

Dadansoddi ar gyfer Polisi



Analysis for Policy



SOCIAL RESEARCH NUMBER:

37/2024

PUBLICATION DATE:

23/05/2024

# Rapid Evidence Assessment: effective approaches and methods in immersion education

## Rapid Evidence Assessment: effective approaches and methods in immersion education

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Full research report: < Jones, K., Jones, I., Rhys, M., Young, K. and Pierce, A. (2023). *Rapid Evidence Assessment: Effective approaches and methods in immersion education*. Cardiff: Welsh Government, report number GSR 37/2024

Available at: <https://www.gov.wales/effective-approaches-and-methods-immersion-education-rapid-evidence-assessment>

Views expressed in this report are those of the researcher and not necessarily those of the Welsh Government.

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## Acronyms

Acronym	Definition
ALN	Additional Learning Needs
EAL	English as an Additional Language
KS2	Key Stage 2
KS3	Key Stage 3
PGCE	Postgraduate Certificate of Education with Qualified Teacher Status
PLASC	Pupil Level Annual School Census
REA	Rapid Evidence Assessment
WAL	Welsh as an Additional Language
WESP(s)	Welsh in Education Strategic Plan(s)
WG	Welsh Government

# 1. Introduction / Background

1.1 This report presents the findings of a rapid assessment of the available evidence about effective approaches and methods in immersion education.

1.2 The purpose of the research was to assist the Welsh Government (WG) in offering guidance on how to provide effective immersion education for 3 to 16-year-olds in Wales. This work is expected to assist WG in providing guidance to:

- practitioners - teachers and assistants working in Welsh-medium and bilingual schools; practitioners delivering education in Welsh-medium and bilingual funded non-maintained nursery settings; late immersion centre practitioners (primary and secondary);<sup>1</sup>
- providers of initial teacher training and providers of professional development for the education workforce;
- trainers - e.g. trainers at late immersion centres, where practitioners train new practitioners;
- policy makers and relevant national organisations: WG, Estyn, Care Inspectorate Wales, the childcare and play consortium CWLWM; regional organisations: officers working in Welsh-medium education in regional education consortia and partnerships; officers working in Welsh-medium education within local authorities: Welsh Language Advisory Teams (Athrawon Bro), officers who support learners from diverse linguistic backgrounds with English and Welsh as an additional language, and officers with responsibility for Welsh in Education Strategic Plans.

1.3 The evidence presented in this report situates Welsh-medium immersion education in the wider context of international evidence about the characteristics of effective immersion education.

1.4 The objectives of this study were:

- to identify, appraise and summarise the research evidence available in Wales and internationally;
- to draw conclusions that will inform guidance on providing effective immersion education for 3 to 16-year-olds in Wales;

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<sup>1</sup> It should be noted that the term 'unit' is used by some local authorities. Following Estyn (2022:8), the term 'centre' is used in this report.



- to make recommendations about areas and research questions that may need to be explored through further research;
- to create a practical and accessible summary that provides guidance to practitioners, trainers and training providers on how to deliver effective immersion education based on the findings of the rapid evidence assessment.

1.5 The research was carried out over a 10-month period, between January and October 2023. The main research question used to inform the study was:

‘What does the literature tell us about effective approaches and methods in immersion education and about effective pedagogy in immersion education?’

1.6 Table 1 provides definitions of the terms included in the main research question:

**Table 1. Definitions of terms included in the main research question**

Term	Definition
Approach	<i>Approach</i> describes the theory or philosophy of how language can be learnt (Richards and Rodgers, 2001).
Method	<i>Method</i> is the way of teaching, and how principles of language learning are applied. The principles can be applied in many different ways (Richards and Rodgers, 2001).
Pedagogy	<i>Pedagogy</i> is defined as teachers’ practice based on theories of education.
Effective	<i>Effective</i> in this report means implementing a consistent learning approach or method in a way that improves the linguistic development of learners in a measurable way.

1.7 The secondary research questions were:

- i) What does the evidence tell us about the effectiveness of introducing and using a language or languages other than the target language at different stages of the learner's education and linguistic journey?
- ii) What does the evidence tell us about the effectiveness of delivering and maintaining immersion education for learners of different ages i.e. what are the characteristics of effective provision in relation to early, mid and late immersion education?

- iii) What does the evidence tell us about approaches to deal with a range of linguistic backgrounds and previous linguistic experiences amongst cohorts or groups of learners?
- iv) Are there specific considerations that merit attention in relation to additional learning needs and immersion education provision?

### **Policy context**

- 1.8 The number of schools and settings offering Welsh-medium and bilingual provision for 3 to 16-year-olds has grown significantly since the 1960s when immersion techniques began to be used in Wales for the first time. The latest Welsh Government figures show that there are 439 Welsh-medium schools in Wales, with 108,866 pupils (23 per cent of pupils in Wales) taught in these schools (Welsh Government, 2023a).<sup>2</sup> In Anglesey, Gwynedd, Ceredigion and Carmarthenshire most pupils are taught in Welsh-medium schools (Welsh Government, 2023a).
- 1.9 The current direction of Welsh Government policy for Welsh-medium education and education in two languages (bilingual education) is reflected in the objectives of the *Cymraeg 2050* strategy (Welsh Government, 2017), and through the Curriculum for Wales (Hwb, 2020). In order to ensure a better alignment with *Cymraeg 2050* and the Curriculum for Wales, the Welsh Government published new guidance for categorising schools according to their Welsh provision in 2021. It is a statutory requirement for schools and local authorities to publish information about the school's language category for the purposes of PLASC (Pupil Level Annual School Census) in their individual school prospectuses and the authority's composite prospectus. PLASC has been revised to reflect the new method of describing the language categories of schools (C1 – English-Medium; CT2 - transitional to C2; C2 - Dual language; CT3 - transitional to C3; and C3/C3P – Welsh-Medium / Designated Welsh-Medium). The new terms were officially introduced in January 2024. It is also reflected through the statutory requirement on local authorities to draw up Welsh in Education Strategic Plans (WESPs) - a requirement derived from section 84 of the School Standards and Organisation (Wales) Act 2013. The Government's *Cymraeg 2050* strategy places an expectation on all local authorities to increase their Welsh-medium provision in order to see 40 per cent of children (in each year group) in Welsh-medium education by 2050 (Welsh Government,

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<sup>2</sup> The following types of schools are covered by the term 'Welsh-medium school' - Primary schools: Welsh-medium, dual stream and transitional schools; Middle and secondary schools: Welsh-medium schools.

2017:39). The targets agreed with the Welsh Government are published in each local authority's Welsh in Education Strategic Plan.

- 1.10 The Welsh Government and local authorities are implementing a substantial programme to expand Welsh-medium education (Welsh Government, 2021e). The Government intends to incorporate immersion models into the mainstream work of the education system (Welsh Government, 2021e:12) and expand the late immersion programme for pupils (Welsh Government, 2021d:18).
- 1.11 During the period March-June 2023 the Welsh Government consulted on proposals for a Welsh Language Education Bill.<sup>3</sup> In their consultation document the Government is seeking views on whether 'a duty should be placed on local authorities to promote late immersion provision among parents, carers and learners' and whether 'a duty should be placed on local authorities to provide late immersion for learners' (Welsh Government, 2023b). The document also proposes to place a duty on local authorities to proactively promote Welsh-medium education among parents and carers (Welsh Government, 2023b).

### **Defining immersion education**

- 1.12 Internationally, there are different interpretations of immersion education, depending on the context (Estyn, 2022). In some cases, immersion education refers to education given to children from families who have moved from abroad and are now immersed in the language of the school, namely the majority language of their new country (e.g. migrants from Syria attending a school in Sweden). In other cases, immersion education refers to the education of learners attending a school in their country of birth, but that the school immerses learners in a heritage or other language (e.g. Mandarin school in the USA). Immersion education in Wales is usually a combination of what is internationally known as 'immersion education' and 'heritage language education', with the second being a term that refers to a wide range of programmes aimed at providing learners with the opportunity to develop a higher level of proficiency in a heritage language (Estyn, 2022). In this study, 'immersion education' is defined as learners' experience of receiving education through the medium of the school's language, with that language being different from the language spoken at home. In Wales, in classes taught through the medium of Welsh, learners who speak Welsh at home are educated together with learners who do not speak Welsh at home. Although the education in the classroom is the

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<sup>3</sup> The report on the White Paper consultation was published 21 February 2024: [White Paper Consultation](#)

same for all learners, those who do not speak Welsh at home receive immersion education. In this sense, 'immersion' refers to the type of learner (one who receives education through the medium a language not spoken at home), rather than the education itself. Immersion education in Wales can differ from that in some international contexts, in terms of the amount of education provided through the medium of the target language. In this study, there is variation in the literature in terms of what percentage of immersion education is delivered through the target language. The criteria for the study did not prescribe that a specific percentage of teaching needs to be through the medium of the target language. The above definition of immersion education is used when considering relevant literature, and each approach or method described in this report targets learners who are immersed in a heritage language or heritage languages or in a language other than the language spoken at home in different contexts. The criteria used to determine the meaning of 'minority language' for the purposes of this study are discussed in the 'Methodology' section.

- 1.13 For the purposes of this study a distinction was made between two main categories of immersion education: 'early immersion' (up until the age of 7) and 'late immersion' (after the age of 7). Internationally the term 'mid immersion' is used to refer to immersion education for 9 and 10-year-olds (Baker and Wright, 2021). It was therefore decided to include 'mid immersion' as well as 'early immersion' and 'late immersion' in the search terms and one of the research questions, in order to cover all literature relating to late immersion.

#### *Early immersion*

- 1.14 Most learners receiving Welsh-medium education in Wales go through a process of early immersion, that is, they follow their education through the medium of Welsh from the beginning of statutory education (in Welsh-medium primary schools), or earlier if they take up nursery education at 3 and 4 years of age, either in maintained or non-maintained nursery settings.<sup>4</sup> In early immersion in Wales, Welsh is usually introduced as the only language of instruction 'up to and including the school year in which the majority of learners turn 7' (Estyn, 2022:7).<sup>5</sup> Early

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<sup>4</sup> Registered non-maintained nursery settings which are approved and funded by the local authority to provide nursery education must adopt a curriculum which meets the legal requirements of Curriculum for Wales. In line with the National Minimum Standards for Regulated Childcare, non-funded settings are also encouraged to incorporate the curriculum into their work: ([National Minimum Standards for Regulated Childcare](#)).

<sup>5</sup> Following the implementation of Curriculum for Wales in September 2022, the use of the term 'Foundation Phase' (and key stages') was removed from the curriculum to reflect a continuum of learning without stages or phases. Foundation

immersion is also available before this age, in various types of childcare settings: private day nurseries, playgroups and *cylchoedd meithrin*. In 2022/23, 23.4 per cent of learners in Year 2 (aged 7) studied Welsh as a first language (Welsh Government, 2023a). The linguistic background of the learners and the opportunities they have to come into contact with the Welsh language with their families and socially varies.

### *Late immersion*

- 1.15 For children in families migrating to Wales, or children moving from the English-medium sector to the Welsh-medium sector after the age of 7, or families moving from another area of Wales, the immersion is referred to as ‘late immersion’ or ‘mid immersion’, depending on the age and key stage of teaching the latecomers (Williams, 2008).<sup>6</sup> In this study, the term ‘mid immersion’ as well as ‘early immersion’ and ‘late immersion’ was included in the search terms, but for the purposes of reporting on the findings and contextualising them to the situation in Wales, there was no distinction between mid immersion and late immersion education.<sup>7</sup> There have also been no distinctions between mid and late immersion education, and intensive immersion education.<sup>8</sup> It was decided to discuss each of these under the same category of ‘late immersion’ as they occur after a child has turned 7 years of age. A latecomer was defined as anyone who joins Welsh-medium education after 7 years of age. This definition comes from the Welsh in Education Strategic Plans Regulations (Welsh Government, 2019:7). These individuals may come from diverse linguistic backgrounds. As Estyn (2022:62) notes, they can be completely new to Welsh, or re-engaging with the language, they can be any age at Key Stage 2 (KS2) or KS3, and may already be educated in Wales, or may have moved to Wales from England or another country.
- 1.16 The provision of late immersion education in Wales began in the 1980s with the first language immersion centre opening in Caernarfon in 1984 (Welsh Government, 2023b). The type of support provided to latecomers varies according to the late immersion systems of different local authorities. A mapping exercise by the Welsh

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learning forms part of the 3 to 16 Curriculum for Wales and is designed to reflect the specific learning and development needs of children up to the age of 8 or learners with additional developmental needs.

<sup>6</sup> We recognise that the term ‘key stage’ is no longer used in the Curriculum for Wales, but it is used here because it is used in the sources in question.

<sup>7</sup> Baker (2006) in the Pacific Policy Research Centre (2010) document, discusses three generic entry points for when students are immersed, which include mid immersion, from ages 9 to 10.

<sup>8</sup> In discussing late immersion and intensive linguistic provision, the Welsh Government (2021f) notes that ‘intensive language provision provides a student with a short period where they learn a second language. Over a period of weeks (for example 5-6 weeks), the provision focuses on learning the language and using it to communicate’ (p.6).

Government (2021a) found that provision varied, with some local authorities offering peripatetic provision, some offering provision as part of mainstream education, and others offering provision in designated centres. The [Welsh Education Bill](#) White Paper sets out the Welsh Government's intention to create a 'single joined-up system' for Welsh language acquisition and learning (Welsh Government, 2023b:25). In September 2021, the Minister for Education and Welsh Language announced funding of £2.2m to support Welsh-medium late immersion provision in schools and centres in Wales (Welsh Government, 2021a). As a result of the announcement, a £2.2m revenue grant will be awarded each year over a three-year financial period (1 September 2022 to 31 March 2025) to expand and maintain provision in each local authority.

#### *Immersion education for learners with additional learning needs*

- 1.17 The Additional Learning Needs and Education Tribunal (Wales) Act 2018 places duties on services to consider whether a child or young person needs additional learning provision in Welsh and to take 'all reasonable steps' to ensure that the provision is in Welsh. In accordance with these duties, Outcome 6 of the [Guidance on Welsh in Education Strategic Plans](#) places an expectation on education services to plan for 'an increase in the provision of Welsh-medium education for pupils with additional learning needs (ALN)' (Welsh Government, 2021c:14). In order to support the requirements of the legislation, we examined what evidence was available regarding the immersion approaches and methods for learners with ALN.

