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A systematic literature review

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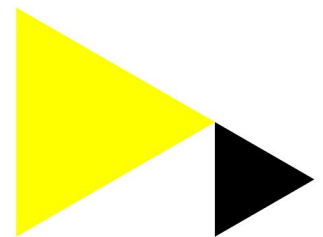
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Multilingual language learning interventions to foster language proficiency and cross-linguistic awareness in language classrooms – a systematic literature review

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ABSTRACT

Multilingualism is common in educational settings across Europe and beyond, yet many language teachers report feeling unprepared to valorise the different languages students bring to their classrooms. Multilingual language learning interventions – activities that intentionally draw on students' multilingual repertoires – offer one way to enhance language learning. Research suggests that such interventions can support students' language proficiency and cross-linguistic awareness, particularly in upper primary, secondary and university contexts. Nevertheless, no systematic literature review has yet synthesised interventions fostering language proficiency and cross-linguistic awareness in educational settings for language learners aged ten or older. Consequently, this systematic review of 17 studies seeks insights into (1) types of multilingual language learning interventions fostering language proficiency and cross-linguistic awareness for this group of language learners, and (2) the outcomes of these intervention types. Our narrative analyses identified three types of multilingual language-learning interventions with outcomes related to language proficiency and/or cross-linguistic awareness: (1) Creating multilingual space in language learning, (2) Raising cross-linguistic awareness with structured tasks and (3) Exploiting multilingual repertoires to support language skills. Our review offers practical insights and directions for further research on using students' multilingual repertoires in upper primary, secondary and university language learning settings.

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Introduction

Despite increasing multilingualism and empirical evidence showing the value of pedagogies that valorise students' multilingual repertoires (Conteh and Meier 2014), many educational settings still adhere to monolingual ideologies (Piller 2016). Whereas teachers may recognise the potential benefits of multilingual pedagogies, their implementation is often hindered by a dominant monolingual mindset. Influenced by the institutions and traditions in which they are embedded, teachers

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reproduce prevailing monolingual ideologies (Slaughter and Cross 2021), limiting their ability to acknowledge and incorporate students' multilingual repertoires into their everyday teaching practices (Pulinx, Van Avermaet, and Agirdag 2017; Veliz and Chen 2024). Moreover, the lack of attention to recognising and utilising students' multilingualism in teacher training and professional development programmes (Wernicke et al. 2021) leaves teachers unprepared to deal with linguistic diversity effectively. Though this situation differs in nature and extent across different European countries (Herzog-Punzenberger, Pichon-Vorstman, and Siarova 2017), in general, the so-called multilingual turn in education (Conteh and Meier 2014), which emphasises the value of multilingualism and the use of students' multilingual repertoires in learning, has been slow to take hold in European educational institutions.

Valorising students' multilingualism is a complex task for teachers, as it requires a deep understanding of how to leverage students' multilingual skills for academic success. Today, many teachers still lack this necessary knowledge about multilingual learning as well as hands-on materials to valorise students' multilingual repertoires in their classrooms (Wernicke et al. 2021). As a result, even teachers with a positive attitude towards multilingualism – including language teachers, who are the focus of the current study – report underutilising students' additional linguistic knowledge and skills (Van Beuningen and Polisenská 2019). As such, they -unintentionally- deny their students the potential benefits of multilingual (language) learning (Constantin-Dureci 2022; Panadero et al. 2025). For the language classroom in particular, these benefits include, for example, socio-affective advantages such as reducing students' anxiety about speaking another language in class (Cenoz, Santos, and Gorter 2022). Scholars also report cognitive benefits of multilingual language learning (Llurda and Calvet-Terré 2022; Van Praag et al. 2016) in improving linguistic awareness (Jessner 2006) or supporting language learning by enabling transfer between typologically similar languages (Eibensteiner 2023).

Kemp (2007) suggests that multilingual language learning has the potential to hone language proficiency and cross-linguistic awareness, specifically during the phase of later language learning (Nippold 2004). In the current study, we define later language learners as students aged ten or older, who are enrolled in upper primary, secondary, or university education. Against this backdrop, when we refer to language teachers, we focus on those teaching in language classrooms with students of this age category, and in these school types. These multilingual students are often proficient in one or more well-developed home language(s) and have a reasonable command of other languages, for example, in (foreign) languages learned at or outside school. Language proficiency can be described as knowledge and skills 'at all its levels, such as sounds (phonetics and phonology), minimal grammatical signs (morphology), sentences (syntax), meanings (semantics), texts (discourse analysis), and language in use (sociolinguistics, pragmatics)' (Ortega 2014, 2). In addition to these domains, language proficiency also encompasses the ability to use language for communication effectively and appropriately in real-life situations, integrating language knowledge with pragmatic and discourse competences. In the phase of later language learning, these competences include important school-related registers (Uccelli 2023) and advanced reading, writing, listening, and speaking skills, which become increasingly varied and demanding in multilingual contexts (Ortega 2014). Defining cross-linguistic awareness, it is important to note that another domain of language competence is knowledge *about* language, also referred to as metalinguistic awareness: the ability to think about language as a system and to analyze its structure separately from its content or meaning (Tunmer and Herriman 1984). From this perspective, cross-linguistic awareness is a subtype of metalinguistic awareness in multilingual contexts described as 'the ability to focus on and reflect on languages in use while identifying their similarities and differences' (Angelovska and Hahn 2014, 187). It is important to note that (the development of) language proficiency and cross-linguistic awareness are strongly intertwined. Tiurikova, Haukås, and Storto (2021), for example, describe how promoting such cross-linguistic awareness (e.g. through interactions with peers who speak different languages) can enhance language proficiency in lower secondary education.

Previous studies have already investigated how specific interventions can improve language proficiency and/or cross-linguistic awareness (Forbes and Fisher 2020; Jessner 2006). To the best of our knowledge, however, research that systematically inventories how multilingual language learning strategies influence language proficiency and cross-linguistic awareness in later language learning, is lacking. With our study, we aim to fill this research gap.

