Primary-Secondary Transitions: A Systematic Literature Review
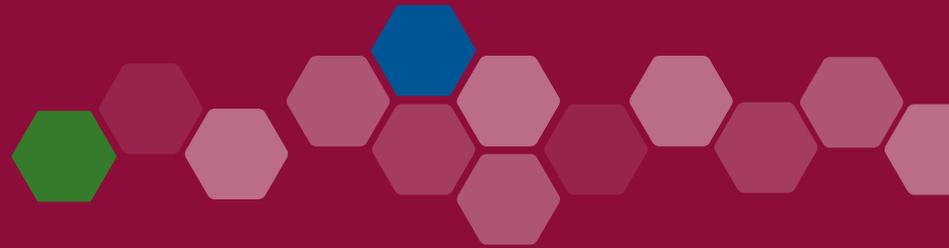
CHILDREN, EDUCATION AND SKILLS

social research

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1. Introduction and Methodology

The University of Dundee has been commissioned by the Scottish Government to undertake this literature review to provide insight into the impact of transitions and the factors that support or hinder a successful transition from primary to secondary school.

The transition from primary to secondary school is viewed as a crucial and significant period in much of the existing literature[1], and has received more focus than any other educational transition[2]. However, Topping[3] noted that despite primary-secondary transition being so important, it was a neglected area of educational research in general. Several studies over the years have identified that there is a 'dip' in attainment at the time of primary-secondary transitions with a lack of expected progress and sometimes regression, especially in literacy and numeracy[4]. Various reasons have been given for this dip in academic attainment such as lack of curricular continuity between schools, differences in pedagogical approaches, differences in expectations of teachers in the two contexts, alongside lowering of self-esteem and mismatch between stage-environment fit[5][6]. Alexander reported that this dip in attainment persists across education systems based on data from various countries, namely Germany, Ireland, Italy, Scotland, Spain, Tasmania and England[7].

The specific research questions addressed in this systematic literature review are:

1. What does the evidence from the UK and other countries suggest about the impact of the primary to secondary transition on educational outcomes and wellbeing?

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[1] Coffey et al., 2013; Jindal-Snape et al., 2005; Maras & Aveling, 2006

[2] Jindal-Snape, 2016

[3] Topping, 2011

[4] Galton, 2010; Galton et al., 1999

[5] Stage-Environment fit refers to the developmental stage and associated needs of a child/young person and to the extent the school (or home) environment is aligned to it.

[6] Eccles et al., 1993; Jindal-Snape, 2016; Jindal-Snape & Miller, 2008

[7] Alexander, 2010

2. What does the research suggest about the experiences of children and young people during their transition from primary to secondary?

3. What are the key factors that make a positive or negative contribution to the primary-secondary transition?

4. What does the evidence suggest about the differential impact of transition on children facing additional educational barriers such as poverty or additional support needs?

5. What does international evidence suggest about the characteristics of educational systems that support or hinder the transitional experience?

1.1 Methodology

We used the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre, 2010) approach to systematic literature reviews (see Figure 1).

1. **Scoping the review:** We started by developing explicit inclusion and exclusion criteria for specifying which literature to include in the review. This included relevance, recency, transparency and reliability/validity (see Table 1).

2. **Searching for studies:** We searched multiple online databases and our search returned 4,635 records for screening: (2,444 from three core databases in the Web of Science (WoS) - Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index; 679 from the Education Resources Education Centre (ERIC); 662 from the British Education Index (BEI); 569 from PsycINFO; and 281 from Applied Social Sciences Index and Abstracts (ASSIA). We also found a further 17 records through searching of other sources. [8]This gave a total of 4,652 records for screening (see Figure 2). We also scanned the contents of key journals in the field such as the British Educational Research Journal, and the American Educational Research Journal. We contacted key and eminent researchers in the field. Given the large volume of published studies that we found, we did not search for "grey" unpublished literature.

3. **Screening studies:** Each piece of literature was screened against the inclusion criteria developed when scoping the review (see Table 1 for

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[8] References within papers, additional papers on that topic within journals and searching for well-known scholars' work.

criteria). By appraising each study against the same criteria and recording the results, the basis for the review's conclusions have been made transparent. Our screening process, which initially comprised reading of abstracts by one team member was conducted in accordance with our inclusion and exclusion criteria and resulted in 4,434 records being excluded for one of five main reasons: it was not a study that was focussed on transition between primary and secondary school; it did not report any empirical data; it was not published in full in the English language; it was a book or dissertation; or it was a report of a review, overview or discussion piece. This left 218 papers and their abstracts were reviewed by three other team members; resulting in rejection of 37 papers for the same reasons as above. A full read of all 181 papers led to further rejection due to the lack of meaningful fit with the research questions. This then left us with 96 studies which have been reported here (see Figure 2).

4. **Describing and mapping:** We described each included study using a standard keywording (coding) strategy such as the EPPI-Centre Education keywording strategy (EPPI-Centre, 2010), and included variables such as population focus, study design and key characteristics related to the research questions (see Appendix 1 for an example). These were used to draw up a 'descriptive map' providing a systematic description of research activity.

5. **Quality and relevance appraisal:** EPPI-Centre weight of evidence (WoE) judgments were applied to each of the included studies. Three components were assessed in order to help derive an overall weighting of evidence score (see Table 2):

a. Methodological quality: the trustworthiness of the results judged by the quality of the study within the accepted norms for undertaking the particular type of research design used in the study. This involved asking questions related to a study's reporting, context, sample, design, reliability and validity of data-collection and analysis (including appropriate number and range of explanatory variables in the statistical models), ethics, sample size, risk of bias resulting from selection and maintenance of sample, and generalisability.

b. Methodological relevance: the appropriateness of the study design for addressing their particular research question/s

c.Topic relevance: the appropriateness of focus of the research for inclusion answering the review question

The following scoring system was used to make assessments for each of the three components assesed: 1 = excellent, 2 = good, 3 = satisfactory, 4 = inadequate.

d.Judgement of overall weight of evidence (WoE) was made based on the assessments for each of the above criteria and by using the same scoring system. Studies classified as medium overall were still included in the synthesis as they met the inclusion criteria for the review, but less reliance was placed on their results. Studies were also graded as: A (directly relevant, UK based); B (probably relevant, non UK based but would equally likely apply to UK settings); C (possibly relevant, non UK but should be interpreted with caution due to strong cultural or institutional differences); D (not relevant, clearly irrelevant due to legislative differences). UK-based studies graded as A were further scrutinised to ascertain their direct relevance (i.e. in terms of context and characteristics of target population). Further details can be requested from main author.

6. **Synthesising study findings:** We used the approach of Narrative Empirical Synthesis (EPPI-Centre, 2010) to bring together the results of the mapping exercise. This mapping provides an accessible combination of results from individual studies in structured narrative summary tables.

7. **Conclusions/recommendations:** We then drew a set of recommendations closely linked to the findings of the synthesis so it is clear the basis on which each recommendation is made. In reporting specific data from studies, we have identified potential limitations of the reviewed studies and proposed a robust design for a Scottish study.

