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Codesign in Indigenous education policy and practice—A systematic literature review

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Abstract

Codesign is an increasingly common term in Indigenous education policy settings. However, it is unclear exactly what it means and how it is enacted. This systematic review examined 15 papers relevant to codesign in the context of Indigenous education, clearly distinguishing between codesign as a process and a method. These papers provide a snapshot of the various ways codesign is conceptualised, enacted as a process and evaluated in Indigenous education settings. In this paper, we respond to these three areas of codesign to inform a more nuanced framework to help policymakers and practitioners in the future.

KEYWORDS

Aboriginal and Torres Strait Islander peoples, codesign, education, Indigenous peoples, social policy

1 | INTRODUCTION

The concept of codesign is not new and can be very broadly defined as referring to research, policy and actions that are designed around the meaningful involvement of end-users (Slattery et al., 2020). As a methodology, codesign can be found in various bodies of literature and contexts, ranging from participatory research design, design thinking, and public sector policy and innovation (Blomkamp, 2018). In the Australian policy landscape, codesign approaches that attempt to proactively work with marginalised groups, who are the subject of a policy or programme intervention, are increasingly used by governments to shift public perception and have been taken up in particular in the health field (Grindell et al., 2022). The use of central aspects of codesign, such as consultation, deep engagement with key stakeholder groups and collaborative problem solving, has long been attempted in various Indigenous policy settings.

More recently, in October 2019, the Australian Government announced the Indigenous Voice Codesign process (National Indigenous Australians Agency, 2019) that would aim to refine ways to enhance local and regional decision making ahead of the proposed (albeit unsuccessful) constitutional change to enshrine an Indigenous voice to parliament (Fredericks & Bradfield, 2021). Nevertheless, as the use of the term codesign becomes common, there is an important growing concern about the lack of clarity on what codesign is and whether there is evidence of its effectiveness in various policy settings (King et al., 2022).

The taken-for-grantedness of what is meant by codesign is evident both in Australian education policies and in the scholarly literature. While the language of codesign is now widely used, its use is slippery and it is not always clear what policymakers mean by the term or whether and how codesign is actually taking place in practice. In addition, in other fields such as health the terminology of codesign is critiqued as "widely used but seldom described or evaluated in detail" (Slattery et al., 2020, p. 1). In the Australian context where Indigenous education continues to lag and the government is criticised for its overwhelming failure to deliver effective policy reform in Indigenous education (Shay et al., 2023, p. 74), without even minimal guidelines, codesign can become just another "tick box" without meaning or capacity for transformation (Locke et al., 2023). Additionally, while codesign assumes decision making will be collaborative, ethical and respectful of Indigenous ways of being and knowing, it can also still both wittingly or inadvertently perpetuate unequal power relationships and even racism. As Fredericks and Bradfield (2021) suggest, the idea of codesign solutions is still based within a settler-colonial landscape and within governing structures ultimately informed by western ontologies.

Key interventions such as Close the Gap, implemented by Prime Minister Kevin Rudd in 2007 to address the disparities between non-Indigenous and Indigenous people in both health (life expectancy) and schooling, outlined positive intentions for improved outcomes for Aboriginal and Torres Strait Islander peoples. However, these policies have continued to fail in their goals to improve educational outcomes significantly. In response to this, the Close the Gap Refresh was announced in 2020 through a New National Agreement (The Department of Prime Minister and Cabinet, 2020). This announcement proposed a radical new approach that signals the importance of Indigenous people's voices; that Indigenous peoples should have a greater say on programmes and services delivered in their communities; and that Indigenous peoples should have greater access to data and information. The outlined commitments have important implications. For example, educational jurisdictions such as Queensland now name codesign as their primary approach in Indigenous education policy settings (Queensland Government, 2023). Therefore, it is timely to consider what codesign means and how it is defined and explained in the growing body of scholarly literature claiming its use in Indigenous education policy, practice and research.

The term codesign could be deemed as conceptual soup, as there is little consensus of its multiple definitions. But despite this, it continues to be a rapidly taken-for-granted term which is attractive to governments and used across various settings, including policy and practice. Our research aims to understand how codesign is defined and used as a process in Indigenous education and proposed as a more equitable way to work with Indigenous communities, taking local and place-based differences into account. Considering codesign is also increasingly used in Indigenous research settings, including education, this systematic literature review is focused on understanding the current corpus of literature, interrogating how codesign is defined, used in practice and evaluated in the few published examples where this is the case. While there are other papers that examine codesign as a research methodology, this is not the subject of this paper. Instead, we examine papers that report how codesign, beyond just being theorised, has been used in educational programmes or projects. This distinction is important as using codesign in research settings and researching the process of codesign in educational policy and practice settings are different contexts, each worthy of examination.

This difference became apparent during this systematic literature review. The focused literature we selected outlined examples of codesign as implemented or practised. These examples of codesign in practice presented us with lived examples that provide us with insight into what the authors seem to mean by codesign and what features are common to most of the projects. These practical examples of codesigned research amplify the aspects of codesign that remain vague or unclear.

For this review, we focus on three areas of codesign: conceptualisation, process and evaluation, with each underpinned by a research question/s: (i) Conceptualisation of codesign—How is codesign conceptualised? (ii) Process—How is codesign enacted as a process? and (iii) Evaluation—How is codesign evaluated? By examining these three areas of codesign (Conceptual, Process and Evaluation), we can develop a more nuanced framework to help policymakers.

2 | WHO ARE WE?

We are a group of Indigenous and non-Indigenous educational researchers. Collectively, we are committed to transformative research, primarily driven by an impetus to produce high-quality evidence to inform systemic change. As this is Indigenous-led research, naming one's location and our relationship to the study is integral to robust Indigenous knowledge production (Martin, 2008). Our research team is consistently engaged with reflexivity, which informs our approaches to the research and the data. Author 1, Shay, is a Wagiman woman who was born in Brisbane and raised in South East Queensland. Author 2, Sarra, is an Aboriginal (Birrigubba) and Torres Strait Islander woman. Author 3, Lampert, is a White woman, born overseas. Author 4, Jeong, is a South Korean woman who moved to Brisbane six years ago. Author 5, Thomson, is a Mandandanji woman born and raised in Brisbane. Author 6, Miller, is a non-Indigenous woman who was the first in her family to be born and raised in Brisbane.

