



Teacher Professional Learning and Development Research in Aotearoa New Zealand: A Scoping Review of Literature, 2010–2023

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Abstract

Teacher professional learning and development are critical to educational improvement efforts and teacher professional growth. Such learning and development can be facilitated in a range of ways, including more traditional ‘workshop style’ training programmes as well as coaching, mentoring, advisory support, teacher inquiry, and other activities that can contribute to teacher learning and change. Despite the extensive time, financial, and human resources invested in teacher professional learning and development in Aotearoa New Zealand every year, it is over 15 years since research on teacher development in this country was brought together in a published review. This paper presents a scoping review of $n=178$ primary studies published in English in 2010–2023 that focus on teacher professional development in the Aotearoa New Zealand schooling sector. Looking across this body of literature, we provide a quantitative overview of characteristics of the literature base and identify shifts, trends, strengths, gaps, imbalances, and directions for future research. This paper offers a timely summary and synthesis of recent research on teacher professional development in Aotearoa New Zealand and also offers challenges and recommendations for researchers working in this area.

Keywords Teacher professional development · Teacher learning · Teacher development · Literature review · Scoping review · New Zealand

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Introduction

Professional learning and development (PLD) are integral to being a teacher in Aotearoa New Zealand (NZ). To support the ongoing development of the teaching workforce, the Aotearoa NZ government's budget appropriations for the 2023–2024 year included over \$140 million for teacher PLD and support across the early learning and schooling sectors (Treasury, 2023). Public funds and teachers' time are invested in PLD on the premise that PLD will generate improvements in teaching practice that enhance students' experiences and outcomes.

Ongoing engagement in PLD also underscores teaching as a profession in which teachers' knowledge and practice are subject to ongoing consideration and refinement. Teachers recognise that their work, knowledge, and decision-making are complex, informed by an evolving research base and changing context (Teaching Council of Aotearoa New Zealand, 2023).

Despite the importance of teacher PLD in Aotearoa NZ, there are few comprehensive, published reviews of literature in this area. The most well-known review in this area is that by Timperley et al. (2007), who considered both "international and New Zealand evidence around the emerging knowledge base about how to promote teacher learning in ways that impact on outcomes for the diversity of students in our classrooms" (p. xxiii).

To bring our picture of the literature up to date, this paper presents a scoping review of literature on teacher PLD in primary and secondary schooling in Aotearoa NZ, encompassing articles published in peer-reviewed journals between 2010 and 2023. Because of the volume and breadth of literature eligible for inclusion, we have undertaken a scoping review rather than a systematic or narrative review. A scoping review methodology is appropriate for studies that seek to "examine the extent (that is, size), range (variety), and nature (characteristics) of the evidence on a topic or question" and to "identify gaps in the literature to aid the planning and commissioning of future research" (Tricco et al., 2018, p. 467, parentheses in original). Our study seeks to address these aims in relation to literature on teacher PLD in Aotearoa NZ's schooling sector. Our review includes the PLD of teachers in both English- and Māori-medium schools; in private, state-integrated, and public schools; and across Years 1–13. We also adopt a broad conceptualisation of what constitutes PLD, which we outline below.

Defining Teacher Professional Learning and Development

Despite its prominence, teacher PLD is a somewhat fuzzy construct. Many educators instinctively associate the term with activities and behaviours—particularly attendance at formal activities such as courses, workshops, and seminars. However, a much broader range of opportunities can contribute to teacher learning and development. Implicit, incidental, and informal activities offer powerful complements to traditional 'one shot' formal activities, which can be disconnected from classroom practice (Evans, 2019). Informal professional learning opportunities include those that are teacher-directed, those that arise spontaneously, and those that emerge out of school practices such as teacher moderation, mentoring, and collaboration. A com-

plication in the conceptualisation of teacher PLD thus concerns whether the term is used to refer to professional development *activities* (whether formal or informal) or, in contrast, to an internal process of teacher *learning and growth* – the development of professionalism that may arise from any of a wide range of activities, reflections and experiences (Evans, 2019; McChesney & Aldridge, 2019).

While researchers have advocated for more attention on internal teacher development (e.g. Evans, 2014; Webster-Wright, 2009), the activity-focused view of professional development remains more prominent in policy and practice (e.g. OECD, 2014). The Aotearoa NZ Ministry of Education’s PLD website mirrors this, focusing on “*opportunities to strengthen teaching practice and educational leadership*” (<https://pld.education.govt.nz/>; emphasis added) rather than on the change that may result from such opportunities. In alignment with the above, we define PLD as any professional activity—formal or informal, planned or spontaneous—that causes, or is intended to cause, teacher learning (McChesney, 2017).

Teacher Professional Learning and Development in Context

Policy and Practice Context: Teacher Professional Learning and Development Provision in Aotearoa New Zealand, 2010–2023

While PLD has long been a key area of national investment, the mechanisms for its provision have changed significantly. In 2010 (when our review period begins), nationally funded PLD provision had been managed for some time through School Support Services agreements between the Ministry of Education and six universities. Each university had a multi-year contract to deliver PLD for schools in their local region. The intention was to allow each school to access professional learning “in a flexible, coordinated way”, and it was seen as “important to allow regions to innovate and not try to force them into centrally determined frameworks and processes” (Sankar & Chauvel, 2010, p. 5). The PLD delivered by School Support Services included major national initiatives such as the Numeracy Development Projects, the Literacy Professional Development Projects, and Positive Behaviour for Learning. School Support Services also provided a national network of secondary subject advisors who supported schools in individual learning areas. However, when the School Support Services model was evaluated over 2007–2010, several issues were identified, including uneven access to or engagement with PLD among schools, inconsistent experiences for schools receiving PLD from multiple Ministry-contracted providers, a lack of data to monitor the uptake and outcomes of engagement with PLD, and a lack of strategic oversight of PLD provision in terms of participation and content focus (Sankar & Chauvel, 2010).