Theoretical framework

It is important to clarify what multilingualism means in the context of multilingual language learning, as researchers often use various terms, such as ‘plurilingualism’ or ‘bilingualism’. Multilingualism differs from bilingualism, which refers to the ability to use two languages fluently (Edwards 2006). It also differs from plurilingualism, which emphasises an individual’s linguistic repertoire and ability to use different languages flexibly depending on the context (Melo-Pfeifer 2018). Following Cook (1990), for this study, we define multilingualism as a multicompetence: the ability to use two or more languages or language varieties in various everyday situations. Multilinguals do not need complete mastery of these languages; it is sufficient to be able to communicate effectively in each one. In an educational context, therefore, multilingualism encompasses all the languages students bring to or learn at school, which means that students’ multilingual repertoires include their home and regional/minority languages, including their varieties, and any language they learn at school (Cenoz 2013; Mitits 2015).

This study focuses on multilingualism in later language learning environments, utilising students’ multilingual repertoires in various intentionally designed educational interventions (Cenoz, Santos, and Gorter 2022). An educational intervention can be defined as a set of behaviours implemented by educators aiming at changes in a student’s capacity to perform certain tasks and described in sufficient detail to permit replication and data-driven interpretation (Zigmond 1996, 98). In this paper, we use intervention as an umbrella term to refer to all explicit changes to education aimed at fostering multilingual language learning. Interventions can include, for example, ‘multilingual approaches’ (Sierens and Van Avermaet 2014) or ‘multilingual strategies’ (Cenoz, Santos, and Gorter 2022) that build on students’ existing linguistic knowledge and abilities to facilitate the learning of languages of schooling and additional languages.

In our study, the term ‘language of schooling’ refers to the typical register used for learning and teaching, usually the dominant language(s) (Schlepppegrell 2004; Uccelli 2023), such as the national or official languages of a region or country. In contrast, in this study, ‘additional language’ is used as an umbrella term that encompasses any other languages students learn at school in addition to their existing linguistic knowledge. For example, home languages or additional languages, at school labelled as ‘foreign’, but not foreign to a minority group of students, can be part of these existing linguistic repertoires. As such, multilingual language learning interventions intentionally draw on students’ existing linguistic knowledge and skills to support the learning of the language of schooling as well as additional languages (García and Wei 2014), shifting perspectives from monolingual ideologies to a multilingual perspective on language learning.

As described by Brice (2015), these interventions can specifically target the language transfer abilities of students. Integrating findings from psycholinguistics and educational sciences, Bosma et al. (2022) argue that by stimulating the use of the home language in the classroom, multilingual language learning interventions, such as translanguaging (García and Wei 2014), can strengthen cross-language connections. Especially in later language learning, recognising and utilising multilingual repertoires, multilingual language learning interventions may stimulate students to transfer their linguistic knowledge from one language to another, resulting in a more efficient and effective language-learning experience (De Bot, Lowie, and Verspoor 2007). Although the different languages in a multilingual repertoire form one integrated language system (Cook 1990), transfer between languages does not happen automatically in later language learning (Forbes and Fisher 2020). To stimulate transfer in language classrooms, teachers should take into account the reflective

and cognitive readiness of later language learners (Busse et al. 2020) and the language-learning skills (Griffiths 2013) these students already have at their disposal.

Against this backdrop, multilingual language learning interventions expand the traditional take on language learning and offer opportunities to effectively utilise learners' multilingual repertoires. Previous research has found that multilingual language learning may boost cross-linguistic awareness (Angelovska and Hahn 2014) and overall language proficiency (Bonnet and Siemund 2018; Haukås 2016; Martini and Torregrosa 2023). For example, in Germany, in primary education, Hopp and Thoma (2021) investigated how multilingual teaching supports grammatical development in English as an additional language by stimulating learners' awareness of cross-linguistic similarities and differences. In relation to language proficiency, Eibensteiner (2023) reports on an intervention in primary and secondary education in Germany and Austria with German speakers, in which the languages of students' multilingual repertoire play an important role in learning an additional language by targeting similar or different grammar patterns.

While a growing number of studies focus on multilingual language learning interventions that foster language proficiency and/or cross-linguistic awareness, the focus on educational settings in the phase of later language learning is incipient, and studies have not yet been synthesised in a systematic manner. To address this gap, this study aims to provide a systematic overview of the types and outcomes of multilingual language learning interventions fostering language proficiency and/or cross-linguistic awareness in later language learning. It seeks to answer the following research questions:

RQ1: Which types of multilingual language learning interventions aim to foster language proficiency and/or cross-linguistic awareness in later language learning?

RQ2: To what extent and in what ways do these types of multilingual language learning interventions foster later language learners' language proficiency and/or cross-linguistic awareness?

Methodology

To answer both research questions, we conducted a systematic literature review following the guidelines described by Carrera-Rivera, Larrinaga, and Lasa (2022) and adopted the PRISMA reporting guidelines (Page et al. 2020). In the next sections, we outline the steps taken for this systematic review.

Search strategy

The review started in November 2022 with a hand search that focused on identifying key concepts and gaps in the literature about multilingual language learning interventions fostering language proficiency and/or cross-linguistic awareness. First, this search showed that many studies mention the importance of multilingual language learning, but only a few specifically addressed its relationship with language proficiency and/or cross-linguistic awareness in later language learning settings. Secondly, there was a wide diversity in definitions and concepts used in the literature for multilingual language learning, language proficiency, and cross-linguistic awareness. We were aware of the risk of excluding relevant studies that use, for example, 'plurilingualism' instead of multilingualism or 'metalinguistic awareness' targeting cross-linguistic awareness. Therefore, the most relevant concepts and definitions related to multilingual language learning, language proficiency, and cross-linguistic awareness were selected from abstracts and titles of ten possibly to include studies. Consequently, terms such as 'bilingualism' and 'plurilingualism' for multilingual language learning, 'target language' for language proficiency, or 'metalinguistic knowledge' and 'plurilingual awareness' for cross-linguistic awareness, were used, along with the three key concepts of our study, to create search strings for the ERIC, Web of Science (WoS), and Linguistics and Language Behavior Abstracts (LLBA) databases. For the complete search strings, we refer to the supplemental online

material. We specifically selected ERIC and WoS for their educational focus, while LLBA was chosen for its larger number of records compared to other linguistic databases such as the Modern Language Association. Additionally, LLBA includes studies in languages other than English. We applied no filters to ensure that relevant studies would not be excluded. This part of the search was conducted on March 9, 2023. We concluded the hand search, which was separated from the search on March 9, 2023, in June 2023.