3 | BACKGROUND

As the Indigenous education policy landscape is seemingly shifting toward codesign or more collaborative or participatory approaches with Indigenous peoples, gaining some clarity about how Governments are making evidence-based decisions to implement such approaches is critical. One of the challenges of researching codesign is defining what it means. As a relatively new and sometimes vaguely described term, codesign is related to other participatory action research methods (Dillon, 2021). Where some use codesign, others might use terms such as community engagement or participatory research. The differences between these are sometimes minimal or unclear. Its usage is also multi-disciplinary, with the term codesign used more often in health and recently adopted in education. Its use also varies in intent, primarily as a practical or social tool by some and a way of signifying a more overtly political intent by others. The decisions that inform this systematic literature review and its parameters were made knowing that language is slippery and fuzzy and that, while "warmly persuasive" (Philip et al., 2013, p. 174). It could be considered a broad semantic catchphrase without a clear shared meaning. Nevertheless, Williams's foundational work on keywords or "significant binding words" (Williams, 2014, p. 15) reminds us that the semantic complexity of defining codesign is in part due to the complexities of language. As terms such as codesign become more commonly used in the creation of policy, they may simultaneously become diluted, shift in focus or lose their meaning becoming a mere buzzword (Williams, 1999).

Codesign is closely associated with community engagement, particularly as it is applied in educational contexts such as the Queensland Government (2023) Department of Education's

"local community engagement through codesign." Determining what Indigenous community means in policy vernacular and how that translates to policy enactment was analysed by Shay and Lampert (2022). The authors concluded that poorly defined and dominant Western understandings of Indigenous communities—including the important differences between them—can result in the homogenisation of issues. As in broader policy, the codesign literature references Indigenous communities and the importance of community voices in the codesign process (Dreise & Mazurski, 2018) which Wright et al. (2021) suggest is crucial to the project of decolonising education. Thus, conceptual, contextualised clarity on a range of terminology is critical for codesign to be both political in intent and fit for purpose, allowing for different outcomes to similar processes enacted over past decades (Shay et al., 2023).

Its close relationship to codesign is helpful to foreground key literature on community engagement. Since the 1970s, Indigenous Elders and education advocates have called for closer involvement of Indigenous communities in educational aspirations at regional and local levels (Holt, 2021). Subsequent state-based Indigenous education consultative groups and committees emerged to involve Indigenous community voices in policy development and enactment. These calls for better community engagement and stronger more authentic Indigenous community-led partnerships follow many years of harsh critique from Indigenous communities and educators about the failure of mainstream non-Indigenous schools to meet the needs of Indigenous young people. Key Indigenous scholars, from Kaye Price and Peter Buckskin, from Karen Martin to Jay Phillips to Lester Irribani Rigney and many, many others, have criticised the education system for ignoring, excluding and oppressing the Indigenous families and young people it is there to serve as well as ignoring and miseducating non-Indigenous students about Australia's Indigenous history and knowledge. Like community engagement, the most politically oriented versions of codesign seek to disrupt what Aileen Moreton-Robinson (2019, p. 68) refers to as "white, heteronormative exclusionary practices." While it is not always directly apparent, and is easily watered down, at its heart and when proposed by Indigenous communities themselves, both community engagement and codesign are motivated—or should be—by the desire for social transformation, a restoration of power and social justice.

The need for codesign in Indigenous education is obvious in the context of the urgent and ongoing systematic failure of the Australian education system to adequately service the needs of Aboriginal and Torres Strait Islander children. As Nakata (2022, p. 865) recently wrote, "we only have to look at Indigenous schooling … statistics over time to know that progress is slow, and in places stationary or going backwards on some measures." The very idea of codesign is meant to be reparative within the assimilationist and colonial education system that historically has been so damaging to Indigenous families and children (Kelly & Rigney, 2022; Shay & Oliver, 2021). Bishop (2021) refers to schooling as causing ongoing, systemic harm to many Indigenous students. In calling for sovereignty, Bishop would go further than suggesting codesign, which may not go far enough in its capacity to decolonise a damaging education system.

Lowe et al. (2019) systematically reviewed 32 studies to understand the barriers and enablers of productive and genuine interactions between Indigenous communities and schools. A key finding of this systematic review is that opportunities need to be made for Indigenous peoples to have the chance to "co-construct" and participate collaboratively with schools and school leaders in decision-making processes that impact their children's education (Lowe et al., 2019). To ensure that shared decision making and community engagement are fostered, the purpose of this engagement must be foregrounded. Mellor et al. (2004) report outlines the role of school leaders in constructing community relationships. If any constructed vision created by the school and community is to be successfully embraced and implemented, it must align with the children's perceived needs as articulated by their families and communities (Eckermann, 1994; Mellor et al., 2004). Community engagement and codesign are commonly noted as the way forward, but fewer examples exist to demonstrate how this can be done.

As noted, the health field has been most proactive in implementing the principles of codesign. Two recently published systematic literature reviews on codesign exist within this field. King et al. (2022) systematic review on codesign for young people in the health and disabilities sectors, including for Indigenous and non-Indigenous children, found no established definition of codesign; only 5 of the 15 studies included in the analysis were Australian-based, and overall, there appeared to be a limited understanding of what codesign is. Further findings suggest an overall scarcity of evaluation, with only one study including evaluative data. This evaluation reported that while equity measures were associated with including specific groups, there was a distinct lack of attending to power dynamics. Failing to recognise power differentials is a concerning finding, particularly as Blomkamp (2018) proposes that "codesign thus aligns normatively with community-driven development and deliberate democracy, which also seek to enhance citizen participation and empowerment" (p. 722). Ansell and Gash (2007) also recognise power imbalances as a key risk of codesign. One strategy that is enshrined in key Indigenous research ethical guidelines such as the AIATSIS (2020) guidelines is the role of Indigenous leadership as a strategy for addressing power imbalances. Our systematic literature review specifically examined how Indigenous leadership was included, not just in the codesign process itself but also in authorship of the papers.