From 2011, PLD provision was opened to a range of providers and facilitators. The largest of these was Te Toi Tupu, a consortium of five providers spanning universities and private entities. During this period, the national approach to PLD arguably shifted from a mentoring or training approach, where “teachers and leaders were in effect apprenticed to advisers” (Whatman & Bull, 2014, p. 8), to a facilitation approach, where PLD provider staff found themselves “doing familiar things ... for different purposes and often in very different contexts” (p. 10). Facilitators were

directed to work with schools that were “deemed to be ‘failing’ or in need of external support” (p. 9). They were also accountable for bringing about improvement in student outcomes to an extent that School Support Services had not been, with the Ministry of Education requiring thrice-yearly reports on progress towards key outcomes.

In 2013, the Minister of Education established a Professional Learning and Development Advisory Group to review and recommend PLD approaches. Consequently, a new model of regionally funded PLD was developed (2015–2016) and rolled out (from 2017), an approach that remains in place at the time of writing. Under this model, any individual or organisation can apply to become an accredited PLD facilitator; at the time of writing, 859 accredited facilitators were listed on the Ministry of Education’s facilitator search tool.¹ Schools and Kāhui Ako/Communities of Learning (see below) choose their preferred facilitator(s) from this list and apply to regional Ministry of Education panels that award PLD funding for a specific number of PLD hours directly to each school–facilitator initiative. Over time, funding decisions have become increasingly “focused on building the capabilities that will lift student outcomes in a small number of national priority areas” (Ministry of Education, n.d., p. 1).

The national structures for provision outlined above do not represent the entirety of the PLD that teachers in Aotearoa NZ schools may access. The establishment of Kāhui Ako/Communities of Learning from 2014 onwards created new Within-School Teacher and Across-School Teacher positions that include a PLD function. There are also teachers working in roles such as Specialist Classroom Teachers, Mathematics Support Teachers, Resource Teachers—Learning and Behaviour, and Resource Teachers—Literacy, each of whom may serve as a source of professional learning for colleagues. Additional targeted initiatives that attract dedicated PLD funding are listed on the Ministry of Education’s website, with examples at the time of writing including Te Akatea Māori First Time Principals’ Programme, dedicated support for provisionally certificated teachers and overseas-trained teachers, and the Better Start Literacy Approach professional support.

As self-governing entities, schools are also free to undertake their own PLD outside the Ministry of Education’s centrally funded PLD scheme. Teachers may likewise pursue their own professional learning journeys through postgraduate study, reading, attending conferences, accessing online resources, participating in teacher networks, and more. Furthermore, all registered teachers in Aotearoa NZ engage in teaching as inquiry, a process that validates ongoing teacher learning and reflection to improve practice. The use of teaching as inquiry was formalised in the *New Zealand Curriculum* (Ministry of Education, 2007) and affirmed under the *Akoranga ngaiotanga | Professional learning* standard for the teaching profession (Education Council, 2017).

There are thus many ways in which teachers in Aotearoa NZ schools engage in PLD; however, recent data indicate the need to strengthen the uptake, use, and impacts of PLD. NZCER’s 2021 *National Survey of Secondary Schools* (Alansari et al., 2022) found that teachers spent a median of 20 h engaged in formal PLD in 2021, with three-quarters of this spent on topics that teachers had not chosen for them-

¹ <https://pld.education.govt.nz/find-a-facilitator/facilitators/>.

selves. Whole-school PLD over the previous three years was described as useful by only 36% of respondents. Compared to a similar survey in 2018, there was an overall sense of a decrease in accessible and useful sources of PLD. Just 14% of survey respondents reported that the change from previous teacher appraisal models to the new professional growth cycle (intended to support ongoing professional development) had resulted in useful learning and development opportunities. It is thus timely to be taking stock of what we know about teacher PLD in this country—and reflecting on what questions have and have not been explored by researchers. To inform this, below we consider international trends in teacher PLD research.

Research Context: International Trends in Teacher Professional Learning and Development Research

Teacher PLD has been considered within a wide body of literature spanning learning areas, international contexts, and decades. The logic behind implementing and investigating teacher PLD has been widely agreed on for some time: that teachers are key actors whose knowledge and practice strongly influence student learning outcomes, as well as being the agents who implement educational reforms (Darling-Hammond et al., 2017; Villegas-Reimers, 2003).

The benefits of PLD for individual practitioners have also been promoted within a wide range of literature for some time (Birman et al., 2000; Darling-Hammond et al., 2017; Wilson & Berne, 1999). For instance, PLD has been advocated for its potential to meet practitioners' needs throughout their careers (Coldwell, 2017; Eros, 2011) and to develop professional identities and autonomy (Trent, 2011; Wang & Zhang, 2014).

More recently, however, rather than positioning teachers as passive recipients of PLD and its benefits, there has been increasing emphasis on teachers' agency around their engagement in PLD (Durrant, 2019; Kennedy, 2014; McChesney & Aldridge, 2021). The importance of gaining teacher buy-in for PLD and school improvement initiatives has been acknowledged, along with the value and appropriateness of giving teachers the freedom to lead at least some of their professional learning themselves.

Different frames for theorising teaching and learning contribute to our understandings of PLD, including the strong cognitivist approach of much educational research of the twentieth century. According to cognitivists, teachers' practices are grounded within their thoughts, knowledge, beliefs, and emotions (Borg, 2003; Pajares, 1992), collectively referred to as *cognition*. PLD targets teacher cognition to enhance knowledge, awareness, skills, and instructional approaches to drive classroom decision-making and collectively improve learning outcomes (Avalos, 2011; Van Driel et al., 2001).

In the twenty-first century, a range of additional theoretical perspectives have emerged as our understandings of PLD have advanced. While retaining recognition of the importance of teacher cognition as a crucial element of the PLD process, the new theoretical perspectives place teacher cognition in a much richer and more complex context. Thus, older and more linear views of the PLD process have been deconstructed (Coldwell & Simkins, 2011; Strom et al., 2021), and alternative perspectives on teacher PLD have been proposed including through sociocultural (e.g. Eun, 2023),

complexity (e.g. Strom & Viesca, 2021), and rhizomatic (e.g. Sherman & Teemant, 2021) lenses.

