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“Professional Learning on Steroids”: Implications for Teacher Learning Through Spatialised Practice in New Generation Learning Environments.

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Abstract

There is growing interest in innovative educational space design and the relationality of spatialised teaching practices. This paper addresses the characteristics of spatialised professional learning in newly redesigned or purpose built new generation learning environments (NGLE). The case study is situated within Aotearoa/New Zealand context, a country where there has been considerable policy focus and investment in NGLE. Data from principals who have established NGLE in their schooling settings is analysed, with consideration given to the preparation of teachers to take up spatialised practices. The study highlights key characteristics of spatialised PLD practice – fostering spatial literacy; professional cross-pollination; co-teaching and peer coaching; privatisation and bespoke professional learning design. The value of this research lies in its contribution to researchers and practitioners in the schooling sector as they consider approaches to professional learning in NGLE.

Introduction

Although the design of learning environments have been a focus across Organisation for Economic Cooperation and Development’s (OECD) countries for some years now (OECD, 2013), an emphasis on associated pedagogies and implications of redesigned space is an emerging concern (Charteris, Smardon & Page, 2018). With the drive to develop new generation learning environments (NGLE) (also called Innovative Learning Environments (OECD, 2013)), space has emerged as a salient consideration among practitioners who seek to align pedagogical beliefs and day-to-day practices within schools (Bradbeer, Mahat, Byers, Cleveland, Kvan & Imms, 2017). It is timely to consider approaches to professional learning and development (PLD) in relation to recent initiatives to redesign or purpose build learning spaces in schools, creating NGLE (Imms, Cleveland & Fisher, 2016)

The ‘spatial turn’ has resulted in an examination of how the spatial organisation of classrooms and schooling environments is “integral to the production of the social and not merely its result” (Massey, 1994, p. 4). The spaces of learning environments are co-constituted through interrelations, always under construction, and embedded in interconnecting material-discursive practices (Mulcahy & Morrison, 2017). McLeod (2014) points out the “burgeoning body” of studies investigating “the emotional, symbolic and pedagogic dimensions of school design and school space” (p. 133). This corpus of research, she writes, “encompasses how the spatial and material dimensions of schools and educational practices shape the experiences and formation of teacher and student identities, representing changing norms and ideals, and perform vital symbolic and practical work” (p. 134). It follows that teacher professional learning and development is an important consideration in this impetus to re-spatialise and redesign schooling environments.

Although there has been much research into the terrain of teacher ‘professional learning and development’ (PLD) over the last two decades, (Day & Sachs, 2004; Hardy, 2012; Mockler, 2011), less has been written about approaches to PLD in NGLE (Alterator & Deed, 2013; Benade, 2015; Bradbeer, 2016), and what it is that teachers need to learn to equip them to teach in these environments. Less has been written about the preparation of teachers in initial teacher education for spatialised practice (Nelson & Johnson, 2017). As Fisher (2016) points out, “rarely is continuous professional development [or PLD] organised around new generation learning environments” (p. 167). Likewise, Bradbeer (2016), argues that there needs to be a better understanding of the ways in which teachers occupy space together in NGLE, with characteristics of PLD an important consideration. We posit here that there is a need for spatialised teacher PLD to support spatialised teaching practice. This is PLD that occurs in the rich contexts of NGLE.

In this article, key literature on NGLE and related learning principles (OECD, 2015) are introduced. Literature on spatial literacy, PLD, deprivatisation of teaching and the importance of relational trust are presented. We engage with these theoretical ideas to analyse the perceptions of principals in order to determine how PLD is undertaken in Aotearoa/ New Zealand; a country where NGLE has been instantiated in educational policy. We lodge an argument that PLD in NGLE requires close attention to practices associated specifically with spatialised pedagogy. This move problematises approaches to PLD in NGLE that do not consider the relationality of classroom spaces. We discuss the impetus for teacher PLD in the current conjunctural epoch (Charteris, Sardon & Nelson, 2017) and implications for practice.

New Generation Learning Environments and Spatial Literacy

Although it is touted that NGLE and associated flexible learning spaces better enhance student achievement outcomes and can address the needs of “21st century learners”, this can be seen as “largely conjecture” (Bradbeer et al., 2017, p. 23). That said, significant national investment of Aotearoa/New Zealand in NGLE has resulted in some principals reporting shifts in approaches to teaching and a need to build pedagogic capacity through brokering the construction and reconstruction of physical spaces with teaching staff (Charteris, Sardon & Nelson, 2016). A range of issues

have surfaced in recent literature pertaining to the move in schools to incorporate NGLE. These issues include: leadership and the complexities of driving a change culture in schools; the use of space in collaborative teaching practices; the need for teachers to undertake targeted PLD to develop capacity to teach effectively in these spaces; and the need for teachers to utilise the design features of NGLE to their potential (Imms, 2018).