#### **Search framework – defining and interpreting terms**

- 1.18 The PICO (Population, Intervention, Control and Outcomes) method was used to respond fully to the research questions. This method focused on the most important issues of the REA by defining terms. The overall aim of PICO is to assist in the development of a research question and literature searches (Aslam and Emmanuel, 2010).
- **Population:** learners receiving immersion education within an education context where the situation is relevant to the Welsh language (i.e. education in a language that is considered a minority language in a bilingual and multilingual context), in the 3-16 age group.<sup>9</sup> These learners may come from diverse linguistic backgrounds and/or may have additional learning needs.

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<sup>9</sup> For example: New Zealand, Australia, Canada, the Basque Country, Asia, South Africa, Ireland, Scotland, and America.

Learners can also join immersion education at different stages of their education and linguistic journey. Two categories of immersion education are covered in this report - 'early immersion' (up until the age of 7) and 'late immersion' (after the age of 7). The report recognises that learners' learning needs in early and late immersion are different (see the section 'Defining immersion education' for specific definitions).

- **Intervention:** access to immersion education approaches or methods in the classroom or linked to the classroom (i.e. inside or outside the classroom e.g. homework, education institution).<sup>10</sup>
- **Control:** Where the literature permits, comparisons between methods/approaches will be made on the basis of 'effectiveness' defined in the Introduction.
- **Outcomes:** learners' language competence.

### **The project team**

- 1.19 The research was conducted by IAITH, and three researchers and a research assistant from Cardiff Metropolitan University. A Steering Group provided input when undertaking the work. This group consisted of officers from the Welsh Government and Estyn. Steering Group members offered guidance and feedback on the protocol, research material and outputs (see Section 2, Methodology).

### **Structure of the report**

- 1.20 The remainder of the report is structured as follows:
- Chapter 2 describes the research methodology.
  - Chapter 3 presents the findings of the study according to the themes that emerged from the literature search.
  - Chapter 4 presents the research conclusions.
- 1.21 There is an additional output to this study - an accessible summary of the study findings for practitioners, trainers and training providers, which presents the key findings on immersion approaches and methods in a practical and accessible way.

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<sup>10</sup> The terms 'approach' and 'method' are defined in Table 1.

## 2. Methodology

### Principles of a Rapid Evidence Assessment (REA)

- 2.1 The review methodology was based on the procedure set out in the GSR toolkit for conducting a Rapid Evidence Assessment (REA) and the work of Collins, Coughlin, Miller and Kirk (2015). The steps included in Collins *et al.*'s report (2015) were followed for the REA. REAs are a form of evidence review which include: informed conclusions on the characteristics and volume of evidence; a synthesis of what the evidence shows, and a critical appraisal of that evidence.
- 2.2 The aim of REAs is to produce an objective and thorough review of evidence, with a transparent description of each stage and reducing bias key parts of the process. The benefits of REAs, compared to more extensive studies such as systematic reviews are that they are quicker, without neglecting key features such as an assessment of quality. It enables literature to be mapped and categorised according to the topics studied and the methods used to carry out the research.
- 2.3 The speed of a REA can also be considered one of its limitations. The focus needs to be narrow in order to limit the number of search results.
- 2.4 Various databases were used and a screening and information extraction process was followed, as outlined in protocol documents such as in the work of Collins *et al.* (2015) and the EPPI Centre (Evidence for Policy & Practice Information Centre) (EPPI-Centre, 2007).
- 2.5 Inclusion and exclusion search criteria were developed. Following a process of piloting search terms, inclusion and exclusion criteria were drawn up taking into account the publications that were part of the pilot process. Based on the pilot process it was decided to set a time frame to include items published between 2000 and 2023.
- 2.6 It was also ensured that the focus of the REA was fully relevant to the research questions by carefully selecting the search terms, screening the title and abstract of publications according to their relevance to the purpose of the REA, and gathering information about the focus of the study and the data collected as part of the data extraction. Quality assurance checks were put in place at key stages of the work, and these steps are described in the following sections.

### Stages of the Rapid Evidence Assessment (REA)

- 2.7 This section presents the four stages of the REA:



- **Stage 1:** Establish the scope and boundaries of the review (including Focus Group 1) and conduct the literature searches
- **Stage 2:** Information screening
- **Stage 3:** Information extraction and quality assessment and weight of evidence
- **Stage 4:** Synthesis development

### **Stage 1: Establish the scope and boundaries of the review and conduct the literature searches**

#### **Focus Group 1**

2.8 In order to ensure that the results of the REA were of use to practitioners, as part of establishing the scope and boundaries of the review, an online focus group was held at the beginning of the research with practitioners, trainers, training providers and system leaders working in Welsh-medium immersion education. The purpose of holding this focus group was to give stakeholders the opportunity to contribute to defining the scope of the work by identifying areas that they felt needed focus, or areas where further information was required (Bloor *et al.*, 2002). They were thus given the opportunity to contribute to the process of identifying the search terms.

2.9 The aim in inviting participants to the first focus group was to include representation from the following stakeholders:

- **practitioners** - teachers and assistants working in Welsh-medium and bilingual primary and secondary schools; Mudiad Meithrin practitioners providing the Curriculum for Wales in non-maintained Welsh-medium and bilingual settings; immersion centre practitioners (primary and secondary);
- **system leaders** – officers from local authorities and consortia with responsibility for the Welsh language – WESP co-ordinators, immersion co-ordinators, additional learning needs (ALN) co-ordinators, learning and support co-ordinators for children who speak Welsh and English as an additional language (WAL/EAL);
- **initial training providers and professional development trainers** – BA Education and PGCE course lecturers, immersion centre trainers, and Athrawon Bro.

It was also the aim to include representation from:

- experienced and recently qualified practitioners;
- practitioners / trainers / providers from authorities where immersion education is provided for learners from diverse linguistic backgrounds and authorities where the linguistic experiences of learners in a class are more homogenous; and
- schools of varying size (some with mixed age classes) and category, namely: category 3 (Welsh-medium), category 2 (dual language) and transitional (T2 and T3).<sup>11</sup>

2.10 The online focus group was held in February 2023, with 18 participants. Those who were unable to attend were invited to offer their input in writing, and feedback was received from one participant through this method. The group was split into smaller groups during the session to allow everyone to contribute to the discussion. A copy of the focus group interview guide is available in Appendix B.1. The outcome of this stage was assurance that the search terms, and therefore the scope of the study, reflected participants' input.

### **Undertaking literature searches**

#### *The databases*

2.11 An initial list of potential search databases for the study was drawn up from those available through Cardiff Metropolitan University library services. The list included databases that appeared to be relevant from the brief description on the university library website. The initial list was presented to a specialist member of Cardiff Metropolitan University library staff. Some databases were excluded, based on the size and scope of the database, to facilitate the objectives and timescale of the REA. In some databases, it was not possible to search all search terms organised according to separate themes (this was called an "advanced search"). Therefore, a "basic search" was carried out, which contained all the search terms together in a single search box. No adverse implications were found from using a "basic search". Due to the time limitations for conducting the research, and the fact that more than 4,000 results were found when searching the databases, an additional filter was added to the search, to search only the abstracts of the items rather than the full

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<sup>11</sup> A T2 school is on its way to becoming Category 2 dual language school and a T3 school is on its way to becoming a Category 3 Welsh-medium school [Guidance on school categories according to Welsh-medium provision](#).

text. Below is a list of the databases used to conduct the searches. These do not include the databases excluded from scoping work.

**Table 2. The databases used to conduct searches**

Database name	Description	Languages searched	Search type
Education Research Complete	Most authoritative online database for education research	Welsh, English	'Advanced search' 'Search field (optional)' searched <sup>12</sup>
Education Resources Information Centre	Database comprising publishers of articles, grey literature and books	Welsh, English	'Basic search' 'Search field (optional)' searched <sup>13</sup>
The National Library of Wales	Collections relating to the Welsh language	Welsh, English	'Basic search' using one search box <sup>14</sup>
MetSearch	Cardiff Metropolitan University Library Service covering 129 literature databases	Welsh, English	'Basic search' using one search box <sup>15</sup>
ProQuest Central	Databases containing comprehensive and diverse multidisciplinary research data from a number of databases	'Anywhere' (search 1), 'abstract' (search 2) and 'all abstract and summary text' (search 3) were completed in English and	'Advanced search' 31,620 results were returned from search 1, which was an unrealistic number for a REA. 58 results were returned from search 2. 244 results were returned from search 3.

<sup>12</sup> That is – when conducting a search in this database, the team had different options. 'Search field (optional)' was selected as a 'title' and 'abstract' search could not be performed at the same time.

<sup>13</sup> See footnote 12.

<sup>14</sup> That is – there was only one search box in this database compared to other databases that allowed the search terms to be split up.

<sup>15</sup> See footnote 14.

		'anywhere' (search 1) in Welsh.	Search 3 was most realistic within the parameters of the REA.
Sage	Periodicals covering humanities and social sciences as well as science, technology and medicine	'All fields' (search 1) and 'abstracts' (search 2) were completed in English and 'all fields' (search 1) in Welsh.	'Advanced search' 4,040 results were returned from search 1, which was an unrealistic number for a REA. 10 results were returned from search 2. Search 2 was most realistic within the parameters of the REA.
Scopus	A database that includes scholarly literature linked to a range of disciplines such as life sciences, social, health and physical	Welsh, English	'Advanced search' 'All fields' searched
Taylor & Francis Journals	A multidisciplinary journal covering humanities and social sciences as well as arts, law, medicine, health, science and maths	Welsh, English	'Basic search' using one search box <sup>16</sup>
Wiley	A wide-ranging multidisciplinary collection of online journals covering social sciences and humanities among other areas	Welsh, English	'Basic search' using one search box <sup>17</sup>

<sup>16</sup> See footnote 14.

<sup>17</sup> See footnote 14.

### *Search terms*

- 2.12 The search terms were determined by considering the research questions for the REA, and discussing with WG which terms were most likely to be included in immersion literature. The work also drew on the research team's expertise and understanding of the literature, and reinforced by key reports that discussed similar topics (Welsh Government, 2021b; 2021c; 2018). The search terms were confirmed and refined in consultation with Focus Group 1 participants.
- 2.13 Search terms were trialled with detailed consideration given to the aims and objectives of the research, the PICO and the research questions. The timescale of the project also had to be considered as well as what was possible within these parameters since one of the elements of the REA is the speed of the work.
- 2.14 When revisiting the databases in detail and working with a specialist library member of staff at Cardiff Metropolitan University, it was noted that it was not possible to conduct searches of all the strings developed for the protocol within each database. Following discussions between WG and the research team, and initial scoping searches, seven search strings were decided upon, based on the general parameters of the various databases (because some databases only allow seven search strings). This meant that the search terms were refined so that the research team could conduct all literature searches within the databases.
- 2.15 An advanced search or a basic search was carried out in all databases. For the advanced searches each string could be searched separately with the Boolean operator "AND". This was not possible for the basic searches, so all search terms were entered into the same search box together.
- 2.16 The search terms were linked with the Boolean operator "AND", as follows:<sup>18</sup>
- Addysg\* OR dysg\* OR ddysg\* OR hyffordd\* OR addysgeg OR caffael OR gaffael OR chaffael OR darpariaeth OR ddarpariaeth
- AND "addysg ddwyieithog" OR dwyieithog OR "ail iaith" OR "iaith treftadaeth" OR "iaith dreftadaeth" OR "iaith lleiafrifol" OR lleiafrifol OR "iaith ranbarthol" OR rhanbarthol OR ychwanegol OR "trydydd iaith" OR "drydedd iaith" OR bylchog OR fylchog OR "iaith ddeuol" OR deuol

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<sup>18</sup> Quotation marks were used when a phrase or more than one word needed to be input into the search.

AND Trochi OR drochi

AND hwyr OR cynnar OR gynnar OR chynnar OR rhannol OR rannol OR cwbl  
OR gwbl OR canolig OR ganolig OR dwys OR ddwys OR “dwy ffordd” OR  
“ddwy ffordd”

AND plant OR blant OR phlant OR mhlant OR plentyn OR blentyn OR  
phlentyn OR mhlentyn OR disgybl OR ddisgybl OR disgyblion OR ddisgyblion  
OR dysgwr OR ddysgwr OR dysgwyr OR ddysgwyr OR myfyriwr OR fyfyriwr  
OR myfyrwr OR fyfyrwr OR “siaradwr newydd” OR “siaradwyr newydd”

AND llwyddian\* OR lwyddian\* OR cyrraedd OR gyrraedd OR chyrraedd OR  
cyrhaeddiad\* OR gwell\* OR well OR effaith OR cynnydd OR gynnydd OR  
chynnydd OR twf OR dwf OR tyfu OR dyfu

AND cynradd OR gynradd OR chynradd OR uwchradd OR “ysgol uwchradd”  
OR ifanc OR “blynyddoedd cynnar” OR “flynyddoedd cynnar” OR canolfan OR  
ganolfan OR chanolfan

- 2.17 A search was conducted in English as well using the corresponding search terms, namely:

Teach\* OR learn\* OR instruct\* OR pedagog\* OR acqui\* OR provision

AND “bilingual education” OR “second language” OR “heritage language” OR  
“minority language” OR “regional language” OR “additional language” OR  
“third language” OR interrupt\* OR “dual language”

AND immersion

AND late OR early OR partial OR total OR mid\* OR intensive OR “two way”

AND child\* OR pupil\* OR student\* OR learner\* OR “new speaker\*”

AND success\* OR achieve\* OR improve\* OR attain\* OR effect\* OR gain\* OR  
increase\* OR grow\*

AND elementary OR secondary OR “high school\*” OR young OR primary OR  
“early years” OR centre

- 2.18 A search was also conducted for additional categories of search terms to answer the following secondary research questions:

- What does the evidence tell us about the effectiveness of introducing and using a language or languages other than the target language at different stages of the learner’s education and linguistic journey?
- What does the evidence tell us about approaches to deal with a range of linguistic backgrounds and previous linguistic experiences amongst cohorts or groups of learners?
- Are there specific considerations that merit attention in relation to additional learning needs and immersion education provision?