At a more practical level, this century has also seen increasing acknowledgement that PLD initiatives do not always foster their envisioned outcomes (Hill et al., 2013; TNTP, 2015). There are a range of reasons for this. Overly strong focus on teacher compliance and observation of administrative protocol, reinforcement of status quo hierarchies, and dismantling of teachers' agency (Murphy & Gale, 2004; Sachs, 2001) can derail the intentions of PLD. On the other hand, a lack of sufficient fidelity can also severely weaken the implementation—and consequently the outcomes—of PLD (Bishop, 2023). As Gurney et al. (2018) note, “implementations of productive teacher professional development are subject to constant revision responsive to shifting political agendas for national growth and productivity, as well as to long-standing cultural notions of the roles of teachers, learners and educational institutions” (p. 510). As well as these macro-level factors, individual teacher factors, student factors, and aspects of the local school context also mediate the outcomes of teacher PLD in important ways (McChesney & Aldridge, 2021; McChesney & Cross, 2023).

Acknowledging the complex relationship between PLD initiatives and the subsequent outcomes, international research has given increasing attention to how to maximise the outcomes of PLD within the messy contexts of real-world school environments. Key focuses include actively monitoring both the fidelity of PLD implementation (Bishop, 2023) as well as the impacts of PLD activities (McChesney & Aldridge, 2019). In addition, the richness of a broader range of forms of PLD is being increasingly recognised, including online PLD (Parsons et al., 2019), teacher inquiry (Hardy, 2016), professional learning communities (Vangrieken et al., 2017), social media and other online networks (Macià & García, 2016), and implicit and informal PLD (Evans, 2019).

Overall, our understanding of PLD, including what it can and should do for teachers, learners, and educational systems, has evolved with the contribution of multiple perspectives over time. International research reflects an increasingly complex view of what teacher learning is, how it comes about, and how it impacts teaching and learning. With this foundation, we now turn to our examination of teacher PLD research in Aotearoa NZ.

Methods

This review sought to answer the following research questions:

- What primary research on PLD in Aotearoa NZ schools or for Aotearoa NZ teachers was published in peer-reviewed journals from 2010 to 2023?
- What is the nature of this research base?
- What directions might future research address?

The review was conducted in accordance with the *PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation* (Tricco et al., 2018). This is a modified version of the widely used PRISMA guidelines for systematic litera-

ture reviews (Moher et al., 2009), with the modifications reflecting the differences between scoping and systematic reviews. Since our study aimed to map research related to PLD in Aotearoa NZ schools from 2010 to 2023 and was likely to generate a broad base of literature, a scoping review and the associated PRISMA-ScR guidelines were deemed most appropriate. The review protocol was not pre-registered, as this is not common practice in education research. However, the PRISMA-ScR checklist was completed as the review progressed and this paper was prepared. Any queries regarding the review process may be directed to the authors.

Inclusion and Exclusion Criteria

Eligible sources for inclusion in this review were peer-reviewed journal articles published in English between 2010 and 2023 that reported empirical research related to teacher PLD in the schooling sector (primary and secondary) in Aotearoa NZ. This included research concerning the professional development of school principals, since Aotearoa NZ principals are considered part of the teaching profession and are subject to the same professional learning requirements to maintain their teacher practicing certificate.

We included articles that had primarily set out to research teacher PLD, and we also included articles where the research was not primarily PLD-focused as long as matters related to PLD formed a substantive part of the research findings. An example of a paper in this latter category is that by Fletcher et al. (2011): while their study focused on how principals effectively raise literacy achievement in reading for upper primary school students, the findings included sustained teacher PLD as one of five core strategies emphasised by the participating principals.

Research situated within the early childhood, tertiary, or pre-service teaching sectors was not eligible for inclusion; nor was work that was published in non-peer-reviewed formats or in dissertations and theses. We also excluded articles that made passing mention of teacher PLD but did not meet the criteria in the previous paragraph. This included, for example, articles that called for additional PLD within their conclusions or recommendations but did not have a substantial focus on PLD in either their research aims or the research findings. Finally, we excluded articles that did not present primary empirical findings—conceptual essays and papers that brought together multiple previously published studies.

Search Procedure

Nine academic databases were searched to locate potentially relevant articles: EBSCO Academic Search Complete, EBSCO Education Research Complete, EBSCO Humanities International Complete, ERIC, Informit, NZCER, ProQuest Education, Scopus, and Web of Science. In addition, three local journals were identified that were not indexed in any of these databases but were considered important to include in the review: *New Zealand Annual Review of Education*, *New Zealand Journal of Teachers' Work*, and *Teachers and Curriculum*. These journals were searched individually using the same search criteria as the database searches.

Searches across all databases and individual journals used the string: (“New Zealand” OR Aotearoa) AND (teach*) AND (“professional development” OR “professional learning”), with filters set to include only journal articles published in English and those published in or after 2010. The initial searches yielded 1,916 records.

The search results were exported into an Excel spreadsheet and compiled, removing duplicates. Title and abstract screening followed; all authors contributed to this process. We used the criteria detailed above to identify articles that could be excluded with confidence, retaining all articles that looked potentially relevant. The first and second authors then conducted full-text screening of all retained articles, excluding those that did not meet our inclusion criteria. Queries and disagreements were discussed to ensure consistency. The searches were executed again in January 2024 to capture any recently published articles (up to the end of 2023). The resulting 85 articles were screened in the same way as those found in the original searches, and eligible articles were added to the data set. In all, after beginning with 2,001 search records that represented 1,085 unique articles, the screening process resulted in 178 articles being eligible for inclusion in this scoping review. Figure 1 summarises the search and screening processes, and a supplementary online document provides an index of the 178 articles included in the review.

Data Analysis

Using an Excel spreadsheet, the first and second authors coded key details of each article included in the review, including features of the participants, the PLD involved, the research design and focus, and where the article was published. Frequencies and percentages were then used to summarise trends across the 178 articles reviewed, as is typical in a scoping review. Appendix 1 details the aspects captured during this stage of data analysis.

Given the large number of articles identified as eligible for inclusion in the review, we did not undertake a critical appraisal of the studies’ research quality, a narrative synthesis of the studies’ findings, or a meta-analysis of the quantitative studies’ findings. Such exercises are not required for scoping reviews. Moreover, syntheses and appraisals are best suited to smaller bodies of literature, while the large number of studies in our review incorporating quantitative methods precluded meta-analysis. By conducting a scoping review, we offer a broad picture of the extant literature and a platform for further analysis.