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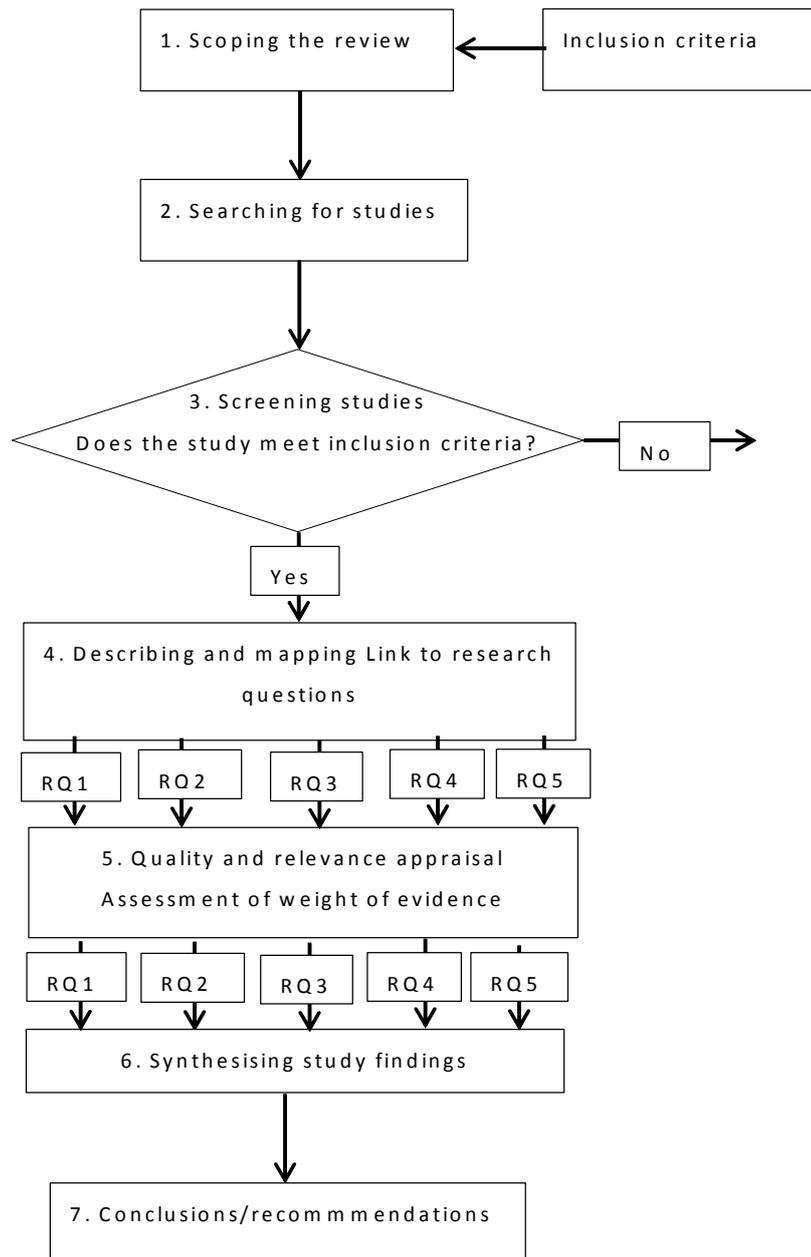
Figure 1: Based on steps of EPPI-Centre Systematic Literature Review

Table 1: Criteria for Inclusion

| Aspect	Criteria
Relevance	Relates directly to the Scottish Government research questions
Search Terms	1. Transition*, 2. Transfer, 3. Mov* *in combination with* i. primary school, ii. elementary school, iii. middle school *in combination with* a. secondary school b. high school c. post-primary (all papers found through these searches were additionally hand searched for disabilit*, additional support need, support need, autism, inclus*, poverty*, etc.; and for a range of educational outcomes, factors, etc.)
Recency	Between 2008 and 2018 to cover the last ten years
Age-range	10-14 (to cover UK and international educational systems)
Geographical spread	International, with the country and educational context clearly stated, with focus on the UK
Research base	Empirical research (either qualitative, quantitative or mixed methods)
Transparency	Methodology of the research should be explicit (e.g. sample size, instruments, analysis)
Reliability/validity	As far as can be determined, the findings upon which the study is based must be valid and reliable, taking into account the type of study, such degree of synthesis and interpretation versus descriptive for qualitative research, mitigating bias
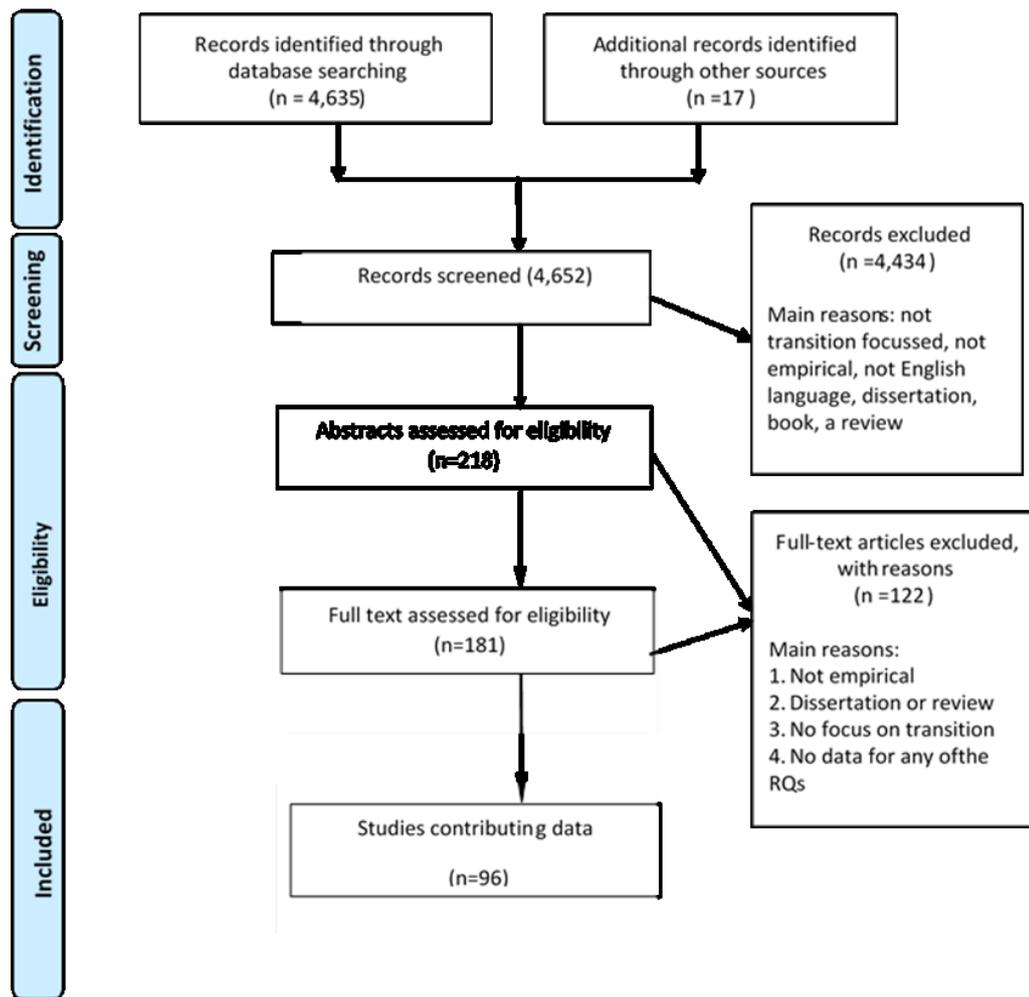
Figure 2: PRISMA flow diagram of study selection

Table 2: Criteria for judging 'weight of evidence'

Level/criterion	Methodological quality	Methodological relevance	Topic relevance
1: Excellent	Excellent research design with clear justification of all decisions: e.g. sample, instruments, analysis. Clear evidence of measures taken to maximise internal and external validity and reliability and reduce sources of bias.	Research questions (RQ) clearly stated. Methodology is highly relevant to their RQs and answers them in detail.	Study is very closely aligned to one of the key review objectives and provides very strong evidence upon which to base future policy/action.
2: Good	Research design clearly stated with evidence of sensible decisions taken to provide valid and reliable findings.	RQs are explicit or can be deduced from text. Findings address RQs.	Study is broadly in line with one of the key review objectives and provides useful evidence.
3: Satisfactory	Research design may be implicit but appears sensible and likely to yield useful data.	RQs implicit but appear to be broadly matched by research design and findings.	At least part of the study findings is relevant to one of the key review objectives.
4: Inadequate	Research design not stated or contains flaws.	RQs not stated or not matched by design.	Study does not address any key research objective.