2.19 The three secondary questions above were not included in the original searches owing to restrictions on the number of search strings in some of the databases. The additional search terms listed below were searched using Cardiff Metropolitan University’s library service, MetSearch, because of its sufficient scope. There were three search strings here. The search was conducted using Welsh and English search terms. The terms in Welsh were:

“Anghenion dysgu ychwanegol” OR “anghenion dysgu arbennig” AND trochi OR drochi

Ffoadur\* OR mewnfudw\* OR fewnfudw\* OR “ceisiwr lloches” OR “geisiwr lloches” OR “cheisiwr lloches” OR “ceiswyr lloches” OR “geiswyr lloches” OR “cheiswyr lloches” OR dadleoli OR ddadleoli OR “cefnidir ethnig lleiafrifol” OR “gefndir ethnig lleiafrifol” OR “chefndir ethnig lleiafrifol” AND trochi OR drochi

“Saesneg fel iaith ychwanegol” OR “Saesneg fel ail iaith” AND “trochi” OR “drochi”

2.20 The corresponding English terms searched were:

“Additional learning need\*” OR “special educational need\*” AND immersion

Refugee\* OR immigrant\* OR migrant\* OR “asylum seeker\*” OR displaced OR “minority ethnic background\*” AND immersion

“English as an additional language” OR EAL OR “English as a second language” OR ESL AND immersion

*Inclusion and exclusion criteria*

2.21 A protocol had been developed as one of the initial stages of the study. The protocol was reviewed to check whether any adaptations were required or whether any specific issues needed to be considered at key points during the study. The

inclusion and exclusion criteria were developed as part of the protocol following the actions set out in Collins *et al.* (2015) and GSR toolkit on conducting REAs. It was decided to include or exclude the items according to the type of publication, as set out in Table 3. Searches were conducted within open access sources (Met Search, National Library of Wales and *Gwerddon*) in order to access Welsh language items that would possibly not be found in larger international databases.<sup>19</sup>

2.22 In undertaking the initial scoping work, it was seen that the majority of the relevant literature had been published in the last 25 years and as the REA needed to be carried out quickly, and as the project team’s best linguistic abilities were in Welsh and English, it was decided to exclude other languages. The following table summarises the criteria used.

**Table 3. Inclusion and exclusion criteria**

<b>Considerations</b>	<b>Include</b>	<b>Exclude</b>
Publication type	Journal articles Books Book chapters Reports Reviews Grey literature Dissertations	Duplicate items Newspaper articles Blogs
Range of publication dates	2000-2023 (including the years 2000 and 2023)	Literature published before the year 2000
Publication language	Welsh English	Literature with a title and abstract that is not in English or Welsh

*Quality assurance – Stage 1*

2.23 At Stage 1 of the study, quality assurance included trialling search terms in various databases with a specialist member of staff from Cardiff Metropolitan University library and discussing the extent of the results against the inclusion and exclusion

<sup>19</sup> No results were found from the *Gwerddon* search, therefore it is not included in the database list.



criteria with the Steering Group, as part of the protocol. This was to ensure that the search terms, databases and inclusion and exclusion criteria used were suitable for the purpose of the REA.

- 2.24 The database searches were conducted by four researchers, and search results compared to match the number of items found from the searches. No inconsistencies were found between the database searches.

### **Advisory team input**

- 2.25 Three internationally recognised experts in immersion education were invited to draw the research team's attention to the research publications relating to effective approaches and methods in immersion education that would be relevant to the study, from their experience, and which met the screening criteria. They were also asked for examples of current and forthcoming research. Only one of the three experts was able to contribute to this stage of the research within the time available. 44 items were received from the one contributing expert. The same procedure was followed for screening and extracting information about these items as was used for the items found through the literature searches.
- 2.26 A total of 4,342 items that met the criteria were obtained at Stage 1 and went on to Stage 2, namely information screening.

### **Stage 2: Information screening**

- 2.27 Search results from Stage 1 were exported to a simple .csv or similar text file (e.g. Excel), depending on the ability of different databases (or noted, in the case of advisory team findings). The following information was imported from the search results of each database into an individual Excel spreadsheet for each database (as the format of each database varies in terms of the order of information): title, author, year of publication, publication type, DOI, name of publisher, summary. A similar Excel spreadsheet was also produced with the same information for the items submitted by the advisory team.
- 2.28 In line with the research questions of the project and the PICO table presented above, the literature had to:
- discuss the effectiveness of something that can be identified as an approach or a method in immersion education (see specific definitions in 1.12)
  - apply to immersion education in Wales i.e.:

- relate to classroom-based teaching or be related to the classroom
- apply to learners aged 3 to 16
- apply to the teaching of Welsh in Wales e.g. education in a language that is considered to be a minority language in a bilingual and multilingual context (examples can be found in New Zealand, Australia, Canada, the Basque Country, Asia, South Africa, Ireland, Scotland, and America).

2.29 The title and abstract (or first paragraph) of each item were read and marked as 'clearly relevant', 'clearly not relevant' or 'uncertain' based on the points above and the documentation used to inform the work.<sup>20</sup> Where there was insufficient information in the title and / or in the abstract (or in the first paragraph) to establish relevance, the item was excluded. Items were identified as 'uncertain' if a second reading was required to be sure that an item met the criteria. Having re-read the title and abstract, the items were placed in the category 'clearly relevant' or 'clearly not relevant'. Items marked 'clearly relevant' were then included in the information extraction phase (Stage 3). A total of 4,121 items did not meet the inclusion criteria in Stage 2 as they were 'clearly not relevant'.

#### *Quality assurance – Stage 2*

- 2.30 Four members of the team were involved in the screening process, to facilitate rapid, transparent and consistent screening. Two members of the team screened the results, with two other team members screening a subset of the total items to ensure avoidance of bias, and to adhere to good screening practice. One member of the team was a named quality assurer, overseeing all quality assurance throughout Stage 2.
- 2.31 In order to ensure quality and consistency between the four members of the team, a calibration meeting was held at the beginning of the screening exercise, where 20 items were assessed jointly (i.e. assessing relevance against the screening criteria). After assessing the items, the results of assessing the relevance of the items were compared. Where there was inconsistency, the research questions and screening criteria were revisited in the protocol, and there was discussion about how the researchers would assess the item in future to ensure collective agreement. Initially, there was some inconsistency between marking an item as 'clearly relevant' and 'uncertain', but by discussing the content of the publications and how they were

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<sup>20</sup> Reference is made to 'relevance' here in the context of the above criteria. The 'relevance' of the literature in assessing the weight of evidence is discussed in more detail in Stage 3.

relevant (or not) to the research questions, the assessment became more consistent.

2.32 A total of 180 items that met the criteria were obtained at Stage 2 and went on to Stage 3, namely information extraction and quality assessment and weight of evidence.

### **Stage 3: Information extraction and quality assessment and weight of evidence**

2.33 The intention here was to collate all searches from each database and remove duplicates before extracting information using a single spreadsheet. However, because the output from each database search varied in terms of the information collected, each finding was screened working with a collection of spreadsheets (a single spreadsheet contained all the items of a single database). Duplicates were deleted when extracting the information from the relevant items following the screening. The information extraction, quality assessment and weighing of evidence were carried out based on reading the full texts that had met the screening criteria at Stage 2. A data extraction form (adapted from EPPI-Centre guidelines) was used to gather key information from each item to ensure consistent appraisal. The original EPPI form was developed for systematic reviews. To ensure the form was suitable for the REA, consideration was given to the GSR REA toolkit, the work of Collins *et al.* (2015) and Welsh Government (2018) which had used a similar adaptation of the EPPI form for REA. On the form there were 53 questions in nine sections to extract the data required to meet the main aims and objectives of the project. The data extraction form questions covered:

- administrative details
- study aim and rationale
- research questions and focus
- method or approach
- methodology
- data collection and analysis
- findings
- quality of the study

- weight of evidence

2.34 A full copy of the data extraction form is available in Appendix A. The final section of the form, 'Weight of evidence' asks for an assessment of the trustworthiness, appropriateness and relevance of the literature item, based on critical questions set out in Table 4. The question of trustworthiness required detail on thoroughness, accuracy, and validity of the evidence. The question of appropriateness addressed the empirical focus of the study (i.e. what evidence was appropriate for this REA), and the question of the relevance of the evidence was based on how much the context of the study in question could be compared with the immersion teaching context in Wales, and the overall objectives of the REA.

**Table 4. Weight of the evidence**

Consideration	Score
I.1 Taking account of all quality assessment issues, can the study findings be trusted in answering the study questions? <i>In some studies, it is difficult to distinguish between the findings of the study and the conclusions. In those cases, please code the trustworthiness of this combined results/conclusion.</i>	I.1.1 High trustworthiness I.1.2 Medium trustworthiness I.1.3 Low trustworthiness
I.2 Appropriateness of research design and analysis for addressing the REA	I.2.1 High I.2.2 Medium I.2.3 Low
I.3 Relevance of particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question, or sub-questions, of this specific REA	I.3.1 High I.3.2 Medium I.3.3 Low
I.4 Overall weights of evidence as relevant to the REA	I.4.1 High I.4.2 Medium I.4.3 Low

2.35 Based on previous REA work (Welsh Government, 2018), I.4 (the overall weight of evidence) was determined based on I.1, I.2 and I.3 scores (trustworthiness, appropriateness and relevance). This process was based on the principles of assessing the weight of evidence as outlined in Collins *et al.* (2015) and the guidance which was part of the original EPPI form from the EPPI Centre (EPPI

Centre, 2007). The guidance notes the combination of scores I.1, I.2 and I.3 in order to determine a high, medium or low quality for each item, i.e.: I.4 HIGH = (I.1 = HIGH or MEDIUM) AND (I.2 = HIGH or MEDIUM) AND (I.3 = HIGH or MEDIUM), where the majority is HIGH.

- 2.36 Where I.1, I.2 or I.3 had been noted as HIGH or MEDIUM, and where at least two of the three were HIGH, a HIGH score was given for I.4. A MEDIUM and LOW score was calculated for I.4 based on the same process; where the majority (i.e. two out of three) of I.1, I.2 and I.3 scores were MEDIUM, a MEDIUM weighted score was given, and where the majority (i.e. two out of three) of I.1, I.2 and I.3 scores were LOW, a LOW weighting score was given. In all cases, part I scores of the EPPI form showed a clear majority, that is, at least two out of three scores were either LOW, MEDIUM or HIGH. Only items identified as I.4.1 HIGH were included in the synthesis (Stage 4) stage of the research to ensure that the REA outcomes focus on evidence of the highest and most relevant quality.

#### *Quality assurance – Stage 3*

- 2.37 In order to ensure quality at the data extraction stage, the data extraction form was trialled jointly by three members of the research team. A calibration meeting was held between the three members using the EPPI form to extract information from 20 per cent of the literature searches for the items that came through Stage 2 (Screening). This was conducted in the form of ‘triangulation’ with each member of the team checking a sample of data extracted by another member of the team (e.g. researcher 1 checking the work of researcher 2, researcher 2 checking the work of researcher 3, and researcher 3 checking the work of researcher 1). This was done in an attempt to ensure that any inconsistencies between the extraction method were moderated and to ensure that the team agreed on weighting a final score I.4.1 for inclusion in Stage 4. One member of the team was a named quality assurer, overseeing all quality assurance throughout Stage 3.
- 2.38 A total of 65 items that met the criteria were obtained at Stage 3 and went on to Stage 4, namely synthesis development.

#### **Methodological Challenges**

- 2.39 Some challenges arose during the initial stages of the methodology, which reflected the complex nature of the study. One of these challenges was to define key terms against the search results obtained. Immersion education was defined in different ways depending on the context. Learners in immersion education settings are

immersed to varying degrees, depending on the language they speak at home (this is also reflected in immersion education in Wales, where learners who do not speak Welsh at home are immersed in a different way from their peers who speak Welsh at home). Defining a minority language was also a challenge, as a language can be considered a minority language at school, community or state level. As the definition of 'immersion' and 'minority language' went through a process of refinement over the course of the REA, a quality assurance stage was added to the process of developing the synthesis. This stage is set out in Stage 4 below.

- 2.40 Another challenge that arose through the initial stages was to understand in each case the type of immersion provision covered in the literature. In some cases, the definition of the type of immersion education was not explicit; for example, no literature explicitly covering 'mid immersion' was found. In these cases a conclusion was reached as to the type of immersion in question based on the researchers' interpretation of the ages of learners in the study (e.g. based on information about the school year of learners). There were also items where there was no mention of the age of the learner. Moreover, the perception of the type of immersion against the age of learners was difficult in some cases, as not all literature reported on the length of time learners had been following the immersion provision in question.
- 2.41 The complex nature of these definitions should be borne in mind when reading the research findings.

#### **Stage 4: Synthesis development**

- 2.42 Following the searches, data extraction and weighting work, the synthesis of the research was drafted, to present the findings of the REA. The findings were presented according to the secondary research questions. A quality assurance stage was developed in the production of the synthesis, to ensure that all the literature presented answered the research questions satisfactorily. Owing to the complex nature of some of the definitions, as previously noted, the process of producing the synthesis was iterative. The quality assurance stage that was put in place is described below.

