increased funding in early childhood education, the rapid growth of the sector over the last 20 years, and current government policy (which sets the goal of 98 percent participation in quality early childhood settings) have eroded that buffer. This part of the article advances the argument that the language of scientific management

is becoming increasingly normalised in early childhood curriculum provision. That there is a void when it comes to scholarship on the issue of scientific management in early childhood education points to the need for conversations of this type to take place, not merely as a caveat, but as a catalyst for the development of counterdiscourses.

There is a historical resistance to scientific-management theory in early childhood education in Aotearoa New Zealand, given the sociocultural underpinnings of curriculum and curriculum provision, as evidenced by the early childhood curriculum *Te Whāriki* (Ministry of Education, 1996), as well as *Kei Tua o te Pae* (Ministry of Education, 2004/2007/2009). However, there is also a history of compromise which is important to note as a point of departure because it highlights the fact that early childhood education is as much a political endeavour as it is social and educational (May, 2009). The time between the publishing of the draft curriculum document and the publication of the final document holds particular relevance to this argument. It was in this space that a key struggle over the language in which to frame the early childhood curriculum provision took place (Te One, 2013). May (2009) frames the early childhood curriculum as a political statement about young children, their learning, and their connections to whānau. In her analysis of the space between the first philosophically driven draft of the curriculum statement and the final functional iteration she shows three particular challenges that the shift entailed:

> First, there was an assumption that early childhood centres would have the funding and trained staff to operate quality programmes … Secondly, the holistic and bicultural approach to curriculum of *Te Whāriki*, inclusive of children from birth, was a challenge to staff who were more familiar with the traditional focus on play areas and activities for preschool-aged children in mainstream centres. Thirdly [and most importantly for the argument being put forward], a political climate of accountability made increasing demands on early childhood staff in relation to assessment and evaluation. Much of this was a new language for staff and parents. (May, 2009, p. 248)

The final curriculum statement identified and expanded on principles, strands, and goals, each of which were explained and operationalised

in terms of "adult responsibilities for management, organisation, and practice" (Ministry of Education, 1996, p. 10). As a curriculum approach this was akin to the "develop[ment of] a science for each element of ... work" (Taylor, 1911/2011, Chapter 2, para. 11). Furthermore, it raised the spectre of learning outcomes as a primary means by which learning goals might be recognised in early childhood settings. This sharp end of the wedge was then followed by a set of resources within Part D of the curriculum (and later in *Quality in Action* (Ministry of Education, 1998) which aimed to provide "further assistance in planning, evaluation, assessment and implementation" (Ministry of Education, 1996, p. 10). The discourse of early childhood curriculum provision, therefore drew heavily, and somewhat unproblematically, on the language of scientific management to describe its functional elements. This is but one thread in the whāriki, but one that would become increasingly important as early childhood curriculum provision entered the 21st century.

What happened in the space between the draft and the final curriculum was not a capitulation by any means. The inspirational language set out by Carr and May (1993) at the outset of the curriculum-development project had been overtaken by a language that was already gripping the wider education system at the time (Elley, 2004). The language of scientific management, with its emphasis on assessment, outcomes, performance, and objectives (Neyland, 2010), had been cleanly inserted into early childhood education at the curriculum level. It is also language that has come to dominate the best practice documents published by the Education Review Office (e.g., where assessment processes and internal review documentation are key indicators of quality within services: Education Review Office, 2013).