Screening procedure

As depicted in the PRISMA flow chart in Figure 1, the search yielded 2,763 results, with ERIC generating 859 results, WoS Core Collection and Linguistics generating 958 results, and LLBA generating 946 results. In the first round of screening, we used Zotero to remove 594 duplicates, resulting in 2169 records for the first round of screening. Next, using the Rayyan tool for systematic reviews, focusing on titles and abstracts, we excluded studies not referring to multilingual language learning or not adhering to one or more of the following criteria:

1. Study includes a multilingual language learning intervention to foster language proficiency and/or cross-linguistic awareness
2. Multilingual language learning intervention takes place in a later language learning setting (students aged >10)
3. Data describe outcomes related to language proficiency and/or cross-linguistic awareness
4. Study underwent a peer-review process.

We decided not to impose a language criterion for publication, allowing studies to be included in this review regardless of the language in which they were published.

For the second round of screening, 51 articles from the search on March 9, 2023, and 28 from the hand search were identified as eligible. At least two authors read each full paper and applied the four

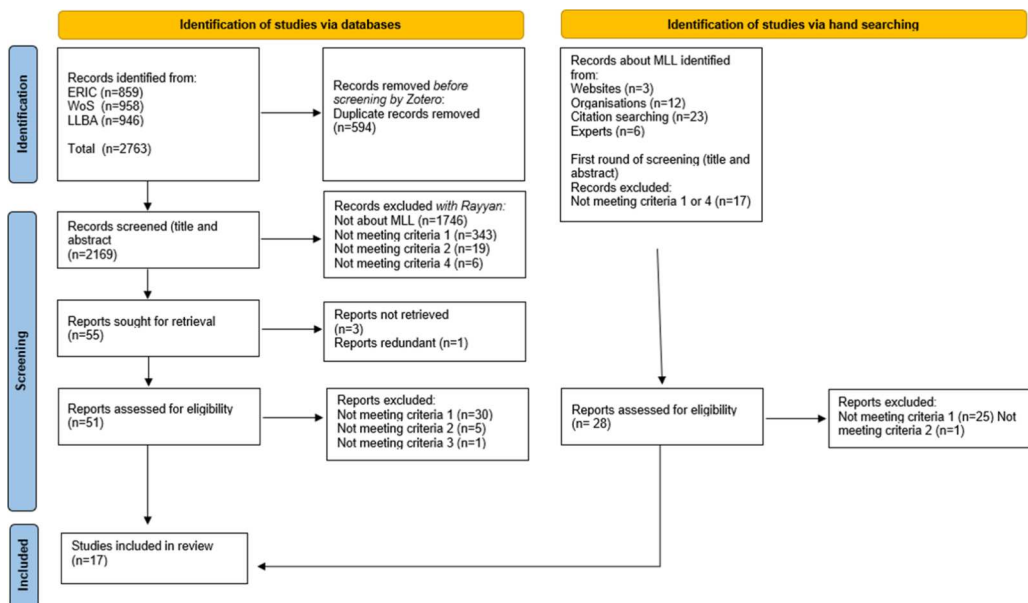


Figure 1. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) overview search strategy and screening procedure.

criteria in order to decide on the study's inclusion. In the very few cases of doubt ($n = 3$), a third author conducted a decisive screening. After this screening, we identified 15 studies from the search on May 9, 2023, and 2 studies from the hand search as eligible.

The final sample resulting from the complete search and screening consisted of 17 articles that were found to meet all criteria, describing multilingual language learning interventions and their outcomes related to language proficiency and/or cross-linguistic awareness in later language learning.

Quality appraisal

We first coded the included studies according to their designs, i.e. quantitative, qualitative, and mixed methods. Next, we adapted the quality appraisal instrument of Morrison et al. (1999) for this study: the nine questions of the instrument, aimed at rating the quality of educational interventions, have been expanded with sub-questions specifically for studies involving multilingual language learning interventions and a point allocation for each question. An example of a question used in the original instrument is: 'Is the precise nature of the intervention clear?'. In our adapted version, the question is formulated as 'Is the precise nature of the multilingual language learning intervention clear?'. While in the original instrument, raters provide a yes/no answer with a brief additional specification, our questions are followed by questions specifying the nature of the intervention, such as 'Is the intervention described in a way that it can be precisely replicated in another later language learning setting, regarding structure, process, and content of the intervention?'. For each question, points are attributed (0 for no, 1 for partially, and 2 for yes). To refine the adapted instrument, two authors screened four studies (23% of all studies) and re-adjusted the questions and scoring. For the final version of the quality appraisal instrument, we refer to the supplemental online material. The first author screened the remaining 13 studies. In cases of doubt ($n = 4$), a second author conducted a decisive screening. With a maximum score of 32, a study was labelled as having 'high' quality with a score of 23 points or more, 'moderate' when scored between 12 and 22 points, and 'low' with a score under 11 points.