In new generation schooling contexts, where space and objects influence pedagogy, teachers and students can enact spatialised practice (Charteris, Smardon & Page, 2018). Produced in “places of assembly” when “bodies, spaces, subjectivities and the differentiated curriculum... are entangled together” (Mulcahy, 2015, p. 507), spatialised teaching practice involves an engagement with the fluid and flexible re-design of learning spaces alongside ongoing evaluation and reconsideration of curriculum, pedagogy and assessment (Blackmore et al., 2011b). Spatialised practice comprises pedagogical engagement with the affordances of NGLE schooling spaces – a notion that has also been described as spatial literacy (Bradbeer, 2016; Fisher, 2004). When students and teachers exercise spatial literacy there is moment -by-moment customisation of classroom spaces with use made of flexible furniture and a range of student groupings (Charteris, Smardon & Page, 2018). These affordances maximise the opportunities associated with openness, where there are “flexible ideas about time and space for learning” and teachers are “called on to question classroom convention and routine, and to construct learning environments in response to new physical and virtual contexts” (Alterator & Deed, 2013, p. 327).

Drawing from research conducted in the tertiary education sector, Dane (2016) describes how NGLE support a range of pedagogical possibilities that are not available in transitional learning spaces. These possibilities include: student access to all classroom features - a sense of student initiative and independence; active surfaces - walls and floors that enable a range of ways to communicate; accessible educational technologies for all students – opportunities for a range of mobile technologies (including assistive ones); mobility of furniture - lightweight and easily moved; a variety of furniture settings – allowing multiple configurations for different types of activities and student initiative in the use of space; and spaciousness - scope and freedom to move. It follows that the confluence of dimensions in Dane’s spatial framework can be considered in relation to the nature of PLD that can be afforded teachers who work in NGLE spaces.

Professional Learning and Development, Deprivatisation, and Relational trust

Professional development may be seen as a series of “individualistic, short-term and decontextualized activities” (Hardy, 2010, p. 72), whereas professional learning implies a process that is ongoing, “dynamic and ever changing” (Long, 2012, p. 46). Taken together as ‘professional learning and development’ (PLD), we conceive in-service teacher education as a process where teachers can grapple with shifting ideas: discussing; struggling; trying new practices out; and constructing and reconstructing new ways of thinking about teaching (Charteris & Smith, 2017). There may be “controlled discomfort” associated with critical reflection where there is

reflexivity focusing on “cherished beliefs and assumptions” (Zemblyas & McGlynn, 2012, pp. 45, 56).

Citing the open plan movement of the 1970s and the development of shared teaching spaces, O’Reilly, (2016) observes that teachers were under prepared for the pedagogical shifts that are required for optimal teaching in these spaces. He observes that in the Aotearoa/ New Zealand context there has not been adequate PLD in regard to collaborative skills, or the systems, strategies and structures that support pedagogical change (O’Reilly, 2016). It follows that if the move to deprivatise teaching practice is to be successful, careful planning and critical reflection on this approach to PLD is required. Deprivatisation of teaching practices is where teaching becomes a publicly profiled activity. School leaders and colleagues access classrooms formally and/or informally to undertake practices such as peer coaching, team teaching, and collegial observations (Vanblaere & Devos, 2016a). These practices can both target and manage “controlled discomfort” (Zemblyas & McGlynn, 2012) and support the professional capability of deliberation (See Gale & Molla (2017) for processes to support deliberation as stimulated consciousness awakening through PLD).

There are compelling critiques of deprivatisation, leveraging the notion that practices of peer review that are associated with deprivatisation reflect a neo-liberal market ideology where “mechanisms that create evidence of efficiency and effectiveness” promote “market orientated practices” and a “‘corporatisation’ of educational activities” (Brix, Grainger & Hill, 2014, p. 85). These moves to enhance efficiency and effectiveness can lead to an “intensification of teachers’ work” (Brix, Grainger & Hill, 2014, p. 85). There may be a “blame culture” associated with this emphasis on performativity with a marketised influence exerting pressure on teachers to perform (Brix, Grainger & Hill, 2014, p. 85). While moves toward deprivatisation are linked with global shifts in education discourse associated with increased accountability (Hardy, 2010), there are convincing reasons to support “the interruption of teaching as a private act” (Cochran-Smith, 2015, p. 118). Cochran-Smith highlights that deprivatisation signals “the end of isolation—with, instead, collegial support, the joint construction of knowledge, and the mutual work of collaborators in communities” (p. 118). Yet she also acknowledges that deprivatisation can also be problematic in that it can be “threatening”, increasing teacher “anxiety and vulnerability” (Cochran-Smith, 2015 p. 118).