Results

This section presents the results of our review. We first consider publication trends: the number of articles published and where those articles were published. We then explore trends in the PLD and the contexts reflected in the 178 reviewed articles. Finally, we explore trends in the research designs employed across the reviewed articles. Within the presentation of results, we identify implications and future research directions related to specific findings. The [Discussion](#) section that follows will then offer broader reflections on the body of articles reviewed.

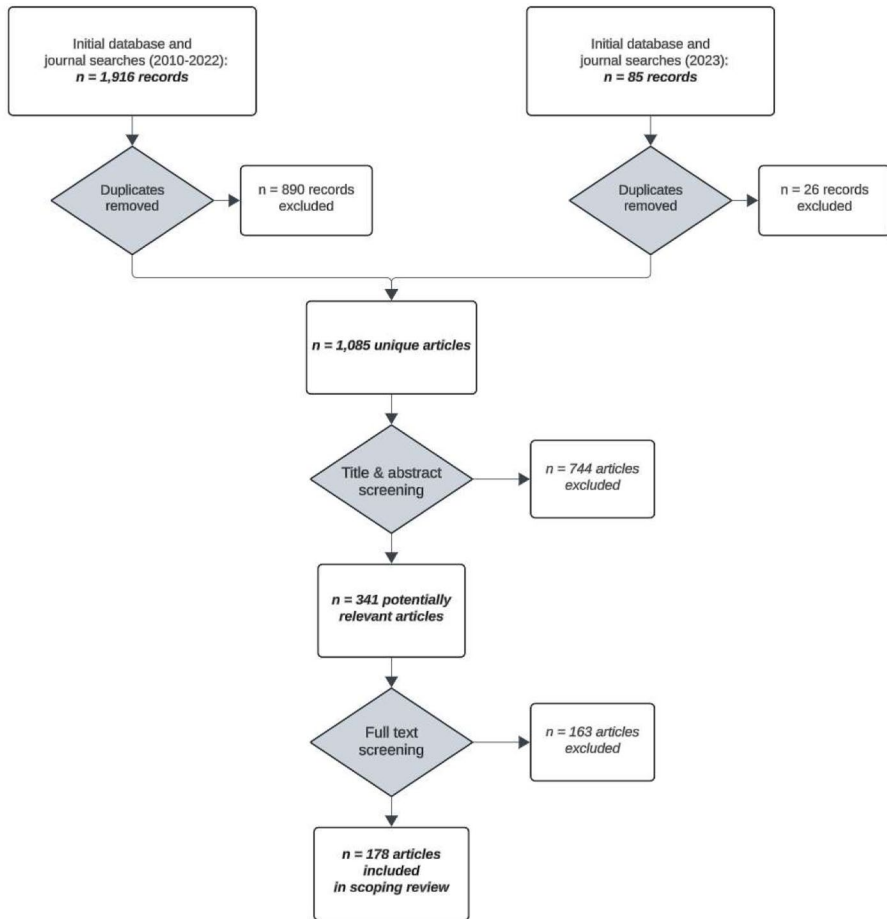


Fig. 1 Search and screening processes

Publication Trends

While the number of articles ($n=178$) found for this review was substantial, the first finding of note is that the amount of research focused on PLD for Aotearoa NZ teachers is decreasing over time, as shown in Fig. 2. Following a peak in 2011, when 30 eligible articles were published, the number of articles published each year revealed a declining trend. Only three eligible articles were found with 2023 publication dates. Given that investment in teacher PLD continues to increase, diminishing research into the conduct and outcomes of PLD seems concerning.

Of the 178 articles reviewed, just over a quarter (49 articles; 28%) were published in domestic journals. 24 articles (13%) were published in Australian or Asia/Pacific-focused journals, and the remaining 105 (59%) were published in broader international journals. The scope of the journals varied, as shown in Table 1.

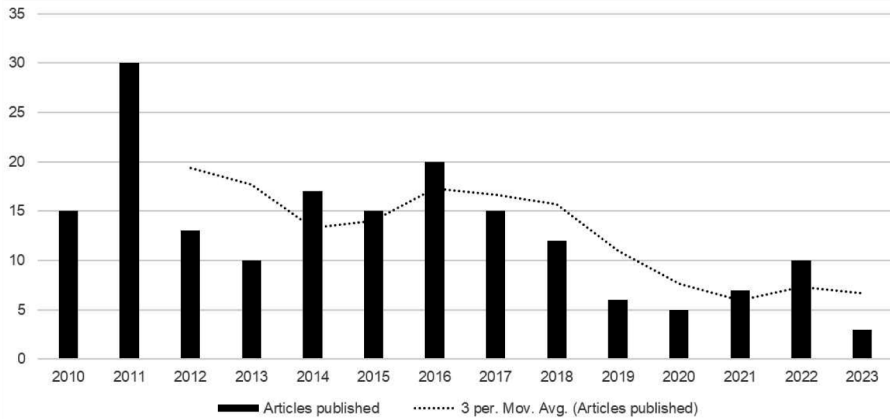


Fig. 2 Total articles by year published (total=178 articles)

Table 1 Distribution of 178 published articles across journal types

Journal type	Example journal titles	Number of articles	Percentage of articles
General education research	<ul style="list-style-type: none"> • <i>New Zealand Journal of Educational Studies</i> • <i>Education Sciences</i> • <i>Improving Schools</i> 	56	31%
Subject/specialist-focused education research	<ul style="list-style-type: none"> • <i>Australasian Journal of Gifted Education</i> • <i>Mathematics Teacher Education & Development</i> • <i>Science & Education</i> 	50	28%
Teacher education/teacher development research	<ul style="list-style-type: none"> • <i>Teacher Development</i> • <i>Professional Development in Education</i> • <i>Asia-Pacific Journal of Teacher Education</i> 	40	22%
Educational leadership/management	<ul style="list-style-type: none"> • <i>International Journal of Leadership in Education</i> • <i>Journal of Educational Leadership, Policy & Practice</i> • <i>Leading & Managing</i> 	22	12%
Practitioner journal	<ul style="list-style-type: none"> • <i>Set: Research Information for Teachers</i> 	7	4%
Non-education-specific	<ul style="list-style-type: none"> • <i>Reflective Practice</i> • <i>International Journal of Web Based Communities</i> • <i>Journal of Professional Capital and Community</i> 	3	2%