Synthesis

Due to the heterogeneity of the studies found in the search, we expected included studies to have a broad scope regarding the types of interventions (e.g. in terms of focus, duration, and languages involved), the general study design (e.g. qualitative or mixed methods), and the type of outcomes (e.g. measured or perceived). Therefore, we adopted a narrative method of synthesis (Popay et al. 2006), which involved reviewing and synthesising findings from multiple studies, focusing on developing a preliminary synthesis of their common features and exploring relationships between studies. This method primarily employs inductive reasoning, as it involves deriving themes and explanations directly from the information of included studies. Additionally, we analyzed the included studies regarding general information (e.g. geographical areas, study design).

To address RQ1, we summarised overarching features of multilingual language learning interventions, which led to their preliminary classification into different types. This classification was done by describing and highlighting common features across the interventions, for example, making students explicitly aware of cognates in typologically similar languages of multilingual repertoires. The first author performed the initial analyses and discussed them with all authors, and adjusted them accordingly.

To address RQ2, we described for each intervention to what extent and in what ways the intervention fosters later language learners' language proficiency and/or cross-linguistic awareness. Categorized by the different types of interventions, we summarised the outcomes – quantitative and/or qualitative – emphasising various domains of language proficiency, i.e. vocabulary or reading, and cross-linguistic awareness, such as cross-linguistic morphological awareness, or more in

general, metalinguistic awareness across languages. Finally, reported positive outcomes were indicated with a +. The symbol +/- was used to refer to reported neutral outcomes (e.g. no significant differences between groups or between pre- and post-measurements), and a - refers to reported negative outcomes.

Results

The first section of this paragraph provides a descriptive overview of the 17 studies included in our sample. To address RQ1, the second section offers insights into the three types of multilingual language learning interventions, which were categorised based on common features across the interventions (Popay et al. 2006). The following section addresses RQ2, exploring how these multilingual language learning interventions relate to outcomes, specifically focusing on domains of language proficiency and/or cross-linguistic awareness. In addition, the last section underscores several key conditions for successful implementation of multilingual language learning.

Characteristics of included studies

Table 1 provides an overview of the main contextual and methodological characteristics of the included studies.

Notably, the publication years of the articles ranged from 2015 to 2022, with a higher number of publications in the later years of this range. One study (Knopp et al. 2021) was published in Dutch, while the others appeared in English. Geographically, most of the studies (n = 14) were conducted in Western countries. The number of participating students in the studies was generally relatively low, ranging from 15 to 67. However, two studies – Prilutskaya and Knoph (2020) and Leonet, Cenoz, and Gorter (2020) – reported larger participant groups of 200 and 107, respectively. In

Table 1. Main characteristics of the included studies.

Author(s), year	Geographical area	Participants	Age of learners	Type of study
1. Torralba, Baños, and Marzà (2022)	Spain	Student (n = 50)	Not mentioned	Quantitative
2. Kypö et al. (2015)	Finland	Student (n = 19) Teacher (n = 5)	Not mentioned	Qualitative
3. Hedman and Fisher (2022)	Sweden	Student (n = 10) Researcher (n = 1) Teacher (n = 6)	13–15 Not mentioned	Qualitative
4. dela Cruz (2022)	Canada	Student (n = 20)	18–56	Qualitative
5. Brown (2021)	United States	Student (n = 53)	25–59	Quantitative
6. Leonet, Cenoz, and Gorter (2017)	Spain	Student (n = 63) Teacher (n = 3)	10–12 Not mentioned	Qualitative
7. Choi (2019)	South-Korea	Student (n = 30)	Average 21.3	Quantitative
8. Chen, Li, and Zhu (2021)	China	Student (n = 38) Teacher (n = 1)	Average 19 Not mentioned	Mixed Methods
9. Knopp et al. (2021)	Netherlands	Student (n = 15)	13–14	Mixed Methods
10. Leonet, Cenoz, and Gorter (2020)	Spain	Student (n = 104)	Average 10.67	Mixed Methods
11. Myklevold (2022)	Norway	Student (n = 19) Teacher (n = 1)	Not mentioned	Mixed Methods
12. Woll and Paquet (2021)	Canada, Mexico	Student (n = 47)	15–68	Qualitative
13. Woll, Paquet, and Wouters (2022)	Canada	Student (n = 22)	21–78	Qualitative
14. Carbonara (2022)	Italy	Student (n = 67)	Average 13.7	Quantitative
15. Prilutskaya and Knoph (2020)	Norway	Student (n = 200)	15–16	Mixed Methods
16. Llanes and Cots (2022)	Spain	Student (n = 54)	Average 19.72	Quantitative
17. Abdulaal (2020)	Egypt	Student (n = 63)	19–24	Quantitative

addition to student data, data were also collected from language teachers in five studies and from a researcher in one study.

In terms of their design, six studies included both experimental and control groups. Of the studies without a control group, five used a design featuring pre- and post-intervention measures, three studies assessed outcomes during and after the intervention, and three relied solely on measures taken during the interventions or on post-intervention measures. Nearly all the studies utilised a mix of different data collection methods, such as semi-structured or in-depth interviews, observations, questionnaires, and student products like writing samples. Out of the total studies, six focused on quantitative data and analyses, six on qualitative data, and five employed a mixed-methods approach that combined both quantitative and qualitative data and analyses to map outcomes. Following the quality appraisal criteria of this study (see section 3.3), nine studies were evaluated as high quality, seven as moderate, and one as low.

Types of multilingual language learning interventions

When examining the types of multilingual language learning interventions, it is essential to consider the languages used in these interventions, as shown in Table 2. Eight studies use learners' knowledge of the national language, whereas five of the interventions incorporate languages forming part of students' existing multilingual repertoires (Leonet, Cenoz, and Gorter 2017; 2020; Llanes and Cots 2022; Torralba, Baños, and Marzà 2022; Woll and Paquet 2021; Woll, Paquet, and Wouters 2022), which are all minority or regional languages that are officially recognised within the national language framework. For example, Basque and Catalan are both officially recognised regional languages in Spain.

Table 2. Three types of multilingual language learning interventions.