Butler et al.' (2022) systematic literature review focuses on optimal approaches to codesign in health with First Nations Australians. Butler et al. (2022) propose that codesign is emerging in health to improve outcomes for Aboriginal and Torres Strait Islander peoples. However, the process of codesign should be culturally safe and effective. The authors identified 99 papers while seeking to understand optimal approaches to codesign in health settings with Indigenous peoples. They identified six key themes: First Nations leadership, inclusive partnerships, evidence-based decision making, respect, culturally grounded approaches and clear benefits to Indigenous communities (p. 7). Their recommendation to develop evaluative and monitoring frameworks for codesign reflects the dearth of reported evaluations of codesign interventions. Unlike the systematic review by Butler et al. (2022) and King et al. (2022) identify power and decision making as one of the key principles of codesign, particularly in Indigenous health settings. As Moll et al. (2020, p. 2) explain, codesign is both a philosophy and a method. The 99 papers that comprise Butler et al. (2022) systemic literature review include themes from philosophical (conceptual) papers and empirical papers (where codesigned projects were reported with data). The proposed themes are useful and transferable to education contexts.

These two systemic reviews of codesign from the health field suggest that codesign comes with a degree of caution. These cautions include claiming the use of codesign when there is still a lack of conceptual clarity about its meaning. Codesign always includes issues related to power and politics. Even though there is a lack of available evidence frameworks for codesign, there is much optimism about the possibilities of codesign in policy and practice settings that affect Indigenous peoples (Akama et al., 2019; Dillon, 2021). Approaches used in Indigenous policy should be fit for purpose and utilise evidence, strategies and contextual approaches to the discipline area. While there will always be a crossover with areas, such as Indigenous health, in terms of potential translation of methodological or ideological policy approaches, Indigenous education should be informed by the broader field of education, educational policy and by scholarship and research developed in the field. The notion of evidence and what we know should also be contested and debated as Indigenous-informed understandings in the literature are critical in moving forward (Shay et al., 2023).

4 | METHODOLOGY

To address this paper's aim of providing insights into three areas of codesign (Conceptual, Process and Evaluation), a systematic review using PRISMA guidelines has been conducted.

PRISMA is a protocol-driven method developed for scientific and evidence-based systematic review and has been used across various disciplines (Paz et al., 2016).

A systematised review of empirical research was conducted on 20 March 2023, across five databases, including ProQuest, Scopus, Web of Science, EBSCO and ERIC. The search was driven by key concepts relating to the research questions, including (1) Indigenous peoples; (2) codesign concept; and (3) education. The search terms include various expressions referring in close relation to each of these concepts. This is an attempt to expand the scope of search, not to disregard the differences between these terms (e.g., we recognise the differences between Indigenous peoples and ethnic minorities). The final terms included were as follows:

("Indigenous" OR "Aboriginal" OR "Torres Strait Islander" OR "First Nation" OR "Blak" OR "Black" OR "Aborigin*" OR "ethnic minorit*") AND ("co-design" OR "codesign" OR "co-creation" OR "cocreation" OR "co-creat*" OR "cocreat*" OR "co-produce" OR "co-produc*" OR "coproduce" OR "coproduc*" OR "participatory design") AND ("education" OR "school" OR "early childhood" OR "early-childhood" OR "education policy").

To ensure that we were able to include studies which used codesign as a methodology, which may have not included the term codesign in their titles, we designated the search field to include the abstract. In addition to this, we were also cognizant about the challenges faced by Indigenous/community-led research, including assembling a research team, acquiring mainstream research funds and needing to "prove" their academic credibility (Olson-Pitawanakwat & Baskin, 2021), which impedes their chances of publishing in mainstream journals and books. Considering this reality and to ensure we were finding a way to address this in the systematic review, we expanded our search to also included conference presentations/proceedings along with peer-reviewed journals, books, book chapters and theses.

Prior to the initial search being undertaken, clear inclusion and exclusion criteria were set. Table 1 details the inclusion and exclusion criteria used for this study.

The results of the initial searches identified 444 publications. After duplicates were removed, 233 documents were screened through title and abstract reviews. After full-text reviews, 61 documents coming from 13 countries (i.e., Canada, Australia, the United States and New Zealand) were included for the larger study informing this paper. Figure 1 illustrates the study selection process using PRISMA.

The 61 records were then categorised depending on their approach to codesign. After considering these documents, 33 out of 61 studies (leaving 28 documents) did not have any details about either the codesign concept, process or evaluation despite mentioning codesign in their abstract. This indicates the prevalence of superficial adoption of the term "codesign" without substantial attention to the meaning and process of codesign. As we were looking not just for explanations or theories of codesign but for lived examples of how codesigned projects were

TABLE 1 Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
• Research including journal articles, books, book chapters, theses, published conference presentations/proceedings • Literature about/including codesign approaches with Indigenous peoples • Published in English • Full-text available • In the field of education (e.g., not health) • The publication must be within the print dates of 1 January 2000 and 20 March 2023	• Duplicate publications • Literature about non-Indigenous minority groups (e.g., immigrants and refugees) • Review-based research and editorials