If the promise of NGLE is to be grasped, with spatial affordances taken to their optimum potential, there is a need for targeted PLD and “fundamental change[s] to the pedagogical practices of teachers” (Benade, 2017a, p. 177). Furthermore, if the implementation of NGLE are not paired with PLD addressing spatialised pedagogical approaches, teachers may “merely default to their traditional practices” (Benade, 2017a, p. 177). A deprivatisation focus creates a collaborative impetus that reflects a focus on both reculturing and restructuring the schooling environment (Fullan, 2014, p. 226). Reculturing takes place through the restructuring of physical and social relationships and is inherent in any moves to implement NGLE that reconfigure both classroom design and teams of teaching staff. Relationships that foster trust are elemental to the success of this reculturing process.

Relational trust, where teacher vulnerability is mitigated in order to support risk taking and collegiality in professional learning, has been a feature of research into practices associated with educational change over the last decade (Cranston, 2011;

Seashore Louis & Murphy, 2017; Tschannen-Moran, 2009). Described as a key leadership capability (Robinson, Hohepa & Lloyd, 2009), relational trust involves fostering supportive collegial relationships and mutual respect between teachers (Edwards-Groves, Grootenboer & Ronnerman, 2016), and teachers and school leaders (Seashore Louis & Murphy, 2017), in a culture of care and safety that is nurtured over a period of time through professional learning experiences (Edwards-Groves et al., 2016). This ethic of trust can provide a foundation for an “increased capacity for change and reform” (Seashore Louis, Murphy, 2017, p. 104). Benade (2017b) makes the point that transparency and trust are key characteristics of NGLE.

Transparency is an easily identifiable characteristic of flexible learning spaces. Gone are solid walls and closed doors looking onto darkened hallways. In their stead are air and light, glass and floating ceilings, buildings with large volumes and dramatic staircases. Teams of coaches, facilitating learning in full view and in earshot of all who pass by, now replace the teacher behind closed doors. (p. 803)

Relational trust has been associated with “sustainable teacher development and educational change in communities of continuous inquiry and improvement” (Edwards-Groves et al., 2016, p. 370). In their research with middle leaders in Australian primary schools, Edwards-Groves et al (2016) found that a culture of relational trust and mutual respect were key features of sustainable change. Relational trust is an important feature of NGLE “where because of a concomitant shift to collaborative teaching, teachers are dependent on each other to achieve the desired outcomes of quality learning, student achievement and discernible progress” (Charteris, Smardon & Nelson, 2016, p. 37). Peer coaching practices can be established that support professional learning.

Peer coaching is a dialogic, co-constructive endeavour where teachers “engage in joint activities which are negotiated rather than imposed” (Wells, 1999, p. 227). Peer coaching practice involves teacher collaboration to explore teaching practices in a situated schooling context (Charteris & Smardon, 2013). In the Aotearoa/New Zealand context of this research the curriculum explicitly mandates that teachers inquire into their professional practice as a cyclical approach to their PLD (Ministry of Education, 2007). Peer coaching, mentoring, relational trust, and spatialised pedagogy are taken together as a theoretical framework that we used to consider implications for teacher PLD in NGLE. In the following, we outline the research on which our analysis rests.

The Case Study

In Aotearoa/ New Zealand the Canterbury Earthquakes of 2010 and 2011 and issues with leaky buildings (Osborne, 2016) have led to significant investment in Education infrastructure. The NGLE policy impetus relates to the aspiration of the New Zealand government to enhance educational outcomes (See Ministry of Education (MOE), 2016) and “control educational practices” (Benade & Jackson, 2017, p. 744). Accordingly, the New Zealand Ministry of Education (MOE) refocused property funding in their Strategic Plan for Education 2015–2019 to align with the OECD initiative to develop NGLE. “The property portfolio is a key enabler of the

Ministry's strategic intentions: enabling twenty-first century learning practices through the provision of innovative learning environments, improving evidence based investment decisions and increasing efficiencies" (Ministry of Education , 2015, p. 36). For many schools the combination of the natural disaster and MOE policy initiatives have catalysed a rapid transition from single cell classrooms to NGLE. The study focused on principals, as they are charged with the responsibility of implementing and filtering educational policy pertaining to NGLE in their schooling settings.

The case study research, with methods drawn from Yin (2009), examined practices associated with PLD in Aotearoa/New Zealand schools. The study design included an online survey on school leader and teacher perceptions (n = 216) of NGLE and further semi-structured interviews were conducted with a subsample of 38 principals who agreed and provided contact details. The data furnished themes that enabled cases to be developed. These involved cases investigating student agency in NGLE (Charteris & Smardon, 2018), spatial practice in NGLE (Charteris, Smardon & Nelson, 2017) and principal perception of change in relation to NGLE (Smardon & Charteris , 2016). To investigate how principals approached PLD as they established NGLE in school settings, a case was developed drawing upon interviews with five principals (pseudonyms provided) from four primary schools and one secondary school across Aotearoa/New Zealand. (Although there were more secondary schools in the study, there were fewer leaders located in NGLE settings). These were principals who had purpose built or redesigned buildings to create NGLE in their schools. Data from these leaders were included in the case study into NGLE, as they were early adopters who had well established NGLE in their schools and had experience in leading the associated pedagogical changes. In the wider data set there were principals who were not supportive of NGLE and were concerned about their implementation in Aotearoa/New Zealand, however we drew data from participants with a commitment to NGLE.