Trends in the PLD and PLD Contexts

The nature of the PLD reported in each article is shown in Fig. 3. Just under half the articles (84 articles, 47%) explored structured PLD events (such as workshops) and/or programmes. This aligns with the activity-focused conceptualisation of PLD research and practice discussed earlier in this paper. Many articles in this group were associated with specific government-funded initiatives such as the Numeracy Development Projects and PB4L. There was also a relatively large body of work (48 articles, 27%) on coaching and mentoring, including informal coaching/mentoring practice as well as work with subject advisors or Resource Teachers: Learning and Behaviour. A smaller amount of work (30 articles, 17%) considered teacher inquiry and co-research. Concerningly, very little research considered either higher education (7 articles, 4%) or spontaneous and informal learning (5 articles, 3%) as sources of PLD. These areas warrant greater attention as potentially powerful contexts for teacher development.

We also looked at each article's conceptualisation of PLD, as articulated in the introduction, background, conceptual/theoretical framework, and/or literature review section(s) of the article. Whereas above we considered the specific source/s of (or opportunities for) PLD, here we consider whether, at a broader, conceptual level, researchers maintained an activity-focused view of PLD or had shifted to considering "the development of the professional" (McChesney & Aldridge, 2019, p. 308). 72 articles (40%) took an expansive approach and used more than one conceptualisation of PLD, perhaps reflecting the theoretical complexity of this construct. It was encouraging to see that the most common conceptualisation of PLD was indeed focused on

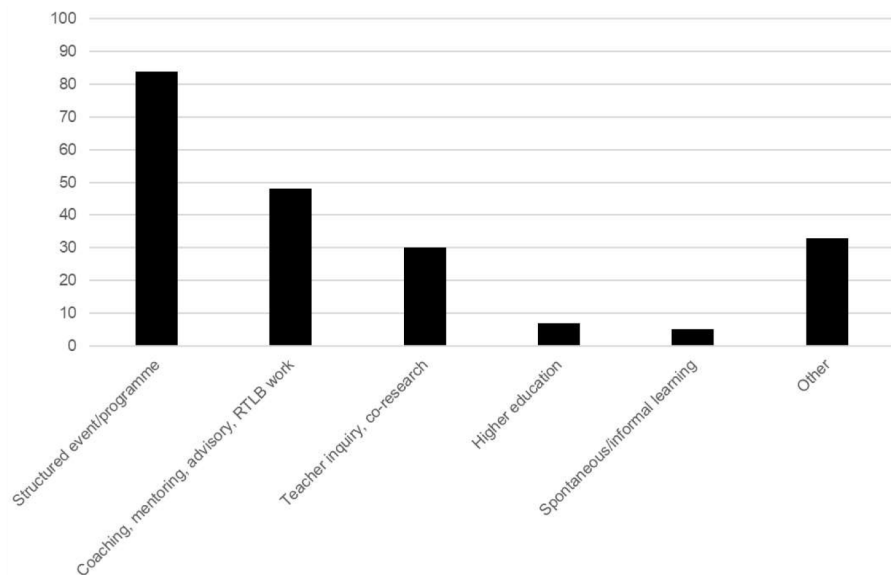


Fig. 3 Nature of PLD reported across 178 articles (note: some articles involved more than one category shown)

teacher learning (evident in 100 articles, 56%). However, an activity-focused conceptualisation was also evident in 95 articles (53%). 25 articles (14%) conceptualised PLD as teacher inquiry, and 53 articles (30%) conceptualised PLD in terms of changes in teacher practice or other measurable outcomes, which can be understood on the grounds that if these outcomes have not been seen, then the professional has not, in fact, developed.

In terms of the PLD contexts, the largest group of articles (80 articles; 45%) focused solely on primary (including intermediate/Year 7–8) teachers and/or schools. Lower numbers focused on secondary teachers and/or schools or spanned both primary and secondary, as shown in Fig. 4. A minority (24 articles; 13%) did not specify the schooling levels they related to. Many articles in the latter category focused on PLD that took place outside school contexts (for example, in online communities), which may explain the non-identification of the teachers' sector levels.

The discursive normativity of English-medium schooling was evident in the reviewed articles. Just four articles (2%) stated that they were reporting on PLD based in Māori-medium schools, while one (1%) spanned PLD in both English-medium and Māori-medium settings. Of the remaining 173 articles, just 21 (12%) explicitly specified that they were reporting on PLD in English-medium schools. The other 152 articles (85%) did not specify the sector they applied to. From our reading of these articles, it seemed highly likely that they reflected PLD in English-medium settings. To support *mana ōrite* (equal status) for English- and Māori-medium education, researchers are encouraged to be explicit in acknowledging which sector their work addresses. There is also a clear need for further research exploring PLD in Māori-medium settings.

Given the strong recommendations in research literature for PLD to have a subject-specific content focus (e.g. Darling-Hammond et al., 2017), we examined the focuses of the PLD in the reviewed articles. Around half of the articles reported PLD targeted at specific learning areas or groups of teachers, as shown in Table 2. Mathematics, English (including literacy), languages/TESOL, and science were the most common

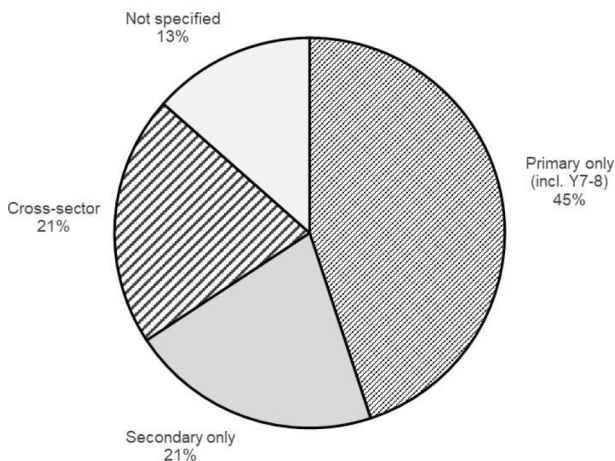


Fig. 4 Schooling sector focuses of the published articles (total = 178 articles)