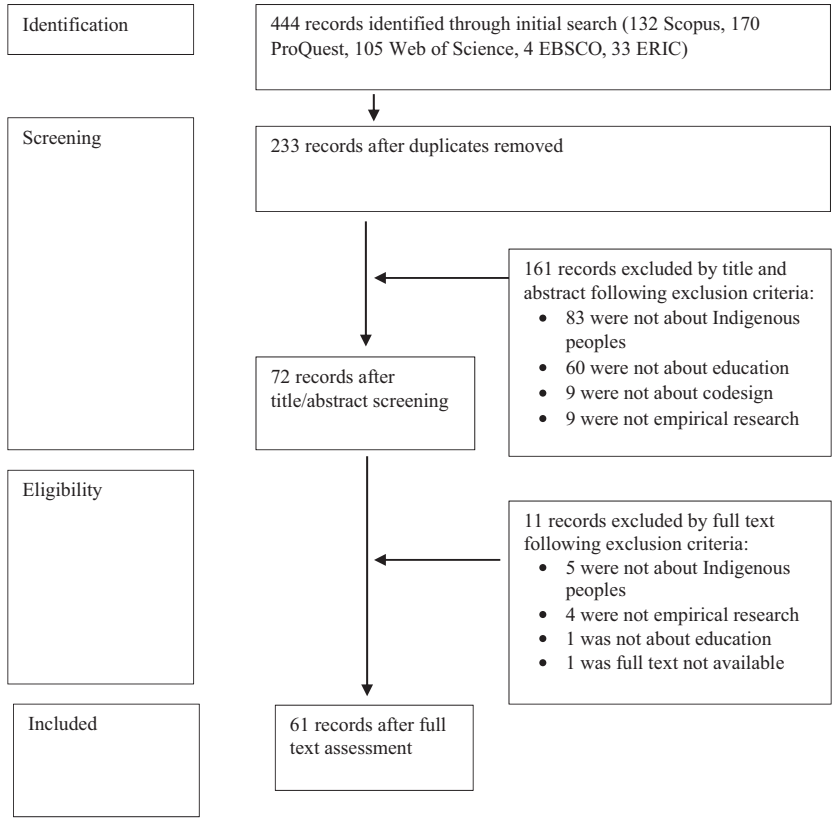

FIGURE 1 Study selection process using PRISMA.

conceptualised, carried out and evaluated, this narrowed our selection. Among the 28 documents with details about codesign, 13 employed codesign as methodology and 15 focused on the three areas of conceptualisation, process and evaluation. This paper highlights the analysis of these 15 documents.

5 | DATA ANALYSIS

The data presented were analysed using an inductive and deductive approach that was guided by the three areas of focus: conceptualisation, process and evaluation (see Figure 2).

As outlined in the introduction, it is clear from the literature across fields that codesign reports varied evidence and principles across all phases of the codesign process, including the conceptual, process and evaluation phases. Using deductive and inductive qualitative analysis, with the deductive element comprising the three focus areas, allowed for the grouping of data that assists in understanding these phenomena across the literature (Azungah, 2018). Inductive analysis was also applied to the data from each paper to speak to the areas of inquiry. These data were then coded under each group and further categorised by higher-order headings (Elo & Kyngäs, 2008). These could be quantified in some areas, and for others, it was ranked according to how the data emerged inductively. For example, to answer whether a conceptual framework was provided, it was not always a yes or no answer. Inductive analysis was suited to the type of data generated from this systematic

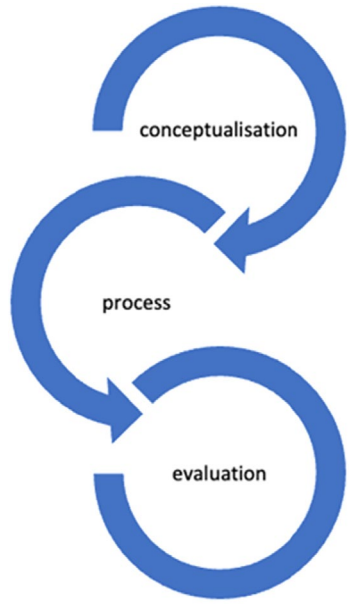

FIGURE 2 Deductive and inductive analysis foci.

review as the knowledge was unknown in this field previously and quite fragmented across the papers (Elo & Kyngäs, 2008).

6 | FINDINGS

This section reports on the findings under the three areas of focus: codesign conceptualisation, process and evaluation. The findings are presented using a variety of infographics and tables with an analysis of each finding. We commence this section by demonstrating the trend of codesign in line with government announcements of a policy shift toward codesign. Ten of the 15 papers (see Figure 3) were published since 2021, providing evidence of a relatively quick surge in peer-reviewed papers where codesign has been used as a policy or practice approach.

Of the 15 studies identified for inclusion for this systematic review, nine were Australian-based studies. The rest of the studies were based in the United States (three), Canada (two) and New Zealand (one). These countries have unique Indigenous policy settings with many distinct contextual histories in relation to Indigenous policy and Indigenous education. It is important to note that all these countries are colonised, include Indigenous populations and are relevant to the Australian context. Table 2 outlined the papers identified for inclusion and the focus and context of each paper.

6.1 | Codesign conceptualisation

This section outlines findings focusing on the conceptualisation of codesign underpinned by two key questions: was codesign defined clearly in the paper? And did the paper use specific codesign guidelines for enactment? The reason for including whether the paper uses codesign guidelines was because this provides evidence of how codesign has been conceptualised and what has informed this conceptualisation.

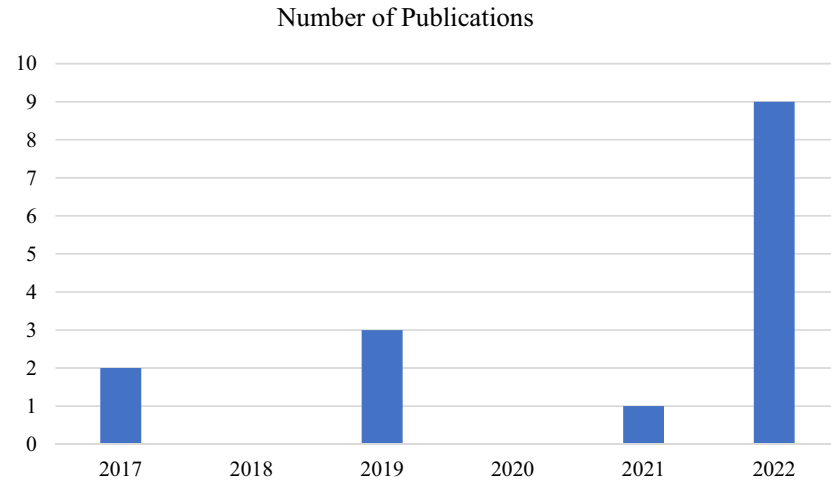

FIGURE 3 Number of publications between 2017 and 2022.