Although the curriculum is implemented to varying degrees within the sector (Education Review Office, 2013), there are calls emerging for further evaluation of its effectiveness raising the possibility of a more contemporary iteration (e.g., New Zealand ECE Taskforce, 2010). One such call is worthy of further scrutiny as it actively encourages a further normalisation of the language of scientific management in the early childhood sector. Ken Blaiklock (2010a) laments the openness of *Te Whāriki*; the lack of evidence available on which to base an assessment

of its effectiveness; and the demise of subject-centred education, which he claims to result from the non-specific nature of the curriculum itself. Blaiklock promotes the further institution of scientific-management practices in early childhood curriculum provision, as the hallmark of his state-of-the-art system. Blaiklock, like Taylor and Rice, is concerned that we have created a curriculum where learning cannot be neatly measured, prescribed, standardised, or managed. This is apparent when he frames his objections to the curriculum:

> *Te Whāriki* does not say when and how to facilitate learning in particular subject content areas. Instead, the responsibility is placed on the teachers to integrate subject content knowledge within interactions that extend children's interests and build on children's current understandings. (Blaiklock, 2010a, p. 206)

To many early childhood practitioners this is not a cause to lament, but rather a cause for celebration. Blaiklock is worried that, without a rigorous evaluation of the effectiveness of the curriculum, and with an absence of prescriptive advice from the Ministry for programme planning and assessment, it would be "impossible to evaluate whether centre programmes are effective for enhancing children's learning and development" (Blaiklock, 2010a, p. 210). Despite the Education Review Office's assurance to government and the community on "the quality and effectiveness of education of schools and early childhood services" (Education Review Office, 2012, p. 2), Blaiklock senses that something is wrong with a curriculum that does not state specific outcomes, provide controls to meet those outcomes, audit the systems in place, and provide a *valid* body of evidence as a result. In short, Blaiklock is arguing not only for an evaluation of curriculum, but for more scientific management in early childhood education.

A key weapon in the arsenal of any scientific management pundit is assessment (Fountain, 2008; Neyland, 2007). Neyland (2010, p. 18) points out that in Aotearoa New Zealand "one expert system dominates. It is 'the scientific management of education'… Interestingly, it is intimately connected with the idea of assessment." One way of finding space in the struggle against the scientific management of early childhood education is to use a concept of assessment that aligns with the holistic, open-

systems approach to early childhood education advocated in *Te Whāriki* (for example Carr, 2001; Ministry of Education, 2004/2007/2009; Carr & Lee, 2012). Ownership of the concept and language of assessment creates a counterdiscourse to assessment defined by scientific managers.

Recognising this, advocates for the scientific management of early childhood education, such as Blaiklock (2010b), may gain ground by undermining the veracity of the assessment processes currently in use. In his paper on assessment in Aotearoa New Zealand, Blaiklock critiques learning stories, pointing out problems with validity, credibility, guidance, definition, and rationale. Where learning stories involve "adults and children telling and retelling stories of learning and competence, reflecting on the past and planning for the future" (Lee & Carr, 2012, p. 2), Blaiklock (2010b) argues that "high quality assessment is needed to support children's learning and to provide information on the effectiveness of early childhood programmes" (p. 5). Blaiklock's contention is that the lack of evidence on the effectiveness of learning stories as an assessment approach, coupled with the lack of evaluation around the effectiveness of *Te Whāriki*, is reason enough to be suspicious of curriculum provision in early childhood education.

Meanwhile, moves are afoot to further entrench a culture of education premised on the use of scientific management concepts. In 2010 the government-appointed Taskforce on Early Childhood Education returned with a number of recommendations for the government to consider. The taskforce recommended that:

> development of a framework, in collaboration with the early childhood education sector, that measures the extent to which the outcomes of *Te Whāriki* are being achieved. This framework should be linked to sector performance monitoring (New Zealand ECE Taskforce, 2010, p. 106).

The subsequent *ECE Sector Advisory Group Report on Sector Wide Quality* (2012) supports this recommendation by stating that "the group acknowledges that the purpose of improving quality in ECE is that all children achieve strong learning outcomes. The Ministry is currently exploring ways of assessing ECE learning outcomes based on *Te Whāriki*. The group considers this work is integral to sector performance

improvement" (p. 1). Put another way, this group has normalised the notion that a curriculum which entails outcomes that are unambiguous, and malleable to control, audit, and research, is a worthy goal to pursue. Again, the turn here is legislative: a further entrenchment of scientific management in the early childhood sector.