The interviews were conducted through either skype or by telephone. Each interview was of approximately 60 minutes duration, semi-structured in nature, and digitally recorded for later transcription. The questions pertained to teacher PLD and implementation of NGLE, although due to the semi-structured nature of the interviews, the principals were able to redirect the conversation to other issues of importance to them, for instance, the use of technologies, teacher collaboration, change management and schooling culture.

A qualitative data analysis software programme, NVivo, enabled the researchers to undertake an initial coding of the data. This involved a line-by-line analysis undertaken to initially identify references to PLD. A further fine-grained analysis was used afterwards as we read and reread the data to determine themes in it. The sample of comments articulated by these leaders were selected on the basis that they highlight PLD design elements pertinent for practice in NGLE. Comments were selected for inclusion in this article on the grounds that they addressed the following two questions:

What are the characteristics of professional learning and development that grow teachers' practice in NGLE?

What does spatialised PLD in NGLE involve?

Illustrative examples from the five school leaders are provided below to give consideration to teacher PLD through spatialised practice in NGLE.

Characteristics of Spatialised PLD

Spatial literacy; professional cross-pollination of expertise; co-teaching and peer coaching, practice deprivatisation, and bespoke professional learning design are discussed as characteristics of spatialised PLD that focuses on fostering spatialised practice across NGLE contexts.

Spatial Literacy

Robert is principal of Rothsfield school, one of the first primary schools in Aotearoa to build NGLE, as they are defined here. There are 6 hubs in the school and a roll of 400 students in years one through to eight. Robert talks about supporting teachers to be critical users of space. Robert describes how PLD needs to support teachers to be critical users of space in order to enable children work in various ways in the classroom.

The staff need to be critical users of space. Not 'this is Mrs. Smith's teaching area' because that's not how it works at all. You need to be as flexible as the pupils because you need to maximise the environment that you are in, and for the teaching that you are doing- whether it's with a mobile TV, whether it's in a discussion circle around a large low table, or small group conferencing on high tables. There are all sorts of different options. (Robert)

Both students and teacher can take up the affordances of different spaces and use it to their advantage. A key feature of working collaboratively in shared classroom spaces is the potential for the cross-pollination of professional learning.

Professional Cross-Pollination

Kim is principal of Greenvale primary school with a rapidly growing roll of just under 500 students. The school caters for students from Years 1 to 8. There have been two stages of building development to date with a purposely designed NGLE. There are a series of 'Learning Hubs' or large shared classroom spaces surrounded by breakout spaces. These offer students opportunities to undertake a range of different learning activities. With three teachers sharing the teaching space in a hub, a focus on collaboration enables students to access a range of teacher strengths and teachers to learn while teaching.

Kim describes how teachers learn from peers when they have opportunities to work across year levels in teaching teams. This practice enables a range of leadership roles and a sense of professional cross-pollination with exposure to others' expertise.

The opportunities for the teachers to cross-pollinate and take on leadership roles is huge because we've got the same sort of shared physical space, which we wouldn't get in a normal classroom environment. (Kim)

In shared spaces, teachers can learn from peers to become proficient at working with students across year levels and engage with students working across discipline specific progressions of learning.

The physical environment allows that flexibility in terms of thinking and designing learning that's really deeply cognitively engaging. You don't have to think about their teacher being really good at one particular year level. For example, in our cross hub there is one hub that is year 0 and 1s and then there's the year 7 and 8 hub next door. (Kim)

The cross-pollination that enables teachers to draw from disciplinary strengths, fosters leadership and a focus on shared goals providing a rich context for in-the-moment and ongoing PLD.

Nigel is principal of Waterford primary school, which opened in the last 5 years as a purpose-built school. Catering for children from Years 1 to 6, the school consists of flexible learning spaces or learning studios with two year groups integrated in each of the 6 hubs. Nigel describes the importance of PLD that fosters a mindset for collaboration, as the 1:25 ratio is less than desirable and it is seen as beneficial for learners to have the input from different teachers.

You can't work in this environment unless you come to the realisation that to meet the needs of 25 learners on your own is simply a bad idea. To maximise learning opportunities, we need multiple inputs. So the challenge is how we might challenge that mindset and help teachers to understand the importance of collaborating to make the biggest difference for learners and their opportunities for multiple relationships to enhance learning. (Nigel)

Like Kim, Nigel identifies that value of bringing a range of curriculum strengths to bear on professional practice.

They might bring different curriculum streams, which again means if I have a strength in numeracy and you've got to strength for dance and drama, we can complement each other. (Nigel)

When collaboration and cross-pollination is a positive experience, the opportunity of working closely together can enable trust intensive co-teaching and peer coaching practices.