##### *Quality assurance – Stage 4*

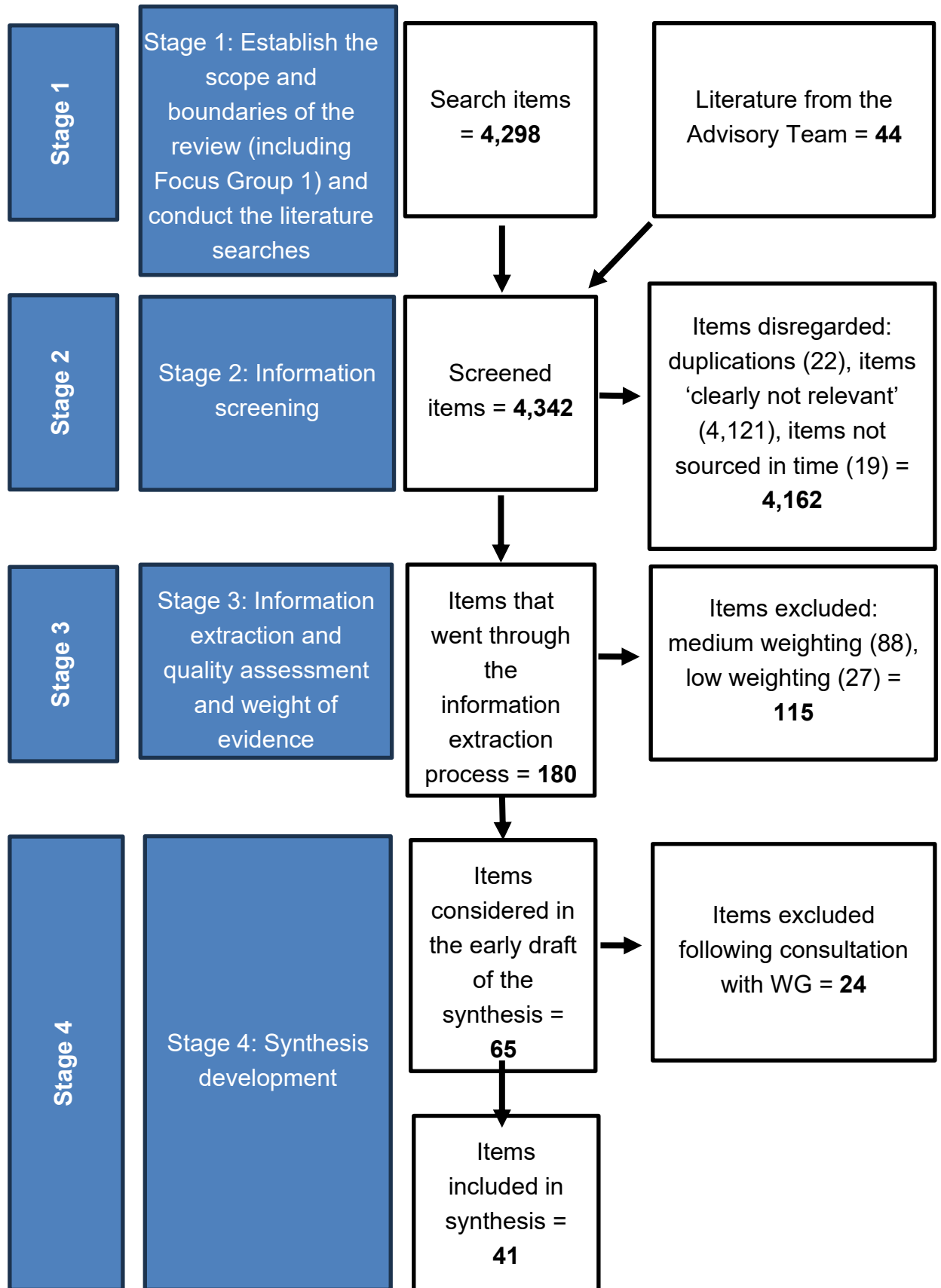
- 2.43 Quality assurance at Stage 4 involved regular discussions with the Welsh Government research management team.

- 2.44 As previously noted, it was not always easy to discern whether the context was one of immersion (and therefore relevant to the context in Wales), and it was decided during the quality assurance stage to exclude some items where it was not clear whether they referred to an immersion education context for the majority of learners in a class.
- 2.45 Through the synthesis development process, questions also arose about the definition of the term minority language, linked to the fact that a language can be considered a minority language at school, community or state level. It was decided to exclude items where it was not entirely clear that they referred to a minority language context at the community and state level in question (e.g. literature from the USA that discussed dual immersion education in Spanish and English where Spanish was a target language was retained, but literature from the USA that discussed dual immersion education in Spanish and English where English was a target language was excluded). 24 items were excluded at this quality assurance stage. A total of 41 items were included in the final synthesis.
- 2.46 Although some items were excluded during this quality assurance stage, the list of references from these items is included at the end of the report, to draw the reader's attention to evidence that may be considered relevant to the immersion education context in Wales.

### *Synthesis results*

- 2.47 The number of items examined at each stage of the study is set out in the PRISMA diagram (Moher et al., 2009) shown below.
- 2.48 A total of 4,298 literature items were obtained through initial searches. A total of 44 literature items were obtained from the Advisory Team. 4,342 items were screened, resulting in 4,162 items being disregarded. Of the 180 items from which information was extracted, 115 were excluded as they had not received a high weighting score. Following further consultation with the Welsh Government, a further 24 literature items were excluded which left 41 literature items presented in the synthesis below.

**Figure 1. Systematic map of evidence in the form of a PRISMA diagram**





- 2.49 Table 5 shows the classification of items included in the synthesis according to the research design, geographical location, individual differences in the population concerned, and the immersion context of the research. These numbers do not correspond exactly to the number of items, as some include more than one geographical location and immersion context.
- 2.50 Many studies used an experimental design with non-random allocation to groups (n=17). A range of methodologies were included in the evidence including reviews, experiments, views studies, and cohort studies. A number of articles were found which presented systematic and non-systematic literature reviews. These reviews identified and discussed dozens of different methods and approaches, and so in presenting the work in this report, only a brief outline of the work is given.
- 2.51 Most of the evidence comes from the USA (n=14), with a wide range of other countries included.
- 2.52 When considering individual differences in the population in question, most studies discussed socio-economic status (n=10) or learners of English as a second language (n=10). Eight studies discussed additional learning needs, one discussed minority ethnic groups and six considered immigrants.
- 2.53 The evidence included 23 studies specifically covering early immersion, 10 discussing mid immersion and 10 discussing late immersion (these were categorised based on the age of learners, see 2.40). There were 12 studies relating to partial immersion, with seven discussing intensive immersion.

**Table 5. Classification of research items included in the synthesis<sup>21</sup>**

<b>Classification</b>	<b>Number</b>
<b>Experiment Design</b>	
Random experiment with random allocation to groups	3
Experiment with non-random allocation to groups	17
One group pre-post test	1
One group post-test only	1
Cohort study	7
Views study	4

<sup>21</sup> This table provides a description of the range of evidence involved in the synthesis. Not all studies included all elements of the table (such as individual differences or geographical location) so not all parts match the number of items that appear in the synthesis.

Systematic review	2
Other review (non-systematic)	4
Document study	2
<b>Geographical location</b>	
Bangladesh	1
Brazil	1
Canada	4
Catalonia	1
China	1
Germany	2
Hong Kong	2
Ireland	4
Israel	1
Italy	1
Nepal	1
Netherlands	1
Taiwan	1
UK	1
USA	14
Wales	1
Various	4
<b>Individual differences</b>	
Immigrants	6
Low socio-economic status	10
Additional Learning Needs	8
English learners / English as a second language	10
Ethnic minorities	1
<b>Which immersion context?</b>	
Early immersion	23
Mid immersion	10
Late immersion	10
Partial	12
Intensive	7
Various/unclear	2

**Prepare an accessible summary for practitioners based on the synthesis**

2.54 Another output from the review was a summary providing guidance for practitioners, trainers and training providers on how to deliver effective immersion education based on the findings of the REA. Stakeholders attending the Focus Group 1

session were invited to the Focus Group 2 session. The purpose of the second focus group session was to receive views and comments from stakeholders on a draft of this summary. It was an opportunity for the research team to receive feedback and suggestions for presenting the findings in a practical way to the target audience.

### 3. Findings

- 3.1 The synthesis is structured according to the secondary research questions that guided the original searches. No item was found that did not fit within the specified questions, taking into account the specific characteristics of the learners in the study (e.g. age, home languages). Where an item of literature referred to a method or approach that could be relevant to more than one research question (e.g. targeting oracy for early immersion learners) it was decided to prioritise the most evident focus, and to introduce the literature under just one research question to avoid repetition between sections.
- 3.2 It should be remembered that the languages taught in the studies below all represent an education context where the situation is relevant to the Welsh language (i.e. education in a language that is considered a minority language in a bilingual and multilingual context). In some cases, there are examples of languages that are considered to be a majority language at international level (e.g. English), but in the specific contexts discussed, that language is considered a minority language.
- 3.3 As noted, all the literature discusses a method or approach and is relevant to the immersion education context in Wales. Approaches and methods have been grouped into wider clusters. For example, a virtual reality method, and a computer games method were combined into a 'technology' cluster. These clusters were grouped into three main themes, namely approaches or methods that target specific linguistic competence (e.g. oracy, literacy), those relating to classroom strategies (e.g. class grouping, classroom language), and others that relate to the characteristics of educators, or the training they need in order for their learners to make linguistic progress. Each item is presented in the context of its particular cluster (e.g. technology), within the theme (e.g. classroom strategies), and under the relevant research questions (e.g. secondary research question 1).
- 3.4 Table 6 presents an overview of the clusters created, grouped into the three themes. Where a theme applied to more than one cluster (e.g. targeting literacy using technology), it is set out twice in the table, therefore the total numbers do not correspond to the total number of items examined.

**Table 6. Themes included in synthesis**

Theme	Cluster	Number
Targeting linguistic competence	Literacy	5
	Oracy	2
	Reading	5
	Vocabulary	2
	Story-telling method	1
	Metalinguistic awareness	1
	Phonics	1
Classroom strategies	2-1-L2 (structured use of target language, home language, and translanguaging)	1
	Peer learning	1
	Language of the classroom/medium of instruction	5
	Combination of strategies	1
	Technology	3
	Class grouping	3
	Explicit instruction	1
	Content and Language Integrated Learning (CLIL)	2
	Form-focussed	1
	Early, regular integration	1
	Social inclusion	1
	Teacher talk	1
Educator characteristics	Training of educators	3

3.5 It is recognised that the theme of ‘educator characteristics’ is slightly different from the other two themes in that the training that educators receive can affect how methods and approaches are delivered to learners, and therefore have an impact on language acquisition.

3.6 Below, the relevant literature is included under each secondary research question.

**Secondary question 1: What does the evidence tell us about the effectiveness of introducing and using a language or languages other than the target language at different stages of the learner’s education and linguistic journey?**

3.7 Eight items of evidence discussed the effectiveness of introducing and using language or languages other than the target language at different stages of the learner’s education and linguistic journey. These are outlined in Table 7. The results of the studies are discussed according to themes: ‘*Theme 1: Targeting linguistic competence*’, and ‘*Theme 2: Classroom strategies*’. The numbers identified for

different methods do not exactly match the number of items relevant to this research question, as some of the items discuss more than one method.

**Table 7. Themes included in secondary research question 1**

Theme	Number
<i>Theme 1: Targeting linguistic competence</i>	
Literacy	2
<i>Theme 2: Classroom strategies</i>	
Combination of strategies	1
Language of the classroom	4
2-1-L2	1
Technology	1

*Theme 1: Targeting linguistic competence*

- 3.8 Literacy is the focus of the study by Butvilofsky *et al.* (2016). The purpose of this longitudinal study was to track the biliterate development of learners aged 3-11 years in a dual Spanish-English immersion programme in the USA, using the Literacy Squared programme. In this intervention, literacy in both languages is taught from the start of statutory school onwards at different stages during the school day, and in subsequent years efforts are made to draw attention to the links between the two languages. This is called paired literacy, rather than sequential literacy. Learners were assessed across three years of receiving paired literacy pedagogy included in the Literacy Squared programme, and it was seen that learners had made significant gains in both English and Spanish literacy. The authors noted that the greatest growth was seen in Spanish between the first two years of schooling (mean score of 27 rather than a mean score of 22.9 for cohort 2, and 24.5 for cohort 3), whilst the greatest growth in the development of English literacy occurred when learners were 9-11 years old. The authors note that the increase in English literacy is cumulative and may not become evident for four or five years.
- 3.9 Leighton (2022) reports on findings from the Children’s Book Initiative (CBI) literacy intervention conducted by Save the Children in Bangladesh with 6-year-olds. The aim of the intervention was to improve literacy outcomes in an area where the language medium of statutory education (Bangla) was different from the language spoken at home for the majority of learners. Story books were used which combined the language of the classroom with the learners’ local language. There was significant improvement in the literacy results of Bangla (+0.41 standard deviation)

and the literacy results of learners' home language (+0.75 standard deviation) following a two-year period participating in this reading pilot project.

### *Theme 2: Classroom strategies*

- 3.10 The best features of various immersion programmes are summarised in a literature review by Lightbown (2014). The total number of texts is not set out in the review. The literature discussed covers learners of different ages. There are a large number of methods and approaches in this review, but they mainly relate to the way in which lessons are structured. According to the author, time is needed to learn a language and international literature shows evidence that a long period of time (thousands of hours) needs to be scheduled in order to learn a language. In addition to time, the author found that successful programmes also commit to intensive periods of immersion (i.e. lessons take place in longer sessions), and present academic content that challenges and engages learners. The authors found that teaching through the medium of the target language has the greatest impact on language transmission, but that there is a need to focus on learners' literacy as well as oracy, in the learners' first language, as well as their target language. Finally, Lightbown (2014) notes that opportunities to engage with learners or speakers of the language beyond the classroom, both inside and outside the school environment, are also beneficial in order to create new speakers.
- 3.11 The work of Mady (2019) provides a description of the classroom language practices in French immersion classes such as French as a Second Language (FSL), where English Language Learners (or ELLs) are also present. The age of learners is not specified in this study. Among newly qualified teachers, French was seen as the target language to model to learners for two main reasons: firstly, in order to support linguistic development in French, and secondly as a means of reducing the gap between the ELL learners and the fluent learners in English. These teachers aimed to limit their use of English, increase their use of French, but also be open to using the home languages of their learners as well in the classroom. Teachers reported that they used a plurilingual approach using the home language of the ELL learners in order to show links with French. However, teachers led on this plurilingual approach, rather than the learners themselves, and there is a call in the discussion section of this paper for further research focusing on learners' use of various languages in the FSL class. FSL teachers in this study also favoured a Core French Programme (i.e. second language sessions) for ELLs

rather than the French immersion class, as immersion is considered much more difficult for these learners. There is, therefore, a suggestion here that some teachers in this study are concerned about the impact of immersion education on students from various home languages.