There is, however, a glimmer of hope in the form of a report on learning outcomes written by members of the 2012 Learning Outcomes Working Group. This group, initiated at a time when the government was questioning the return on its investment in early childhood education, presents a model premised on potential rather than discrete and measurable outputs. By focusing on humanistic potentiality through the development of mana (Carr et. al., 2012, p. 5), and linking this to the current curriculum framework and supporting documents such as *Kei Tua o te Pae* (Ministry of Education, 2004/2007/2009), these authors have managed to sidestep the adoption of a language aligned to scientific management. Rather, they include holistic, open-ended, and life-affirming concepts such as empowerment, being and becoming, and the adoption of dialogue as a key factor in determining the appropriateness of both potentiality and curriculum provision. Other groups, such as the Learning Outcomes Panel at New Zealand Kindergartens, have sought to build on that broad framework to offer a pragmatic tool to support teachers in their articulation of learning outcomes, without forming a prepackaged set of outcomes that can be applied across multiple localities (New Zealand Kindergartens, 2013). Both initiatives show that there are alternatives to scientific management being developed within the sector, for the sector.

However, at a more general level, the Teachers Council has begun a nationwide project on appraisal in education for early childhood and the schooling sector. This project has the stated aim of supporting "professional leaders with the opportunity to strengthen their systems to ensure their teachers and students benefit from appraisal as a professional learning and development process" (New Zealand Teachers Council, 2013, para. 2).

On the surface this looks like a good idea, and one that does not necessarily entail a further advance into scientific management. However, after being accepted into the project, an email on behalf of the New Zealand Teachers Council was sent from the project leaders to project participants putting

forward the following proposition to be reflected on and discussed: "Implementing effective performance management is a key leadership competency. Capability in developing learning and accountability focused systems of appraisal is critical to achieving shared goals" (M. Absolum & K. Mitchell, personal communication, 18 February 2013). This is a proposition that is rich in the language of scientific-management theory: "effective", "performance", "management", "competency", "accountability", "systems", and "goals". This would be an interesting provocation to consider for any educationalist. However, the statement itself is not the provocation; it is instead constructed as an unproblematic statement—as commonsense. The provocation is a call for reflection whereby educational leaders are asked to identify the conditions that "need to be in place for both learning and accountability outcomes to be achieved and why do you think that?" (M. Absolum & K. Mitchell, personal communication, 18 February 2013). Without serious reflection and critique of the initial statement, educational leaders are being asked to reflect on how the proposition might be enacted, not on whether the proposition is a useful way to think about professional development. The normalisation of scientific-management discourse in the realm of educational leadership is typified by the unproblematic acceptance of that discourse in the context of professional practice.

The slow enculturation achieved by the normalisation of scientific-management discourse in early childhood curriculum provision is like a noose tightening around the neck of ECE in Aotearoa New Zealand. The metaphor here employs imagery of violence or, more specifically, a symbolic violence, that involves "the imposition of a cultural arbitrary by an arbitrary power" (Bourdieu & Passeron, 1990, p. 5). The non-arbitrary appearance of policy and curriculum (which is in fact arbitrary given that both are prone to change), combines with the non-arbitrary veneer of scientific management as a language appropriate to the articulation of curriculum provision, creating a self-reproducing discourse. This article makes the point that the language of scientific management is as arbitrary as any language, raising suspicion, and the hope that an alternative language may someday take its place.

The scientific management and the compulsory sector

To contextualise the argument of normalisation, and to substantiate the earlier claim that the language of scientific management has become a default language within the wider education sector, this section draws together some strands from within the compulsory sector of education in Aotearoa New Zealand. This is useful to explore because early childhood curriculum development and provision takes place within a wider discursive context that occupies the entire education sector in Aotearoa New Zealand.

