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A systematic review of empirical studies into multilingual pedagogies and their outcomes in primary education

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ABSTRACT

A growing body of research has shown that multilingualism can be a resource in learning, and has suggested that a diverse array of pedagogical approaches can be used to support multilingual learners in primary education. However, the field is lacking a review of literature examining multilingual approaches in education in relation to their outcomes. Therefore, this study asks what multilingual pedagogies can possibly be beneficial in supporting linguistically diverse students. Based on a systematic review of 34 international peer-reviewed articles on multilingual pedagogies in primary education and their cognitive and socio-affective outcomes, a categorisation into four multilingual pedagogies is proposed: pedagogical translanguaging-based, affirming, scaffolding and cross-linguistic. Additionally, we report on two main categories of outcomes: cognitive outcomes (e.g. reported results on vocabulary growth, morphological awareness, content learning) and socio-affective outcomes (e.g. reported results on wellbeing, relational aspects, self-efficacy). The proposed categorisation of multilingual pedagogies offers ways to support the shaping of multilingualism in education from different angles. The outcomes of the present study show that multilingualism can serve as a meaningful resource for learning in primary education contexts.

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Multilingual pedagogies; primary education; minority languages; pedagogical translanguaging; equity

For many countries, the recent insights from international monitoring studies reflect an ongoing trend of educational inequity for students with a migrant background and/or growing up multilingually (Alieva, Hildebrand, and Van Kerm 2018; Schleicher 2023). Research in the field of multilingualism in education has demonstrated that pedagogies which embrace students' multilingualism can counteract some of the educational challenges associated with multilingual backgrounds (e.g. Cummins 2018; Duarte and Günther-van der Meij 2018; García and Li 2014; Lucas and Villegas 2010). Cummins (2018) argues that home use of languages other than the school language may constitute a potential source of educational disadvantage, but only when the school fails to provide appropriate support to enable students to develop academic skills in the school language. Several pedagogical approaches have been developed to help educators identify ways to support multilingual learners, while valuing their specific linguistic and cultural resources. Studies have demonstrated that multilingual pedagogies can have both positive cognitive outcomes

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(Giouroukakis and Honigsfeld 2010; Meléndez-Luces and Couto-Cantero 2021) and positive socio-affective outcomes for students (García, Seltzer, and Witt 2018; Lucas and Villegas 2010; Meléndez-Luces and Couto-Cantero 2021).

Despite this growing body of research in support of framing multilingualism as a resource in learning (García, Seltzer, and Witt 2018; Le Pichon-Vorstman, Siarova, and Herzog-Punzenberger 2017; Meléndez-Luces and Couto-Cantero 2021), schools are slow to implement multilingual pedagogies in practice, and educators may still view linguistic diversity as a 'challenge or deficit' (European Commission et al. 2017, 64; Herzog-Punzenberger, Le Pichon, and Siarova 2017). Teachers and policy makers may have false assumptions about literacy levels of multilingual in both their home language and the school language(s). This can lead to wrong beliefs about literacy acquisition and achievement (Escamilla 2006). A review study of Langeloo et al. (2019) showed that young multilingual children are often exposed to unequal learning opportunities compared to their monolingual peers. This reality indicates there is still a clear need to translate multilingual pedagogical theory into practices that are usable and well-perceived by teachers and school leaders (Cummins 2018; Lorenz, Krulatz, and Torgersen 2021; Lucas and Villegas 2010; Okal 2014). The present systematic literature review attempts to take a step towards meeting this need. Our aim is to identify and evaluate multilingual pedagogies that can be used in regular classrooms and which support students from diverse, linguistic backgrounds. Our overarching research question is: what multilingual pedagogies have been found to be beneficial in supporting linguistically diverse students in the existing literature?

Multilingual pedagogies are understood here as approaches to instruction which aim to support students with diverse linguistic backgrounds, primarily those with home languages that differ from the language of schooling (Cummins 2018). The 'multilingual' nature of such pedagogies implies a defiance of monolingual, deficit-based views of language (Duchêne 2020), a recognition of linguistic diversity as a resource (Ruíz 1984), and welcoming and encouraging the flexible use of students' full linguistic repertoires (Cenoz 2012; Cenoz and Gorter 2021; García and Li 2014). Multilingualism in education is used as an umbrella term for such pedagogies (Kirsch and Duarte 2020). What this research considers to be multilingual pedagogies is in the literature discussed with different terminology, including bilingual pedagogy, linguistically responsive pedagogy, functional multilingual learning, and translanguaging.

Pedagogies which can be used in regular classes and not only in separate education for multilingual learners will be the focus of this review, as scholars including Cummins (2019), Lucas and Villegas (2010), and Duarte (2020) have made strong cases for the use of multilingual pedagogy for the benefit of all students, regardless of their linguistic background. Multilingual pedagogies can foster metalinguistic awareness of both monolingual and multilingual learners (Bosma et al. 2022).

Some recent review studies have addressed similar aims as the current study, including a review of a range of factors (on micro-, meso- and macrolevel) which contribute to the effectiveness of multilingualism in education by Kirss et al. (2021). Other studies offer reviews of existing literature focused on one location or feature of multilingual pedagogies, such as third language acquisition (Dyssegaard et al. 2015), content and language integrated learning (CLIL) in Europe (Goris, Denessen, and Verhoeven 2019), or the effect of translanguaging on bilingual lexicon development (Bosma et al. 2022). Others are focused on other educational levels, such as a review of literature on dynamic language use in early childhood education (Pontier, Boruchowski, and Olivo 2020). However, the field is lacking a recent systematic review of literature examining the outcomes of these types of multilingual approaches implemented in primary educational contexts. Also, little is known about the relationship between socio-affective outcomes of different multilingual pedagogies.

The present study will review literature based on a purposefully broad inclusion of multilingual approaches implemented in primary school contexts across settings. Our systematic review aims at providing a descriptive overview of multilingual pedagogies and their reported cognitive and socio-affective outcomes in the international literature. Specifically, our research questions were the following:

Research question 1: Which multilingual pedagogies are applied in primary education?

Research question 2: What are the cognitive and socio-affective outcomes of multilingual pedagogies in regular primary education?

Method

For our systematic review we followed the guidelines stipulated by Denscombe (2021). The search for relevant articles was conducted by the first and second author. It started on February 15, 2022 by entering a specific search string and filters in two separate databases: the Education Resources Information Center (ERIC) and Web of Science. In the search string notation, we used the terms multilingual, plurilingual, and bilingual to be inclusive of the variety of terminology used for what is referred to in this study as 'multilingual'. Though 'pedagogy' is the preferred term of this study, we used truncated terms to search for articles which refer to education, strategy, approach, and teaching. Finally, we searched for articles referring to either primary or elementary education, to be inclusive of different varieties of English. Filters were applied to search only for English-language articles which were published within the past ten years. To assure quality, filters were also applied to search for peer-reviewed scientific journal articles only. The notation and results of these search strings and filters are summarised in Table 1.

During the screening process, first duplicates were removed. Also, non-peer-reviewed literature was removed as the quality of this text may not be consistently high. Subsequently articles identified from the databases were screened, primarily based on our definition of multilingual pedagogy: pedagogies which welcome and encourage the use of students' full linguistic repertoires. Using the inclusion and exclusion criteria outlined in Table 2 the title, keywords, and abstracts of the remaining articles ($n = 1357$) were screened for eligibility by the first and the second authors using the software programme Rayyan. As many articles used qualitative methods, qualitatively measured outcomes are included in addition to quantitatively demonstrated effects, taking into account the perceptions of teachers, students, or parents, as well as researchers' observations.