Co-teaching and Peer Coaching

Selwyn is principal of Whitevale, an urban secondary school that has had purposely designed NGLS spaces for over half a decade. There are flexible open learning common spaces with connected breakout rooms and specialist spaces around

the school. The school is arranged in learning communities of four teachers and four classes and they are designated particular learning common spaces. According to Selwyn, the teachers have a strong collaborative community.

We call it learning communities and learning commons with four teachers, four classes. The teachers plan, work together, collaborate, team teach, celebrate, cry together, whatever - it is as a true team. (Selwyn)

This openness to “celebrate” and “cry” that Selwyn alludes to implies that there is relational trust underpinning the intensity of working so closely with other teachers. Kim uses a term coined by one of the teachers in her school to describe how working closely with colleagues can afford intensive PLD - professional learning on steroids,

There are huge amounts of PD... It's professional learning on steroids... Because you're observing and being observed and reflecting all the time with each other... (Kim)

There can be coaching practices afforded in NGLLE that are different to peer observations in single cell classrooms. In these potentially collaborative spaces, teachers are able to offer non-contrived spontaneous observations of each other's practice.

There are so many opportunities to observe other teaching practice and there are incidental back-end discussions that you have at such a high level. There are more opportunities than you if you just had somebody come in and observe occasionally. That sense of knowing each other and each other's next step - that is supportive. The opportunity is there because you have got daily contact and you are seeing good practice every day in the environment. You're reflecting on practice that hasn't gone so well together too. It's very, very intense professional learning that is going on... You get to see other people in their practice. It's not fragmented as it's always ongoing. (Kim)

On an ongoing basis colleagues can be available to observe each other (formally and informally) and reflect on practice together. There is knowledge of what people are exploring in their practice and have identified as next steps in a process where they inquire into their teaching (MoE, 2016). This inquiry process is embedded in co-teaching approaches to spatialised practice. Nigel describes how teachers record each other in the classroom space to undertake practice analysis.

So, for example, we use co-teaching strategies as one teacher would observe and one teacher will be teaching and the other one will be recording. If you've prepared a situation where a child who is not learning as well as they wanted or whatever reason and then the teachers gather around the iPad afterwards and have a conversation about that, that's far more meaningful than having someone come and pull an observation of the teacher or the child. It's about the team working to begin with and how do we do this- what is happening here? (Nigel)

Nigel describes a culture of collaboration and the provision of space for dialogue. The employment of an external provider assists with reculturing the dialogic space in the school to target the strategic aims the school are striving for.

It would totally depend on the culture that exists within your schools. When you see teachers deconstruct and reflect on their practice, some do and some do to a greater degree than others ... Does the school have an expectation that

they have some pretty open and honest conversations about experiences that happened within our space? ... We have engaged a 'provider' to improve our learning talk and our conversations so that those conversations are actually making a difference – so that children are learning self-regulation and hauora [wellbeing] as opposed to negative conversations or conversations that failed to get to the crux of our problems. (Nigel)

Furthermore Nigel highlights a point of difference in NGLE where there are multiple perspectives to be sought on any issue.

Everybody makes a difference. Because instead of mulling it over in your head, which is unless you can find somebody else to talk with in a traditional classroom,... In the collaborative space there's no question that there are multiple perspectives and a number of people [to talk with]. (Nigel)

The possibility for peer coaching conversations and the public nature of reflection highlight how PLD is deprivatised.

Deprivatisation

The deprivatisation of teaching practice involves teachers sharing their practice openly, where pedagogy is made public. Vanblaere & Devos (2016b) note that the "full potential" of deprivatised practice is "still to be explored, both in schools and in research" (p. 220).

Timothy is a principal of Sutcliff, a regional full primary school with a roll of approximately 300 that provides education for students in Years 1 to 8. He describes how in a collaborative teaching environment it is harder to revert to old practice habits. The visibility of deprivatised teaching leverages shift in practice.

Teaching collaboratively is a hell lot harder than just disappearing back to your single cell class and kind of doing what you are doing. If you get tired around them you kind of just resort back to what you always did. You can't do that in the collaborative classroom space. Equally that's where the big advantage is in terms of teacher practice. (Timothy)

A focus on spatialised practice in shared NGLE spaces is a deprivatising shift for some teachers. Kim highlights that self-interest becomes less important than the collaborative endeavour. There is a co-constructed values list that frames an explicit focus on dropping "ego- for 'we go'" so that practitioners in the school are both "humble and flexible".

I think for some teachers that it's about a lot of ego - 'my' and 'I'. And I think you have to lose that language of I and my and be humble and understand that you may have 20 plus years' experience of teaching, but a PRT (provisionally registered teacher) might come in with a really awesome idea and actually take the risk and jump in. We have a mindset and values list. One of them is 'we go', 'not ego'.... It takes the personal out of it. (Kim)

Kim makes the point that different opinions are to be valued and conflicting perspectives can be generative.