- 3.12 The language of the classroom is also discussed in a study by Hipfner-Boucher *et al.* (2016). Their work focusses on 6-year-old children from Canada who spoke Chinese at home and followed three different educational programmes, namely French immersion, Chinese-English bilingual education, and English-only education. The method here is immersion. It was seen in the learners' results that those who attended the French immersion programme scored significantly higher in terms of phonological awareness ( $p = .029$ ) and reading English vocabulary ( $p = .024$ ) than those who went through the bilingual Chinese-English and English-medium education systems. The authors of the study note that, based on their evidence, education through the medium of French or Chinese can facilitate the acquisition of English.
- 3.13 There is discussion about the language medium of the classroom in various primary school immersion programmes in Rolstad *et al.* (2005). Here, there are 17 studies covering the use of languages other than the target language. The authors conclude that a method using learners' first language as an education medium is beneficial to them when acquiring the target language. This differs from much of the evidence discussed in this section, and authors acknowledge that they did not exclude studies in their review based on the quality of the research design, which could explain this difference.
- 3.14 In Przymus (2016) there is a description of an innovative 2-1-L2 model used in Arizona in maintaining dual immersion in English and Spanish in a secondary school with children aged 14-18 years. In the 2-1-L2 model 90-minute lessons are structured as 30 minutes immersion in English, 30 minutes immersion in Spanish, and 30 minutes of using both languages in practices such as translanguaging. According to the author, establishing space in the curriculum for immersion in two languages and translanguaging gives every student the opportunity to develop confidence in using their second language as they also receive the same support with their first language. There was an increase in the confidence levels of learners using both languages, having undertaken the 2-1-L2 model for nine weeks.



3.15 Leacox and Jackson (2014) explore the impact of learning to read through the medium of English with accompanying vocabulary guidance bridging with Spanish using technology, and an adult-led reading intervention with children aged 4-8 years. In the cohort of learners who received the technology intervention, there was better performance in terms of vocabulary acquisition than in the cohort receiving the adult-led reading intervention. However, because the technology intervention package contained a number of different teaching strategies, it was not possible to prove which features were most effective (e.g. expanded definitions, verbal repetition or Spanish bridging). This study argues that a child's first language mediates the acquisition of vocabulary in a second language when undertaking e-book reading tasks, i.e. when there is a concept with a strong label connection in a first language, it leads to easier acquisition of the label in the second language.

**Secondary question 2: What does the evidence tell us about the effectiveness of introducing and maintaining immersion education for learners of different ages i.e. what are the characteristics of effective provision in terms of early, mid and late immersion education?**

3.16 As already noted, two main categories of immersion are considered in this report: early immersion and late immersion. The discussion below is structured according to these two categories, i.e. the information about early immersion contexts covers the experiences of children up to the age of 7 years. All other immersion contexts (i.e. mid and late) are covered under the heading 'late immersion'. It should be noted that a number of studies did not explicitly refer to 'late' or 'early' immersion (because different education systems use different terms). Where there was no specific information about the type of immersion in question, the information about the ages of learners was used in order to categorise them.

**Early Immersion**

3.17 12 items of evidence discussed approaches and methods in early immersion education provision. These are outlined in Table 8. The results of the studies are discussed according to themes: '*Theme 1: Targeting linguistic competence*', '*Theme 2: Classroom strategies*' and '*Theme 3: Educator characteristics*'.

**Table 8. Themes included in secondary research question 2 on early immersion**

Theme	Number
<i>Theme 1: Targeting linguistic competence</i>	

Literacy	2
Oracy	2
Vocabulary	2
<i>Theme 2: Classroom strategies</i>	
Class grouping	1
Explicit instruction	1
Medium of instruction/language of the classroom	3
Structured immersion	1
Technology	1
Dual immersion	1
Two-way immersion	1
<i>Theme 3: Educator characteristics</i>	
Teacher talk	1
Training of educators	1

*Theme 1: Targeting linguistic competence*

- 3.18 In Reading (2009), there is a comparison between the English literacy skills of learners aged 5-6 years in a Spanish immersion school and in a French immersion school. The approach used for the two Spanish and French language immersion groups was a phonics programme which included specific education on developing phonemic awareness, the principles of the alphabet, decoding skills, and vocabulary development. Evidence was seen that literacy skills improve when learning the target language. The greatest effect seen was that the literacy skills of Spanish learners were better than those of French learners because Spanish orthography was more similar to English (compared to French).
- 3.19 Tong *et al.* (2021) advocate a partnership between the school and the home to develop learners' literacy skills in early immersion education. Mandarin was the home language of these 6–7-year-old learners. In this experimental study, the method used was a home-based literacy activity intervention aligned with the curriculum. Through these activities, parents were encouraged to practise English speaking, listening, reading and writing skills with their children. The study shows that literacy outcomes as well as learners' motivation to continue learning English improved as a result of the intervention.
- 3.20 A systematic review by Wang (2021) reviews the evidence on supporting young children's oracy development in early immersion. This review included seven items of literature. One study found that a language instruction method that integrates spoken and written language was more beneficial to learners' oral language

development compared to oral language instruction only. A vocabulary intervention was the focus in another study, where teachers read aloud scientific academic vocabulary in the target language as part of a science lesson, and as a result learners acquired more vocabulary and were better able to expand on scientific vocabulary than the control group. Three of the studies measured the impact of the English Language and Literacy Acquisition (ELLA) method. It was seen in these studies that the learners' phonological and oral proficiency skills had improved after the interventions. In one of the studies, the approach was the structure of the instruction, and it was seen that learners improved their oral proficiency in classes where educators gave them more opportunities to participate in oral and literacy activities. It notes that early intervention is necessary but not sufficient to ensure continuous linguistic development, and that methods such as separate language teaching blocks, effective teacher-learner interaction, and professional development for staff are effective ways of supporting learners' oral language development.

- 3.21 Schwarz *et al.* (2020) consider interventions to support learners' oracy. Their study with children aged 4-6 in Arabic early immersion contexts in Iran notes that strategies such as the use of repetition and specific requests to use Arabic in the classroom have an impact on the linguistic skills of the learners. This article discusses that teacher mediated socio-dramatic play has increased children's use of Arabic in the classroom. As part of this method, the children led on the play method, and the teacher used Arabic during role play (e.g. doctor).
- 3.22 The subject of the study by Read *et al.* (2020) were books for children containing code-switching in the target language to support learners aged 2-5 to acquire new vocabulary. This study was set in a metropolitan area of the USA. The families of learners noted that they were exposed to the second language for 10-56 hours a week. The immersion context in this case was a dual immersion education setting, where learners either acquired English at school, and spoke Spanish at home, or acquired Spanish at school, and spoke English at home. Using only books in the target language (Spanish or English depending on the cohort of learners), was compared with the use of books in the learners' home language, which included code-switching to the other language. Older learners (7 years old) were more likely to acquire new vocabulary using the books which included code-switching. The authors suggest that story books containing code-switching should be read as part of the education for bilingual speakers, to increase the exposure of their languages within the classroom.

## *Theme 2: Classroom strategies*

- 3.23 In her study of children aged 3-5 in Ireland, Hickey (2007) discusses the importance of differentiated teaching for the Irish context. Here, the method of grouping L1 and L2 learners in order to increase the social use of the target language is discussed. Analysis of the linguistic networks found in these groups showed that the target language was often not used socially, with learners choosing to speak English with each other. The author concludes that there is a need to provide opportunities for young children to be able to use the minority language in groups of L1 speakers only (as well as providing opportunities for L2 children to integrate), because mixing both languages has a detrimental effect on the social use of the Irish language.
- 3.24 First language and second language acquisition in children aged 2-6 years (n=54) in Germany are discussed by Bergström *et al.* (2016). The method involved is immersion. The English immersion programme and conventional L2 English teaching programme are compared in this study over a period of 2.5 years. No detrimental effect was found on the children's first language development as a result of the immersion. All results of linguistic measures from the L2 immersion group were better than the group receiving conventional L2 education. There were more differences between the two cohorts of learners in their receptive skills, namely understanding vocabulary and sentences, than the differences seen in the production measures. The authors found that children in the immersion group produce more words than the children in the conventional teaching group after 20 months, but no differences were observed between these groups after 31 months.
- 3.25 Kane *et al.* (2023) present a study of the relationship between the standard of teacher talk in the classroom and the oral ability of English and Spanish dual language learners aged 4-6.<sup>22</sup> The study is set in Florida, in the USA. 'High quality' teacher talk is discussed here, relevant to the subject taught. Teachers tended to use two specific types of teacher talk, namely giving directions and contextualised language. Although the authors note that there is evidence that the target language is used in lessons, these types of target language are not of high quality as they do not allow the speaker to expand on the subject discussed. This paper notes that teachers need more professional development in high-quality language use in dual learner classes, for teacher talk to be an effective method.

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<sup>22</sup> 'Dual language learners' is the term used to define children and young people who are learning English either sequentially or simultaneously with the home language (Kane *et al.*, 2023).

- 3.26 Yeung *et al.* (2019) discuss explicit instruction and the significant impact of using this approach with learners aged 4-6 in Hong Kong over an 8-week period. These learners were from Chinese families, and were first immersed in English, in order to prepare them for education in both languages. Features of explicit instruction in the study in question were to focus on four words in the target language in each session, extended activities on target words, and the use of story books as a context for learning. Progress was seen in expressive and productive vocabulary as well as phonological awareness among these learners as a result of the intervention. The authors state that practitioners should focus more on vocabulary development and use methods such as explicit instruction.
- 3.27 The role of technology in assisting language development is a focus of the study by Outhwaite *et al.* (2020). The benefits of technology programmes that support immersion are introduced, focusing on developing children's maths skills in Brazil. The learners who took part in this research were 5-6 years old. A maths app was used to provide child-focussed one-to-one instruction using interactive pictures, sound and animation that provided clear and consistent objectives, instructions and formative feedback to all users. Learners worked through the apps with headphones individually, at their own pace, repeating instructions and activities as often as needed. Learners spoke Brazilian Portuguese as their home language and received education through immersion in English. The app was available in the children's two languages (L1 – Brazilian Portuguese, L2 – English) and they made significant gains in their maths skills after 10 weeks of the intervention in both languages. However, there were greater gains in the development of maths skills among learners instructed in Brazilian Portuguese than those instructed in English. The authors suggest that the learners' level of linguistic competence must be sufficient to be able to deal with maths instructions.

### *Theme 3: Educator characteristics*

- 3.28 The variety of home languages within the classroom, and consequently the diverse linguistic needs of children, are often discussed in relation to immersion education. A study by Hickey *et al.* (2013) focuses on education leadership methods with learners from diverse home languages in an early immersion context in Wales. They note that two main issues need to be considered, namely immersion methodology, and the differentiation of teaching based on the specific needs of learners within this methodology. They note that there is a need to look again at

immersion pedagogy training and how to increase the use of Welsh in the classroom. They suggest that the training needs to include strategies for differentiated teaching (for example how much of the target language to use when giving instruction) to maintain the first language and immersion in the second language. In terms of only using the target language, the authors note the need to address educational educators' beliefs and concerns about the welfare of young children, given the reservations expressed by some educators about only using the target language. Understanding of the target language in pre-school settings and other methods of supporting expression to help children find meaning can only be discussed when those concerns are alleviated by experienced educators. It should be noted that this assessment of the effectiveness of the immersion method is based on the opinion of educators. Also, reference is made to grouping learners according to ability in their study. Based on the research, the authors conclude that flexible grouping to stretch the children linguistically can support learner development.

- 3.29 Hickey and de Mejía (2014) discuss key issues and policy considerations for immersion education in the early years. They present a summary of effective methods and approaches internationally in terms of a monolingual and bilingual immersion education, including: training for staff in introducing the Vocabulary, Oral, Language, and Academic Readiness (VOLAR) programme, which improves the language skills of young learners with language impairment, and training for educators on effective use of input in the target language in the classroom. Based on the international context, the authors argue that the most significant challenge for the immersion education sector is to train new educators in immersion methodologies, in order to support prospective educators to provide appropriate activities to develop the children's language acquisition. According to the evidence in this article, staff providing immersion education in the early years must be trained to be flexible when planning tasks in order to differentiate according to the young learners' abilities. The authors also call for the support of educators to promote the target language as a social medium in the classroom.

### **Late Immersion**

- 3.30 Nine items of evidence discussed the late immersion education provision. These are outlined in Table 9. As in the previous section, the results of the studies are

discussed according to themes: ‘*Theme 1: Targeting linguistic competence*’, and ‘*Theme 2: Classroom strategies*’.

**Table 9. Themes included in secondary research question 2 on late immersion**

Theme	Number
<i>Theme 1: Targeting linguistic competence</i>	
Reading	4
<i>Theme 2: Classroom strategies</i>	
CLIL	2
Medium of instruction/language of the classroom	1
Technology	1
Focus on form	1

*Theme 1: Targeting linguistic competence*

- 3.31 Costa and Guasti (2021) asked whether learning to read in two languages simultaneously is advantageous. In their study, the Italian reading performance of learners aged 6-11 (in three different age categories: mean age of group 1 = 6-7, group 2 = 8-9, group 3 = 10-11) is covered in two schools in Milan and Rome, providing dual immersion education in English and Italian, and Italian-only education. English immersion programmes were compared with Italian-only control programmes. The results show that bilingual children receiving dual immersion education in Italian and English were not less proficient in Italian than children in the Italian-only school. There was also an improvement in the English language skills of the dual immersion education group across all age groups, and a correlation between their Italian and English reading skills. According to the authors, introducing reading material in both languages simultaneously helps support bilingual literacy in dual immersion education.
- 3.32 The work of Berens *et al.* (2013) studies the impact of immersion on reading skills acquisition in two languages for 7 to 9-year-old learners. These learners attended three different types of education, for learners who either spoke English or Spanish at home: Spanish and English dual immersion education 50:50; Spanish-English dual immersion education 90:10; and English only education for learners who only spoke English at home. Positive impacts of immersion education were seen in the learners’ reading measures. Progress was seen in the reading skills of bilingual children learning in a dual-language learning context (50:50 and 90:10) compared with monolingual children learning in a single language learning context. Bilingual

children who only spoke English at home who attended a Spanish-English school with a maximum of 50 per cent of their education in English, performed just as well and even better on English reading tasks than their English only peers, with 100 per cent of instruction in their English only teaching context. Learners from the bilingual 90:10 education had performed better in reading and general language tasks in Spanish than 50:50 learners. However, the authors argue that the 50:50 education had led to a more balanced acquisition in both languages.