During the screening the Critical Appraisal Skills Program (CASP) checklist for qualitative studies (CASP 2018) was used as a guide. Articles that were unclear about aims, method or outcomes after reading the title, keywords and abstracts were removed ($n = 341$). After this first round of screening, the remaining articles ($n = 52$) were sought for retrieval. In the second round of screening, full-text articles which could be retrieved ($n = 50$) were read and further reviewed for eligibility after the first author crosschecked these results. To improve reliability, around 10% of the articles were screened and coded by at least two authors. Debatable articles were again read and discussed in the whole research team. Articles that ultimately did not meet the inclusion criteria after full reading were removed from the dataset ($n = 14$). Data from the final selection of articles ($n = 34$) were extracted and recorded in a data extraction form. See Figure 1 for a summary of all steps in the screening and selection process.

Table 1. Search strategy and number of results for each database used.

Search string	Filters applied	Database	*n*
(multilingual* OR plurilingual* OR bilingual*) AND (educat* OR pedagog* OR strateg* OR approach* OR teach*) AND (primary school* OR primary education OR elementary school* OR elementary education)	Timespan: 2013 to 16-2-2022 Journal articles only Peer-reviewed only English language	ERIC	1040
(multilingual* OR plurilingual* OR bilingual*) AND (educat* OR pedagog* OR strateg* OR approach* OR teach*) AND (primary school* OR primary education OR elementary school* OR elementary education)	Between 16-2-2012 and 16-2-2022 Document type: articles, NOT book chapters Language: English Research area and Web of Science category: Education/Educational research	Web of Science	546

Table 2. Inclusion and exclusion criteria for screening and selection of articles.

	Inclusion criteria	Exclusion criteria
Relevance	In English	Dissertations, conference papers, literature reviews, etc. (e.g. Dale, Oostdam, and Verspoor 2018)
	Focus on primary education	
	Focus on in-school multilingual pedagogies in regular educational programmes	Focus on teacher training or professional development (e.g. Barrios and López Gutierrez 2019)
	Refers to outcomes of the pedagogy on students	Not about multilingual approaches according to our definition (e.g. Torepe and Manning 2018)
	Focus on welcoming and encouraging the use of students' full linguistic repertoires	Not relevant for regular educational programmes (e.g. Mohammed 2021)
Quality (based on the CASP-checklist)	Peer-reviewed empirical studies	Unclear about outcomes / Doesn't refer to outcomes (e.g. Dafouz and Hibler 2013)
		Unclear about methods (e.g. Afitska 2016)

The analysis took the form of a realist synthesis by 'using existing work' to draw conclusions about 'what will work (or not work) for whom under what circumstances' (Denscombe 2021, 188). Following a grounded approach and throughout the review of full texts and extracted data, attention was paid to recurring themes found bottom-up in the literature in order to derive the multilingual pedagogies and their features and outcomes. In repeatedly reviewing, thematically analysing (Braun and Clarke 2006) and constantly comparing (Thornberg and Charmaz 2012) the data extracted from the articles, common themes were identified and discussed in the research team.

Results

Descriptive summary

The articles which met all the inclusion and exclusion criteria illustrate that most research on this topic has been conducted within the past five years (see Figure 2) and has been conducted in Europe ($n = 15$) and North America ($n = 13$) (see Figure 3).

Types of multilingual pedagogies (RQ1)

We identified four categories of multilingual pedagogies based on their overall strategies: *translanguaging-based pedagogies*, *affirming pedagogies*, *scaffolding pedagogies* and *cross-linguistic pedagogies*. If any of these practices was reported in a study, the pedagogy was assigned to this category. These four categories are not mutually exclusive; the boundaries between the categories are fluid and some of the selected studies may discuss pedagogies that we placed under two (or even more) of the categories. Many of the approaches described in the literature embraced multilingualism using a variety of strategies (see Table 3). The high frequency of articles using a combination of types of multilingual pedagogies ($n = 20$) demonstrates that multilingualism in education can be approached from a variety of angles and aims. Thus, the categories presented here should not be taken as mutually exclusive, but as different dimensions on the basis of which the development and implementation of multilingual pedagogies can be approached.

Translanguaging-based pedagogies

Pedagogies based on translanguaging are about creating space and opportunities for students' full linguistic repertoires to be used within the classroom context. In translanguaging-based pedagogies there is a fluid use of various languages but not necessarily focusing on transfer between various languages. These pedagogies do not necessitate teachers possessing the same language repertoires as their students. An example of a translanguaging-based pedagogy found in the literature is *buddy pairing*. Students with the same home languages but with differing English abilities were grouped together to facilitate peer-to-peer interaction and support (Morrison et al. 2020).