TABLE 2 Included papers and context of paper.

Study	Authors and year of publication	Context of the publication
1.	Armstrong et al. (2022)	Intercultural communication workshop and multi-media resources
2.	Bennie et al. (2021)	A coach education and health promotion workshops series providing specific opportunities for Aboriginal Australian coaches
3.	Cardinal and Fenichel (2017)	Curriculum for the course, "Teaching Language Arts in FNMI (First Nations, Me'tis and Inuit) Contexts."
4.	Conrad (2022)	Native sovereignty curriculum for K-12
5.	Delbridge et al. (2022)	Curriculum for undergraduate and postgraduate health professions programmes
6.	Dollinger et al. (2021)	Early-stage university outreach interventions
7.	Farrant et al. (2019)	Ngulluk Koolunga Ngulluk Koort project to help ameliorate the disadvantage that many Aboriginal Koolunga (children) and their families face, by building on the strengths of Aboriginal people and culture
8.	Hall (2019)	Supports and barriers for Aboriginal teachers from remote communities who undertake teacher education
9.	Moore et al. (2022)	Escape room activity with a scenario that would support students on their cultural learning journey
10.	Saha et al. (2022)	An educational virtual field trip (VFT) resource that weaves understandings from Mātaurānga Māori and Geology to teach about caldera volcanoes
11.	St John (2022)	Digital literacy skills training for senior students
12.	López (2022)	Makerspace between the northern Californian Pinoleville Pomo Nation (PPN) and a team from the University of California
13.	Robinson (2017)	Group and individual video projects investigating the North
14.	Smith (2022)	Curriculum that followed student interest and leveraged a learning environment focused on developing people-nature relationships
15.	St John and Akama (2022)	Design education programme with young adults from Ntaria

TABLE 3 Codesign conceptualisation, examples and frequency.

Conceptualisation of codesign	Examples	Frequency
No definition		9
Definition provided	Relational to community; respect for cultural protocols; engagement throughout design process	2
Other participatory definition	User-generated ideas in design process; to be carried out with and by the community; involves systematic inquiry, reflection and action; decision-making power and ownership is shared between the researcher and the community; bi-directional research capacity and co-learning	3
Production of knowledge	Knowledge co-production; knowledge sharing; knowledge integration; knowledge interpretation; knowledge application; shared process; co-research is equitable at all stages	1

6.1.1 | How was codesign defined in the paper?

Understanding how codesign is defined and seeking conceptual clarity in how codesign is used in Indigenous education settings forms the impetus for this systematic review. Overall, the papers reporting on codesign processes in Indigenous education settings do not report how they have conceptualised codesign or where the basis for their approach originated. Table 3 visually represents an analysis of how the author/s reported the conceptualisation of codesign across the 15 papers.

As outlined in Table 3, few papers provided a definition of codesign despite the paper being about codesign in an Indigenous education setting. Two papers (e.g., López, 2022; St John & Akama, 2022) provided definitions of codesign that emphasised the centrality of community engagement and working with the community through the process. Three of the papers (e.g., Dollinger et al., 2021; Farrant et al., 2019; Smith, 2022) referenced participatory design and research as well as community-based participatory research when defining codesign in their papers. It was evident from these three papers that the notion of community engagement, partnership and collaboration was understood as a critical aspect of the approach used and named codesign. Castleden et al. (2012) propose that community-based participatory research is a process that is fundamentally about shared power and decision making, co-learning and mutually beneficial outcomes. The final paper (Robinson, 2017) documents similar principles of shared processes in what Armitage et al. (2011) call knowledge gathering, sharing, interpretation and application.

6.1.2 | How do papers use specific codesign guidelines for enactment?

Analysing how the identified papers use existing scholarship or practice guidelines for codesign provides important insights into how codesign is conceptualised to date in Indigenous education. Most authors (8 of 15) draw from the participatory research literature when implementing codesign approaches in Indigenous education (e.g., S4, S6, S7, S11, S12, S13, S14 and S15). Two of the 15 papers (e.g., S3 and S8) drew from narrative research literature. However, only 4 of the 15 papers (S1, S5, S9 and S10) referenced frameworks developed by Indigenous researchers (inclusive of Indigenous ways of being, knowing and doing) or an Indigenous organisation. A key finding from this analysis is that although codesign used in Indigenous policy settings, such as in Indigenous education where it is ostensibly about collaborating with Indigenous peoples, most scholarship to date on effective processes is drawing from Western knowledge production and only a minority of papers are referencing and using Indigenous knowledge frameworks and scholars.

6.2 | Codesign process

6.2.1 | When was the codesign approach applied in the process?

The timing of codesign, including when, how and why codesigned projects are initiated, is often mentioned as a key principle of codesign (Moll et al., 2020). In our review, there was a general lack of clarity around the timing of the project, including who, for instance, had initiated it in the first place and whether the partnership remained intact over the whole life span of the project. The question of when codesign is applied addresses fundamental concerns about the proper starting point for any codesign project outlined by Indigenous peoples (Moll et al., 2020, p. 2). Figure 4 provides a visual representation of when codesign was reported to be implemented in the process of codesign.

TABLE 4 When the codesign approach was applied in the study.

When the codesign approach was applied in the study	Frequency
From early design but unsure how it was applied after	2
From early design and to mid-point of the study	1
From early design and continued until completion	6
Only during the mid-point of the study	4
From mid-point of the study and continued until completion	2

Figure 4 illustrates that while less than half of the papers explicitly reported codesign prior to or upon implementation, there are signs that codesign needs to be implemented early in the project phase. The second most frequent category (four papers) demonstrated codesign only during mid-project, suggesting codesign was introduced early to mid-project with limited information about what phases of and/or the principles of codesign continued. Where projects have applied, codesign mid-project and on, the project may have been pre-conceptualised without Indigenous peoples. There appeared to be strong evidence of Indigenous people being included in the later design (past the problem identification phase) and during the codesign process.