Author(s), year	Language(s) Existing in the Linguistic Repertoires	Language(s) of schooling	Additional Language(s)	Educational setting	Duration of intervention
1.Creating multilingual space in language learning					
Torralba, Baños, and Marzà (2022)	Spanish Catalan	Not mentioned	English	University	3 workshops
Kyppó et al. (2015)	Lx*	Not mentioned		University	4–6 lessons per week
Hedman and Fisher (2022)	Lx	Swedish	Swedish English	Secondary	1 or 2 lessons per week
dela Cruz (2022)	Lx	French	English	Secondary	13 weeks
Brown (2021)	Lx	English	Arabic, French	University	10 weeks
Leonet, Cenoz, and Gorter (2017)	Basque Spanish	Basque Spanish	English	Upper-primary	16 weeks
2.Raising cross-linguistic awareness with structured tasks					
Choi (2019)	Korean	Not mentioned	English French	University	Not mentioned
Chen, Li, and Zhu (2021)	Uyghur Putonghua	Putonghua	English French	University	10 weeks
Knopp et al. (2021)	German	Not mentioned	Dutch Maltese	Secondary	1 week
Leonet, Cenoz, and Gorter (2020)	Basque Spanish	Basque	English	Upper-primary	Not mentioned
Myklevold (2022)	Lx	Norwegian and English	English German	Secondary	4 weeks
Woll and Paquet (2021)	Spanish French	Not mentioned	Spanish French	University	Not mentioned
Woll, Paquet, and Wouters (2022)	French Lx	French	German	University	Not mentioned
Carbonara (2022)	Italian, Lx	Italian	English	Secondary	Not mentioned
3.Exploiting multilingual repertoires to support language skills					
Prilutskaya and Knoph (2020)	Norwegian Lx	Norwegian English	English	Secondary	1 workshop
Llanes and Cots (2022)	Spanish Catalan	English	English	University	16 weeks
Abdulaal (2020)	Lx	Not mentioned	English	University	4 weeks

*Lx: Not specified language in study.

In these interventions, Basque is used alongside the national language, Spanish, to foster language development in English, while Catalan serves a similar purpose in Catalonia.

Table 2 also clarifies for each study if the languages mentioned in the intervention are part of the existing linguistic repertoires, are the language(s) of schooling, or are additional languages. It is particularly noteworthy that English is an additional language in the majority of multilingual language learning interventions. As shown in Table 2, most of the interventions take place in university language learning settings ($n = 8$), often over a relatively short duration, varying from three workshops to a period of 16 weeks. Five studies did not mention the duration of the intervention. We identified three types of interventions in the included studies: (1) Creating multilingual space in language learning, (2) Raising cross-linguistic awareness with structured tasks, and (3) Exploiting multilingual repertoires to support language skills. Below we describe each of the intervention types in more detail.

Creating multilingual space in language learning

Out of 17 studies, six implemented this type of intervention, categorised by the common feature of shifting perspectives from monolingual ideologies to a more multilingual framework in language learning. For this purpose, educators allow multiple languages from teachers' and students' multilingual repertoires in instruction and communication while teaching and learning the language of schooling or an additional language. For example, to develop plurilingual competences, Torralba, Baños, and Marzà (2022) employ audiovisual translations in workshops where students collaborate in languages that are part of their multilingual repertoires, Spanish and Catalan, to agree on the final translation in English, the additional language. Similarly, Kyppö et al. (2015) introduce course concepts that facilitate multilingual communication among teachers and between teachers and students, such as multilingual negotiation, storytelling, and reading. Both interventions encourage students to discuss topics in multiple languages and utilise their existing multilingual repertoires. Likewise, during mentoring sessions, Hedman and Fisher (2022) permit mentors to assist students in using their 'strongest language' – notwithstanding the type of language – while learning the two languages of schooling. In the study by dela Cruz (2022), student tutors help learners of an additional language by utilising students' multilingual repertoires through cross-linguistic comparison, translanguaging, and translation. Researchers also incorporate commonly learned additional languages or languages of students' multilingual repertoires to create a multilingual space while teaching another language. For instance, while teaching the additional languages French and Arabic, Brown (2021) allows multilingual instruction, using a commonly learned additional language, English, combined with languages of students' multilingual repertoire. Furthermore, Leonet, Cenoz, and Gorter (2017) use linguistic landscaping to visualise local expressions in three languages from the students' multilingual repertoires, continuing with writing a story while using the same organisation in these languages but staying aware that grammar, vocabulary, and spelling are specific to each of the languages.

Raising cross-linguistic awareness with structured tasks

Eight studies are categorised in this type of intervention. Five of those studies, primarily aimed at enhancing additional language learning, made explicit use of typologically similar languages in students' multilingual repertoires to make them aware of cognates, morphemes, and internationalisms. Choi (2019) and Chen, Li, and Zhu (2021) explicitly make students aware of cognates in typologically similar languages within their multilingual repertoires, French and English. Additionally, Knopp et al. (2021) explore to what extent students apply their multilingual repertoires by using receptive multilingual strategies to decode an unfamiliar but typologically similar language (Dutch) and to what extent these strategies can be transferred to decode a language that is not familiar or typologically related (Maltese). With reflections on declensions, descent, and connections of words for vocabulary acquisition in Basque, Spanish, and English, followed by activities focused on oral and written language, vocabulary, and discourse, Leonet, Cenoz, and Gorter (2020) focus on

developing morphological awareness in English as an additional language. To support both the learning of the additional languages and the language of schooling, Myklevold (2022) incorporates various strategies emphasising the identification of cognates, internationalisms, and textual patterns across students' multilingual repertoires. In three studies in Table 2, researchers stress the reciprocal relationship between cross-linguistic awareness and language proficiency, which serves as a common feature of this type of intervention. They explore how reflecting on structural features of the different languages in existing linguistic repertoires helps students develop a deeper understanding of how languages function. Examples are the studies of Woll and Paquet (2021) and Woll, Paquet, and Wouters (2022). The former introduces two customised plurilingual consciousness-raising tasks. These tasks begin with an input-based discovery phase in which students highlight teacher-chosen grammar structures in texts, followed by a reflective phase where students are asked to make assumptions about the underlying patterns and similarities across English, Spanish, and French. The tasks conclude with a validation phase where students discuss their assumptions and difficulties until they reach a consensus as a group. The latter, a subsequent study, developed and applied three interconnected plurilingual consciousness-raising tasks related to German, an additional language. Carbonara (2022) engages students in multilingual interventions, such as translanguaging, focusing on different properties of the languages and on activities in which students make comparisons between languages in their multilingual repertoires.