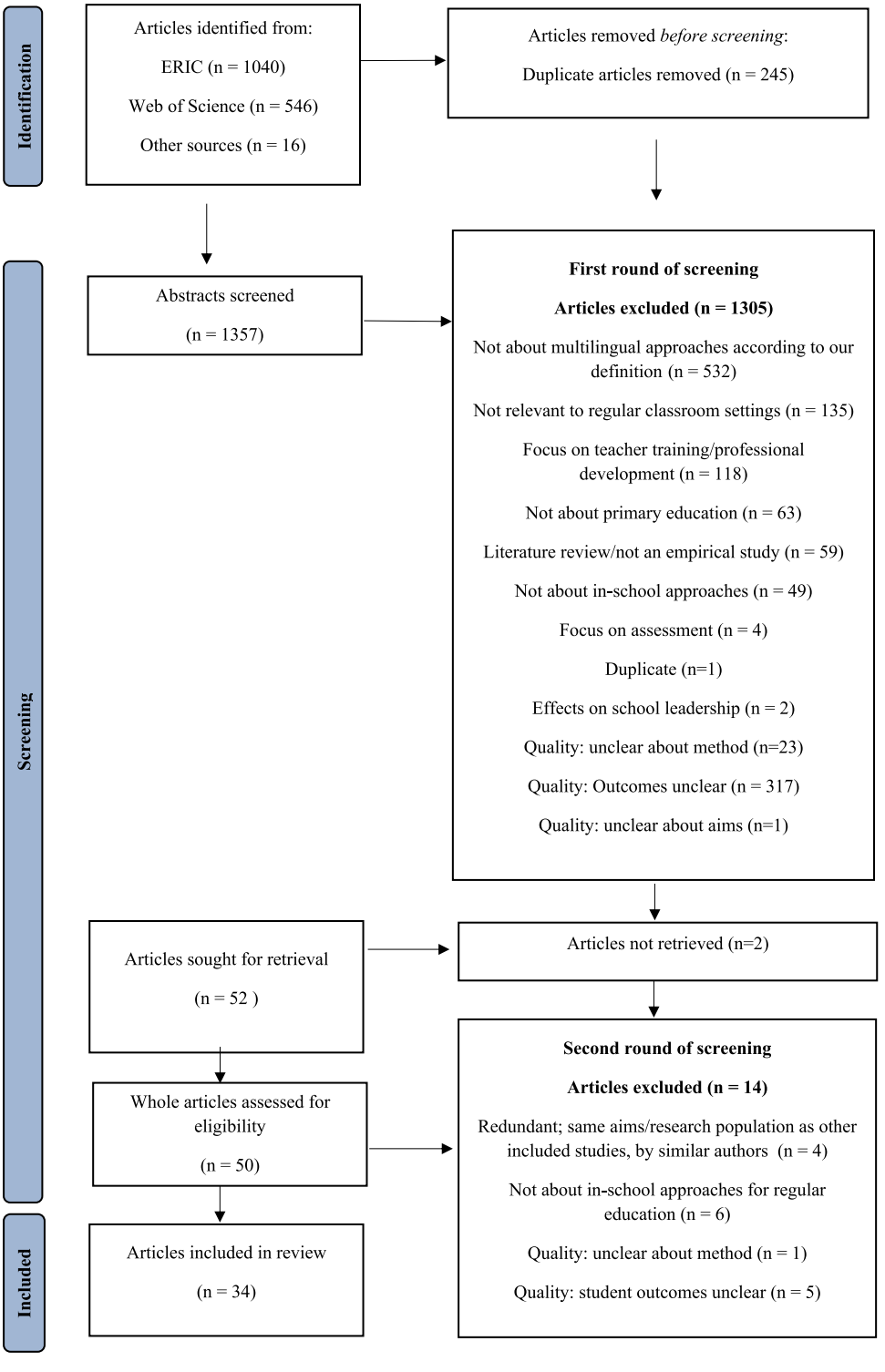

Figure 1. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) chart of selection.

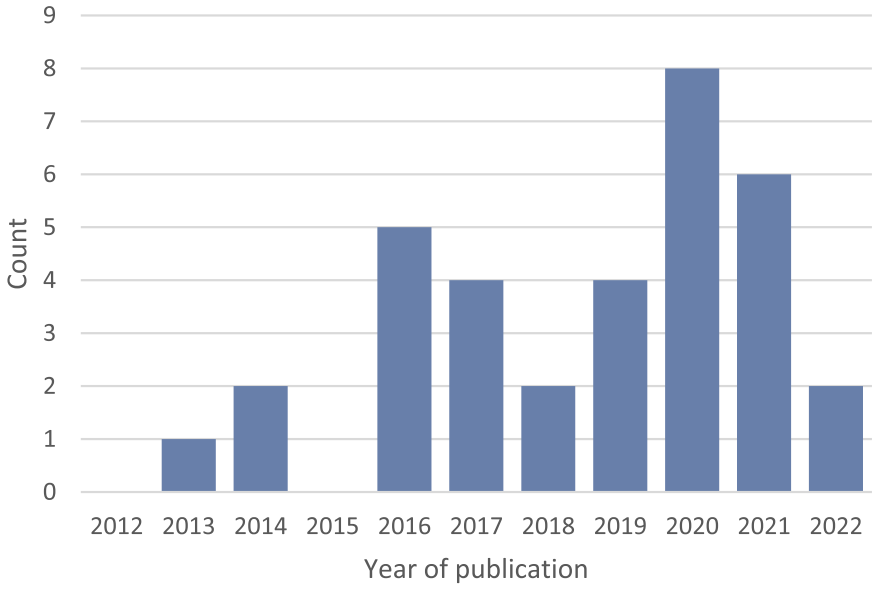

Figure 2. Bar chart showing the distribution of articles by publication year.

Translanguaging-based pedagogies were the most prevalent type of multilingual pedagogies found in the literature ($n = 22$). The most studied of these was *pedagogical translanguaging* (Cenoz and Gorter 2021; García and Li 2014). Pedagogical translanguaging implies that the use of different languages is carefully and deliberately planned and that teachers are aware of the language they use for each activity. In most cases, pedagogical translanguaging was investigated as a pedagogy implemented at the classroom level in different subjects, including science (Karlsson, Nygard Larsson, and Jakobsson 2020; Milligan, Clegg, and Tikly 2016), language arts (Garcia-Mateus and Palmer 2017; Ossa Parra and Proctor 2021), social studies (Garcia-Mateus and Palmer 2017; Milligan, Clegg, and Tikly 2016), mathematics (Milligan, Clegg, and Tikly 2016; Robertson and Graven 2020), and foreign language classes (Corcoll 2013; Hopp et al. 2021; Hopp and Thoma 2021; Leonet, Cenoz, and Gorter 2020; Rabbidge 2019). Pedagogical translanguaging can

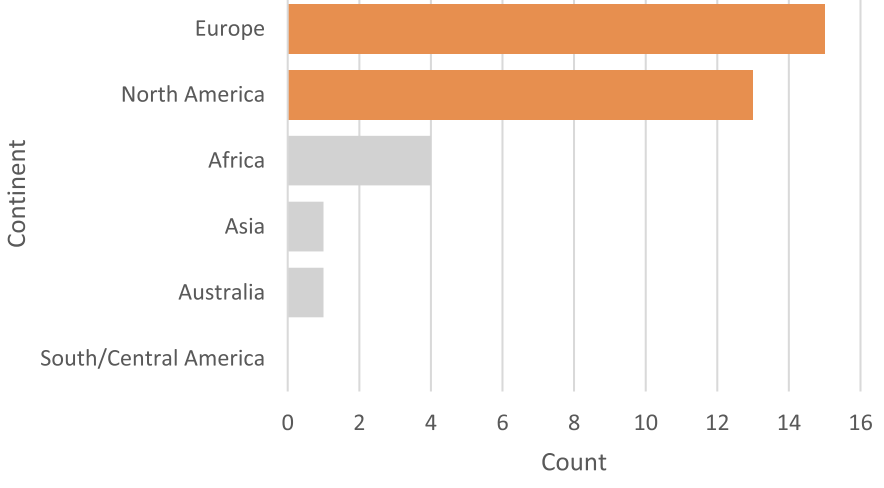

Figure 3. Bar chart showing the distribution of articles by research location.

Table 3. Table showing frequency of multilingual pedagogy type combinations.

Combinations	Count
T	5
T, A	3
T, C	6
T, S	3
T, A, S	2
T, A, C	3
A	8
A, S	1
A, S, C	1
S	1
S, C	1
Total	34

Note: T: translanguaging-based pedagogies; A: affirming pedagogies; S: scaffolding pedagogies; C: cross-linguistic pedagogies.

be used to shape both learning-related and social discourse in the classroom environment. At a classroom level, pedagogical translanguaging can be used in individual classroom activities, such as during reflection (Busse et al. 2020), text production (Lau, Botelho, and Liaw 2021; Velasco and Garcia 2014; Wedin and Wessman 2017), reading activities (Cenoz, Leonet, and Gorter 2021; Mgijima 2021) and paired and small-group discussions (Milligan, Clegg, and Tikly 2016). Busse et al. (2020), for example, describe an intervention in an English as a foreign language class in Germany, with students participating who spoke a wide range of languages at home. In the activities the students were encouraged to reflect in any language, with other students sometimes helping to translate for the teachers to understand. Pedagogical translanguaging can also be established as a school-wide approach, where the application by individual teachers can vary (Carbonara and Scibetta 2022).