1.2 Ethics

The team followed our profession's code of practice (General Teaching Council for Scotland, Health and Care Professions Council) and were governed by the University of Dundee Research Ethics Committee protocols (see https://www.dundee.ac.uk/research/governance-policy/ethicsprocedures/ethics/). The team are committed to ethical analysis of the literature and reporting.

1.3 Potential limitations

Although we used systematic literature review and there was cross-checking by team members at all stages, it is possible that we have missed some crucial literature in the search or rejected it based on our (collective) qualitative judgements. Also, we had a larger number of papers than expected; in some cases because we included papers that would normally not have been included by us due to lower Weight of Evidence. However, as they provided some valuable information to respond to the research questions set by the Scottish Government we opted to include this literature.

2. Results and Discussion

2.1 Research Question 1: What does the evidence from the UK and other countries suggest about the impact of the primary to secondary transition on educational outcomes and wellbeing?

The papers reviewed in this section, include nine from the UK, namely two from Scotland, six from England, and one from Northern Ireland. For the next level of proximity for educational system are seven studies from Australia (including one across Australia and Denmark), 13 from USA, and one from Canada, and then distant ones, one each from Japan, Peru and Israel.

Impact of transition on educational outcomes

Fourteen studies provided evidence for school related impacts of transition to secondary school. Nine studies reported on decline in pupils' grades in one or more subjects such as Maths and Reading [1-9]. Eight studies used examination results to measure academic outcomes, whilst in one researchers examined outcomes themselves. These studies varied in sample size and research design. Three studies with the largest sample size and longitudinal data were that of Benner and Graham (2009) [1], Schwerdt and West (2011) [6] and West et al. (2010) [9]. Benner and Graham collected data at eight time points; twice per year, two years in primary school and two in secondary school from 1,979 multiethnic pupils in USA. They used report cards and school records to determine academic outcomes and found that Grade Point Average (GPA) declined and absence increased after starting secondary school. Further, they reported that many pupils struggled throughout secondary school. Using modeling analysis researchers reported links in the decline in grades with school level SES, ethnic diversity and size of school. A study from Scotland that collected data from over 2000 pupils from the last year of primary school to the final years of secondary school reported that pupils who reported more school concerns during the transition to secondary school achieved fewer Standard Grades in later years [9]. Another study in Florida (USA) [6] used eight years of statewide administrative data to report that educational achievement declined when pupils started middle school and declined again when starting high school. However, the sample included in their analysis is not clear from their paper.

Similar outcomes were noted in other studies with smaller samples and shorter longitudinal data [5, 7, 8]. For example, one of the studies with a smaller sample was conducted in USA with 252 pupils and collected data

before and after the move to secondary school using questionnaires [2]. The researchers found that course grades declined significantly across the transition to secondary school and they concluded that this was due to disruption in supportive relationships. Again, another study with a sample of 74 from the USA that used standardised measures to examine pupils' scores over three years of middle school reported that transition to middle school had led to decline in Maths scores [3]. A decline in grades was also noted in a study from England that collected data at two time points in the first year of secondary school, using National Tests of English, Maths and Science at time point 1 and teachers' assessment scores at time point 2 [4].

Although a change in grades was evident in these studies and researchers concluded that a decline in educational outcomes was as a result of primary-secondary transition, the results should be treated with caution as the cause and effect is not clear. Further, most of the samples, especially in the USA, included African American and Hispanic pupils who were noted to be experiencing pre-existing difficulties at school. Some studies have also analysed Socio-Economic Status, gender and other risk factors, and found that these seemed to have an impact on the educational outcomes and increased the likelihood of problems with transitions [e.g., 1, 2, 3, 7].

Other studies reported on the deterioration in attitudes to subjects, such as Mathematics [10]. This could be explained by the decline in academic engagement [2] and motivation [10, 11], especially as absences increased in secondary school [1, 6]. A decline in perceived teacher support and an increase in self-reported school problems [6], were noted along with an emergence of support needs related to academic skills and problem behaviour [13].

Some studies noted that primary-secondary transitions did not result in negative educational outcomes for all pupils. However, they did not report how widespread the impact, or lack of it, was on pupils in their sample. Only one study reported figures; only a third of their total sample of 330 pupils experienced a decline in educational outcomes which was inferred from only a third requiring additional support with academic outcomes and behaviour in secondary school [13].

Impact of transition on wellbeing outcomes

Wellbeing is one of the least well-defined terms and can include emotional and psychological wellbeing, spiritual wellbeing, physical wellbeing and social

wellbeing[9]. On the basis of this broad understanding of wellbeing, we found that 20 studies focussed on wellbeing outcomes; some studies investigated pupils' socio-emotional wellbeing [2, 14], and others depression, anxiety and mental health [19].

Some studies reported that transition had a positive impact on pupils' wellbeing outcomes [14, 15, 16, 17]. For example, an English study collected data from 63 first year secondary school pupils using a self-report questionnaire administered three times over a 10 week period. They measured the correlation between QoL and three basic need variables, namely autonomy, competence and relatedness. The researchers reported improvement in Quality of Life (QoL)[10] for 21% of their sample based on pupils self-reporting over time and found that it was linked to the satisfaction of need for autonomy and relatedness, but not competence [17]. They concluded that the shorter period required for improvement in QoL suggests that psychological adjustment to school transition takes place relatively quickly. Another study also concluded that pupils adapted fairly quickly to secondary school [16]. This study from England collected data from 550 pupils and 569 parents using questionnaires. At the start of secondary school, 84% pupils said they had felt prepared for transitioning to secondary school. Whilst 16% did not feel prepared for moving to secondary school, by the end of the first term only 3% felt worried or nervous. These findings are important as one study found that adaptability had the strongest relationship with achievement in all subjects [18]. There was also evidence to suggest that the transition from primary to secondary school had a broadly positive impact on pupils with ASD, although the sample size was small [14]. Contrary to previous research reporting dip in self-esteem, it was found to not change significantly in one study with 306 Dutch children [15]. Overall, these are an important group of studies as they found results counter to the norm and are useful in changing the negative discourse around transitions to some extent.

On the other hand, other studies have found that primary-secondary transition has a negative impact on pupils' wellbeing outcomes. In an American study with 3,312 White and Black/African American young people surveyed over three and a half years which also included transition to secondary school,

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[9] Toma, M., Morris, J., Kelly, C., & Jindal-Snape, D. (2014). *The impact of art attendance and participation on health and wellbeing: Systematic literature review*. Glasgow: Glasgow Centre for Population Health.

[10] KIDSCREEN, a measure of QoL, has10 dimensions of QoL: physical well-being, psychological well-being, mood and emotions, self-perceptions, autonomy, family relationships, relationships with friends, school environment, bullying and financial resources.

researchers found that school misbehaviour increased over time, while perceived school belongingness decreased [19].The latter is of concern as school belonging has been shown to be important for long term mental health outcomes [20]. Another study that found that a third of the 1,500 pupils in their study who had experienced a 'difficult' or 'somewhat difficult' transition to their new school experienced poorer social and emotional health, including higher levels of depression and anxiety at the end of their first year of secondary school [21]. This becomes even more of an issue for pupils with Additional Support Needs (ASN) as higher anxiety scores for pupils with ASN were found before and after the transition to secondary school [22, 23] and increased anxiety was found to be associated with decreased connectedness to school [24]. It was also found that existing transition practices that were effective for typically developing pupils were not effective for pupils with ASN [23], highlighting the need to provide more individualised support to pupils with ASN.