Exploiting multilingual repertoires to support language skills

The third type of intervention includes three studies that share the common feature of utilising students' multilingual repertoires to promote language skills in a language of schooling or an additional language. For instance, the research conducted by Prilutskaya and Knoph (2020) examines the following interventions to support writing skills in an additional language, English: (1) writing solely in the additional language, (2) translating a draft from the language of schooling, Norwegian, into the additional language, and (3) employing translanguaging, which permits the use of any language or a combination of languages in the draft prior to composing the final essay. Similarly, in a study by Llanes and Cots (2022), students are encouraged to reflect on how they would compose a business letter in a language of their multilingual repertoire before writing it in English. Also, in this study, students are exposed to listening activities of native speakers of English and non-native speakers that share students' home languages, with the aim of improving their English language proficiency. Abdulaal (2020) introduces an intervention which he labels 'stego-translanguaging pedagogy', involving the indirect use of students' multilingual repertoire, such as reading about a topic in one of the languages of their repertoire at home, before performing a reading task in the additional English language in class (this type of translanguaging is similar to the use of translanguaging in pre-teaching). In this way, the indirect use of languages can be seen as an added aspect to translanguaging in situ.

Outcomes of multilingual language learning interventions related to language proficiency and cross-linguistic awareness

To address RQ2, Table 3 lists the outcomes of the three types of multilingual language learning interventions in relation to language proficiency, focusing on the target language of the intervention, and/or cross-linguistic awareness, and their respective domains (see sections 2, 3, 4).

Creating multilingual space in language learning

The studies of the first type show that these multilingual language learning interventions may lead to benefits related to cross-linguistic awareness and language proficiency. As shown in Table 3, the study by dela Cruz (2022) reveals positive outcomes for cross-linguistic awareness and language proficiency in English, as measured by pre- and post-tests. For both outcomes, data from an observation grid, field notes, and semi-structured interviews were analyzed. Three studies only present benefits related to

Table 3. Outcomes of three types of multilingual learning interventions related to language proficiency and/or cross-linguistic awareness.

Author(s), year	Outcomes related to language proficiency*	Outcomes related to cross-linguistic awareness *
1. Creating multilingual space in language learning		
Torralba, Baños, and Marzà (2022)	+ Plurilingual competences, +/- English	
Brown (2021)	+ Arabic, vocabulary, listening, writing +/- French, writing	
Kyppö et al. (2015)	+ Lx, communication competences	+ metalinguistic awareness across languages
Hedman and Fisher (2022)		+ metalinguistic awareness across languages
dela Cruz (2022)	+ English, domain not specified	+ metalinguistic awareness across languages
Leonet, Cenoz, and Gorter (2017)		+ metalinguistic awareness across languages
2. Raising cross-linguistic awareness with structured tasks		
Leonet, Cenoz, and Gorter (2020)		+ cross-linguistic morphological awareness
Knopp et al. (2021)	+ German, -Maltees, reading	+ cross-linguistic awareness of typologically similar languages
Chen, Li, and Zhu (2021)	+ French, pronunciation	+ cross-linguistic phonetic awareness in typologically similar languages
Choi (2019)	+ French, domain not specified	+ cross-linguistic awareness of cognates in typologically similar languages
Myklevold (2022)	+ German, reading	+ cross-linguistic awareness of cognates and internationalisms
Carbonara (2022)		+ cross-linguistic phonetic and syntactical awareness
Woll and Paquet (2021)		+ cross-linguistic syntactical awareness
Woll, Paquet, and Wouters (2022)		+ cross-linguistic syntactical awareness
3. Multilingual repertoires supporting language skills		
Prilutskaya and Knoph (2020)	+ English, writing	
Abdulaal (2020)	+ English, writing/reading +/- English, writing	
Llanes and Cots (2022)	+ English, writing/speaking	

*+: Positive, +/-: Neutral, -: Negative.

language proficiency. In relation to FREPA descriptors (Council of Europe 2018), Torralba, Baños, and Marzà (2022) assessed students' plurilingual competences, using the Test for the Assessment of Plurilingual and Pluricultural Competence. Although the differences between the experimental and control groups were not statistically significant, students in the experimental group showed some progress in developing their knowledge and skills related to adapting and facilitating communication in the additional language, English. Through student and teacher reflections, a perceived improvement was described by Kyppö et al. (2015) in students' communication competences and ability to mediate information in multilingual contexts. For additional languages, French and Arabic, Brown (2021) identified statistically significant differences in writing and vocabulary assessments, benefiting the experimental group that received instruction in their home language as well as in English, a common additional language. Three studies reported an increase in metalinguistic awareness among students. Hedman and Fisher (2022) underscore, by means of audio- and video-recorded interactions from classroom observations, the crucial role of collaborative learning for multilingual language learning, which was also noted by dela Cruz (2022). Leonet, Cenoz, and Gorter (2017) note, through individual and group interviews of teachers, that in multilingual language learning, students were aware that grammar, vocabulary, and spelling are specific to each language.

Raising cross-linguistic awareness with structured tasks

The second type of intervention was implemented in eight studies. Three of these studies mention the advantages related to both cross-linguistic awareness and learning an additional language.