6.2.2 | Evidence of clearly defined roles

Enacting codesign is recognised as being complex and resource intensive (Einfeld & Blomkamp, 2021). Having clearly defined roles when bringing groups together with diverging interests may assist in supporting the desired outcome. From the analysis, 53.3 per cent of the papers (8/15) in this systematic review showed evidence of defining roles for those involved in

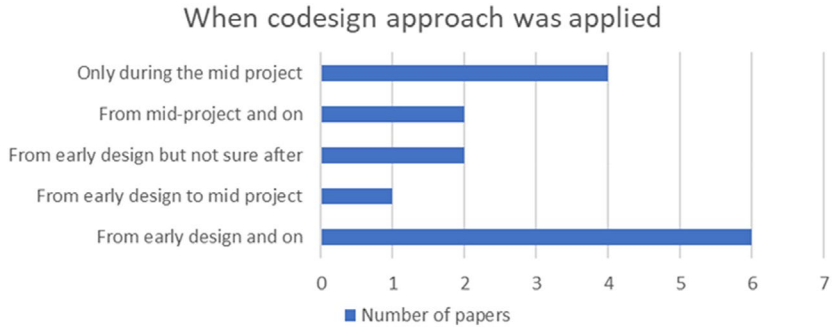

FIGURE 4 When codesign was applied.

the codesign process (e.g., S4, S5, S7, S9, S10, S12, S13 and S14). At just over half, it is apparent that there is a need to have more emphasis placed on understanding roles in developing effective codesign processes.

6.2.3 | Evidence of indigenous leadership

Policy is shifting to recognise the need to work in new ways that elevate Indigenous peoples' voices and facilitate Indigenous leadership. Therefore, it was essential to include an analysis of the ways in which Indigenous leadership was evidenced across the papers. This supports an evidence-based understanding of how codesign processes in Indigenous education to date can include mechanisms for Indigenous leadership. Figure 5 shows how Indigenous leadership was evident across the 15 papers.

Figure 5 highlights an important but concerning finding. Codesign is proposed as being a process-oriented shift in Indigenous settings and fundamental to the codesign process. Yet, our analysis demonstrated that there is no consistent evidence that Indigenous leadership is part of codesign processes in Indigenous education for the included papers in this review, with only a third of papers (33 per cent, 5/15) evidencing Indigenous leadership.

6.2.4 | Evidence of shared decision making

The concept of shared decision-making features in much of the literature cited in this paper and beyond. This is related to the previous section about the timing of Indigenous representation. The use of "co" with design alone suggests that the process is not an individual pursuit but rather a joint endeavour. Analysing how shared decision making was evident in the papers gives us a deeper understanding of how Indigenous education has embraced a process with interests from differing parties. Figure 6 outlines the findings across three areas: shared decision making and decision-making processes are clearly demonstrated (e.g., S1, S4, S5, S7, S10, S13 and S15); some evidence of shared decision making, but these appear limited (e.g., S6, S8, S9, S11, S12 and S14); and where there was no evidence or discussion about shared decision making (e.g., S2 and S3).

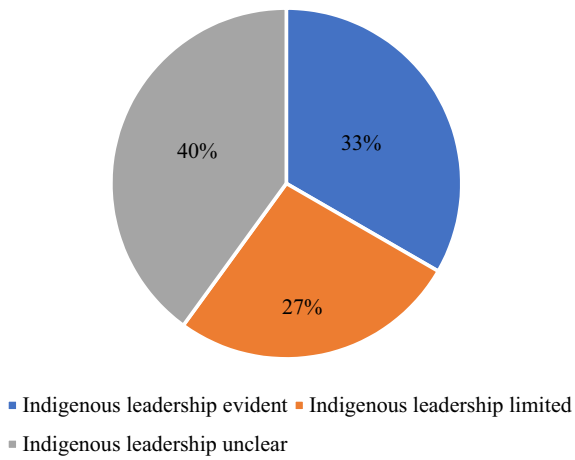

FIGURE 5 Evidence of Indigenous leadership.

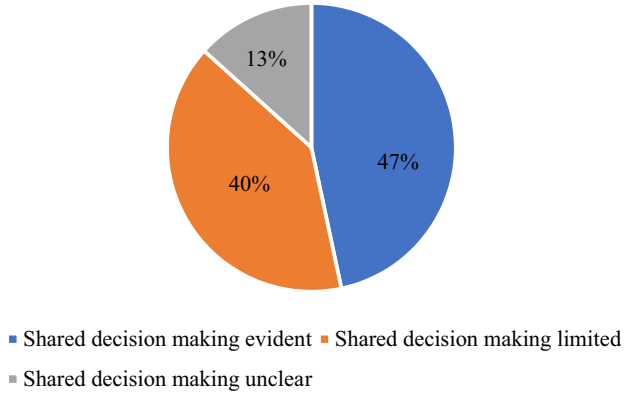

FIGURE 6 Evidence of shared decision making.

6.2.5 | Indigenous voices representation

As with the inclusion of Indigenous leadership, exploring the evidence of how Indigenous voices were incorporated and represented in a process that ostensibly seeks to include them is critical in moving the field forward. From the papers included, there seems to be a lack of clarity about how codesign approaches should include Indigenous peoples. There is also limited evidence that indicates the studies are engaging consistently with Indigenous people to a point where their voices are evident in the published paper: no evidence of Indigenous voice (three papers); mention of engagement but limited detail (five papers); and Indigenous voices evident (seven papers).

6.3 | Codesign evaluation

The pinnacle of understanding a policy or programme's success is having robust and fit-for-purpose evaluative processes (Dreise & Mazurski, 2018; King et al., 2022). In codesign literature broadly, evaluation and understanding of the success of a project using codesign is emphasised as critical. This final section addresses the topic of evaluation by exploring how evidence of evaluation is reported, if at all. The first data we report are whether the included papers showed evidence of project evaluation. Figure 7 demonstrates the urgency of addressing evaluation in codesigned projects, with only two papers undertaking evaluation (e.g., S5, S9).