Table 2 Learning areas or other focuses of PLD across 178 articles

PLD focus	Number of articles	Percentage of articles
Maths	16	9%
English/literacy	15	8%
Languages/TESOL	15	8%
Science	14	8%
Health and Physical Education	10	6%
Arts	6	3%
Social Science	5	3%
Technology	3	2%
Te reo Māori	1	1%
Multiple areas or generalist teaching	71	40%
School leaders	10	6%
Special education/learning support	8	4%
Resource teachers: Learning and behaviour	3	2%
Not specified	10	6%

Note Some studies related to multiple learning areas, so the totals add to more than 178 articles and more than 100%

focuses. Just one article (Marshall & McKenzie, 2011) considered PLD related to Te Reo Māori. This is a clear gap in research, given increased expectations of cultural responsiveness and schools giving effect to Te Tiriti o Waitangi (Education and Training Act, 2020) as well as the ongoing growth of enrolments in Māori-medium education (Education Counts, 2023). 40% of the reviewed articles (65 articles) involved PLD across multiple learning areas (including whole-school PLD) or for generalist primary school teachers. The remaining 10 articles (13%) did not specify a focus; many of these related to broader modes of PLD such as mentoring, with the focus of the paper being on the practice (e.g. mentoring) rather than the content area.

The broader professional development literature highlights the importance of teacher collaboration, particularly in job-embedded contexts where teachers can sustain their learning over time alongside their immediate colleagues (Darling-Hammond et al., 2017). In contrast, as shown in Fig. 5, over two-thirds of the articles in our review (122; 69%) reported on PLD that involved individual teacher participation (e.g. individual teachers engaging in external PLD or working one-on-one with a coach or advisor). The PLD in 11 articles (6%) involved a single group of teachers who regularly work together, such as a subject department or syndicate; 16 articles (9%) reported on whole-staff PLD; and 29 articles (16%) involved multiple groups of teachers who work together, such as several whole schools, or several departments/syndicates. Future research could further explore PLD that involves collective modes of teacher participation, including how this is perceived by Aotearoa NZ teachers and schools.

Finally, we considered the delivery mode of the PLD. 69 articles (39%) explored in-person PLD, 13 articles (7%) online delivery, and 12 articles (7%) a mix of these modes. 84 articles (47%) did not specify a delivery mode. It seems likely that much of the non-specified PLD would have taken place in person (particularly before the COVID pandemic), but we encourage authors to be clear in specifying the delivery mode when reporting future research. The changes wrought by the COVID-19 pan-

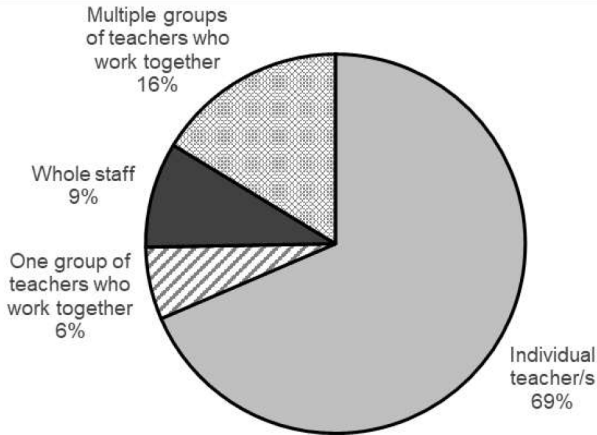


Fig. 5 Teacher collective participation in PLD across 178 articles

demographic have drawn attention to the potential of online teaching and learning opportunities, making this mode a potential focus for ongoing research going forward.

Research Design Trends

The reviewed articles tended to be relatively small in scale. Despite national funding pathways and PLD expectations, national-level studies were almost non-existent. Of the 178 reviewed articles, 105 (59%) involved 25 or fewer teachers, and just 21 (12%) involved more than 100 teachers. The largest study reviewed was Bourke et al.'s (2013) analysis of a Ministry of Education-funded PLD initiative; this study spanned 18 schools, with 964 teachers contributing data. Even this largest study in our review still spanned only a fraction of Aotearoa NZ's schooling system. We acknowledge the role played by NZCER in conducting national surveys of teachers (see NZCER, n.d.), and we note that their survey reports were not eligible for inclusion in this review due to being published in-house rather than within peer-reviewed journals. However, ideally, large-scale explorations of teacher PLD in Aotearoa NZ would come from more than one source. Larger-scale research is an avenue for future consideration, especially if researchers wish to impact government policy decisions.

Methodologically, 111 of the reviewed articles (62%) used solely qualitative methods and a further 56 articles (31%) used mixed methods. Nine articles (5%) were solely quantitative, suggesting an opportunity for more of this type of research—especially as quantitative work is conducive to a larger scale. Two articles (1%) did not provide sufficient details to categorise the methods used. 104 articles (58%) employed snapshot/single time-point designs, and 69 (39%) employed longitudinal designs. Four articles (2%) did not specify whether data were collected at a single time or across a longer period.

We also looked for articles that employed Kaupapa Māori or other Indigenous methodologies and/or theories. Here, we were specifically considering research design, and we were relying on what authors stated (we did not infer the use of

an approach if it was not explicitly named). Among the 178 articles in our review, none explicitly reported using Kaupapa Māori research and/or Kaupapa Māori theory. One article—by Hynds (2010)—described using “appropriate Māori-based protocols”; another—by Reynolds (2019)—used Pasifika research ethics, talanoa (a Pacific method), and vā (a Pacific theory). These two articles constitute just 1% of the articles in our review; we found that even studies focused on initiatives such as Te Kotahitanga used European-style research designs and methods, perhaps reflecting the norms of the time they were written in. Given Aotearoa NZ’s bicultural foundations and our aspirations for cultural responsiveness and mana ōrite in our education system, the lack of Māori and Indigenous approaches to researching PLD was surprising. Kaupapa Māori, Pacific, and other Indigenous methodologies and theories have expanded rapidly over the past decade; incorporating these into research on teacher PLD in Aotearoa NZ is an important future direction.