Chen, Li, and Zhu (2021) report statistically significant learning outcomes related to reflection on phonetics, benefiting English pronunciation. Choi (2019) notes that the strategic use of cognates helped students recognise the relevance of linguistic knowledge across additional languages. However, students with a higher level of proficiency in the additional language, French, showed better cognate recognition in French than in English, the other additional language. They were more adept at employing effective strategies, highlighting a positive outcome for cross-linguistic transfer. Myklevold (2022) conducted a study on the strategic use of cognates and internationalisms, involving pre- and post-questionnaires, semi-structured interviews, and focus group discussions with students and their teachers. The intervention primarily enhanced students' cross-linguistic comparisons-skills and text comprehension, with more significant benefits observed in German than in English. Related to cross-linguistic awareness, the study of Leonet, Cenoz, and Gorter (2020) used a background and translanguaging questionnaire, a morphological awareness test, and focus group discussions to measure outcomes, and found that the experimental group achieved higher scores in morphological awareness as compared to the control group. Furthermore, Knopp et al. (2021) conducted pre- and post-tests on students' decoding process with receptive multilingual strategies and revealed that participants were able to leverage their multilingual abilities in typologically similar languages. However, their decoding success was notably less when working with languages that are not typologically similar. The last group of studies on this type of intervention mostly mentions outcomes related to cross-linguistic syntactical awareness. Carbonara (2022) reports that participants in the experimental group, who engaged in both cross-linguistic phonetic and syntactical awareness, outperformed those in the control group on both a sound-symbol correspondence task and a grammatical inferencing task, as assessed by the corresponding Llama sub-tests. In cross-linguistic tasks of targeted grammar structures in different languages, Woll and Paquet (2021) analyzed the outcomes by audio recordings alongside post-task questionnaires. The verbal data indicated that the collaborative and reflective nature of the tasks allowed learners to identify similarities between languages and actively engage in knowledge construction. Students reported benefiting from these tasks through collaborative learning, participating in metalinguistic reflections across languages, and developing accurate assumptions about targeted grammar structures. In their subsequent study, Woll, Paquet, and Wouters (2022) analyzed participants' discussions to determine whether students reflected on and analyzed three languages superficially or more in-depth. They highlighted that learners engaged in different levels of analysis when making cross-linguistic connections, depending on the specific language combinations and additional language structures.

Exploiting multilingual repertoires to support language skills

Three studies focused on intervention type 3, mobilising multilingual repertoires to support language skills and reported positive outcomes related to the development of language proficiency in languages of schooling as well as additional languages. Research conducted by Prilutskaya and Knoph (2020) emphasises the significant role of the dominant additional language, English, as a metacognitive tool across all three writing conditions of the intervention. Participants answered a questionnaire about the use of their multilingual repertoire and their perceptions of the assigned writing condition. The study underscores students' strategic use of the two languages within students' multilingual repertoires, Norwegian or Lx, to generate ideas and organise information. In pre- and post-tests, Abdulaal (2020) found that stego-translanguaging can be regarded as an influential factor in the experimental group to enhance reading and writing in English. Additionally, Llanes and Cots (2022) reported comparable results with a slight advantage for the experimental group in writing and speaking English, using a pre- and post-questionnaire and assessments by an expert examiner.

Effectively implementing multilingual language learning interventions

In addition to the three types of interventions and their outcomes, studies in our sample highlight several key conditions for the successful implementation of multilingual language learning

interventions. First, several authors emphasise the importance of cross-curricular collaboration between language teachers as well as collaboration between multilingual students in language classrooms (Woll and Paquet 2021). Second, while it is not essential for language teachers to speak the languages in their students' multilingual repertoires, it is crucial for them to understand which languages are present in these repertoires (Myklevold 2022). Finally, Woll, Paquet, and Wouters (2022) stress the importance of recognising language patterns. Language teachers should be able to identify these patterns across languages and integrate them explicitly and systematically into the multilingual language learning intervention (Chen, Li, and Zhu 2021; Choi 2019).

Discussion

With our systematic review, we aimed to define types of multilingual language learning interventions that can be used to foster language proficiency and/or cross-linguistic awareness, as well as describe their outcomes in later language learning settings. We reviewed 17 studies, and as expected based on our understanding of the studies from the hand search, we synthesised a diverse range of multilingual language learning interventions, as well as studies with varied designs and a high diversity of outcomes. We will discuss general aspects of the included studies and their interventions, our categorisation of these multilingual language learning interventions into three types, and relevant results in relation to previous literature.

Characteristics of included studies and multilingual language learning interventions

Most of the studies were conducted in Western countries and in university language learning environments, typically involving students who were 18 years old or older. This might suggest that multilingual language learning interventions are better suited for this age group, but it is more likely that there is a sampling bias. Therefore, further research with learners in different later language learning contexts, such as upper primary and secondary education, is necessary (Herzog-Punzenberger, Pichon-Vorstman, and Siarova 2017; Nippold 2004), as well as more research in non-Western contexts. Furthermore, in addition to the nationally recognised (minority) languages, the emphasis on English as an additional language in multilingual language learning interventions is noteworthy. Despite researchers highlighting the aim of enhancing language proficiency in English through these interventions, they do not explain the rationale behind the prominence of English, either from a geographical or from an educational perspective. To fully exploit the benefits of multilingual language learning interventions, it is recommended to also investigate how they can incorporate and reinforce other additional languages and languages of schooling, as well as all other languages in students' multilingual repertoires (Piller 2016). In addition, our classification of languages (e.g. languages of schooling and additional languages) highlights the complex language ecologies that researchers and practitioners deal with when implementing multilingual language learning interventions. For example, in the study of Llanes and Cots (2022), depending on the learner, Spanish can be the language of schooling or an additional language. This is the case in many later language learning settings in which different languages are included and learners have diverse linguistic backgrounds, making it challenging for teachers to tailor their teaching to students' specific linguistic profiles (e.g. Myklevold 2022).