Affirming pedagogies

Affirming pedagogies consist of actively demonstrating that students' linguistic and cultural identities matter and are valued within the school context. Pedagogies which involve welcoming, valuing, acknowledging, and celebrating students' diverse linguistic and cultural identities as a resource were found in more than half of the reviewed articles ($n = 18$). One of the primary ways that this is addressed in the literature is by *welcoming the use of home languages* in the school environment (Fielding 2016; Karlsson, Nygard Larsson, and Jakobsson 2020; Lopez 2016; Peyer, Barras, and Luthi 2022; Robertson and Graven 2020; Van der Wildt, Van Avermaet, and Van Houtte 2017; Wedin and Wessman 2017). This is often enacted on the school level by creating an environment where both students and teachers can use their complete linguistic repertoires in the classroom or in social situations, in contrast to strict language policies that permit only the language of schooling. Though related to pedagogical translanguaging, approaches that invite the use of any language function to affirm students' diverse linguistic identities as valuable and welcome in the school environment rather than to shape classroom discourse.

In some cases, a school's approach is more than simply allowing the use of home languages and involves the active *acknowledging and celebration of students' linguistic and cultural backgrounds* (Busse et al. 2020; Demie and Lewis 2018; Fielding 2016; Hopp and Thoma 2021; Molyneux, Scull, and Aliani 2016; Newcomer 2020; Wedin and Wessman 2017). This may be incorporated into teachers' interactions with students (Fielding 2016; Newcomer 2020), in planned lessons or curricular offerings (Busse et al. 2020; Hopp and Thoma 2021; Newcomer 2020), or in the general school climate (Demie and Lewis 2018; Fielding 2016; Wedin and Wessman 2017). Several articles describe school-wide approaches which aim to value diversity at every level – in the school's

leadership, staffing, curriculum, and at the student level (Demie and Lewis 2018; Hopp and Thoma 2021; Newcomer 2020; Wedin and Wessman 2017).

Another pedagogy on the school level (Fielding 2016; Molyneux, Scull, and Aliani 2016; Newcomer 2020) places equal importance on the development of the majority language as that of the minority language and involves 'learning both languages, learning about both languages, and learning through both languages' (Halliday 1980, as cited in Molyneux, Scull, and Aliani 2016, 339). For example, at the school investigated by Newcomer (2020), there is the endeavour to use Spanish and English equally for both academic and social activities. The school offers bilingual education, and a bilingual community is cultivated with the support of parents and a largely bilingual faculty and staff.

In a similar vein, some approaches draw from a 'funds of knowledge' perspective, in which the linguistic and cultural knowledge students bring with them from home is valued and used in the school context. Approaches based on a funds of knowledge pedagogy which were found in this review often involved connecting instruction to students' lived experience including their home languages (Castillo and Wagner 2019; Lau, Botelho, and Liaw 2021; Molyneux, Scull, and Aliani 2016; Newcomer 2020; Zaidi 2020) in. For instance, textbooks and other learning materials were adapted to be more relevant to students' cultural or linguistic backgrounds (Castillo and Wagner 2019; Zaidi 2020).

Finally, affirming pedagogies can also involve *students' production of multimodal identity-affirming texts*, which are generally referred to as 'identity texts' (Kapoyannis 2019; Lau, Botelho, and Liaw 2021; Wedin and Wessman 2017; Zaidi 2020). As Lau, Botelho, and Liaw (2021) explain, 'identity texts can refer broadly to any text production whereby students' multilingual, multicultural and multiliterate resources and identities are valorised and leveraged for socially meaningful learning and affirmation of identities' (2). For example, Kapoyannis (2019) describes a case in which students engaged with a story about the cultural and personal significance of names, both in class and at home, and created identity texts about their names based on artifacts they brought from home.

Scaffolding pedagogies

Pedagogical approaches based on scaffolding ($n = 9$) are those which aim to support individual students' learning through tools and strategies that involve a language which students are familiar with, whether they are physical learning materials or support-based approaches to instruction. Whereas in other pedagogies scaffolding may be an aspect or element implicitly present, in this category scaffolding is the dominant aspect. Scaffolding multilingual pedagogies can be used in tailored ways to specifically target the linguistic and learning needs of multilingual learners. One of the used strategies within this type of approach was *scaffolding through learning materials*. An example is the case studied by Milligan, Clegg, and Tikly (2016) in which the teacher's approach involved using adjusted textbooks with bilingual glossaries and visuals to aid understanding among students.

Some studies investigated the outcomes of pedagogies focused on *holistic biliteracy*, also referred to as *paired literacy*. In essence, the paired literacy pedagogies identified in the literature aimed to support the simultaneous development of both the language of schooling and students' home languages using supports such as bilingual texts or texts available in students' home languages (Ceprano et al. 2018; Molyneux, Scull, and Aliani 2016; Soltero-Gonzalez et al. 2016; Zaidi 2020) and multimedia, technology-based literacy programmes (Castillo and Wagner 2019; Van Laere et al. 2017).

Another type of scaffolding is *emotional scaffolding*. Emotional scaffolding has been investigated to 'help students recognize their emotions and utilize them to actively participate in classroom activities and achieve their learning goals' (Back, Han, and Weng 2020, 389). In monolingual (English-only) learning settings, multilingual students can experience and act upon negative emotions, such as anxiety, caused by a setting in which they have to develop the school language proficiency and grade-level content simultaneously (Back, Han, and Weng 2020). Those emotions are often

masked by language barriers. Bilingual classroom assistants, community support, and volunteers can provide emotional scaffolding (Back, Han, and Weng 2020; Zaidi 2020).

Cross-linguistic pedagogies

Cross-linguistic pedagogies aim to develop students' language awareness using multiple languages, by thinking about form-related aspects of language. In cross-linguistic pedagogies there is a conscious focus on transfer between various languages. There are some conceptual differences between cross-linguistic and translanguaging-based pedagogies: While many translanguaging-based approaches view multilingual learners' language repertoire as a unified system rather than as separate, bounded languages, cross-linguistic pedagogies often approach languages as distinct systems. These latter pedagogies focus on identifying and leveraging connections, contrasts, and transfer between two or more languages. They can focus on language awareness on different levels: in vocabulary, morphological, and sociopolitical contexts. For example, teachers can use them with the aim of increasing the awareness of connections between languages or to make students aware of their own multilingualism and of languages in society. Language awareness is an important component of translanguaging pedagogies (García and Li 2014). This was reflected in the literature, as cross-linguistic pedagogies were often used in combination with translanguaging-based ones ($n = 6$).

Cross-linguistic pedagogies were found in comparatively fewer articles ($n = 11$) than other categories, but still made up a distinctive group of approaches with similar aims and methods, the most common being *language comparisons*. Depending on the case, cross-linguistic approaches made comparisons between languages in terms of vocabulary and cognates (Cenoz, Leonet, and Gorter 2021; Hopp et al. 2021; Soltero-Gonzalez et al. 2016), grammar and syntax (Hopp and Thoma 2021; Ossa Parra and Proctor 2021), or in general (Busse et al. 2020; Zaidi 2020). Other cross-linguistic pedagogies involve developing students' *morphological awareness* in the language of schooling as well as in a foreign language or student's home language, which may also be a regional minority language (Leonet, Cenoz, and Gorter 2020; Ossa Parra and Proctor 2021).

Other, less common, approaches involve explicit discussions about multilingualism and language rights (Busse et al. 2020; Carbonara and Scibetta 2022; Zaidi 2020) and translation activities (Busse et al. 2020; Corcoll 2013) for the purpose of building awareness of different languages. In Carbonara and Scibetta's study (2022), for instance, explicit discussion about multilingualism, language rights, and social inequalities was used, thus demonstrating how a cross-linguistic approach can move beyond building awareness of the linguistic features and functions of language but also address awareness of the meaning of language within a larger sociopolitical context.