Summary: Impact of transitions on educational and wellbeing outcomes

The evidence from the UK and other countries suggests that primary to secondary transition has a negative impact on educational outcomes and a mixed impact on wellbeing outcomes.

The key findings related to impact on educational outcomes are:

- All 14 studies that focussed on educational outcomes provided fairly robust evidence that there was a decline in pupils' educational outcomes after they moved to secondary school.

- Eight of these studies used either examination scores or standardised test scores to provide evidence of decline in grades achieved by the pupils after the transition to secondary school, with three providing evidence of a decline over a number of years [1, 6, 9]. However, whether this decline was as a direct result of the transition to secondary school is less clear.

- Three of the eight studies had a sample size of over a 1000 pupils, with others collecting data from a few hundred pupils.

- All studies used statistical analysis to show the changes in grades over time. However, none of the studies with the exception of one [13] reported the proportion of pupils whose grades had declined after the transition to secondary school.

- Some studies reported declines in motivation, school engagement and attitudes towards some subjects, and increase in absence and dropping out. These could potentially explain the reasons for decline in grades, or vice versa.

The key findings for impact on wellbeing outcomes are:

- A small number of studies found either no negative outcomes or some positive outcomes for a small number of pupils.

- Two studies [16, 17] reported that most pupils adapted quickly to secondary school which was found to be important for wellbeing of pupils in another study. However, both studies had small samples and the positive changes were not reported for all pupils.

- Other studies found negative impact of transitions on wellbeing including increase in school misbehaviour, decline in feelings of school belongingness and connectedness, poorer social and emotional health, and higher levels of depression and anxiety.

- Increase in pupils' anxiety during transitions was associated with decreased connectedness to school and decline in perceived school belongingness over time.

Links between educational and wellbeing outcomes in the primary to secondary transition

There is evidence to suggest that there are links between educational and wellbeing outcomes, with some studies noting that wellbeing can have an impact on educational outcomes [25, 26]. Analysing a large secondary longitudinal dataset, Langenkamp [25, 26] found that school ties and social integration, including teacher bonding[11], popularity, and extracurricular participation, affect academic achievement. They also act as a protective factor for vulnerable pupils when they enter secondary school.

These links between educational attainment and wellbeing have been documented well by one of the more robust Scottish studies by West et al.[9]. The study examined the effect of transitions on educational and wellbeing outcomes. They conducted a longitudinal study over approximately nine years, collecting data at three time points, from over 2000 pupils from 135 primary, 43 secondary schools as well as with school leavers.

They measured educational attainment (age 18/19) using the number of qualifications, and self-esteem, depression and anti-social behaviour using standardised scales. They found that around three quarters of the participants had experienced some difficulty during the transition from primary to

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[11] Teacher bonding in this study was measured using three items, namely, teachers treat pupils fairly, how often pupils have trouble getting along with their teachers and whether teachers care about them.

secondary school. Those who had lower ability and lower self-esteem experienced poorer *school* transitions[12]. Those who were feeling anxious, had experienced victimisation in the past, had difficulty forming friends and had concerns about peer relationships, experienced poorer *peer* transitions. Also, those who had concerns during the transition to secondary school went on to achieve a lower number of Standard Grades. They also found that poorer school transition at age 15, predicted negative impact on both educational and wellbeing outcomes. However, as acknowledged by the authors, the data about transition concerns and anxieties were not captured at the first time point, i.e., in the final year of primary school, and pupils were instead asked to reflect on their experiences when they were in the second year of secondary school. Further, the first set of data were collected in 1994 and transition practices might have changed in the intervening 24 years.

Summary: Links between educational and wellbeing outcomes

- There was robust evidence, although based on self-reporting, from three large scale studies (9, 25, 26; two used the same secondary dataset, 25, 26), that bonding with peers and teachers is important to pupils in the transition from primary to secondary school.

- Researchers of these studies argued that if this bonding is positive and good social integration has happened, they helped pupils to be resilient to the transition and accompanying changes.

- However, if this bonding and the overall transition experience are negative, then pupils can experience long term mental health issues and lower educational outcomes; in some cases the latter is the result of the former (9).

2.2 Research question 2: What does the research suggest about the experiences of children and young people during their transition from primary to secondary?

This section focusses on research that investigated the experiences of pupils during their transition from primary to secondary school. We identified a total of 43 studies in the last 10 years that report the experiences of pupils during their transition from primary to secondary school, 23 of which were undertaken

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[12] School concerns during the transition included, amongst others, difficulties with size of school, different teachers, the amount of work. Peer concerns during the transition included difficulties with bullying and making friends.

in the UK. The aspects of pupils' experiences that have been explored in the literature have been thematically grouped and are discussed in terms of: relationships (with peers and teachers); physical environment; academic matters; and engagement and motivation. As can be seen from Table 3, the same aspects of transitions to secondary school can lead to both positive and negative experiences for different pupils, Overall, pupils and parents are mainly concerned with relationships with others, with less concern over academic matters [36]. For example, one study found that secondary schools were chosen based on friendship groups [52]. None of the studies have reported on positive and negative experiences that captured all four aspects noted above. Therefore, currently it is difficult to understand how these aspects might interact with each other, potentially leading to a positive and/or negative experience for the pupil. Similarly, there is little longitudinal research that allows us to ascertain the direction of the relationship between these positive/negative transition experiences and educational and wellbeing outcomes.

Relationships

Perceived and real relationships with peers and teachers were the most discussed aspect in primary-secondary transitions literature. As a result of the transition, pupils reported both positive and negative experiences related to their relationships with peers and teachers. Further, relationships were an important factor in making transitions smooth or difficult. A mixed-methods, longitudinal study involving 258 pupils from both the US and England concluded that pupils' happiness is most influenced by their relationships with peers, followed by their relationship with teachers [35]. Most pupils indicated that familiarisation with their new school environment and people prior to the transition would facilitate good relationships after the transition [36].

Relationships with peers

Several studies have reported on the peer-related concerns that pupils had prior to and after the transition to secondary school. Some of these studies collected data using qualitative methods, such as interviews in England and Scotland with small samples of pupils, parents and professionals [33, 34, 37]. Others involved larger samples with up to 550 children and 569 parents [16] and some researchers have conducted multi-site and mixed methods studies such as Booth and Sheehan who collected data in the US and England [35] . Across this body of research, pupils' worries included losing old friends [33-35], concerns about making new friends [16, 33, 34, 37, 38] especially if they already had negative experiences in primary school [16]. These studies also report that pupils were concerned about bullying [9, 34, 35, 38], moving without any friends from their primary school [36] and dealing with new pupils

who were older and bigger than them [16, 34, 41, 42] (Big Fish Little Pond Effect).

Six studies reported that transition to secondary school had been positive for forming new friendships. This was reported to be due to a wider group of friends [20, 27, 28, 32], positive relationships with new peers [36] and opportunities to transform their identities in the new school [39, 40]. One study reported that pupils had opportunities to make friends with older peers which they saw as a marker of esteem [27].

Relationships with teachers

In the case of relationships with teachers, some concerns were expressed by pupils prior to the transition. These included perception of secondary teachers being stricter [34, 36] and a sense of loss due to leaving behind primary school teachers with whom they had formed a secure attachment [34]. Negative experiences resulted from pupils experiencing different pedagogical approaches in primary and secondary schools [34]; a perception of lack of positive attitudes of secondary school teachers towards the pupils [43]; a lack of respect and trust [42], and secondary school teachers' higher expectations and rules, which were sometimes unspoken [34] and inconsistent [42].