- 3.33 Mak *et al.* (2017) found that a programme focusing on supporting learning to read with an online programme had increased the phonological skills of 6 to 7-year-old learners who spoke Chinese at home. The method in question here is the ABRA programme (delivered in English) to support the acquisition of Spanish as a second language in Hong Kong. ABRA is associated with phonics in the school curriculum and includes textbooks on subjects such as body parts, animals and numbers. After learners took part in the ABRA programme, significant progress was seen in their ability to link phonemes and graphemes (effect size = +0.22), with phoneme segmentation (effect size = +0.46) and in their nonsense words fluency (effect size = +0.22).
- 3.34 More texts about reading in relation to late immersion (n=7) were found than in the early immersion context (n=2). Graham *et al.* (2022) presumed in their research on emerging bilingual learners (in English and Spanish dual immersion education) that being taught to read improves the reading skills of younger learners more than older learners. This review by the authors looked at 32 research papers. In the review, 38 different methods for teaching reading (e.g. phonics instruction, computer instruction, peer reading instruction, whole word reading instruction, social studies-based reading instruction) are presented. In some cases, the interventions in question were introduced to the whole class, sometimes 1:1, sometimes in pairs and sometimes in small groups (the number of learners in these groups is not known). The authors found that the reading score for younger children receiving intervention was lower than the reading score for 9–18-year-old learners. The authors conclude that teachers need to consider how to use reading interventions carefully in classrooms where there are emerging bilingual learners and adapt the interventions to ensure more effective instruction where required.



## *Theme 2: Classroom strategies*

- 3.35 The methods or approaches that encompass CLIL (an approach for teaching a subject through an additional language) and translanguaging are covered in Theme 2 for this secondary research question. This is because these may be used in immersion education contexts, where the home language of the learners is different from the target language, or when the target language is a heritage language.
- 3.36 Literature about late immersion education describes CLIL as an effective method of immersing older learners. In Ó Ceallaigh *et al.* (2017), the experiences of teachers and learners who undertook physical education lessons through the medium of the Irish language (L2) in an English-medium (L1) school in Ireland is discussed. These 9 to 10-year-old learners took part in a series of eight lessons through the medium of Irish. A qualitative analysis of teachers' perceptions show that the learners' experiences are very positive; the learners gained confidence, and their satisfaction levels and linguistic abilities improved in the various skills. Practitioners had also noted that CLIL had given them professional satisfaction in their work.
- 3.37 The study by Oattes *et al.* (2020) discusses the use of the CLIL approach in Dutch and English bilingual immersion schools in the Netherlands, where English was a different language from the language spoken at home. They focussed this work on 12 to 13-year-old and 14 to 15-year-old learners studying History through the medium of English or Dutch, and the impact of this on the subject test results and subject knowledge. The research results demonstrated that the younger cohort of learners (aged 12-13) in the mainstream, studying in Dutch, had performed better than those who learnt through the medium of English. However, the opposite is seen in the results of the older cohort (aged 14-15) who had already received two years of CLIL education. The learners in bilingual education (studying History through the medium of English) were statistically significantly better than those in the mainstream. There is evidence in this research that the performance of learners in bilingual education was also better in a History test through the medium of Dutch. This shows that educating History through the medium of L2 does not have an adverse effect on the learner's L1 use in the subject. The authors conclude that these are the results of CLIL pedagogy as this encourages deep learning.
- 3.38 Similar results can be seen in the work of Pathak *et al.* (2021) which also studies the impact of the language of instruction on teenage learners (aged 13-16). The authors examined the impact of providing instruction in L2 on L1 literacy and

cognitive skills at two schools in Kathmandu. One of the schools taught through the medium of English (L2) and the other in Nepali (L1). The main finding of this study was that the learners who were taught in English performed better than those taught in Nepali across a range of linguistic and cognitive tasks. The authors argue that learners receiving instruction through L2 benefit in terms of developing bilingualism and biliteracy.

- 3.39 Form Focussed Instruction (FFI) is considered in the work of Ní Dhiorbháin and Ó Duibhir (2016). Inductive FFI, as presented in this research, means that the teachers provide examples of grammatical structures and then learners discover the rule by themselves. Here, the 11 to 12-year-old learners attended Irish immersion education in Ireland. Over a period of four weeks, the genitive case was taught in a specific way (students being able to clearly repeat the rule orally and in writing) and discussions were held regarding the form with the educator and among peers. There is evidence in this research that explicit and inductive approaches help immersion learners to develop and remember their understanding of grammatical rules. Attention is also given to the fact that the social nature of this approach is beneficial to learners as knowledge about rules is generated together with peers and the teacher.
- 3.40 Tai and Chen (2021) discuss the benefits of using virtual reality technology when immersing English learners. The technology programme aims to improve listening skills, where the instruction and input into the programme are delivered in the target language. A cohort of English learners aged 12-13 received virtual reality language education intervention in north Taiwan via the Mondly app. In the app, reality is imitated, for example, in a restaurant, hospital or hotel. The app is able to recognise speech automatically to enable the learners to interact in English with virtual characters and receive feedback immediately. The control group watched a series of videos on a computer rather than being immersed in technology. It was noticed that those following the virtual reality intervention had scored better in terms of their listening comprehension and retention, compared with the control group. According to the authors, virtual reality technology encourages a sense of *presence* among users, which can improve listening and comprehension skills among English learners.

**Secondary question 3: What does the evidence tell us about approaches to deal with a range of linguistic backgrounds and previous linguistic experiences amongst cohorts or groups of learners?**

- 3.41 Five items of evidence discussed the situation in immersion classes where the learners came from migration backgrounds, and other varied linguistic backgrounds. These are outlined in Table 10. The results of the studies are discussed according to themes: ‘*Theme 1: Targeting linguistic competence*’, and ‘*Theme 2: Classroom strategies*’.

**Table 10. Themes included in secondary research question 3**

Theme	Number
<i>Theme 1: Targeting linguistic competence</i>	
Literacy	1
Metalinguistic awareness	1
<i>Theme 2: Classroom strategies</i>	
Social inclusion	1
Early, regular integration	1
Class grouping	1

*Theme 1: Targeting linguistic competence.*

- 3.42 One item focused specifically on developing learners’ literacy in a target language, not spoken at home, coming from linguistic backgrounds with different linguistic experiences. In a review of the international literature, Poarch and Bialystok (2017) discuss the impact of immersion education on the literacy development of immigrants. They argue that German policy makers need to support learners who have migrated to the country to support their heritage language as well as the country’s majority language. Supporting learners to maintain their heritage language is the approach in question which, according to the authors, supports the immersion of learners. According to their assessment of the international context, when education systems promote literacy in the native language they show that they regard those languages as valuable qualities.
- 3.43 It was assumed in the work of Mady (2015) that a method focusing on developing metalinguistic awareness affects the linguistic competence of migrants to Canada who learnt English and French in immersion education. Learners in this research were aged 11-12 and had been immersed for 6 years when the data was collected. Although the cohort of migrants performed better in language tests (which measured various linguistic skills) than their Canadian counterparts, there was no

evidence of a positive correlation between the metalinguistic awareness of the learners who had migrated with the higher scores. That is, the learners did not score better across linguistic skills if their score for linguistic awareness was higher. It is assumed that other contextual factors influence linguistic ability in the case of this data.

*Theme 2: Classroom strategies*

- 3.44 Reese *et al.* (2018) interviewed Catalan immersion programme educators and observed immigrants in Catalan immersion programmes. Teaching strategies such as supporting emotional well-being, and the use of learners' home languages are addressed in this research. The purpose of the research was to measure the extent to which teachers felt that immigrants had settled into the schools (i.e. to what extent the immigrants were using the language). Learners are immersed in various ways at a 'rapid' pace; the 'aula d'acollida' (reception/welcome class) takes learners out of the classroom to provide specific language lessons during the week, and a 'desdoblament' strategy is used, which is to place two educators in a class to give additional support to newcomers. The authors found that teachers emphasise social inclusion (i.e. incorporating learners into school and community structures), which means that they are less likely to use learners' home languages in these education institutions. Based on the evidence, these authors argue that more education is needed about different cultures in immersion institutions that educate immigrants, and that awareness of diverse cultures and languages can contribute to social inclusion beyond the school.
- 3.45 Crul *et al.* (2019) present a synthesis of policy literature and documentation about Syrian migrants in Sweden, Germany, Greece, Lebanon and Turkey. The countries concerned integrate Syrian migrants into their compulsory education systems using different methods, and according to the authors, with varying levels of success. In one case, the method involved is intensive immersion, with the impact measured by the length of time required before learners are integrated into the mainstream. This research suggests that the immersion education system in Sweden is working relatively well, with a relatively short intensive immersion period leading to learners being mainstreamed according to the learner's need. Another method discussed is continued support (i.e. specific linguistic support over a period of time after the initial immersion period). There is evidence in this research that continued mainstream support is also necessary to support migrants when attending compulsory

education. This review found that moving immigrant learners to the mainstream early in their education journey, as is happening in Sweden, is a way of avoiding social isolation.

- 3.46 Robinson and Sorace (2018) found that grouping learners in classes according to linguistic background can affect learners' ability to acquire Spanish as a second language in Scotland. The research participants included a combination of recent immigrants to Edinburgh, who did not speak English at home, and native English speakers, in language lessons. Groups where 95 per cent of learners were monolingual English speakers (the homogenous group) did not perform as well in DCCS (Dimensional Change Card Sorting Task) tasks as groups where 50 per cent of learners were multilingual (the heterogeneous group), and a high percentage of those were recent migrants to Scotland who had not acquired English. DCCS tasks are used to measure executive function, where learners sort a set of cards according to dimensions, colour and shape. The English-only learners in the heterogeneous group also performed better than their homogenous group counterparts, possibly because they interacted with multilingual learners. The authors claim that combining learners from different linguistic backgrounds can benefit monolingual speakers when learning a second language from scratch.

**Secondary question 4: Are there particular issues that merit attention in terms of additional learning needs and immersion education provision?**

- 3.47 Seven items of evidence considered additional learning needs. These are outlined in Table 11. The results of the studies are discussed according to themes: '*Theme 1: Targeting linguistic competence*', '*Theme 2: Classroom strategies*' and '*Theme 3: Educator Characteristics*'.

**Table 11. Themes included in secondary research question 4**

Theme	Number
<i>Theme 1: Targeting linguistic competence</i>	
Phonics	1
Vocabulary	1
Reading	1
Story-telling method	1
<i>Theme 2: Classroom strategies</i>	
Class grouping	1
Peer learning	1
<i>Theme 3: Educator Characteristics</i>	

*Theme 1: Targeting linguistic competence*

- 3.48 Four items focused on targeting specific linguistic competence. The studies vary in terms of target languages, age and first language, but all take account of a population with additional learning needs (ALN). A systematic study of 19 studies discussing vocabulary interventions for emerging bilingual speakers (Kong and Hurless, 2021) takes into account specific considerations for emerging bilingual children aged 3-5 with ALN in the early years. The 19 studies reviewed describe a range of methods for teaching new vocabulary. The most frequently reported methods were word definitions (i.e. explaining the definition of the words or pronouncing the words), and highlighting the words through repetition. Another method was to provide visual and gestural cues (such as pointing to the picture and providing visual or gestural cues), communication stimuli/responses (including taking turns in conversation, expanding / expatiating, modelling, and giving feedback to learner responses), and semantic connection (which linked new concepts to familiar concepts). The study concludes that vocabulary interventions generally support the development of these learners, and that embedding an additional element of the instruction (such as an interactive discussion asking children to respond specifically) accelerates their linguistic development.
- 3.49 Przymus and Alvarado (2019) discuss using a method to assess ALN in emerging bilingual learners. The authors discuss the use of translanguaging when repeating stories as a method. Learners who spoke Spanish, Tigrinya, and Tzotzil at home are discussed here, and they attended an English-Spanish dual immersion education secondary school. As part of the study, learners had the opportunity to translanguange when re-telling a story using English, Spanish or any other language they spoke at home. It is concluded that giving individuals opportunities to use their full linguistic repertoire enables them to receive a fair ALN assessment. Including translanguaging in the assessment enabled learners to use a more comprehensive repertoire, leading to more accurate data on participants' language skills in order to be able to determine whether they had specific ALN. This study highlights considerations when assessing ALN in a bilingual population and recommends further work on creating standardised assessments for non-monolingual populations.

- 3.50 Sanabria *et al.* (2022) assess an intervention that targets understanding when reading in the target language for children who are learning two languages and who have poor reading skills. In this instance researchers consider the ‘EMBRACE’ programme (Enhanced Moved by Reading to Accelerate Comprehension in English) with children aged 11-14 who are in dual language immersion. Previous evidence showed that reading difficulties are common in children with language impairment. The EMBRACE programme is intended to specifically target understanding, particularly when learning to read in a second language. As part of the intervention, learners move images on an iPad to demonstrate comprehension of stories. The study results showed that there were no significant differences in the accuracy of reading comprehension after receiving the intervention, but that there was a positive impact on children with poor reading skills, particularly when undertaking easier topics.
- 3.51 A study by Wise *et al.* (2015) considers phonological awareness training for at-risk readers in the early French immersion context in Canada. The experimental group received phonological awareness training as well as a letter-sound correspondence instruction twice a week for eighteen weeks. As part of the intervention learners became aware that sentences contain words, words contain syllables, and syllables are made of individual sounds or phonemes. This sequence increased children’s awareness of speech units, and over time they learned to produce and manipulate them. Significant differences were observed for the experimental group immediately after the intervention, and two years later, suggesting that interventions relating to phonics can address the lack of phonics awareness for at-risk readers in an early immersion context.

*Theme 2: Classroom strategies*

- 3.52 Two items focused on group learning or peer learning. Both studies discuss learners with ALN, in early immersion education in both Spanish and English in the USA.
- 3.53 Landry *et al.* (2019) present a study on grouping young children in dual immersion education and its impact on social and behavioural outcomes. ‘Preparing Pequeños’ is a cognitive instruction programme for small, targeted groups. The programme is a Spanish translation of a series of literacy activities that have already been approved to develop language skills. The reading skills of the children in the study were categorised as weak and the authors emphasise the importance of being able to

meet the demand in terms of the individual needs of children with ALN within a dual immersion class. The programme was seen to have a positive impact on the learners involved. The results of the experiment showed the importance of small groups in dual immersion contexts in the early years, and that this method is not being used adequately. The results also show that children who had taken part in the 'Preparing Pequeños' programme had improved their socio-emotional, language and literacy skills as a result of the intervention. The authors note that the evidence suggests that the use of small groups in dual immersion with children with weak reading skills is an effective way of raising standards. The experiment also shows the positive impact of training in programmes such as 'Preparing Pequeños' on the standard of teaching. For example, more specific instruction was being used in small groups and educators were able to support the children using scaffolding (supporting a learner with a task and withdrawing support gradually).