Outcomes of multilingual pedagogies (RQ2)

To answer the second research question, we analysed the outcomes reported in our dataset. We distinguished between two main categories: cognitive outcomes (e.g. reported results on vocabulary growth, morphological awareness or content learning) and socio-affective outcomes (e.g. reported results on wellbeing, relational aspects, self-efficacy) of the multilingual pedagogies. Based on the extracted data, six overarching types of cognitive outcomes were identified, along with six types of socio-affective outcomes, with cognitive outcomes more frequently reported (see Table 4).

Table 4. Frequency of outcome type reported in the literature.

Cognitive outcomes	*N*	Socio-affective outcomes	*n*
Language acquisition	9	Emotional wellbeing	2
Literacy development	8	Engagement	8
Language awareness	8	Self-efficacy	12
Access to curricular content	9	Identity affirmation	9
Critical thinking/creativity	6	Open-mindedness	4
Academic achievement	3	Belonging/inclusion	3
Total	47	Total	38

Many studies found more than one type of outcome, hence a greater frequency of reported outcomes in Table 4 than the number of reviewed articles. Appendix 1 provides an overview per article of the type of study, the data collection method, and the outcomes, associated with each of the four multilingual pedagogies found in the literature.

Cognitive outcomes

Cognitive outcomes of translanguaging-based pedagogies. Translanguaging-based pedagogies were most strongly linked with increased access to curricular content (Back, Han, and Weng 2020; DeNicolo 2019; Karlsson, Nygard Larsson, and Jakobsson 2020; Lau, Botelho, and Liaw 2021; Milligan, Clegg, and Tikly 2016; Morrison et al. 2020; Robertson and Graven 2020). Karlsson, Nygard Larsson, and Jakobsson (2020) found translanguaging to support students' learning by helping them relate the content to their prior experiences, bridge gaps in their understanding, and express their thoughts on the content. Though studies did not always find significant results with large effect sizes, several studies found moderate positive effects of translanguaging-based pedagogies on language awareness (Carbonara and Scibetta 2022; Cenoz, Leonet, and Gorter 2021; Corcoll 2013; Garcia-Mateus and Palmer 2017; Leonet, Cenoz, and Gorter 2020; Ossa Parra and Proctor 2021). An intervention study involving pedagogical translanguaging by Leonet, Cenoz, and Gorter (2020) found that the treatment group attained higher scores on morphological awareness than the control group. Similarly, the treatment group in a translanguaging-based intervention from Cenoz, Leonet, and Gorter (2021) demonstrated greater cognate awareness development, although they were not significantly better at cognate identification than the control group. Other studies found positive outcomes on language acquisition (Busse et al. 2020; Hopp and Thoma 2021; Milligan, Clegg, and Tikly 2016; Molyneux, Scull, and Aliani 2016; Morrison et al. 2020), literacy development (DeNicolo 2019; Mgijima 2021; Velasco and Garcia 2014; Wedin and Wessman 2017), and critical thinking and creativity (Lau, Botelho, and Liaw 2021; Ossa Parra and Proctor 2021; Velasco and Garcia 2014). Academic achievement was not measured as an outcome of translanguaging-based pedagogies.

Cognitive outcomes of affirming pedagogies. In the category of affirming approaches, the most associated cognitive outcome was language acquisition (Busse et al. 2020; Fielding 2016; Hopp and Thoma 2021; Kapoyannis 2019; Molyneux, Scull, and Aliani 2016; Newcomer 2020). Welcoming the use of home languages in school was found to have positive outcomes on general vocabulary development (Fielding 2016; Kapoyannis 2019) and language development in both the majority and minority languages (Molyneux, Scull, and Aliani 2016; Newcomer 2020). This outcome was followed by literacy development, including reading (Castillo and Wagner 2019; Gebhard, Chen, and Britton 2014; Lopez 2016; Wedin and Wessman 2017) and access to curricular content (Karlsson, Nygard Larsson, and Jakobsson 2020; Lau, Botelho, and Liaw 2021; Robertson and Graven 2020; Zaidi 2020). Allowing the use of home languages in the classroom in addition to the language of schooling was also found to help learners make sense of mathematics (Robertson and Graven 2020). Affirming pedagogies were also associated with increased critical thinking and creativity (Fielding 2016; Lau, Botelho, and Liaw 2021; Newcomer 2020), language awareness (Carbonara and Scibetta 2022; Fielding 2016; Zaidi 2020) and in two cases, academic achievement (Demie and Lewis 2018; Lopez 2016).

Cognitive outcomes of scaffolding pedagogies. For empirical studies investigating scaffolding pedagogical approaches, the most dominant reported cognitive outcome was increased access to curricular content (Back, Han, and Weng 2020; Karlsson, Nygard Larsson, and Jakobsson 2020; Van Laere et al. 2017; Zaidi 2020). This type of outcome was found in almost all articles which examined scaffolding approaches. Other outcomes associated with scaffolding pedagogies were increased language acquisition (Ceprano, Shea, and Gandt 2018; Milligan, Clegg, and Tikly 2016; Molyneux, Scull, and Aliani 2016), literacy development (Castillo and Wagner 2019; Soltero-González et al. 2016), reading fluency and comprehension in local languages (Castillo and Wagner 2019) academic achievement measured by standardised assessments (Soltero-Gonzalez et al. 2016), and language awareness (Zaidi 2020). In their longitudinal intervention study of a paired literacy

approach, Soltero-Gonzalez et al. (2016) found positive effects on reading and writing as measured by a high-stakes state test.

Cognitive outcomes of cross-linguistic pedagogies. The most salient reported type of outcome for cross-linguistic approaches was, not surprisingly, increased languages awareness (Carbonara and Scibetta 2022; Cenoz, Leonet, and Gorter 2021; Corcoll 2013; Garcia-Mateus and Palmer 2017; Leonet, Cenoz, and Gorter 2020; Ossa Parra and Proctor 2021; Zaidi 2020). Exploratory evidence was found for that translanguaging together with cross-linguistic pedagogies such as comparing languages, supported students' agency and participation, along with their critical thinking and metalinguistic awareness (Ossa Parra and Proctor 2021). Cross-linguistic pedagogies were also found to have a positive impact on language acquisition in some cases (Busse et al. 2020; Hopp and Thoma 2021). The more sparsely reported positive outcomes of cross-linguistic pedagogies include literacy development (Soltero-Gonzalez et al. 2016), access to curricular content (Zaidi 2020), critical thinking and creativity (Ossa Parra and Proctor 2021), and academic achievement (Soltero-Gonzalez et al. 2016).

Socio-affective outcomes

Socio-affective outcomes of translanguaging-based pedagogies. The two most salient socio-affective outcomes associated with translanguaging-based pedagogies include increased student engagement (Back, Han, and Weng 2020; Corcoll 2013; DeNicolo 2019; Karlsson, Nygard Larsson, and Jakobsson 2020; Milligan, Clegg, and Tikly 2016; Morrison et al. 2020; Rabbidge 2019) and self-efficacy (Back, Han, and Weng 2020; Carbonara and Scibetta 2022; Corcoll 2013; Garcia-Mateus and Palmer 2017; Lau, Botelho, and Liaw 2021; Ossa Parra and Proctor 2021; Velasco and Garcia 2014). In one pertinent example, Back, Han, and Weng (2020) describe how translanguaging initiated by classroom assistants increased student engagement, decreased anxiety-related behavioural problems, and helped bring out students' 'inner voice' for the first time, meaning that students started talking about their emotions, their interests, and other things that preoccupied them.