I think teachers are really good at sweeping stuff under the carpet because they are naturally nurturing people and don't like confrontation, but I think it's really important and healthy to think about the things that actually do need to be discussed and analysed and moved forward. (Kim)

With the focus on flexibility in NGLE, it follows that professional learning needs to be differentiated and relevant to a school community and the socio-cultural context of the teaching space.

Bespoke professional learning

A bespoke approach recognises the different prior experiences of teachers and that their skills and knowledge may be varied. It considers the professional learning context and is tailored to the strengths and needs of teachers.

The professional learning in Kim's school is multilayered. It is carefully designed to meet the needs of individual teachers, groups of teacher and the whole staff as a collective.

We design professional learning in-house primarily. It depends on their needs of the teachers at the time. There will be whole staff PD. Then middle management take away different elements of that and drill down into it, depending on the need of the teams. Then we have the coaches as well who drill down into individual goals and what teachers are needing. So it's multilayered and multifaceted to meet those different needs of all the teachers within the school. (Kim)

Selwyn describes how a one-size-fits-all approach to PLD does not address the complex needs of the staff in the NGLE. Moreover, in the interests of differentiation, he has moved the PLD design toward a tailored approach. This is spatialised PLD in that there is fluidity and flexibility with the range of approaches across the staffroom and classroom spaces in the school.

I am ditching all our off the shelf PD opportunities. I always get disappointed with the providers that come in - lots of promise and expectation but it just doesn't deliver and we get a whole lot of resentful staff. Some got something out of it, some didn't.... Now, for someone having a mentor might be better. So let's do that. And for someone else it might be classroom based. ...We know that learning programme of PD is just not very effective and we have got to stop thinking about the whole staff as this mass. We are not like that at all. We are not all the same. We are all very different. (Selwyn)

In addition, Selwyn talks about evaluating the quality of bespoke, targeted PLD in regard to its effectiveness for individual staff members.

So we say okay, you're one of the leaders. Let's do a real assessment of your leading skills and you might be good at A, B and C but not very good at D. Let's be honest about it you know, it's a high trust model, no threat. Okay, let's put something in D for you. And it could be done in a group with some other people so therefore there is accountability. You still have your objective, you still have your goals.... But if we don't target it, it's just a little bit of a hit

and miss thing and there is accountability in there. I am going to put this time and effort and energy into this resource because this is what we've identified for you and you will benefit from it. We want results and accountability for that. (Selwyn)

The juxtaposition of these characteristics of spatialised PLD suggests significant shifts in the nature of PLD design and provision. Implications of these emerging dimensions for schools, leaders and teachers are addressed in the following discussion of findings.

Implications of Spatialised of Professional Learning in NGLE

The pace of schooling change (exemplified in uptake of NGLE in some education systems) has resulted in a trend involving “individualistic, decontextualised and passive learning initiatives”, with contextually relevant teacher learning more difficult to effect because of “work intensification within schools and schooling systems” (Hardy, 2010, p. 72). The impetus to develop NGLE that are “conceptualised as new and potentially better socio-spatial contexts for learning” with learning spaces that are designed “as architectural devices to support new forms of practice”, signal significant shifts in the educational discourses of Aotearoa/ New Zealand, the context of this study (Bradbeer et al., 2017, p. 22).

Findings from our previous study suggest a strong push back by principals on a “focus of remodelling and refurbishing classrooms as a starting point, without engaging in concomitant teacher professional learning and development” (Charteris, Sardon & Nelson, 2016, p. 43). On the basis of the findings above, we suggest that the professional learning is an important dimension of teacher preparation for teaching in NGLE. In particular, learning opportunities focusing on the provision of PLD design as spatialised practice could specifically broker: spatial literacy; professional cross-pollination; co-teaching and peer coaching practices; practice deprivatisation; and, a bespoke approach to teacher learning design. In Table 1, we detail briefly outline suggestions for structures that foster a focus on spatialised pedagogy and PLD.

Table 1. Structures for spacialised pedagogy in professional learning and development.

Characteristics of spacialised PLD	Possible structures that support spacialised PLD
Spacial literacy	Regular opportunities to revisit the use of space: By teachers: fostering critical friend relationships; implementing quality learning circles; dialogue in staff meetings and syndicate meetings; the inclusion of peer observation; and use of photography as illustrations of spacialised practice.