Three studies reported that pupils were positive about the move to secondary school as they liked the clear structure and routine of the secondary school [32], had developed positive relations with new teachers [35] and found the secondary school teachers to be dynamic, fun and knowledgeable [46]. It is worth noting that one of these studies [32] collected data from six pupils with ASD in England who might have preferred the structured nature of the work due to their support needs.

Davis et al. [39] reported on a study conducted across Bulgaria, Cyprus, Greece, Ireland, the Netherlands, Romania, Catalonia/Spain and Scotland. They collected data from 578 professionals but only 34 child and parent interviews took place at three transition stages across the eight countries. The parents and teachers highlighted the need for a good parent-pupil-teacher partnership to facilitate a positive transition that is also inclusive. Therefore, they suggest that the relationship between parents and teachers is important too.

Interestingly, though, a mixed methods study [28] found that pupils' positive appraisals such as new opportunities for friendships and attitudes towards teachers were short-lived. By the second year of secondary school, these attitudes were less significant. This could be explained by the findings from a Norwegian study that found a negative relationship between perceived teacher support and age of the pupils. How positive pupils feel about their

relationships with teachers may be linked to age rather than primary-secondary transitions [29].

Physical environment

This theme includes the physical environment of the school, such as the building and space, and its location. The negative aspects that pupils reported included difficulty coping with the larger environment of the secondary school [9, 16, 33, 35] including concerns about getting lost [34, 47, 48]. Studies that included participants with ASN (or parents and teachers of pupils with ASN) reported that there were additional issues for them, including the increased noise and hustle [31, 49] and concerns about travelling to secondary school [9]. Concerns were raised about discontiuities between how primary and secondary schools are structured, e.g., in Scotland, pupils have one classroom in primary school and in secondary school they have to move to a number of classrooms [34]. However, some pupils found the same aspects positive, such as being able to move between classes [27, 28], increased school population [32, 46], and better and more resources in the secondary school [27, 46].

It is worth noting, however, that in one study, even those pupils who liked the new physical environment in the first year of middle school in the US (largely due to the opportunity to get a locker and change classes – both perceived as indicators of being considered more mature) experienced a lack of fit[13] between themselves and the hectic school climate and teachers by the end of the first year (middle school Grade 7) through to the next year (Grade 8). [28].

Academic matters

In this section the focus is on academic work including the curriculum, homework and assessment. There were mixed views about these aspects during transitions to secondary school. Some studies reported that pupils: found the work in the secondary school more difficult [41]; experienced greater personal responsibility related to academic planning and organization [41]; found the volume of homework was high [9] especially when there seemed to be lack of communication between their teachers; were concerned about tests and assessments [48]; and found there was a lack of curricular continuity and progression [43], including in music [44] and mathematics [45].

Other studies reported the opposite with pupils: enjoying challenging work in secondary school [27, 48]; appreciating the opportunities to learn new and interesting things [50] for growth and development [48] due to a diverse

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[13] Lack of fit is defined as a mismatch between adolescents' developmental needs and the school environment

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curriculum [32]; and feeling being grown up with more responsibility [27, 28]. Please note that one study [28] reported that these positive attitudes were short-lived, declining by the end of the first year.

Engagement and motivation

The reviewed studies noted that after the transition to secondary school, pupils experienced a reduction in school connectedness [51]; an increase in school absences [1]; a decline in positive attitudes towards studying, especially mathematics [10]; and a decline in grades [1] (see also Research Question 1). Another study reported that although absences seem to have increased when considering the data of all 8908 pupils suggesting that transition to secondary school can lead to lowered engagement, this was not the case for a large subset of their sample [55]. They found four reasons for the difference in attendance trajectories, namely: increase in school size promoted increased attendance; moving to secondary school more racially diverse than their middle school led to decline in attendance; having experienced teachers in middle school and even more experienced teachers in secondary schools led to an increase in attendance, and going to a school with lower SES compared to the middle school led to a decline in attendance. However, it is worth considering the extent to which attendance can be proxy for engagement and motivation.

Very few UK studies reported pupils' positive engagement experiences during transitions (e.g., Symonds & Hargreaves [27]) (see Table 3). It is easy to assume that this was a feature of the research studies and how the questions were framed. However, this was not the case and even when standardised scales and/or open-ended questions were used, pupils reported more negative than positive experiences. In this context it is interesting that Makin et al. found that the participants with ASN reported negative experiences regardless of the school they moved to [30] suggesting their needs were not met in mainstream or special schools. Similarly, parental perception of the upcoming transition to secondary school was more negative than positive which was different from those whose children had already started secondary school [31] which may suggest that concerns subside over time.

Summary: Positive and negative experiences of transitions

The reviewed international literature provided a rich picture of pupils' experiences during their transition from primary to secondary school.

- The most discussed aspect of transitions was relationships with peers and teachers. This included concerns about forming positive relationships and the positive impact of good relationships.
- Relationships and perceived attitudes of teachers were predictors of positive/negative experiences.

- The relationship between teacher-parent was also reported to be important.

- Different pupils had different views about the same features of the physical environment of the secondary school. It was suggested that the physical environment of the secondary school may not fit well with the developmental stages of the child/young person.

- Pupils with ASN had additional requirements to those noted by typically developing peers.

- Some studies reported that pupils enjoyed challenging work, whereas others found the work to be too hard.

- Engagement and motivation were found to decline in the reviewed studies. Most studies used attendance records as a proxy for engagement.

- One study reported that declining attendance was related to four factors, namely size of secondary school, diversity of secondary school, teachers' experience and SES area of the secondary school as compared to the primary school. They also reported that for a large number of pupils attendance had not declined.

Table 3: Positive and Negative Experiences of Pupils

	Positive Experiences	Negative Experiences
Relationships with Peers	• Wider group of friendships [20, 27, 32] • Positive relations with new friends [36] • Opportunity to reject prior social roles and transformative for their sense of identity [39, 40] • Opportunities to make friends with older peers as a marker of esteem [27]	• Losing old friends [33-35] • Concerns about making new friends [16, 33, 34, 37, 38, 39] • Bullying [9, 34, 35, 38] • Moving without any friends from their primary school [36] • Dealing with new pupils who were older and bigger than them [16, 34, 41, 42] • (Big Fish Little Pond Effect)
Relationships with Teachers	• Clear structure and routine [32] • Positive relations with new teachers [35] • Dynamic, fun and knowledgeable teachers [46]	• Different pedagogical approaches in primary and secondary schools [34] • Perception of secondary teachers being stricter [34, 36] • Leaving behind primary school teachers with whom they had formed secure attachment [34] • Lack of positive attitudes of secondary school teachers towards the pupils [43] • Lack of respect and trust from secondary school teachers towards pupils [42] • Secondary school teachers' higher expectations and rules, sometimes unspoken [34] and inconsistent rules [42]
Physical environment	• Being able to move between classes [27, 28] • Increased school population [32, 46] • Better and more resources [27, 46]	• Getting lost [34, 47, 48] • Difficulty coping with the larger environment of the secondary school [9, 16, 33, 35], noise and hustle making pupils with ASD feel unsafe [31], Acoustics in certain spaces being unpleasant for a pupil with ASN [49] • Travelling to secondary school [9]

Academic matters	• Challenging work [27, 48], being able to learn new and interesting things in secondary school [50], opportunity for growth and development [48] • Feeling of being grown up with more responsibility [27, 28] • Diverse curriculum [32]	• Harder academic work and inability to do it [41] • Greater personal responsibility related to academic planning and organization in secondary schools [41] • Volume of homework [9] • Concerns about tests and assessments [48] • Lack of curricular continuity and progression [43], including in music [44], mathematics [45]
Engagement and motivation		• Reduced feelings of connectedness with the school [51] • Increase in school absences [1] • Decline in positive attitudes towards studying, especially mathematics [10] • Decline in grades [1] (see also Research Question 1)

2.3 Research Question 3: What are the key factors that make a positive or negative contribution to the primary-secondary transition?