6.3.1 | Authorship

Although not directly addressing evaluation, in line with the previous discussion on the representation of Indigenous voices in the process, it was important to consider how Indigenous peoples are represented in the reporting of codesign projects. The analysis included a search across authorship on all 15 papers to understand how Indigenous peoples were recognised for their contribution to codesign. Figure 8 demonstrates Indigenous authorship representation.

Most papers had no evidence of Indigenous authorship. The second highest number of papers has no Indigenous codesign partners but had an Indigenous author on the team. Three papers included the Indigenous codesign partners (notably not as a first author), and no papers with an Indigenous codesign partner as an author. Who produces knowledge matters, and

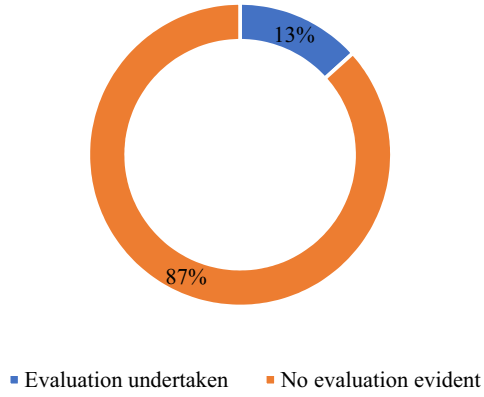

FIGURE 7 Was the codesign project evaluated.

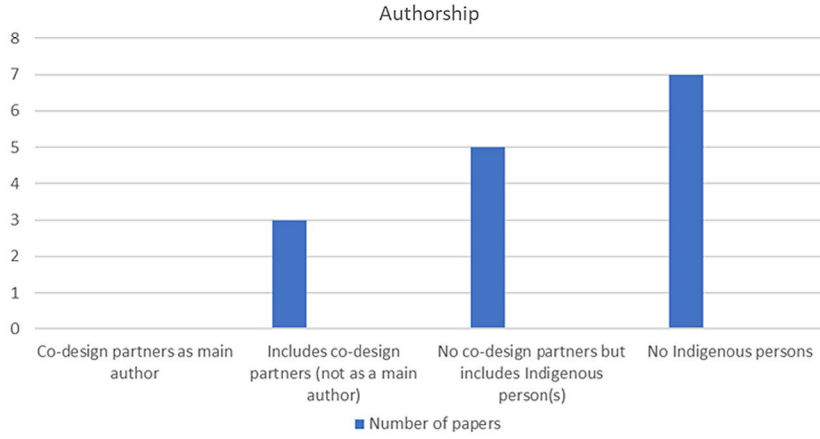

FIGURE 8 Indigenous authorship.

thus, who authors the story of knowledge production, is part of an overarching understanding of how Indigenous peoples are positioned, represented and listened to (Shay et al., 2023). There is no indication of whether Indigenous community members were invited as authors. The lack of co-authorship of papers reporting on a codesign process with Indigenous peoples suggests that co-authorship is not currently the practiced norm.

6.3.2 | Identified strengths of codesign

Across the 15 papers, several strengths of codesign in Indigenous education settings were identified. Improved relationships and understanding of the groups coming together were identified by several authors as a potential positive (Armstrong et al., 2022; Farrant et al., 2019; Saha et al., 2022; St John, 2022). Some authors (such as Farrant et al., 2019; Hall, 2019) reflected on how having a deeper understanding of differences in worldviews, values and cultures can enrich a process and grow existing relationships. Saha et al. (2022) expanded on this notion by proposing that through different worldviews converging in the process of codesign, multiple knowledge systems can provide a transformative lens and support affirming of identities. Codesign, through relationality, requires humility and expertise through experience over

hierarchies of knowledge, which has formed the foundation of colonial settler relationships to date (Conrad, 2022). Utilising codesign as a process can provide counter-narratives to the existing norms, including recognising Indigenous ontological processes such as yarning, stories and visual imagery (Bennie et al., 2021; Cardinal & Fenichel, 2017; Conrad, 2022; St John, 2022; St John & Akama, 2022).

6.3.3 | What challenges were outlined?

Many challenges were identified across the included 15 papers. The most prevalent concern to emerge was that Western structures, such as Governments, do not accommodate the time and resources required to incorporate Indigenous ways of being, knowing and doing through the codesign process (Armstrong et al., 2022; Farrant et al., 2019; López, 2022; Moore et al., 2022; Robinson, 2017; Saha et al., 2022; St John, 2022; St John & Akama, 2022). This is a significant barrier, yet the paradox is that codesign is presented as a shift in the process meant to allow Indigenous voices, process and knowledge sharing to authentically be part of the process. Some papers discussed the requirement of a disposition of humility, care, respect, patience and being okay with discomfort. There were concerns that those working within Western institutions were not afforded the time to undertake their roles in such a way. For Indigenous participants, Cardinal and Fenichel (2017), Delbridge et al. (2022) and López (2022) raised the issues of remuneration and appropriate compensation for Indigenous peoples and their required expertise in the process.

7 | DISCUSSION

The key findings from this systematic review show that while there is much optimism about the possibilities of codesign, there are several areas of concern from the conceptualisation, process and evaluation. As codesign is espoused as a process to shift power dynamics that enable Indigenous leadership, those undertaking codesign work must recognise the criticality of Indigenous voices and authority as a vital part of the process. Findings from this review demonstrate that this does not appear to have shifted significantly in applying codesign in Indigenous education settings.

If a specific approach is to be used effectively in a policy setting, particularly with Indigenous people, knowing the process and having a shared understanding between Indigenous and non-Indigenous peoples is needed. Most papers in this systematic review appear to draw from the participatory literature or principles. However, participatory literature is broad and is unable to fully address the highly contextualised settings across Indigenous communities in Australia such as differentiating, as a base starting point, between metropolitan, regional, rural or remote communities. The term community was often used to describe the conceptual approach to working with partners in a codesign setting. However, as outlined earlier in the background of this paper, the notion of community and how it is defined (or ill-defined by non-Indigenous peoples) is also problematic in educational policy (Shay & Lampert, 2022). Conceptual clarity in understanding who is included and excluded in defining Indigenous communities, particularly by and from Indigenous peoples, is part of the codesign conceptualisation that is currently missing in the literature. Furthermore, a general need for conceptual clarity on what codesign is philosophically and how those using codesign conceptualise effective processes is emerging. What is clear is that there is no distinct data that centres the voices of Indigenous peoples in defining and refining these ideas. As codesign has been introduced as an ostensible panacea for past policy failures, conceptual clarity for Governments, schools and other bodies using codesign to advance Indigenous education is urgently needed.