At a board of trustees level the National Administrative Guidelines (Ministry of Education, 2012) directs boards to "develop personal and industrial policies ... [w]hich promote high levels of staff performance, use educational resources effectively and recognise the needs of students" (Ministry of Education, 2012, NAG 3). This guideline extends the language of scientific management into the field of governance. Higher levels of staff performance require boards to understand what high performance looks like (a standard), and encourages the development of a measurement device along with appropriate auditing tools to ascertain whether performance meets the quality standard. Management is then required to implement and assess the performance-management process and report to the board. The board is therefore charged with a legislative as well as governance function in schools. This focus on measurement and reporting, according to Neyland (2010), is a key indicator of scientific management in action. The language of scientific management pervades the National Administration Guidelines where words such as "assessment", "achievement", "evaluate", "targets", and "effective" (which also begs the question of measurement) are commonplace. Even the recent alternative vision sketched out by Wylie (2012, pp. 253–255) does little to avoid an education system where capability, performance, output, formative accountability, and education authority are cited as hallmarks of an effective system. The language of scientific management permeates the charter statements that boards create and work with, as well as the role of the board; which is framed as the entity that controls the management of the school, and controls and manages the school (Education Act, 1989, ss. 72, 75). With elections every 3 years, the

general laity of the board in terms of educational credentials, and a highly regulated context, it is little wonder that the language of scientific management is reproduced (Bourdieu & Passeron, 1990); made normal; made to appear non-arbitrary in the governance of schools.

Boards are charged with the development and implementation of curriculum in the compulsory sector (Ministry of Education, 2012, NAG1). However, the language of values, competencies, principles and vision in the curriculum has been overcome by a language of standards, measurement, accountability, and outcomes. For example, in the annual board report of one Nelson school there is no mention of key competencies, no reflection on the values and principles espoused in *The New Zealand Curriculum* (Ministry of Education, 2007). Instead there is a plethora of measurement data pertaining to the National Standards and plans based on improving outcomes against those standards in future. The argument here is not that such a focus is without its uses, but rather that any alternative to a notion of schooling based on scientific management appears to be far beyond expectations and practical considerations for governance in the present system.

The National Standards in reading, writing and mathematics, which came into force in 2010, are a case in point that reveal the pervasiveness of the scientific management of schooling. Using Neyland's (2010) breakdown of the legislative turn it is clear that National Standards are an exemplar for the scientific management in education: there is a statement of unambiguous outcomes which entails the standards themselves. There is a theory of control which is explicit from governance (e.g., National Administration Guideline 2a: where mandatory reporting against the standards is prescribed), to management, and into teaching practice—through the generic assumption that "all students are able to effectively access the New Zealand Curriculum as evidenced by achievement against National Standards" (Nelson Central School, 2013, p. 16). There is a system of auditing educational outcomes against the National Standards, which, in 2012 dovetailed into the development of informal league-type tables constructed by Fairfax Media and published online in September of the same year. This was followed in 2013 by a similar league table of midyear results. Finally, there is the provision of instrumentally oriented

research which takes the form of self-review tools for trustees, teachers, and in-school leaders (Ministry of Education, 2009). Research, in the context of National Standards, focuses on an evaluation of need, and provision of professional learning to attend to identified needs, with the goal of improving outcomes and aiding future planning. The National Standards are therefore a good example of scientific management in action.

Pursuing unambiguous outcomes is the crux of the scientific-management paradigm, insofar as without it there is little to control, audit, or improve through research. This drive toward unambiguous outcomes is echoed in a concern within the early childhood sector that "National Standards start to dictate how we prepare children for school" (Norotowski, as cited in Cox, 2010, para 6). Recent developments in the mechanics of National Standards assessment point to issues in the consistency of assessment: raising the spectre of ambiguity. Around 30 percent of a teacher's assessment against the National Standard comes from standardised testing, the lion's share of the assessment data comes from the Overall Teacher Judgement (OTJs). In 2011 this chink in the armour of National Standards was gazetted (25 October) and the development of the Progress and Consistency Tool (PaCT) was announced. The aim of PaCT is "to support teachers' overall judgments and assist with increasing the consistency of judgments across the country and over time. The tool will also enhance the measurement of students' progress in relation to the National Standards" (Ministry of Education, 2011). At the time of writing this article the reading and writing tool is being trialled. This will be followed by a national trial of both the mathematics and the reading and writing tool in 2014. What these tools might look like as a result of these trials is debatable. However, the fact that PaCT, through its emphasis on standardised, effective measurement of outcomes, is another example of scientific management in action is difficult to dispute.