The section focusses on key factors that make a positive or negative contribution to primary-secondary transitions. The findings are split under two broad themes, protective factors and risk factors. Factors are discussed in terms of those related to: individual characteristics; interpersonal relationships (with peers, family and teachers); and the physical and cultural environment of the school. Factors relating to the structure of educational systems are also mentioned briefly but are discussed in detail under 2.5 (RQ5).

Protective factors: Key factors that make a positive contribution

There are several factors involved in how pupils adapt to the transition positively. These are:

- Factors related to pupils
- Factors related to peers
- Factors related to family
- Factors related to teachers
- Environment and school factors

Factors related to individual characteristics of pupils

Whilst several studies have explored how individual characteristics of pupils impact on the transition from primary to secondary, the research also shows that the school environment plays a major role in how children develop the necessary competencies and skills to adapt. Research has explored the following pupil related factors that make a positive contribution:

- ability to control negative emotions [50, 53, 54]
- problem solving skills to effectively negotiate the contextual and social changes [53]
- ability to develop good and stable peer relationships [2, 27, 33]
- confidence in own abilities, child-led transition processes [27, 39] (i.e., the child has agency and voice in matters related to their transitions)
- enjoyment of school life and connectedness to school [27]

- good school attendance that then increases academic engagement [55]

Therefore, opportunities need to be created in nurseries and primary schools for children to learn these academic, social and emotional skills. Ultimately, school environments that support children to achieve and succeed have a positive impact on their transition experience [50].

Further, it is important that schools and education systems fit with the child/young person's developmental stage and needs so that they find the learning at school, and the school climate, to be engaging and motivating. It is also vital that pupils have positive expectations about the transition prior to experiencing it as research suggests that pupils who expected a positive transition were three times more likely to have a positive transition [56].

Factors related to peers

As mentioned earier, researchers have found peer relationships as one of the most important factors that can lead to positive or negative outcomes [59]. For example, peer acceptance, number of friends and quality of friendship before the transition to secondary school contributed significantly to the prediction of adjustment after the move [57, 59]. Further, Kingery et al. [57] found that the relationship between peer acceptance and academic achievement was extremely robust, highlighting that pupils' primary school social interactions play a substantial role in their academic success at secondary school by serving as a protective factor in coping with challenges associated with primary-secondary transitions.

Hammond [33] and Tso and Strnadová [58] suggest that good peer relationships can act as resilience factors. This is also confirmed by a study undertaken by Symonds and Hargreaves [27] who argue that good peer relationships lead to more positive attitudes towards school and emotional engagement with teachers, peers and lessons. Unsurprisingly, Farmer et al. [40] found that less bullying in secondary schools helped too. However, interestingly, based on an analysis of 1995-1996 National Longitudinal Study of Adolescent Health (Add Health) data and the Adolescent Health and Academic Achievement (AHAA) study data from the US, Langenkamp [25] found that pupils who transition with some but not all previous classmates retained previous friendships but also benefitted from making new friends compared to those who move with their entire class or with very few classmates. She reported that they had higher academic outcomes. Further, using the same dataset Langenkamp [26] reported in another paper that social relationships in primary school acted as a buffer against poor academic outcomes in the first year of secondary school; however this was not the case for low-achieving primary school pupils.

Factors related to family

Research suggests that out-of-school factors might be more important than in-school factors during transitions [1, 59], and research to date has focussed on family relationships and interaction [59]. Several key factors relating to family have been found to be important for successful transitions, namely: consistent and ongoing support from parents [59, 60]; stable home environment [33]; responsive and engaged parents [33]; and a parenting style that children and young people perceived to support their autonomy [61]. In an Australian study with just under 2000 pupils undertaken before and after the transition to secondary school in Australia, it was found that pupils who were closer to their parents were more likely to report that they had an easy or somewhat easy transition [59]. Perception of maternal and paternal behaviour that supported autonomy was found to be equally effective; it was positively related to self-esteem and negatively related to depressive symptoms across transition from primary to secondary school [61]. A study in the USA undertook a Social and Health Attachment Survey with 652, mainly ethnic minority, pupils and found that parental control in the form of support and supervision was also found to be associated with higher levels of academic motivation and lower levels of negative behaviour [62].

The extent to which schools involve parents in the transition processes can impact on how well children transition from primary to secondary. Research suggested that schools who employed parent-led or parent-teacher partnership approaches, and where parents were involved as equal partners, were likely to support the child's transition and inclusion of pupils with additional support needs more effectively [39]. However, not all professionals in this cross-EU study [39] agreed that schools should use a parent-led transition approach. Some did not want it to be parent-led because they wanted it to be professional-led. Whereas others did not want it to be parent-led because they wanted to follow a child-led approach to transition practice.

According to MacKenzie et al. [48] another protective factor in the family is an older sibling who attends the same secondary school. They found that this could reduce anxiety and negative attitudes towards the transition from primary to secondary school. However, it is worth noting that their sample comprised all female pupils and the impact on male pupils might be different.

Factors related to teachers

Most of the researchers looking at factors influencing the transition outcomes focus on the teacher's role. Supportive [60] and caring teachers [33], and good teacher bonding [25] have been found to enhance the transition experience. Perceived teacher support was associated with positive perceptions of school climate and academic motivation [62] and teachers' attitudes and abilities were found to affect pupils' integration into secondary

school [50]. Further, teachers who made learning fun and enjoyable [50] enhanced the transition experience; this is crucial as enjoyment was found to be the most important factor behind emotional engagement with peers, teachers and lessons [27]. In an Italian study, Longobardi et al. [64] reported that pupil-teacher relationships can be both a protective and risk factor. They found that the quality of the relationships between pupils and teachers can affect both academic achievement and conduct problems and hyperactive behaviours. Further, Madjar and Chohat [65] found that teachers who: encourage learning and understanding instead of achieving high scores; focus on the individual's achievement rather than comparison of their achievement with their peers; and are responsive and patient when pupils make mistakes, can enhance a pupil's self-efficacy which supports a more successful transition to secondary school. Further, it has been suggested that teachers are effective when they are comfortable with a shift in power dynamics and are willing to allow child- and parent-led transition processes [39].

Environment and school factors

Focusing on school connectedness and belonging, Lester et al. [66] found that feelings of connection to primary school were important for later connections to secondary school and helped reduce any symptoms of anxiety. Vaz et al. [20] found beneficial long term effects of school belongingness on mental health functioning. Further, Vaz et al. [20] recommended that schools should assess pupils' school belongingness and mental health functioning in primary school and share these records to enable appropriate support to those who need it.

Risk factors: Key factors that make a negative contribution

Many of the protective factors operating at the individual, interpersonal and school level have also been found to be associated with negative transition experiences.

Factors related to pupils

According to 74 teachers from six lower secondary schools in Norway, over 30% pupils were seen to have experienced problems with transitions. The teachers reported that pupils did not have successful transitions due to a lack of academic skills, inability to follow directions, and lack of ability to work independently and in groups [68].