The data showed that Indigenous leadership, Indigenous voices and shared decision making were not prevalent across the papers. Dillon (2021) reported the shift to codesign as potentially coinciding with the current political landscape of the referendum to change the constitution to enshrine an Indigenous voice in parliament. Dillon (2021) proposes that in avoiding the topic of Indigenous sovereignty, codesign could be seen in a similar way; no autonomy but shared decision making and "meet[ing] Indigenous interests halfway" (p. 7). In Indigenous health settings, Butler et al. (2022) identified factors of Indigenous leadership, respect, culturally grounded approaches, shared decision making and inclusive partnerships as foundational to practical codesign. The authors further draw attention to the issue of power differentials and propose that inappropriate use of codesign in Indigenous policy settings has the potential to cause harm.

A critical issue in the process is the point at which a codesign process commences. There are remaining questions about whether a codesign project must be conceptualised with Indigenous peoples—whereby there is shared agreement about the location of the problem, first and foremost. From there, critical parts of the codesign process, such as developing shared expectations of outcomes, can commence. This is essential to encompass a shift in power to shared decision making, Indigenous leadership and inclusion of Indigenous voices. For example, one community may have an issue with low attendance of Indigenous students. A school might go to the local community Elders and critical people and have a pre-developed plan for addressing the issue. The community then gets a say in how the project is enacted. The school might consider this codesign. However, the community has known of the issue for some time, and all the young people in their community have talked to their parents and Elders about several teachers at the school whom they do not feel safe around and who are making racist comments when teaching history curriculum. Suppose the codesign process commences from problem conceptualisation in the early stages. In that case, there is an opportunity for some of the aspirations outlined in the literature, such as governments drawing from expert knowledge within local communities (Dreise & Mazurski, 2018) and moving away from governments and other bodies defining the problems within the constraints of funding and the worldviews of those implementing codesign (Einfeld & Blomkamp, 2021). There is a risk of Indigenous voices being ignored if the codesign practice norm is to enact codesign at a phase that suits the group wanting to codesign with Indigenous peoples.

The codesign evaluation data also raised opportunities for clarity and development. Only two of the 15 papers address evaluation explicitly when the significance of evaluation of codesign is delineated in the literature essential in understanding codesign impact, successes and lessons (Butler et al., 2022; Dreise & Mazurski, 2018). The Productivity Commission released the Indigenous Evaluation Strategy in 2020. The purpose for its development was that despite an enormous expenditure on Indigenous policy and programmes, the evidence of what works is scarce because such limited resources and focus have been on quality evaluation of Indigenous policy and programmes. The strategy further outlined how a quality evaluation will support building a robust evidence base and ensure greater accountability and transparency of governments, funders, Indigenous peoples and communities (The Productivity Commission, 2020). In line with the Indigenous Evaluation Strategy and aspirations outlined broadly in codesign literature to achieve positive outcomes, any programme or policy using codesign as a named process should have embedded evaluative processes that ensure Indigenous worldviews and leadership are incorporated.

8 | CONCLUSION

This literature review had two aims. The first was to try to identify a more accurate or nuanced definition of codesign that would be helpful to researchers and practitioners working

in education. While the 15 studies that inform this systemic review on codesign differ in their contexts and purposes, they provide a valuable snapshot of definitions of codesign and insights into how it can be done. Close readings of these papers also show what is missing in how codesign is conceptualised, what we know about the process and how codesign projects are evaluated. If the aim of codesign is to dismantle or decolonise traditional concepts of relationships where programmes or policies are done "to" rather than "with" Indigenous communities, the more clarity, the better. Transparency is necessary if codesign is to produce more ethical processes, benefiting Indigenous communities and non-Indigenous people who hope to improve their practice. This is explicit in most literature on codesign, suggesting that most who utilise codesign see their task (the "why") as political and moral.

The second aim was to come closer to developing a set of standards for researchers to use in their own conceptualisation, implementation and evaluation of codesigned projects. The findings from this systematic review provide an evidence-informed snapshot of how codesign is currently conceptualised, enacted and evaluated in Indigenous education settings. The findings enable us to conclude its possibilities, distinguish areas for development, and consider how implementing and writing about codesign as a process in policy development in Indigenous education may or may not be doing anything differently from past ideas. Developing an Indigenous and data-informed shared conceptualisation of codesign processes and evaluation is most urgent if the aim is to move toward addressing equitable outcomes in Australia's education system or achieve different outcomes to past approaches. Although several gaps and issues of concern were identified, the use of codesign in Indigenous education policy and practice settings is a relatively new concept, notwithstanding the many approaches that have attempted to embed collaborative partnerships as fundamental. Codesign studies should adhere to the standards identified in this small, focused systemic literature review. That is, they should be codesigned with Indigenous end-user communities from conception, they should document, regularly review and assess their process to guarantee community-led approaches, and they should be community evaluated for their impact. These should be minimum requirements for a project to call itself codesigned. There is more to learn from the possibilities of codesign for the future of Indigenous education.

AUTHOR CONTRIBUTIONS

Marnee Shay: Conceptualization; funding acquisition; writing – original draft; methodology; writing – review and editing; investigation; supervision; formal analysis; resources. **Grace Sarra:** Writing – review and editing; conceptualization; investigation; funding acquisition. **Jo Lampert:** Funding acquisition; conceptualization; investigation; writing – review and editing; writing – original draft. **Daeul Jeong:** Methodology; formal analysis; writing – original draft; writing – review and editing. **Amy Thomson:** Writing – original draft; formal analysis; writing – review and editing. **Jodie Miller:** Writing – review and editing; writing – original draft; methodology; validation.

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