Although the quality appraisal showed that the quality of most studies was 'moderate' or 'high', the relatively small sample sizes and short duration of the interventions, as well as the methodologies used in the studies, could compromise the credibility of the available empirical evidence. For example, only six studies involved a study design with both an experimental and a control group. Furthermore, not all interventions are described in detail, probably due to the constraints of scientific article length. Providing more detailed descriptions could be beneficial for language teachers seeking to implement multilingual language learning interventions in their classrooms and for researchers to gain insight into, for example, which characteristics of these interventions lead to

outcomes that foster language proficiency and/or cross-linguistic awareness. In addition, no studies included a longitudinal design aiming at mapping the effects of multilingual language learning interventions over time.

Types of multilingual language learning interventions

To answer RQ1, we analyzed the common features of the interventions and distinguished three different types of multilingual language learning interventions fostering language proficiency and/or cross-linguistic awareness. Multilingual language learning interventions type 1 are characterised by **creating a multilingual space in language learning**, where teachers and students draw on their full linguistic repertoires in both instruction and communication while engaging with the language of schooling or an additional language. The interventions of Type 2 first have in common, first, the **explicit use of cognates, morphemes, and internationalisms**, where teachers encourage learners to recognise and reflect on similarities across typologically related languages in their repertoires. Secondly, for Type 2, teachers may also design **structured cross-linguistic awareness tasks** that guide students in comparing language structures across different languages, thereby fostering a deeper understanding of how languages function. Finally, in Type 3, teachers use students' **multilingual repertoires to support language skills**, leveraging existing knowledge to strengthen overall language learning.

These three types of interventions respond to the need for theoretical knowledge and practical insights needed to valorise students' multilingual repertoires in later language learning environments (De Bot, Lowie, and Verspoor 2007; Van Beuningen and Polisenká 2019; Wernicke et al. 2021). Serving as a set of evidence-informed interventions, these types may support language teachers in developing and implementing multilingual language learning interventions in their own later language learning contexts. It is important to highlight that intervention Type 1 is used, intending to break down the monolingual mindset and ideologies (Constantin-Dureci 2022; Panadero et al. 2025; Piller 2016; Slaughter and Cross 2021). Therefore, Type 1 can be seen as a necessary first step to facilitate the so-called multilingual turn (Conteh and Meier 2014) in later language learning environments, as it creates space for other types of multilingual language learning interventions. Interventions of Type 2 may help facilitate transfer between typologically similar languages within students' multilingual repertoires. Also, studies that move away from the focus on typologically related languages, exploring the structures of the various language systems present in learners' multilingual repertoires (Carbonara 2022; Woll and Paquet 2021; Woll, Paquet, and Wouters 2022) are part of Type 2. Finally, Type 3 utilises multilingual linguistic knowledge that may be drawn from Types 1 and 2 to enhance the development of language skills in both the languages of schooling and additional languages.

Outcomes related to language proficiency and/or cross-linguistic awareness

In relation to RQ2, we found that most multilingual language learning interventions promote both the development of language proficiency and cross-linguistic awareness. While language proficiency is a relatively well-defined construct, the operationalisation of cross-linguistic awareness varies across studies, along with the tools used to measure it. To the benefit of both researchers and practitioners, it would be helpful to establish clearer definitions and operationalizations of the different domains of cross-linguistic awareness. Additionally, not all studies on intervention type 1 report outcomes related to language proficiency alongside cross-linguistic awareness. Also, intervention type 3 directly enhances the language proficiency of additional languages by leveraging students' multilingual capabilities. Interestingly, this occurs seemingly independent of the reciprocal relationship between cross-linguistic awareness and language proficiency (Bonnet and Siemund 2018; Haukås 2016; Martini and Torregrosa 2023), still demonstrating positive results for language proficiency. Therefore, further research is needed to explore the reciprocal relationship between cross-linguistic awareness and

language proficiency in multilingual language learning interventions. Moreover, the review highlighted several key conditions that enhance the implementation success and therefore the outcomes of multilingual language learning interventions (see section 4.4).

Limitations and recommendations

We included a total of 17 studies in our review. This relatively small number of publications may be due to selection bias. Although we utilised the multilingual database LLBA for our search, all of the included studies were published in English, with only one exception published in Dutch and some abstracts in Spanish. This language bias likely stems from how we constructed our search strings (see online material). To ensure that we did not overlook any relevant articles, we included various concepts related to multilingual language learning, cross-linguistic awareness, and language proficiency in later language learning, but we only used English terms. To mitigate this language bias, it would be beneficial to conduct a future review using search strings in multiple languages. Additionally, we observed a notable prevalence of studies reporting positive outcomes for both language proficiency and cross-linguistic awareness, which may be the result of publication bias. Furthermore, we noted that most interventions were studied among students aged 18 and older. Therefore, we cautiously question whether the researchers (most likely working in university settings) assumed a convenience sample for their intervention (Andringa and Godfroid 2020). We therefore reiterate that future research is needed to investigate the effects and conditions of multilingual language learning interventions in other later language learning settings.

Conclusion

Previous research has suggested a positive relationship between valorising students' multilingual repertoires in the classroom and their cognitive development in later language learning (Eibensteiner 2023; Jessner 2006; Kemp 2007; Llurda and Calvet-Terré 2022; Van Praag et al. 2016). We identified three types of multilingual language learning interventions that have the potential to foster students' language proficiency and/or cross-linguistic awareness. These interventions serve as valuable starting points for further research as well as for language teachers looking to develop multilingual language learning interventions for their specific later language learning contexts. In addition, our review provides directions for designing and researching future multilingual language learning interventions, such as including multiple languages (instead of just English), larger sample sizes, younger learners, and using experimental and longitudinal designs.

As multilingualism continues to rise and later language learning settings become linguistically more diverse, language teachers are increasingly willing to incorporate their students' multilingual repertoires into their practice. Against this backdrop, ongoing educational research further exploring the affordances of multilingual language learning interventions and their implementation and outcomes in various later language learning settings is crucial.

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