- 3.54 A study by Calhoun *et al.* (2007) considers the effectiveness of a peer-mediated programme on reading skill acquisition for 6 to 7-year-olds in a two-way bilingual classroom. The study included children with ALN in the sample who received *PALS* (Peer assisted learning strategies), as recommended to supplement core reading programmes. As part of this method, teachers teach children how to work together on peer-mediated activities which include storytelling sessions with sounds and words. The results of the intervention show that the use of *PALS* has been effective in helping teachers to adapt instruction to different groups, including children with ALN. *PALS* had led to an increase in learners' phoneme segmentation fluency, nonsense words fluency, and the fluency of reading out loud.

### *Theme 3: Educator characteristics*

- 3.55 One item focused on teacher training taking into account a population with additional learning needs (ALN). Nic Aindriú *et al.* (2023) discuss the design and content of an online professional development course for educators. The authors note that the educators of children with ALN in immersion education find it difficult to meet the learning needs of those children owing to a lack of assessments, interventions and resources in the language of provision. As part of the study, the training was conducted with a group of educators, and the results of the provision were then reported. There were three main elements to the course, covering theoretical information regarding bilingualism and the acquisition of a second language, appropriate assessments for children learning a second language, and



strategies and interventions to support educators to deliver content appropriately in a bilingual or immersion context. The course included the following interventions, amongst others: lesson reflection sessions, creating action plans for individual learners, role play tasks, observations, speech and language sample analysis, and the development of a shared library of resources. The educators' feedback towards the course was positive but lack of time was a challenge for all of them. All participants felt that each module was effective in developing learners' linguistic ability, and that the most useful elements were realistic ideas for implementing educational strategies.

## 4. Conclusions

4.1 In this section the evidence gathered is summarised under the four secondary research questions:

### **Summary of what the evidence tells us about the effectiveness of introducing and using a language or languages other than the target language at different stages of the learner's education and linguistic journey:**

- Although some authors found that mainly using the target language was beneficial in immersion contexts, there is evidence that occasional use of the home language can also be beneficial in order to compare various languages. For example, it was seen that developing bilingual learners performed better when repeating stories by translinguaging, and structured 2-1-L2 time had improved learners' immersion in both languages. Evidence was provided in one review which supported teaching in the learners' home language rather than immersion education. However, that report submitted evidence without having considered the quality of the research designs.
- In the evidence it was seen that structuring the use of various languages (in specific sessions or lessons for each language) as well as allocating time for translinguaging, were effective.
- The evidence notes that interventions to develop literacy skills have a positive effect on language acquisition, for example progress in reading skills and metalinguistic awareness. However, this depended on a number of factors and the type of intervention in question. For example, in English-Spanish dual immersion programmes, English literacy could be cumulative and possibly would not become evident for years after the progress seen in Spanish.
- There was some evidence of the benefits of using technology to develop phonological awareness and vocabulary acquisition when learning a language, but it is difficult to identify, based on the evidence available in the study, which elements of the technology are most effective.

**Summary of what the evidence tells us about the effectiveness of introducing and maintaining immersion education for learners of different ages i.e. what are the characteristics of effective provision in terms of early, mid and late immersion education:**

*Early Immersion*

- There is evidence in the literature that using bilingual books and code-switching in reading material can support learners' linguistic development in early immersion education in the target language. In addition, 1:1 reading time between adults and the young learners is beneficial, for example, between children and their parents.
- The evidence examined for this study notes that early immersion learners should be taught in small groups. When teaching in small groups, the specific needs of learners can be identified, and teachers can differentiate on the basis of those needs.
- It was seen that teacher talk had an effect on learners' oral ability, and that using the target language effectively (by repeating, confirming, detailing and elaborating) predict learners' linguistic outcomes. It was noted that technology programmes can support reading skills development in immersion education, which can assist teachers where resources are limited.
- There is strong suggestion in the evidence that using the target language on its own in immersion education is not enough: the teachers' use of the target language must also be meaningful. That is, teachers should use language which gives learners the opportunity to extend and elaborate when speaking in the target language, rather than just giving instructions in the target language.

*Late Immersion*

- Extensive evidence was found that methods targeting reading skills support language acquisition in late immersion contexts. Specifically, teaching learners to read with phonics can help them to link phoneme and graphemes and help with phoneme segmentation.
- There is a strong argument in the evidence examined for this study that introducing two languages simultaneously in reading material is beneficial.
- The evidence notes the importance of recognising learners' linguistic context when considering linguistic development in late immersion contexts, and that this extends to considering the learners' individual needs.

- The evidence reports that CLIL is an effective tool to develop learner confidence, improve knowledge about subjects other than the target language and to develop linguistic skills. However, the evidence does not provide much detail about the exact skills.
- It was seen in the synthesis that communication methods helped learners to acquire the target language. There was evidence that small groups encouraged learners to use the target language more often and by using an inductive and explicit approach (learners finding out grammatical structure rules for themselves) learners were equipped to work with peers to better develop and remember grammatical rules.
- There is evidence to suggest that using games or technology to assist with learning a language or languages can be effective. Virtual reality technology, specifically, can create a sense of presence which reinforces the immersion experience.

**Summary of what the evidence says about approaches to deal with a range of linguistic backgrounds and previous linguistic experiences amongst cohorts or groups of learners:**

- Evidence about using various languages in immersion classes where learners come from different language backgrounds shows that metalinguistic awareness does not lead to higher ability in the target language.
- The synthesis included a strong argument that using the learner's home language was important to show the value of those home languages. There was a suggestion that intercultural education was required to promote social inclusion and that moving immigrants to the mainstream early on could help with this. However, the link between seeing value in languages and the effective acquisition of linguistic competence was unclear.
- The synthesis included evidence that mixing monolingual and multilingual groups had a positive effect on the linguistic ability of all learners, not just migrants.
- There was evidence that pair work could help develop reading skills in the target language among mixed ability groups.

**Summary of what the evidence says about specific considerations that merit attention in terms of additional learning needs and immersion education provision:**

- There is scope to support students with ALN in immersion classes, and small group teaching and encouraging collaboration between peers are effective ways of improving linguistic skills, bearing in mind the learner's specific ALN.
- Translanguaging was seen to assist in identifying and assessing multilingual learners with ALN.
- The evidence shows that phonics intervention can address the lack of phonics awareness.

4.2 This report presents a wide range of literature on international immersion education methods and approaches. The evidence offers guidance to policy makers and educators on offering effective immersion education in Wales. However, it should be borne in mind that effective provision could be different in Wales, in comparison with international contexts. When planning provision and evaluating its effectiveness, requirements and circumstances that are specific to Wales should be a central consideration.

**Further research considerations**

4.3 This report presents evidence of international immersion education approaches and methods, and only a few examples of immersion education provision in Wales were obtained. Further research could be carried out into immersion methodology in Wales, looking at the approaches and methods used in early and late immersion contexts, with immigrants, with learners with additional learning needs, and those who use a language other than the target language at home. Research specifically focussing on the effectiveness of the methods and approaches would provide valuable information about immersion education in Wales.

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## **Appendices**

Appendix A: Data extraction form

Appendix B: Focus Group topic guides

## Appendix A – Data extraction form

Data extraction form (EPPI-Centre 2007), adapted on the basis of an adaptation by Welsh Government (2018)

### Section A: Administrative details

*Use of these guidelines should be cited as: EPPI-Centre (2003) Review Guidelines for Extracting Data and Quality Assessing Primary Studies in Educational Research. Version 0.9.7. London: EPPI-Centre, Social Science Research Unit.*

A.1 Name of the reviewer	A.1.1 Details
A.2 Date of the review	A.2.1 Details
A.3 Paper citation details  <i>Identification number to cross reference with the excel spreadsheet</i>	A.3.1 Details
A.4 Status	<p>A.4.1 Published (ISBN / ISSN)</p> <p>A.4.2 Published as a report / conference paper (no ISBN / ISSN; e.g. internal reports or conference papers)</p> <p>A.4.3 Unpublished (thesis, author manuscript for example)</p>
A.5. Language of publication	<p>A.5.1 Welsh</p> <p>A.5.2 English</p> <p>A.5.3 Other - details</p>

## Section B: Study aim(s) and rationale

<p>B.1 What are the broad aims of the study?  <i>Please write in authors' description if there is one. Elaborate if necessary, but indicate which aspects are reviewers' interpretation. Other, more specific questions about the research questions and hypotheses are asked later.</i></p>	<p>B.1.1 Explicitly stated (please specify)            B.1.2 Implicit (please specify)            B.1.3 Not stated/unclear (please specify)</p>
<p>B.2 What immersion context is this relevant to?</p>	<p>B.2.1 Early Immersion            B.2.2 Mid Immersion            B.2.3 Late Immersion            B.2.4 Partial Immersion            B.2.5 Intensive Immersion</p>
<p>B.3 Which age group of learners is this relevant to?</p>	<p>B.3.1 3-7 years old            B.3.2 7-11 years old            B.3.3 11-14 years old            B.3.4 14-16 years old</p>
<p>B.4 Was the study informed by, or linked to, an existing body of empirical and/or theoretical research?  <i>Please write in authors' description if there is one. Elaborate if necessary, but indicate which aspects are reviewers' interpretation.</i></p>	<p>B.4.1 Explicitly stated (please specify)            B.4.2 Implicit (please specify)            B.4.3 Not stated/unclear (please specify)</p>
<p>B.5 What are the research questions / hypotheses (Use words of authors here)</p>	<p>B.5.1 details</p>

## Section C: Study research question(s) and its policy or practice focus

<p>C.1 What is/are the topic focus/foci of the study?</p> <p><i>E.g. What is under consideration?</i></p>	<p>C.1.1 Details here</p>
<p>C.2 Was a specific method or approach investigated?</p>	<p>C.2.1 Yes (details)</p> <p>C.2.2 No</p>
<p>C.3 In which country or countries was the study carried out?</p> <p><i>Please use this question to provide further details, where relevant e.g., region or city.</i></p>	<p>C.3.1 Explicitly stated (please specify)</p> <p>C.3.2 Not stated/unclear (please specify)</p>
<p>C.4 What is the target language?</p>	<p>C.4.1 Details</p>
<p>C.5 What is the learner's L1?</p>	<p>C.5.1 Details</p>
<p>C.6 How old were the participants at the time of study?</p>	<p>C.6.1 3-7 years old</p> <p>C.6.2 7-11 years old</p> <p>C.6.3 11-14 years old</p> <p>C.6.4 14-16 years old</p>
<p>C.7 What was the number of participants?</p>	<p>C.7.1 Details</p>
<p>C.8 What was the educational setting for the study?</p>	<p>C.8.1 Not Applicable (e.g., study of policies, documents, etc.)</p> <p>C.8.2 Nursery schools/ Early Years setting</p> <p>C.8.3 Primary</p> <p>C.8.4 Secondary</p> <p>C.8.5 Other (specify)</p>
<p>C.9. What is/ are the population focus/ foci or the study?</p>	<p>C.9.1 Learners</p> <p>C.9.2 Teaching staff</p> <p>C.9.2 Other (Specify)</p>

<p>C.10 What is known about individual learning difference within the sample? (Additional learning needs, SES, intellectual attainment etc.)?</p>	<p>C.10.1 Not Applicable  C.10.2 Explicitly stated  C.10.3 Implicit  C.10.4 Not stated/ unclear</p>
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**Section D: Teaching method or approach**

<p>D.1 If a method or approach is being studied, does it have a formal name?</p> <p><i>Use author's own words here</i></p> <p><i>Remember – authors might not explicitly use the words 'methods' or 'approach'.</i></p>	<p>D.1.1 Not applicable (no programme or intervention)</p> <p>D.1.2 Yes (please specify)</p> <p>D.1.3 No (please specify)</p> <p>D.1.4 Not stated/unclear (please specify)</p>
<p>D.2 Please describe in more detail the specific method or approach with which the study is concerned.</p>	<p>D.2.1 Details</p>
<p>D.3 What is the aim of the method / approach?</p> <p><i>Use author's own words here</i></p>	<p>D.3.1 Not stated</p> <p>D.3.2 Not explicitly stated</p> <p>D.3.3 Stated</p>
<p>D.4 What is the duration of the method/ approach?</p>	<p>D.4.1 Details</p>
<p>D.5 What training or skills are needed to perform the intervention?</p>	<p>D.5.1 Details</p>
<p>D.6 How was effectiveness measured?</p>	<p>D.6.1 Details</p>

## Section E: Methods - Groups

<p>E.1 Is the study cross sectional or longitudinal?</p>	<p>E.1.1 Not Applicable E.1.2 Cross Sectional E.1.3 Longitudinal</p>
<p>E.2 When were outcome measures taken?</p>	<p>E.2.1 Not Applicable E.2.2 Pre E.2.3 Post E.2.4 Delayed</p>
<p>E.3 What is the methodology of study (group, case, cohort, systematic...)?</p> <p><i>NB. Studies may use more than one method – please code each method used and note the respective outcomes for each method.</i></p> <p><i>A= i). compare two or more groups which receive different interventions or different intensities/levels of an intervention with each other; and/or with a group which does not receive any intervention at all</i></p> <p><i>AND ii) allocate participants (individuals, groups, classes, schools, LEAs etc.) or sequences to the different groups based on a fully random schedule (e.g., a random numbers table is used). If the report states that random allocation was used, and no further information is given then please keyword as RCT. If the allocation is NOT fully randomised (e.g., allocation by alternate numbers by date of birth) then please keyword as a non-randomised controlled trial.</i></p> <p><i>B=Please use this code if the evaluation compared two or more groups which receive different interventions, or different intensities/levels of an intervention to each</i></p>	<p>E.3.1 A Random experiment with random allocation to groups E.3.2 B Experiment with non-random allocation to groups E.3.3 C One group pre-post test E.3.4 D one group post-test only E.3.5 E Cohort study E.3.6 F Case-control study E.3.7 G Statistical survey E.3.8 H Views study E.3.9 I Ethnography E.3.10 J Systematic review E.3.11 K Other review (non-systematic) E.3.12 L Case study E.3.13 M Document study E.3.14 N Action research E.3.15 O Methodological study E.6.16 P Secondary data analysis</p>