In terms of self-efficacy, Carbonara and Scibetta (2022) and Garcia-Mateus and Palmer (2017) both found translanguaging-based practices to boost students' feelings of empowerment. Identity affirmation was also found as an outcome of translanguaging-based pedagogies in some cases (Busse et al. 2020; DeNicolo 2019; Garcia-Mateus and Palmer 2017; Lau, Botelho, and Liaw 2021; Molyneux, Scull, and Aliani 2016; Wedin and Wessman 2017). In a few cases, translanguaging-based approaches were also linked with increased open-mindedness (Busse et al. 2020; Carbonara and Scibetta 2022; Molyneux, Scull, and Aliani 2016), emotional wellbeing (Back, Han, and Weng 2020; Busse et al. 2020), and belonging/inclusion (DeNicolo 2019).

Socio-affective outcomes of affirming pedagogies. Unsurprisingly, among the reported socio-affective outcomes, affirming pedagogies were most commonly linked with outcomes related to the affirmation of students' identities (Busse et al. 2020; Kapoyannis 2019; Lau, Botelho, and Liaw 2021; Molyneux, Scull, and Aliani 2016; Newcomer 2020; Wedin and Wessman 2017; Zaidi 2020), followed by student self-efficacy (Carbonara and Scibetta 2022; Fielding 2016; Lau, Botelho, and Liaw 2021; Newcomer 2020; Peyer, Barras, and Luthi 2022; Zaidi 2020). Policy changes at the school level, such as integrating newly arrived students into regular classes and elimination of schools' monolingual policy, was found to boost students' identities as capable students (Wedin and Wessman 2017). Other studies found that approaches that valued students' diverse identities increased students' confidence and pride in their own abilities and those of their classmates (Fielding 2016; Peyer, Barras, and Luthi 2022; Zaidi 2020), and helped position students as independent learners with agency over their own learning (Lau, Botelho, and Liaw 2021). For all articles which found an increase in open-mindedness among students, e.g. greater interest in the linguistic diversity of classmates, affirming pedagogies were used (Busse et al. 2020; Carbonara and Scibetta 2022; Molyneux, Scull, and Aliani 2016; Newcomer 2020). Affirming pedagogies were also linked with increased engagement (Karlsson, Nygard Larsson, and Jakobsson 2020; Zaidi 2020), belonging and inclusion (Newcomer 2020; Van der Wildt, Van Avermaet, and Van Houtte 2017) and emotional wellbeing (Busse et al. 2020).

Socio-affective outcomes of scaffolding pedagogies. Socio-affective outcomes were also found in connection with scaffolding pedagogies, first and foremost in increased student engagement (Back, Han, and Weng 2020; Karlsson, Nygard Larsson, and Jakobsson 2020; Milligan, Clegg, and Tikly 2016; Zaidi 2020). Milligan, Clegg, and Tikly (2016) found that language supportive textbooks and pedagogical practices were perceived by students and educators as leading to increased motivation, engagement, and accessibility for students. Student self-efficacy (Back, Han, and Weng 2020; Zaidi 2020) and affirmation of students' identities (Molyneux, Scull, and Aliani 2016; Zaidi 2020) were other notable outcomes related to scaffolding approaches, such as the use of bilingual books in English and Italian (Ceprano, Shea, and Gandt 2018). A school-level pedagogy related to holistic biliteracy described by Molyneux, Scull, and Aliani (2016) was found to contribute to students' positive affirmation of their identities and abilities in both of their languages. Teachers also reported increased levels of social cohesion, interaction across language groups, and acceptance of diversity among students. Back, Han, and Weng (2020) found emotional scaffolding to contribute considerably to students' emotional wellbeing.

Socio-affective outcomes of cross-linguistic pedagogies. Cross-linguistic pedagogies were comparatively less often linked with socio-affective outcomes than cognitive ones. Outcomes on student self-efficacy (Carbonara and Scibetta 2022; Corcoll 2013; Garcia-Mateus and Palmer 2017; Ossa Parra and Proctor 2021; Zaidi 2020) and identity affirmation (Busse et al. 2020; Garcia-Mateus and Palmer 2017; Zaidi 2020) were the two most reported. Activities described by Zaidi (2020) which involved guests reading stories in students' home languages and engaging children in discussions about multilingualism helped instill a sense of pride, confidence, and value in their home languages among both students and guest readers. Increased open-mindedness was reported by two studies describing cross-linguistic pedagogies (Busse et al. 2020; Carbonara and Scibetta 2022). Other less-prominent reported outcomes included emotional wellbeing (Busse et al. 2020) and engagement (Corcoll 2013; Zaidi 2020).

Neutral or negative outcomes

Though most studies found only positive outcomes from the use of multilingual pedagogies, some did discover some unintended negative or neutral outcomes. For example, Rabbidge (2019) describes a situation where translanguaging was not consistently applied, and which led to disengagement among students. Peyer, Barras, and Luthi (2022) observed that not all students may be comfortable with being positioned as experts in their home language. Van der Wildt, Van Avermaet, and Van Houtte (2017) surprisingly found a negative association of multilingual-friendly teaching practices on the sense of school belonging of Dutch-dominant bilinguals in a study of 67 primary schools in a Dutch-speaking area of Belgium. The authors theorise that this might be a result of conflicting ideologies between the home and school environments.

In a couple examples, neutral findings were reported, sometimes simultaneously with positive outcomes (Corcoll 2013; Hopp et al. 2021). Importantly, the lack of significant negative outcomes indicates that students' language development was not impeded by less instructional time in the target language when using a multilingual approach, negating an all-too-common fear and misconception.

In several articles educators are advised to be wary of some potential unintended negative outcomes, including student disengagement (Rabbidge 2019), oversimplifying content while translanguaging (Karlsson, Nygard Larsson, and Jakobsson 2020), or trying to implement pedagogies which require additional vulnerability from students without first establishing a respectful and safe classroom climate (Lau, Botelho, and Liaw 2021).

Discussion

The aim of this study was to provide insights into what kind of multilingual pedagogies have been implemented in primary education and what outcomes these pedagogies can yield for students. A systematic review of international literature on multilingual pedagogies in primary education and

their cognitive and socio-affective outcomes on students was performed. A categorisation into four multilingual pedagogies was proposed: translanguaging-based, affirming, scaffolding, and cross-linguistic pedagogies. While the boundaries between the categories are fluid, they are not mutually exclusive; article may thus discuss pedagogies that we categorised under more than one category. This categorisation of multilingual pedagogies raises awareness of the various approaches that can address multilingualism in education from different angles. It provides practitioners and scholars with a lens to help them make conscious choices in specifying and applying multilingual strategies, potentially also meaning focusing on aspects that are described here in multiple categories. It offers a broad focus, which makes it well-suited for different forms of primary education, including contexts with both minority and migrant languages, as well as other language varieties. It can serve as a flexible set of ideas that can be tailored to support multilingual students and inspire additional innovations. Similar to existing frameworks (e.g. Cummins 2018; Lucas and Villegas 2010), it can serve as a tool for educators to address the various forms of inequity that may arise. The majority of the studies in this review concerned multilingual interventions that draw on two or more bilingual or multilingual pedagogies ($n = 20$). Those studies, in which different categories of approaches are combined, seem to be most beneficial and underline the value of embracing multilingual pedagogies with a holistic, multidimensional approach.