	<p>With students: fostering student voice where students see change on the basis of their input, inclusion of photovoice and student art illustrations of spatial use; consultation with student focus groups; and school community engagement with student led presentations on the use of space.</p>
Professional cross-pollination	<p>Approaches to professional cross-pollination can include: celebration of teacher strengths; release time for professional reflection; tools and scaffolds for data collection during peer observations; fostering curriculum leadership and mentoring; focusing peer discussion during moderation meetings; developing a shared language around progressions of learning; and collaboratively determined shared teacher inquiry goals.</p>
Co-teaching and peer coaching practices	<p>Approaches to co-teaching and peer coaching can include: careful co-planning to ensure compatible uses of spaces; building capacity for relational trust; agreement around protocols for peer feedback; developing expertise in active listening and dialogic feedback practices; support for spontaneous observation practices and time scheduled for feedback conversations; consideration given to relationships that involve power sharing; value given to risk taking and reflective practice; and value placed on multiple perspectives.</p>
Practice deprivatisation	<p>The fostering of practice deprivatisation can involve: developing a shared language and coherent approach to pedagogy through dialogue in meetings; promoting a shared focus between staff – from ‘my and I’ to ‘we’; valuing different opinions and surfacing conflict to discuss issues as they arise; having clear roles and responsibilities; and negotiating protocols for working together.</p>

	Use of video to self critique and better understand contributions to the team
Bespoke PLD	Approaches to bespoke PLD can involve: fostering relational trust that enables teachers to realistically appraise what they require to grow in their practice; surfacing teachers' prior knowledge in order to build on what they already know; facilitating opportunities for curiosity and for staff to follow their interests where possible; a multilayers approach where there is a shared focus on overall school goals in addition to individualised ones; and school leadership that is responsive to teachers' needs and are data informed – data generated from PLD initiatives and student achievement.

The notion of spatialised practice (in both teaching and PLD) is founded on the premise of spatial literacy where teachers understand and know how to use the affordances of particular classroom spaces. Leveraging spatial literacy, there is moment –by-moment customisation of classroom spaces with use made of flexible furniture and a range of student groupings. Comber and colleagues (2006) highlight how space is highly influential in schooling settings. “[S]pace, along with discourse, gender, class, and race, is productive of subjectivities, relationships, and practices” (p. 230). As suggested by Robert above, in NGLE teachers who demonstrate spatial literacy engage in moment -by-moment customisation of learning spaces. It follows that spatialised PLD not only fosters this capacity for fluidity, but also supports a degree of reflexivity in how the practices are conceptualised and reflected upon individually and collegially.

With enhanced possibilities to learn from others as a form of professional cross-pollination there can be collegial role models for professional practice in the immediate teaching environment. Professional cross-pollination suggests potential for in-the-moment and just-in-time spatialised PLD opportunities. The findings suggest that this may involve learning how to work with students across year levels, enhancing discipline specific expertise and pedagogical content knowledge (Shulman, 1987) associated with progressions of learning, and possibilities for close mentoring in leadership.

While NGLE designs arguably intensify the working environment, due to multiple relationships and increased accountability to colleagues whom teachers work closely with, the opportunities for professional learning as a spatialised practice (“on steroids”), offers possibilities for collegial, contextualised and active teacher learning. It follows that, with profound changes to the nature of professional practice in NGLE, professional learning as a spatialised practice is an important consideration. It is well documented that teaching practice in NGLE involves an ongoing continual process of

negotiation as teachers respond to and adapt the affordances of unwalled classrooms (Deed & Lesko, 2015).

Without targeted professional learning, teachers may teach in flexible spaces and acknowledge that new approaches are possible, yet they may continue with pedagogical practices more aligned with conventional classrooms (Alterator & Deed, 2013). Bradbeer (2016) alludes to the importance of understanding the “space-between” as the interrelationship between “teacher collaboration, pedagogy and space” and the significance of “cohabitation, collaboration and co-construction” (p. 83) in NGLE. Without PLD to support teachers to manage the relational intensity associated with working in deprivatised NGLE, teachers may experience a sense of “dislocation and anxiety” (Alterator & Deed, 2013, p. 326).

Within the professional learning frameworks that are established to target school wide development goals, strategic and embedded PLD that optimises the affordances of NGLE can enable the fluidity for bespoke professional learning. With an emphasis on flexibility for student learning in NGLE, it follows that professional learning can be tailored to the socio-cultural context of the teaching space and bespoke in the way that, anytime and anywhere, it can address the needs of teachers. Thus spatialised PLD, that takes place ‘in the moment’ and is ‘just in time’ rather than ‘just in case’, is “multilayered and multifaceted” as ‘Kim’ alluded above.

Some Reservations for Consideration

The spatialised professional learning practices outlined in the findings above are contextually afforded through pedagogical practices in particular dynamic schooling spaces. Bradbeer et al.’s (2017) survey research, involving a sample of 337 Aotearoa/New Zealand schools, found that while ILE are growing in number, they are “not proliferating with abandon” (p. 34). Furthermore, they found that more than two thirds of learning takes place in traditional classrooms and that open plan designs are not the “dominant alternative to the traditional space” (p. 34). They found that spaces offering flexibility with “operable walls, break-out spaces and a combination of large and mid-sized classrooms” are more widespread in Aotearoa/New Zealand schools (Bradbeer et al., 2017, p. 34). It follows that spatialised PLD is dependent on the nature of both the physical and relational affordances of particular schooling sites and therefore, factors like prevailing teaching practices and the nature of the environments themselves, influence the approaches taken.