As the language of scientific management becomes increasingly normalised in the compulsory sector from the level of the board, through management, and into the classroom, alternative languages of education begin to appear strange. This article has advanced the argument that early childhood curriculum provision is moving along the trajectory toward

scientific management, through the normalisation of language associated with that paradigm. It has made the point that the language of assessment, measurement, audit, and outcomes is the non-arbitrary default setting of educational discourse around curriculum provision in early childhood education, as well as in the compulsory sector. Taylor's programme of removing initiative and trust and replacing it with a measurement oriented, outcome-focused and accountability rich model is alive and well in Aotearoa New Zealand. Recognition of the normalisation of scientific management as an educational discourse is the first step in future rehabilitation. This article has aimed to progress that recognition.

A conclusion—viva the trusted teacher

Neyland (2010) makes the point that "contemporary education under scientific management is repressed" (p. 51). By this statement he means that the drive toward constructing a measurable, accountable, output-focused version of education represses educational spirit. Neyland's concept of spirit is more akin to the notion of mauri, or life force, than it is to the notion of religious inclusion that I have posited elsewhere (Hannigan, 2012). For Neyland (2010), the spirit of education consists of four interrelating dimensions: enchantment (embracing uncertainty with a sense of wonder), ecstatic (standing outside one's original frame of reference through surprise and absorption), autotelic (engaging in activity that is intrinsically rewarding), and comical (giving over the drive toward certainty to develop an attitude of playfulness).

Neyland's (2010) proposition is that the scientific management of education represses; shuts down; edits out, the four elements of spirit identified above—the drive toward certainty undermines enchantment by valorising measurability in curriculum provision. The discourse which exemplifies a standardised, outcomes-driven teaching practice in ECE and the compulsory schooling sector works against a vision of education that idealises the spirit of wonder and awe. Similarly, the need to map progress, to predict outcomes through controlling inputs, and to report (as well as audit) a small subset of human skills, works against those ecstatic elements that take teachers and students alike beyond their skins and into new and unprecedented ways of being. Similarly, a focus

on working within externally constructed frameworks for prescribed outcomes erodes the autotelic capacity for self-generation by bracketing off those activities that are deemed measurable from those activities that are less measurable (for example, curiosity, amazement, kindness, and even rebellion). Because scientific-management theory is premised on a drive toward both certainty and utility, the comical, occasioned aspects of teaching and learning—those aspects of spirit premised on the veneration of uncertainty and playfulness—become continuously excluded as valid ends of education. Who within the present discursive environment could take enchantment, awe, uncertainty, and humour as key learning outcomes of early childhood curriculum provision? And even if this was possible, who could imagine seeing such a vision enshrined as policy direction?

In a field of education, and ECE education in particular, where play has long been the *sovereign concept* (cf. Murdoch, 1997), the editing out of playfulness by the elevation of certainty, made possible through measurement, and explicit through the generation of valid outcomes, seems to pose risks for early childhood education and challenges for early childhood teachers. The danger is that if the early childhood sector continues to normalise the language of scientific management in educational discourse, then it is more scientific management of curriculum provision that is the likely result. This article has aimed to place the language of scientific management under suspicion in the hope that it is not too late to generate alternative discourses. If history tells us anything, it is that change is always possible, and if Neyland (2010) has told us anything in his work it is that "the worst kind of bad education is the sort that dupes us into believing it is good" (p. 1). Nō reira, haere, haere, haere ki te mārama hou.

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