A key insight that was drawn from the literature in order to apply multilingual pedagogies successfully is that multilingual approaches have to be learner centred and context specific, meaning that they support the development of all the languages used by learners in their specific school and home contexts. In most cases, embracing multilingualism in education does not require a major overhaul of approach or changes to the language of instruction (Corcoll 2013). It can often be a 'progressive and self-sustaining process' (Newcomer 2020) and build on existing resources and curricula.

The review study showed that multilingual pedagogies were associated with both cognitive and socio-affective outcomes. The most prominent cognitive outcome of the reviewed multilingual pedagogies was increased access to curricular content, meaning that students were able to engage with the instruction more easily and equitably. In addition, language acquisition, literacy development, and language awareness were widely found outcomes. Among socio-affective outcomes, increased self-efficacy, which was also often identified as self-confidence, agency, and empowerment, was the most frequently reported outcome. Also prevalent were increased student engagement, including motivation and participation, as well as the affirmation of students' identities. Several studies showed that the benefits of multilingual pedagogies are not limited to multilingual, minority language students, but can be of considerable benefit to monolingual or majority-language students as well.

The present study shows that multilingualism can serve as a great resource for learning in primary education contexts. This insight is in line with the premise of existing frameworks on multilingual pedagogies, such as translanguaging (García and Li 2014), linguistically responsive pedagogy (Lucas and Villegas 2010), culturally responsive teaching (Gay 2002), and the holistic model towards multilingualism in education (Duarte and Günther-van der Meij 2018). Several scholars in the field have suggested that multilingualism in education can contribute to more equity (Cummins 2018; García and Li 2014; Lucas and Villegas 2010). While only some of the reviewed studies made explicit connections to equity, the range of positive cognitive and socio-affective outcomes has the potential to add to more equitable outcomes for multilingual students and should be further explored in future studies.

Limitations and recommendations

We recognise several limitations of our study. Our inclusion criteria resulted in mainly including research from Europe and North America. This is probably due to the inclusion of only articles written in English. Moreover, the conceptualisation of multilingual approaches used in this review

drew solely from scholars whose research is primarily conducted in Europe and North America (e.g. Cenoz and Gorter 2021; Cummins 1979, 2018, 2019; García and Li 2014; Lucas and Villegas 2010). To include a wider range of geographical contexts, future studies may consider expansion of the languages included. Using alternative definitions of multilingual education from beyond a western- and euro-centric academic context, such as Makalela's (2016; as cited in Mgijima 2021) model for translanguaging based on ubuntu, may also produce a different set of results and contribute to a more complete picture of literature on multilingual pedagogies.

Moreover, due to the scale of this review and the inclusion of studies using both qualitative and quantitative methods, it is not possible to make assumptions about causation and generalizability. Future studies can explore how to operationalise outcomes of multilingual pedagogies in more quantitative ways. The aim of this study was to explore the possible outcomes of multilingual pedagogies and not to quantify the findings of the studies. If more quantitative studies are available with effect sizes, statements may be made based on meta-analysis about the strength of effects of particular multilingual pedagogies.

Evidence of the long-term outcomes of multilingual pedagogies was limited, so to echo several authors of the reviewed articles (Demie and Lewis 2018; Hopp et al. 2021; Kapoyannis 2019; Van Laere et al. 2017), the field would benefit from more longitudinal studies in the future. Finally, a limitation of our study is that the different contexts in which the studies were carried out have not been taken into account in the analysis. Different contexts might be related to different outcomes, for example, whether there is a multilingual policy in a country, region, or school, whether there is a majority of students in school who grow up multilingual or just a few, or whether teacher have been prepared to deal with cultural or lingual diversity or not.

Conclusion

Multilingualism is often seen as a 'challenge or deficit' in primary education (Cummins 2019; European Commission et al. 2017, 64), and concrete tools for shaping multilingual pedagogies, which might counteract some of the disadvantages associated with a multilingual background, are lacking (Cummins 2018; Lorenz, Krulatz, and Torgersen 2021; Lucas and Villegas 2010; Okal 2014). Our findings offer educators and policymakers evidence for the usefulness of embracing multilingualism in (primary) educational contexts. They also offer a categorisation into four pedagogies (translanguaging-based, affirming, scaffolding and cross-linguistic) that support practitioners in primary education in developing evidenced-informed multilingual pedagogies. These findings can hence help shape a holistic multilingual approach in the classroom that benefits not only the cognitive and socio-affective development of multilingual learners but all primary school students. Though educational inequity may stem primarily from factors beyond educators' control (Cummins 2018; Schleicher 2023), these findings offer ways for educators to make a positive difference on students' educational opportunities and experiences in ways they can.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used ChatGTP in order to improve language and readability. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Appendix 1

Summary of type of study, pedagogy category, data collection method and outcomes found in the literature

Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes						Socio-affective outcomes				
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Back, M., Han, M., & Weng, S	2020	Case stories	X		X		Weekly observations of translanguaging activities in participant classrooms.	4	elementary school	+						+		+			+
Busse, V., Cenoz, J., Dalmann, N., & Rogge, F.	2020	Quasi-experimental invervention study	X	X		X	Pre- post-, and follow-up tests; affect was measured after each lesson.	42	8 to 10 years old		+						+		+		+
Carbonara, V., & Scibetta, A	2022	Transformative action-research project	X	X		X	Different kinds of data collected through ethnographic fieldwork; this paper focused on analysis of focusgroup interviews composed with students.	122	kindergarten to middle school				+			+			+		
Castillo, N.M., & Wagner, D.A.	2019	Longitudinal intervention study (short-term, with control group)		X	X		Repeated measures	215	7 to 11 years old			+								
Cenoz, J., Leonet, O., & Gorter, D.	2021	Intervention study (with control group), exploratory	X			X	Participants completed a background questionnaire and a cognate recognition task; a thinking aloud protocol and interviews were also used.	24	5th grade of elementary school				+							
Ceprano, M.A.	2018	Pilot study			X		Classroom observations, written responses from students and pre-service teachers' personal reflections.	22	5th grade of elementary school		+					+				

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes						Socio-affective outcomes					
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Corcoll, C.	2013	Intervention study (with controlgroup)	X			X	Observations, field notes made by the teacher/researcher, an activity survey submitted to students, focus group interviews, language pre- and post-test, pre- and post-motivation surveys.	100	7 to 8 years old				( )			+		+			
Demie, F., & Lewis, K.	2018	Case studies and focus groups (complementary methodological approach)		X			Eight primary schools were visited to identify factors which explained their success. Instruments: semi-structured interviews with individuals, focus groups with parents, pupils, and school leaders, along with classroom observations and structured questionnaires. Also ofsted reports, student work, and achievement data were analysed.	112	primary school						+					
DeNicolo, C.P.	2019	Case study	X				Participant observations, interviews with students and teachers, analysing of student artifacts.	22 (3 in focus)	kindergarten to 5th grade	+		+					+	+		+	
Fielding, R.	2016	Case study		X			Interview data from case studies of two separate schools were analysed: focus group and individual semi-structured interviews with students, semi-structured interviews with teachers and focus group of parents.	19	5 to 6 years old		+		+	+		+					