Finally, in terms of the data sources used, most studies (153 articles, 86%) drew on teacher voice, whether alone or in combination with other data sources. 71 studies (40%) included consideration of teacher learning, and 67 articles (38%) used evidence of changes in teacher practice (although our coding for both of these included teachers’ reports of their learning and changed practice). In contrast, just 23 articles (13%) examined student outcome data, and just 14 articles (8%) considered student voice/perception data. PLD provider/facilitator perspectives were used as data in 38 studies (21%), and 41 studies (23%) incorporated other voices—most commonly the perceptions of school leaders. Going forward, researchers could consider the most powerful combination of data sources to inform their research; while teacher voice is often the easiest to collect, it has limitations. Combining teacher voice with other forms of evidence of teacher and student outcomes may give a fuller picture of impacts (Desimone, 2009).

Discussion

Overall, this review has indicated that there is significant research interest in the PLD of teachers in Aotearoa NZ. Given the large investment of public funds in teacher PLD and the centrality of PLD as a professional expectation in the teaching profession, this is not unexpected. Teacher PLD has been approached by researchers through a range of contexts and lenses, across diverse subject areas, and through the perspectives of teachers, leaders, and students. However, we nonetheless see scope for expanding the breadth and depth of research, informed by our reading of the reviewed articles against international literature in the field of teacher PLD.

Much of the research in our review involved expert-led PLD. The activity-focused conceptualisation of PLD came through strongly among the articles in our review, and structured PLD events as well as expert-led forms such as coaching, mentoring, and advisory and RTLB input were common. International research (as flagged at the beginning of the paper) likewise often conceptualises teacher PLD in terms of particular activities and underscores the ongoing role of ‘experts’ in crafting and reviewing this PLD.

However, there is much to be gained from centring teacher voices as leaders of their own learning and practice. Given our findings, there is certainly scope for this in future Aotearoa NZ research by extending the focus on modes such as teacher inquiry, independent teacher learning, and teacher-led PLD. The identities of teachers-as-learners and teachers-as-researchers can continue to be amplified to form legitimate parts of the puzzle of teacher learning research.

Increasing the focus on teacher-led research may also allow further scope for documenting informal learning, which is a significant aspect of developing as a professional. When faced with the question ‘What did you learn?’, we are inclined to report our learning as a packaged set of knowledge, awareness, or attitude changes, often connected to the stated focus of a PLD activity. Much PLD research internationally focuses on such ‘explicit’ learning: that is, what is documentable and reportable by teachers (Evans, 2019). Implicit/informal learning, which may be more gradual and less detectable, is more difficult to capture through popular research approaches. Webster-Wright (2009) argues that professional knowledge is often conceptualised “as primarily cognitive, ‘acquired’ through learning, and able to be studied separately from the sociocultural context in which the knowledge is used” (p. 713). Therefore, she argues, studies tend towards atomism (rather than holism), and approach professionals via a dualist ontology that assumes they can be studied separately from their practice.

To address this dualist positioning, Aotearoa NZ PLD research may benefit from expanding into different research approaches. Much of the reviewed literature orients towards a qualitative, interpretivist paradigm and/or a descriptive approach. Other ways of framing teacher learning, grounded in different ways of conceptualising knowledge and professionalism, offer potential frames to sit alongside current approaches and contribute different pieces of the puzzle. As an example, research underpinned by poststructuralist approaches to teacher identities as fluid and dynamic move us away from a linear conception of teacher development happening along predictable stages from novice to experienced. Similarly, attempting to account more holistically for the material and ideal factors that underpin teacher decision-making—from the physical dynamics of the classroom and school to the ever-present, shifting ideologies of ‘good teacher’ and ‘good student’—would allow a deeper understanding of teachers’ interactions with professional learning, including how and why they learn from it, and what their learning results in. The voices and experiences of students add another dimension which can be captured through classroom-oriented research.

While many studies explored specific instances of PLD in Aotearoa NZ schools, we noted little research that considered PLD policies and structures. There is an urgent need for research at this system level that critically and empirically explores the impacts, benefits, and consequences of the architecture of PLD provision. For example, the regionally allocated PLD model has arguably generated a proliferation of providers and a fragmentation of PLD provision into small ‘micro-contracts’. Despite the Ministry of Education’s mechanisms for accrediting PLD providers and establishing national PLD priorities, we do not know whether the regionally allocated PLD contracts combine in coherent ways within individual schools or across the system. We do not yet understand the effects of marketising PLD provision in this way,

including how underlying pedagogical principles are translated via pre-packaged models, programmes, and products; nor do we know the extent to which the current system of PLD provision is making meaningful differences to teaching, learning, or student outcomes in the intended priority areas.

There is also a need for more research into teacher agency, accountability, improvement, and sustainability in schools over longer time scales. While our review identified a substantial minority of longitudinal studies, few of these extended beyond 12–18 months. Teachers are key educational change makers who, although invariably facing institutional and systemic constraints, nonetheless have the agency to make a range of decisions about what they do and how. Teachers are not technicians who implement policy in predictable ways. Tracking teacher learning and change over longer periods would allow for change to be documented and understood in more holistic ways. Providing evidence on whether the uptake of new ideas and practices is long-lasting or beneficial across the span of multiple years, particularly for programs which are now long-running, would be of great benefit to the field.

A related consideration is the effectiveness of educational change in meeting its desired outcomes for students who are marginalised within the education system. In Aotearoa NZ, there has been a strong emphasis on supporting student populations who are considered to be marginalised or at risk. However, the voices of students were notably missing from much of the reviewed literature. There was also little research related to PLD on Te Reo Māori or in Māori-medium education, and little research that used Kaupapa Māori and other indigenous perspectives. Given the importance of equity in academic discussions, policy, curriculum, and teacher education programs, we hope to see more equity-focused consideration of teacher PLD in future published work.

We also argue that there is a need for this research to test theories of action to establish connections between teachers' practice, professional development, and goals for students. The extent to which culturally responsive or sustaining pedagogy, for instance, connects to student learning outcomes, is an apt focus for future research. Further work is also warranted in the areas of English for speakers of other languages (ESOL), given growing multilingualism in the country, as well as work with focuses around disability and inclusion.