There is also evidence to suggest that additional support needs can exacerbate the negative impact of primary to secondary school transition. For example, children with Autistic Spectrum Disorder (ASD) [22, 47] or English as an additional language (EAL) experience more difficult transitions (see also 2.4). Bailey and Baine [53] found that pupils with SEN/ASN can become dependent on adults to support them in primary school, and a lack of

comparable levels of trust, support and comfort at secondary school can lead to difficulties in adjusting. This decrease in pastoral support in secondary school was also noted by Hammond [33].

Factors related to peers

The difficulties related to friendships with peers during transitions have been reported in several other studies as noted under 2.2. For example, Hammond (2016) [33] noted that pupils were anxious about leaving behind and falling out with old friends, making new friends and trying to be part of a new social group.

Factors related to family

Some of the family factors noted earlier under positive transitions, can also be associated with more difficult transitions. For example, Hammond [33] suggested that lack of autonomy at home can have a negative impact on transitions. Another study found that siblings/cousins can worry the child/young person when they share their negative experiences with them prior to the transition to the secondary school [34].

Factors related to teachers

Symonds and Hargreaves [27] noted that teachers may be accountable for a major portion of the decline in attitudes toward school. Pupils in their study in England were concerned about the volume of homework rather than the difficulty level, which they blamed on lack of coordination among teachers. This was also found in a study from Australia where completing both homework and assignments for a number of teachers was difficult for the pupils [50]. Further, differences and discontinuity in assessment [60] and disciplinary practices [34, 60] have also been noted, which contribute to pupils becoming disengaged from school. Teachers also spoke about the organisational discontinuities between primary and secondary school, as well as discontinuity in teaching styles [43]. The discontinuity in moving from managing the expectations of one teacher in primary school to several teachers in secondary school might therefore be a major factor in the transition experience being negative.

Environmental, systemic and school factors

Evangelou et al. [16] reported that legislation can impact on where changes to support the transition process need to be implemented. For example, in some countries, local authorities are responsible for processes which ultimately impact on the transition experience (e.g. coordination of admissions). This study also highlighted that lack of communication between regional areas can be problematic, especially when pupils could be attending primary and secondary schools in different regions and even local authorities. Further,

there were several systemic factors that led to problems with transitions, such as larger school, increased academic demand and having to move and travel to school [33, 34], resulting in pupils finding secondary school to be a very different context [30]. The environment can be intimidating and have an impact on academic motivation and ability to develop friendship networks, thereby minimising social capital that can contribute to positive educational outcomes [69].

According to teachers from a study in the US, the biggest barriers to successful transition were: lack of resources; lack of training especially related to career development planning for pupils with disabilities and facilitating parent/pupil involvement; lack of involvement from all stakeholders including pupils and parents; and lack of structures and systems that could support them to facilitate good transition practice [70]. The school organisation models were again found to be key factors leading to problems with transitions, discussed further under 2.5.

Summary: Key factors that make a positive or negative contribution to primary-secondary transition

The review found several key factors that make a positive or negative contribution to primary-secondary transition. As multiple ecological systems[14] of the child/young person (e.g., peers, school) are involved in supporting or hindering transitions, transition to secondary school is not a straightforward area to research. None of the studies collected data from all significant others/influential individuals within the child's ecosystem.

- There are several factors within the child's ecosystem that can act as a barrier to, or facilitate, a smooth transition to secondary school. Further, the same factor might act as a protective and/or negative factor at different times, and sometimes at the same time.

- Pupils' emotional intelligence, problem solving skills, confidence and engagement were seen to facilitate positive transitions.

- Good relationships with peers, family and teachers were seen to enhance resilience to deal with change.

- Child-family interaction and parent-teacher relations can have an impact on the transition experience.

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[14] Bronfenbrenner (1979, 1992) conceptualised ecological systems theory in terms of the proximal and distal systems ranging from those closest to the individual (such as parents) to those most remote (such as national policy). These systems from proximal to distal are the microsystem, mesosystem, exosystem, and macrosystem. Chronosystem was added at a later date to represent effect of time on all other ecological systems (Jindal-Snape, 2016).

- It was found that pupil and teacher relationships can affect academic achievement, engagement and behaviours (such as conduct and emotional behaviours) and have a substantial impact on whether the transition experience is positive or negative.

- There were mismatches and discontinuities between primary and secondary school teachers' practices that led to a negative transition experience.

- Assessing pupils' school belongingness and mental health functioning in primary school and passing this information to secondary schools was seen to be an important way of supporting them, especially as this could highlight support needs.

2.4 Research Question 4: What does the evidence suggest about the differential impact of transition on children facing additional educational barriers such as poverty or additional support needs?

This section focusses on the experience of the primary-secondary transition for children and young people facing additional educational barriers. The search for this research question was different from other research questions (please see Methodology section). We manually searched all the papers that had met the criteria in the context of primary-secondary transitions and were to be used in this literature review. We used key words such as disabilit*, additional support need, support need, autism, inclus*, poverty to do searches but also highlighted anything that seemed like additional barriers when reviewing the papers. Therefore, it is possible that some papers related to this research question might have been missed if they did not meet our initial criteria for primary-secondary transitions literature.

The majority of the studies about additional barriers were undertaken in the UK. Only five studies were identified as being directly relevant to Research Question 4 as they compared typically developing pupils with those who have additional educational barriers. There was a wider body of literature identifed where the transitions of pupils with an ASN are studied [3, 13, 14, 20, 22, 23, 30-32, 49, 51-53, 58, 63, 71-75, 81, 83-96]. However, this wider body of literature focused only on a sample comprised of pupils with an additional barrier and so it is difficult to provide evidence of differential impact of the transitions. Nevertheless, most authors of these studies have argued that transition is more difficult for pupils with ASN. Two studies from this wider body of literature have been included in this section as they are from Scotland [22, 71].

Of the seven studies discussed here, four were from the UK, one from Ireland and two from Australia (drawing on the same sample of pupils). Four of the studies focussed on disabilities [20, 23, 73, 74]; two involved pupils identified as vulnerable (such as, those who may be in care, are a young carer, or social and emotional difficulties) [71, 72], and one focussed on pupils with Aspergers Syndrome [22].

Two studies reported on the prevalence of anxiety being greater in pupils with disabilities than their typically developing peers [23, 73]. However, Bloyce and Frederickson [72] found that anxieties relating to the transition were no greater for pupils with disabilities than it was for pupils with English as an additional language. Four studies highlighted the mental health and emotional needs of pupils with additional support needs at transition [20, 23, 71, 72, 74]. Vaz et al. [74] suggested that there is a link between pupil's anxiety and mental health, which has a possible negative impact on their academic attainment. Therefore, it has been argued that there should be an emphasis on the transition support of pupils with additional support needs [23, 73], with others also recommending that these transition processes should be personalised to the needs of different groups of pupils [22, 72]. Further, a co-ordinated approach between the schools, with input before the transition from pupils with additional needs (including those at a social disadvantage or with mental health issues) has been reported to be important [20, 74]. Strategies that have been used to support transition to secondary school for pupils facing additional educational barriers include:

- relaxation techniques [22]

- nurture groups (i.e., small classes within a mainstream school where pupils are supported to develop emotional and social wellbeing) [71]

- curriculum bridging units (i.e., schemes of work that start in the primary school and are completed in the secondary school, sometimes taught by the secondary teacher) [23]

- Transfer Support Team intervention where the same support assistant worked with the pupils in their last terms at primary school and again after they moved to secondary school, implementing a scheme of work to prepare the pupil for the transition [72]

The study exploring the Transfer Support Team intervention had a comparison group and it was found that the intervention group's concerns, though much higher than the comparison group's prior to the intervention, reduced to the same level post-intervention. However, none of the studies exploring these intervention strategies collected data over a long period. Therefore, it is unclear whether these strategies were effective in the long term. It has been suggested that transition support should also be provided to family members [22].