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes						Socio-affective outcomes					
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/ I	EW
García-Mateus, S., & Palmer, D.	2017	Case study	X			X	Analysis of classroom interaction data embedded in a larger study: video- and audio-recordings of lessons/ classroom interactions, field notes, interviews with teacher and students.	3	1st grade of elementary school				+			+	+				
Gebhard, M., Chen, I., & Britton, L.	2014	Longitudinal intervention study, exploratory		X			Analysis of documents associated with planning and teaching the unit, video recordings of student participation in classroom activities, written texts produced by students before, during and after the unit, student district and state test scores.	3	8 to 9 years old			+								
Hopp, H., Jakisch, J., Sturm, S., Becker, C., & Thoma, D.	2020	Longitudinal intervention study (with controlgroup)	X			X	Pre and post assessments of English vocabulary, grammar, and metalinguistic awareness using established tests and scales, controlled for background variables; structured interviews about students' learning experiences and metalinguistic awareness.	200	9 to 10 years old			( )	( )								
Hopp, H., & Thoma, D.	2021	Experimental intervention study	X	X		X	Pre-post-test control study, part of a larger research project. Pre-tests on cognitive processing and language proficiency; post-tests on target structures administered by the teacher.	258	9 to 10 years old		+									

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes							Socio-affective outcomes				
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Kapoyannis, T.	2019	Intervention study		X			Field notes, student artifacts and reflections from preservice teachers were analysed.	39	2nd and 3rd grade of elementary school		+						+				
Karlsson, A., Larsson, P. Nygård Larsson, & Jakobsson, A.	2019	Ethnography	X	X	X		Monthly science lessons were observed for three years. Ethnographic data were collected: video and audio recordings, field notes, students' texts, teaching materials, recorded conversations with four newcomer students.	24	grades 4 to 6 of primary school	+								+				
Lau, S. M. C., Botelho, M. J., & Liaw, M. J.	2021	Secondary, qualitative research	X	X			Ethnographic data were collected: video recordings of lessons, pre- and post-interviews with students and teachers, student writing samples and questionnaires at the end of the year, and case studies of 6 bilingual students.	39	3th grade of primary school	+				+		+	+				
Leonet, O., Cenoz, J., & Gorter, D.	2020	Intervention study (with control group)	X			X	Mixed methods design: background questionnaires, morphological awareness tests, translanguaging questionnaires and focus group discussions with students in the experimental group.	104	5th and 6th grade of primary school (age∼ 10.67)				+								

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes							Socio-affective outcomes				
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
López, F.A.	2016	Cross-sectional study (hierarchical linear modeling)		X			Questionnaires were given to students and teachers at three participating schools and were analysed to compare teachers' beliefs and behaviors with students' reading outcomes. Teacher questionnaires on cultural responsive teaching (CRT) beliefs and behaviors were used, as well as student questionnaires on ethnic identity, perceived discrimination, reading achievement, and academic competence.	260	grade 3 to 5 of primary school			+			+					
Mgijima, V.D.	2021	Solomon Four quasi-experimental design, invervention study	X				Data were collected through tests which contained a mixture of multiple choice and open-ended questions. Participants attempted two sets of pre-tests and post-tests: one set in their home language, and one set in English.	215	4th grade of primary school			+								
Milligan, L.O., Clegg, J., Tikly, L.	2016	Intervention study (with control group)	X		X		A mixed methods, exploratory design (baseline and post-tests with students): pre- and post-tests on vocabulary and comprehension, classroom observations, interviews with teachers, focus group interviews with students and school administrators.	1241	4th grade of primary school	+	+							+			

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes							Socio-affective outcomes					
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Molyneux, P., Scull, J. & Aliani, R.	2016	Longitudinal study	X	X	X		Classroom observations, student achievement data, work samples, staff interviews, parent questionnaires, and student self-assessment.	24	primary school		+						+		+		
Morrison, J., Ardasheva, Y., Newcomer, S., Lightner, L., Ernst-Slavit, G., & Carbonneau, K.	2020	Multiple case study	X				Audio-recorded classroom observations, researchers' field notes, pre-/post-observation interviews, and classroom artefacts recordings.	49	4th grade of elementary school	+	+			+				+			
Newcomer, S. N.	2020	Case study		X			Ethnographic data from a larger study was used, as well as interviews with focus students.	7	(former) primary school students		+			+		+	+		+	+	
Ossa Oarra, M., & Proctor, C.P.	2021	Pilot study	X			X	Audio and video recorded lessons were examined (ethnomethodological analysis of participants' discourse and interaction in translanguaged lessons).	5	K8 students				+	+		+					
Peyer, E., Barras, M., & Lüthi, G.	2022	Videographic study		X			Videographic observation of 32 video's; video's were transcribed and analysed using qualitative content analysis.	169	11 to 12 years old							+	( )				
Rabbidge, M.	2019	Comparative case study	X				Each teacher (case) was interviewed (semi-structured) twice and observed during two lessons.	3	does not apply									( )			

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes							Socio-affective outcomes				
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Robertson, S.-A., & Graven, M.	2020	Naturalistic, qualitative study	X	X			Data collection through lesson observation and interviews with teachers. Also assessment data generated by a professional development project initiative were used.	2	4th grade of primary school	+											
Soltero-González, Lucinda; Sparrow, Wendy; Butvilofsky, Sandra; Escamilla, Kathy; Hopewell, Susan	2016	Longitudinal intervention study (quasi-experimental)			X	X	Informal writing and reading assessments and standardised assessments for writing and reading in Spanish and English. In addition, funds of identity were documented via observation checklists, the collection of lesson plans, and student artifacts.	358	3th grade of primary school			+			+						
Van Der Wildt, A., Van Avermaet, P., & Van Houtte, M.	2017	Cross-sectional study (multilevel regression analysis)		X			Surveys (sense of school belonging (SSB) as dependent variable)	3016	primary school											( )	
Van Laere, E., Rosiers, K., Van Avermaet, P., Slembrouck, S., & Van Braak, J.	2017	Intervention study			X		Two phases of data collection: first, students worked individually using a computer-based learning environment (CBLE) offering multilingual content (E-Validiv), while they were videotaped and their activities were logged. Then, they were interviewed by means of stimulated recall on the way they had used the CBLE.	5	5th grade of primary school	+											

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Author(s)	Year of publication	Type of study	Pedagogy category				Data collection method	Number of participants	Age/grade of participants (students)	Cognitive outcomes						Socio-affective outcomes					
			T	A	S	C				AC	Laq	LD	Law	CT	AA	S	IA	E	O	SB/I	EW
Velasco, P., & Garcia, O.	2014	Case study, collaborative action research project	X				Written texts produced by young bilingual writers in which translanguaging is used were analysed on how and why translanguaging was used, as well as the effect it has in the development of writing and of voice.	5	K-4th-grade			+		+		+					
Wedin, Asa; Wessman, Anneli	2017	Longitudinal ethnographic action research	X	X			Observations from two school years, teacher interviews, local policy documents and focus group interviews with students.	Doesn't specify	grades 3 to 6 of elementary school			+					+				
Zaidi, R.	2020	Case study, collaborative action research project		X	X	X	Video recordings, and surveys and reflections on the experience of using dual-language books by teachers and students.	49	10 to 12 years old	+			+			+	+	+			

Note: Pedagogy categories: T: translanguaging-based; A: affirming; S: scaffolding; C: cross-linguistic. Cognitive outcomes: AC: access to curriculum content; Laq: language acquisition; LD: language development; Law: language awareness; CT: critical thinking; AA: academic achievement. Socio-affective outcomes: S: self-efficacy; IA: identity affirmation; E: engagement; O: open-mindedness; SB/I: sense of belonging/inclusion; EW: emotional well-being.