As the data above indicates, practices of co-teaching and peer coaching can assist in facilitating a culture of deprivatisation in NGLE, where there are dialogic co-constructive professional learning encounters made possible through joint activities (Wells, 1999). Previously, we have argued that moves to implement NGLE at policy level implies a conjuncture; a rupturing and reassembling of material - discursive practices in education (Charteris, Smardon & Nelson, 2017). This conjuncture involves a shift from a disciplinary form of control that privileges hierarchies and factory model schooling processes, to more elaborate structures that evoke datafication (Thompson, 2016) with associated pedagogical practices that support ‘control by distance’. ‘Control’ by distance’ involves freedom and transparency, with pedagogical practice made visible through accountability mechanisms of

deprivatisation. As Vanblaere and Devos (2016a) found, deprivatisation can challenge the status quo in schools and serve as a powerful force for change.

As a prominent feature of collaborative approaches to PLD in NGLE, deprivatised practice and has been critiqued as an intensification of performativity expectations (Charteris, Smardon & Nelson, 2017) Literally classroom walls are made of glass with practice visible to teaching peer, senior leaders and parents. The emphasis on classroom deprivatisation has a connection with neoliberal policy objectives that perpetuate the schooling audit culture (Charteris, 2016) that is increasingly pervasive in Australasia (Connell, 2013). The politics of NGLE are worth considering in this light, with the panoptical surveillance (Foucault, 1977) of deprivatised spaces resulting in practices that are visible to all. An associated increase in accountability and control (Sellar, 2015) can result in an intensification of teacher workload pressure (Thrupp, 2016). As the findings highlight, there is a considerable workload in NGLE with the demands of spatial literacy and the associated immersion in professional learning where there is both constant visibility (Alterator & Deed, 2013) and the capacity to engage with continuous peer coaching feedback (*PLD on steroids*).

Although there have been benefits highlighted in this study, the potential for “anxiety and vulnerability” (Cochran-Smith, 2015 p. 118) associated with deprivatised practices in NGLE must not be underestimated and therefore scope for PLD that recognises teacher agency (Charteris, 2016) is important. It is well established in the literature that a key feature of intimate collaboration is professional trust and the development of positive working relationships (Charteris & Smardon, 2014). Hardy (2012) makes the point that when teachers are provided with scope to take up professional identities associated with “productive professionalism” PLD is founded on “active collaboration and collective action, engagement, inquiry, trust, transformative politics...” (p. 810).

The participants in this study make up a sample from schools who have committed to NGLE and have committed to reculturing their schools to align with a 21st century learner vision (Benade, 2017a). These principals are ambassadors for NGLE as they have invested heavily in building projects. Further research could be undertaken into the perceptions of those who are not early adopters of NGLE as they may raise legitimate concerns. There could also be further research into both the practices associated with bespoke approaches to PLD design and the nature of specialised PLD in NGLE.

Conclusion

Restructuring schooling processes does not necessarily guarantee reculturing and there can be teachers’ resistance where they reorganise physical environments with flexible furniture to approximate single cell environments. Rather than being a stand-alone catalyst for change for ‘21st century learning’, NGLE are likely to provide an opportunity for PLD that enhance the pedagogic repertoire of teachers working collaboratively with their peers (Imms, 2018). In Table 1., we provided a summary of structures for PLD that may be useful in schools when developing specialised practices. These structures can assist leaders with approaches to PLD that

support a change culture in schools. These structures can also assist teachers to incorporate the use of space in collaborative teaching practices, where consideration is given to the affordances of NGLE design features (Imms, 2018). The structures may also inform approaches taken in initial teacher education, that support preservice teachers and beginning teachers with developing spatialised practices.

Although there are a plethora of approaches to PLD in NGLE, it is appropriate for the school demographic, the school vision for 21st century learning, resourcing for technologies and property funding, and particular staff strengths and needs to be taken into consideration. The PLD approaches described by the principals in this study suggest that particular spatialised dimensions of PLD come to the fore in collaborative NGLE spaces. Building on emerging work in the field pertaining to teachers' adaptation of their work in open learning spaces (Alterator & Deed, 2013), and the need for PLD to foster productive collaborations (Bradbeer, 2016), we have provided a set of dimensions for policy makers, school leaders and teachers to consider when designing PLD to support spatialised teaching practice. With the open-plan movement perceived as an architectural failure, and the reason attributed to many teachers being "unable to adapt to, and therefore working against, a space that was radically different from what they were accustomed to" (Byers & Imms, 2017, p. 52), close attention to spatialised PLD, as illustrated in this article, is warranted.

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