*other and/or with a group which does not receive any intervention at all BUT DOES NOT allocate participants (individuals, groups, classes, schools, LEAs etc.) or sequences in a fully random manner. This keyword should be used for studies which describe groups being allocated using a quasi-random method (e.g., allocation by alternate numbers or by date of birth) or other non- random method.*

*C=Please use this code where a group of subjects e.g., a class of school children is tested on outcome of interest before being given an intervention which is being evaluated. After receiving the intervention, the same test is demonstrated again to the same subjects. The outcome is the difference between the pre and post test scores of the subjects.*

*D=Please use this code where one group of subjects is tested on outcome of interest after receiving the intervention which is being evaluated.*

*E=Please use this code where researchers prospectively study a sample (e.g., learners), collect data on the different aspects of policies or practices experienced by members of the sample (e.g., teaching methods, class sizes), look forward in time to measure their later outcomes (e.g., achievement) and relate the experiences to the outcomes achieved. The purpose is to assess the effect of the different experiences on outcomes.*

*F=Please use this code where researchers compare two or more groups of individuals on the basis of their current situation (e.g., 16 year old pupils with high current*

*educational performance compared to those with average educational performance), and look back in time to examine the statistical association with different policies or practices which they have experienced (e.g. class size; attendance at single sex or mixed sex schools; non- school activities etc.).*

*G= please use this code where researchers have used a questionnaire to collect quantitative information about items in a sample or population e.g., parents views on education.*

*H= Please use this code where the researchers try to understand a phenomenon from the point of the 'worldview' of a particular, group, culture or society. In these studies, there is attention to subjective meaning, perspectives and experience'.*

*I= please use this code when the researchers present a qualitative description of human social phenomena, based on fieldwork.*

*J= please use this code if the review is explicit in its reporting of a systematic strategy used for (i) searching for studies (i.e. it reports which databases have been searched and the keywords used to search the database, the list of journals hand searched, and describes attempts to find unpublished or 'grey' literature; (ii) the criteria for including and excluding studies in the review and, (iii) methods used for assessing the quality and collating the findings of included studies.*

*K= Please use this code for cases where the review discusses a particular issue bringing*



<p><i>together the opinions/findings/conclusions from a range of previous studies but where the review does not meet the criteria for a systematic review (as defined above).</i></p> <p><i>L= please use this code when researchers refer specifically to their design/ approach as a 'case study'. Where possible further information about the methods used in the case study should be coded.</i></p> <p><i>M=please use this code where researchers have used documents as a source of data e.g., newspaper reports.</i></p> <p><i>N=Please use this code where practitioners or institutions (with or without the help of researchers) have used research as part of a process of development and/or change. Where possible further information about the research methods used should be coded.</i></p> <p><i>O=please use this keyword for studies which focus on the development or discussion of methods; for example, discussions of a statistical technique, a recruitment or sampling procedure, a particular way of collecting or analysing data etc. It may also refer to a description of the processes or phases involved in developing an 'instrument' (e.g., an assessment procedure).</i></p> <p><i>P= Please use this code where researchers have used data from a pre-existing dataset to answer their 'new' research question.</i></p>	
<p>E.4 How were group comparisons achieved?</p>	<p>E.4.1 Not applicable (not more than one group)</p> <p>E.4.2 Prospective allocation into more than one group, e.g., allocation to different</p>

	<p>interventions, or allocation to intervention and control groups</p> <p>E.4.3 No prospective allocation but use of pre-existing differences to create comparison groups, e.g., receiving different interventions or characterised by different levels of a variable such as social class</p> <p>E.4.4 Other (please specify)</p> <p>E.4.5 Not stated/ unclear (please specify)</p>
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## Section F: Data collection & analysis

F.1 How were the study samples identified/ recruited?	F.1.1 Details
F.2 Was consent sought?	<p>F.2.1 Not applicable (please specify)</p> <p>F.2.2 Participant consent sought</p> <p>F.2.3 Parental consent sought</p> <p>F.2.4 Other consent sought</p> <p>F.2.5 Consent not sought</p> <p>F.2.6 Implicit</p> <p>F.2.7 Not stated/unclear (please specify)</p>
F.3 What data was collected?	F.3.1 Details
F.4 How was the data collected?	<p>F.4.1 test</p> <p>F.4.2 Curriculum-based assessment</p> <p>F.4.3 Focus Group interview</p> <p>F.4.4 One-to-one interview (face to face or by phone)</p> <p>F.4.4 Observation</p> <p>F.4.5 Self-completion questionnaire</p>

	<p>F.4.6 self-completion report or diary</p> <p>F.4.7 Examinations</p> <p>F.4.9 Practical test</p> <p>F.4.10 Other documentation</p> <p>F.4.11 Not stated/ unclear (please specify)</p> <p>F.4.12 Please specify any other important features of data collection</p>
F.5 Are assessments of reliability/ replicability reported?	<p>F.5.1 Yes (details)</p> <p>F5.2 No</p>
F.6 Are assessments of validity reported?	<p>F.6.1 Yes (details)</p> <p>F.6.2 No</p>
F.7 What data analysis methods were used? (qualitative / quantitative)	<p>F.7.1 Explicitly stated (please specify)</p> <p>F.7.2 Implicit (please specify)</p> <p>F.7.3 Not stated/unclear (please specify)</p> <p>F.7.4 Please specify any important analytic or statistical issues</p>

## Section G: Results

G1. What results do the authors report?	G.1.1 Details
G2. What population do the authors aim to extrapolate to?	<p>G.2.1 Not specified</p> <p>G.2.2 Details</p>
<p>G3. What do the authors conclude about the study findings?</p> <p><i>Provide sufficient details here to allow for synthesis phase to be completed</i></p>	G.3.1 Details

## Section H: Quality of the study - Reporting

H.1 Are the aims of the study clear?	H.1.1 Yes (details) H.1.2 No (details)
H.2 Is the methodology adequately reported?	H.2.1 Yes H.2.2 No
H.3 Is the study replicable?	H.3.1 Yes (details) H.3.2 No (details)
H.4 Is there selective reporting? <i>Do the authors report all variables as noted in their aims?</i>	H.4.1 Yes (details) H.4.2 No (details)
H.5 Are there ethical concerns?	H.5.1 Yes (details) H.5.2 No (details)
H.6 Is the methodology justified by the authors?	H.6.1 Yes (details) H.6.2 No (details)
H.7 Is the validity of the research tools established?	H.7.1 Yes (details) H.7.2 No (details)
H.8 To what extent can the research error/bias be ruled out?	H.8.1 almost fully (please specify) H.8.2 a little (please specify) H.8.3 not at all
H.9 How justifiable are the conclusions?  <i>Take the above into consideration and note to what extent the review agrees with the author about the conclusions.</i>	H.9.1 almost fully (please specify) H.9.2 a little (please specify) H.9.3 not at all
H.10 How generalisable are the findings?	H.10.1 Details

## Section I: Weight of evidence

I.1 Taking account of all quality assessment issues, can the study findings be trusted in answering the study questions?	I.1.1 High trustworthiness I.1.2 Medium trustworthiness I.1.3 Low trustworthiness
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<p><i>In some studies it is difficult to distinguish between the findings of the study and the conclusions. In those cases, please code the trustworthiness of this combined results/conclusion.</i></p>	
<p>I.2 Appropriateness of research design and analysis for addressing the REA</p>	<p>I.2.1 High I.2.2 Medium I.2.3 Low</p>
<p>I.3 Relevance of particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question, or sub-questions, of this specific Rapid Evidence Assessment</p>	<p>I.3.1 High I.3.2 Medium I.3.3 Low</p>
<p>I.4 Overall weights of evidence as relevant to the REA</p>	<p>I.4.1 High I.4.2 Medium I.4.3 Low</p>

## Appendix B – Focus Group topic guides

### B1: Rapid Evidence Assessment: Effective approaches and methods in immersion education - Focus Group 1 topic guide

<b>Administrative Details</b>	
Date of focus group	16 February 2023
Individuals in attendance ( <i>code only, not names</i> )	

#### Order of Focus Group

**1. Welcome, thank you for attending, introduce the research team and explain the aims and objectives of the review: (2 minutes)**

The aim of this project is to carry out a rapid assessment of the available evidence about effective approaches and methods in immersion education. The objectives of the project are as follows:

- i) to identify, appraise and summarise the research evidence available in Wales and internationally;
- ii) to draw conclusions that will inform guidance on providing effective immersion education for 3 to 16-year-olds in Wales;
- iii) to make recommendations about areas and research questions that may need to be explored through further research;
- iv) to create a practical and accessible summary that provides guidance to practitioners, trainers and training providers on how to deliver effective immersion education based on the findings of the rapid evidence assessment.

**2. The purpose of the first focus group session is to: (3 minutes)**

- Provide an opportunity for stakeholders to contribute to defining the scope of the work by identifying where focus / more information is required
- Ensure relevance of REA to practitioners
- Point to possible sources for the REA (that will need to go through the same screening process as other sources)

- Provide a basis for the summary for practitioners by collecting information about what is good in current sources that provide advice on immersion education / what to avoid

Focus group 1 is not a space to express an opinion on effective immersion methods - rather, it is a space to gather information on literature on the area that stakeholders are aware of. Neither is it an opportunity to talk about the challenges of providing immersion education more widely, such as lack of funding, lack of resources etc. You will be aware that the group will contribute to a report that will be published, therefore, what is discussed should be kept within the group.

### **3. Introducing the participants: (5 minutes)**

Everyone to introduce themselves – name and role and area in Wales (*this information will not be recorded or reported, other than in a list of the types of roles that contributed to the focus group*)

- 4. The discussion:** (i) Check that everyone is happy for the discussion to be recorded. (ii) Split the group into two or more 'rooms' to discuss the first question depending on the number of participants (up to 4 in each room and one member of the research team in each 'room' to keep a record of the discussion). Discussion for 20 minutes then report back to full group. Repeat the same steps with Question 2 but change the members of each room.

### **Question 1 (30 minutes)**

What research evidence about immersion education do you use to inform your work?

Prompts (for researcher only)

- Do you base your practice on research evidence?
- Publications about immersion education methods/approaches used?
- Publications about methods/approaches for early immersion and/or late immersion education (depending on stakeholders)
- Publications about dealing with learners from a variety of linguistic backgrounds (including those with no Welsh or English skills) and linguistic experiences
- with learners with additional learning needs
- with learners who are economically disadvantaged
- (if time allows) with distance/virtual learning
- Publications about methods/approaches in any other situation?
- (if time allows), are these publications useful? Why / why not?

## **Question 2 (25 minutes)**

With what immersion education approaches and methods would you appreciate further guidance?

Prompts (for researcher only)

- *Gaps in the evidence – particularly in relation to the Welsh context?*
- *Teaching situations (classroom/ virtual) where would you appreciate further evidence or guidance in terms of methods/approaches)?*

## **5. Follow up: advice on preparing a practical and accessible summary (5 minutes)**

Thank everyone for their contribution to the First Focus Group. Explain the following steps:

- Please contact IAITH via email if you wish to answer a question you did not have the opportunity to answer.
- Virtual focus group to be held to discuss and receive comments on a draft summary for practitioners, trainers and training providers.
- We will share a draft of the practical summary in advance of the meeting.
- Confirm the date of the second focus group.



## Appendix B2: Rapid Evidence Assessment: Effective approaches and methods in immersion education - Focus Group 2 topic guide

<b>Administrative Details</b>	
Date of focus group	5 December 2023
Individuals in attendance ( <i>code only, not names</i> )	

### Order of Focus Group

- 1. Welcome, thank you for attending, introduce the research team and remind attendees of the aims and objectives of the review: (2 minutes)**
- 2. Remind participants of what was noted in the invitation regarding confidentiality and the fact that the findings are embargoed until publication (2 minutes):**
- 3. Ensure everyone is comfortable with the Privacy Notice (1 minute)**
- 4. Note the 'rules' for using Teams**
- 5. Aim of the project (2 minutes)**  
Remind everyone that the aim of this project was to carry out a rapid assessment of the available evidence about effective approaches and methods in immersion education. The objectives of the project were as follows:
  - v) identify, evaluate and summarise the available evidence;
  - vi) draw conclusions to inform guidance on the provision of effective immersion education for 3 to 16-year-olds in Wales;
  - vii) propose recommendations on areas and research questions that may need to be explored through further research;
  - viii) create an accessible summary based on the findings of the rapid evidence assessment. The summary will provide guidance to practitioners seeking support on how to deliver effective immersion education, and for trainers and training providers.
- 6. The purpose of the second focus group session, therefore, is to: (2 minutes)**
  - discuss and receive your views and comments on a draft of the summary specifically designed for practitioners, trainers and training providers.

- *Note:* The purpose of the summary is to present the findings and conclusions of the rapid evidence assessment in an accessible way to practitioners and trainers. The summary is not intended to propose which methods or approaches practitioners should implement.

## **7. Scrutiny of the summary (40 - 50 minutes)**

*Check that everyone is happy for the discussion to be recorded (and the reason for recording) from this point onwards.*

### **General comments (10 – 15 minutes)**

- (i) What are your general comments? (design, language, style, terminology, level of detail, length)
- (ii) How could the summary be improved?

### **Detailed scrutiny of the text (15 minutes)**

- (iii) Do you have any specific comments / suggestions for the text on page 1, 2, 3 etc.

### **The approaches and methods (10 minutes)**

- (iv) Does the summary encourage you to further investigate the approaches and methods identified?
- (v) If 'yes', what makes you say this?
- (vi) If no, why?

### **Using the summary (10 minutes)**

- (vii) Would you be likely to use the summary and promote the summary to your colleagues?
- (viii) If 'yes', what makes you say this?
- (ix) If no, why?

### **Closing comments (5 - 10 minutes)**

- (x) Any further general comments to finish?

## **8. Close and next steps (2 minutes)**

Thank everyone for their contribution to the Focus Group and explain the following steps:

- The final report and summary will be published on the Welsh Government website after the end of the project.