Finally, we would advocate for more research that compares teacher PLD in Aotearoa NZ to other contexts internationally. While 59% of the publications were in international journals, there were very few articles that looked at PLD in Aotearoa NZ through an international and/or comparative lens (an exception was Papp & Cottrell, 2021). Through comparative and other international studies, Aotearoa NZ researchers and teachers can reflect and learn from international work and consider elements of other systems which could be relevant to us. We would encourage researchers to go beyond the Anglosphere—Australia, the USA, Canada, and the United Kingdom, particularly—to make these comparisons, and instead to consider other countries in the Asia-Pacific region and beyond.

Limitations

This scoping review has strengths and limitations. The scoping review methodology allows for a broad, exploratory review of work in a particular area. This approach enabled us to provide an overview of the extent, nature, emphases, and gaps in research on teacher PLD in Aotearoa NZ schools from 2010 to 2023. However, the broad nature of the scoping review methodology, combined with our topic and time-frame, mean a corresponding loss of depth. We have chosen to provide a broad picture of the literature base, which we hope will be a useful platform for subsequent analyses of subsets of the literature, with critical quality appraisal and/or synthesis of findings provided within those subsets.

A second limitation is that, while some aspects of the coding process were straightforward (such as recording the number of teacher participants), other aspects involved interpretations. One example is identifying the underpinning conceptualisation of PLD evident in a particular manuscript. For our review, two authors contributed to the coding and discussed decisions as needed to ensure consistency. However, we acknowledge that different researchers may make different interpretations, and we note this as a limitation inherent in the type of coding undertaken.

A final limitation is the restriction of this review to peer-reviewed articles. This is relatively common when conducting a scoping review. However, we acknowledge that other sources exist and offer important insights that complement those reflected in this review. Examples include MOE evaluations of initiatives such as PB4L, which may offer comments on PLD as part of the wider evaluation; postgraduate student dissertations and theses, some of which will focus directly on PLD; and teacher survey reports such as those from NZCER or the OECD, which offer quantitative insights into the prevalence and nature of teacher PLD in Aotearoa NZ. Given the large number of peer-reviewed papers found within our review parameters, it was not manageable to also locate and include these other sources.

Conclusion

Through this review, we have examined literature focused on teacher PLD in Aotearoa NZ schools, published between 2010 and 2023, using a scoping review methodology. We have found that a significant amount of research has been conducted on teacher PLD in Aotearoa NZ schools; however, there are imbalances and gaps in both substantive focuses and research approaches.

Ideally, research and policy would each inform each other. If, as a community of scholars, we hope to influence PLD policy and facilitation in this country, we need to work towards research that is of use to policy makers through its scope, focuses, and design. Simultaneously, there is a need for research on PLD to respond to policy changes, provide critique, offer impact evaluations, and acknowledge complexities that may otherwise be masked by policy statements. We hope this review provides a useful platform to direct ongoing research in this important area.

Appendix

Appendix 1 Variables used in Coding the Review Articles

Category	Variable	Codes
Participants and context	Number of teachers/schools involved in the research	(actual number recorded)
	Schooling sector/s	<ul style="list-style-type: none"> • Primary [including Y7-8] • Secondary • Cross-sector • Not specified
	English- and/or Māori-medium schools	<ul style="list-style-type: none"> • English-medium • Māori-medium • Not specified
The PLD involved in the research	Learning or specialist areas of focus	<ul style="list-style-type: none"> • English [including literacy] • Mathematics and statistics • Social sciences • Science • Technology • The arts • Languages [including TESOL] • Health and physical education • Multiple areas/generalist teaching • Special education • Resource teachers: Learning and behaviour • School leaders • Not specified
	Individual or collegial participation	<ul style="list-style-type: none"> • Individual teacher/s [not full staff or teaching teams] • One group of teachers who work together but NOT whole school staff • Whole staff of one school • Multiple groups who work together in their contexts [could be multiple departments across multiple schools - or multiple whole schools]
	Type of activity/ies	<ul style="list-style-type: none"> • Structured PD event/programme • Coaching, mentoring, advisory, RTLB work • Spontaneous/informal learning • Teacher inquiry/research • Higher education/further study • Other

Appendix 1 Continued

Category	Variable	Codes
	Funding or origin of the PLD	<ul style="list-style-type: none"> • Government funding at system/school level [e.g. numeracy project, subject advisors, RTLB] • Government funding at individual level [e.g. study awards, sabbaticals, teacher fellowships] • Self-funded/initiated by teacher or school [e.g. attending conferences, further study] • Collaborative/led by staff [e.g. shared inquiry, 'homegrown' workshops] • Formal research partnerships [e.g. TLRI, TLIF] • Incidental/spontaneous PLD • Other/not specified
	Delivery mode	<ul style="list-style-type: none"> • In-person • Online • Mix of in-person and online • Not specified
Nature of the research	Methodology	<ul style="list-style-type: none"> • Qualitative only • Quantitative only • Mixed methods
	Research design	<ul style="list-style-type: none"> • Longitudinal • Snapshot
	Dominant conceptualisation of PLD	<ul style="list-style-type: none"> • PLD as activities • PLD as teacher learning • PLD as focused on changes in teacher practice or other outcomes • PLD as teacher inquiry • Other/not clear
	Measures or data sources used	<ul style="list-style-type: none"> • Teacher voice/perceptions • Indications of teacher learning [including teacher accounts] • Indications of changes in teacher practice [including teacher accounts] • Student outcomes • Student voice/perceptions • PLD provider/facilitator voice/perceptions • Other stakeholder voice/perceptions
	Use of kaupapa Māori or indigenous research framings	<ul style="list-style-type: none"> • Kaupapa Māori research/perspective • Other indigenous (e.g. Pacific) research/perspective • None/not specified
Publication context	Journal geographic provenance	<ul style="list-style-type: none"> • New Zealand • Australia/Asia-Pacific • International
	Journal disciplinary provenance	<ul style="list-style-type: none"> • General education research journal • Subject-focused education research journal • Teacher education/development research journal • Educational leadership/management journal • Practitioner journal • Non-education journal

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Declarations

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