Summary: Differential impact of transition on children facing additional educational barriers

The review found little research on the differential impact of additional educational barriers on primary-secondary transitions. However, there is evidence to suggest that:

- Pupils facing additional educational barriers also have additional needs which should be addressed through transition support as indicated above. These pupils benefit from differentiated support provided by schools for their transition to secondary school.

2.5 Research Question 5: What does international evidence suggest about the characteristics of educational systems that support or hinder the transition experience?

This section focusses on international evidence about the characteristics of educational systems that support or hinder the transition experience. Some countries have changed their educational systems to enable smooth transitions, such as middle schools in the US. In this review, apart from two studies [35, 75], we found no other international comparative studies. Further, the authors seem to have made an assumption that the reader knows their context which has resulted in little discussion in reviewed literature of characteristics of educational systems that can support or hinder the transition experience. However, we have tried to unpack what these studies found in order to attempt to provide answers to Research Question 5. We will consider these characteristics of educational systems and their impact under the following themes:

- Age at transition
- Organisational model of the school
- Size of school
- Structural organisation of schools
- Environment of school
- Feeder schools and clusters

Age at transition

One study attempted to study the impact of age at the time of transition to secondary school as previous studies have suggested that puberty might be a contributing factor for negative transition experiences. This study [76] was

conducted in Germany where transition to secondary school takes place after 4th grade, i.e. before the onset of puberty, unlike other countries, including Scotland where pupils transition to secondary school between the age of 11 and 12. Arens et al. [76] aimed to determine whether the decline in pupils' academic self-concept and self-esteem noted in other research was related to the impact of puberty and transition or transition alone. They studied the perception of two groups of pupils prior to the onset of puberty, those in the class before (4th Grade, mean age of sample 9.67, Standard deviation of 0.60) and those in class after (5th Grade, mean age of sample 10.75, Standard deviation of 0.59) transition to comprehensive secondary school. They found that the pupils who had made the transition to secondary school had lower levels of self-esteem, which could be a result of their academic and social experiences. They concluded that age at transition did not lead to the decline in Grade 5 pupils' self-concept (i.e., belief about themselves and their competence) and self-esteem, and that the decline was subject to environment-based transition effects. However, we need to treat the results with caution as they did not follow the same pupils from primary to secondary school. Further, as the researchers themselves noted, they did not measure maturity levels of individual pupils, thereby making an assumption about the onset of puberty based on pupils' age.

Organisational model of the school: Independent vs public schools

Organisational structure of the school, i.e., whether the school is public, independent or faith based, can have an impact on educational and wellbeing outcomes. Vaz et al. [20] looked at differences in transitions for 266 pupils (69 of whom had a disability) from private/independent, Catholic and public/government primary schools in Australia. They concluded that pupils who went to independent primary schools had the highest concurrent academic competence and lowest scores for mental health functioning after the transition to secondary school, even after accounting for personal background factors. They hypothesise that the benefits of independent schooling on academic competence might be attributable to better resources, good school climate and/ or fewer behavioural problems. They also noted that it was the type of primary school rather than the secondary school that had an impact on academic competence after transition to secondary school.

Size of school

The size of primary and secondary schools was found to have an impact on pupils' educational and wellbeing outcomes after transition. In a longitudinal study, with data collected 6 months before and after the transition, Vaz et al. [20] reported that pupils in mid-range sized schools (375–975 pupils) had better outcomes than those in larger schools. Benner and Graham (2009) [1] also found that an increase in school size from primary to secondary was

associated with lower grades and increased absences in the US. They found that pupils had a better sense of belonging in smaller, ethnically diverse schools.

However, as can be seen below, Nielsen et al. [75] suggested that moving to a bigger secondary school was helpful for school connectedness, and socio-emotional outcomes in Australia. It also provided pupils with more opportunities to establish friendships. Similarly, Benner and Wang [55] in the US found that pupils who attended middle and high schools that were small were more likely to show a decline in attendance compared to those whose middle and high schools were large and ethnically diverse. However, additional factors which co-occurred with an increase in school size may also have had an effect. For example, the researchers found that pupils were not only moving to a bigger school but also a school that was more affluent, ethnically diverse, and had more experienced teachers. Therefore, it is to be noted that size was only one variable and other variables such as teacher experience also had substantial impact.

Structural organisation of schools: Through-schools vs physical move and middle school model

Three models were found in the literature that could have an impact on educational outcomes, namely, through-schools, middle schools and schools requiring a physical move to another school.

There can be different types of through-schools, such as ones where pupils study from nursery through to secondary school, nursery through to primary school or primary through to secondary school. Some studies looked at the impact of studying at through-schools and one focussed on through-schools with and without middle schools. In this Australian study [74], the researchers compared academic competence scores of pupils who: (i) followed a traditional primary-secondary school transition; (ii) followed a through-school model *with* a middle school; or (iii) followed a through-school model *without* a middle school. Those who attended a through-school model without a middle school had the highest post transition academic competence scores [74].

Nielsen et al. [75] compared the impact of the Australian education model where pupils move to secondary school between the age of 12-13 to the through-school model in Denmark where pupils did not change schools at any point in their school career. Data were collected from three age groups in both countries; 11–12 year old pupils in line with the age group prior to transition to secondary school in Australia, 13–14 during transition and 15 year-old at post-

transition[15]. In contrast to the study discussed above [74], they found that in Australia there were no statistically significant differences in emotional symptoms, conduct problems or school connectedness with increase in age; whereas in Denmark, low school connectedness, emotional symptoms and conduct problems increased with age. They hypothesised that moving to a bigger secondary school gave Australian adolescents age-stage related independence and a wider group of peers with whom they could make friends. Whereas, in Denmark they remained with with the same peers with whom they might not have had a good relationship. They highlighted that irrespective of the educational system, low school connectedness led to socio-emotional issues.

The second model was that of middle schools. Middle schools, also known as junior high schools in some countries, are the educational stage between primary and secondary schools. One study in the US [77] found evidence that attendance at middle school resulted in worse outcomes, such as greater academic failure rates compared to pupils who studied in K-8 (kindergarten through to grade 8) schools. However, they also found that those who attended K-8 primary school were more likely to attend an elite secondary school, and that this could account for differences in academic outcomes. In contrast, Farmer et al. [40] who studied 36 middle grade rural schools in the US found that pupils who moved to a middle school reported less bullying and better social dynamics.

The third model is that of structural change and movement to another secondary school. A study conducted by Felmlee et al. [69] in the US found that students who experienced a structural transition reported significantly lower levels of social integration and significantly lower grades compared to students who stayed at the same school. Interestingly in Israel, Madjar et al. [11] who studied the trajectories of academic and social motivation of 415 pupils found that those from 'no-transition' (through-schools) schools reported that the pupils who were moving school were seen to be more aware of social aspects as they were going to separate from old friends and had to make new friends. These pupils reported a greater decline in deep learning with an increase instead in their desire to show their ability to others.

Feeder schools and clusters

Studies have also compared systems where pupils move from a primary to a secondary school which has no other primary schools feeding into it compared to being in a primary school that feeds into a secondary school with multiple

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[15] Please note this is the terminology used in the study which is not in line with our definition of transitions as an ongoing process.

primary schools. When investigating this, Langenkamp et al. [26] found that pupils who transitioned to a secondary school with multiple feeder primary schools were less likely to fail a course in the first year of high school, and that this also applied to low-achieving pupils. However, Felmlee et al. [69] noted that mergers of multiple feeder schools came at a greater academic cost than single-school transitions, and that these effects can be seen throughout pupils' high school careers. Further, Temkin et al. [78] found that moving from a single feeder school to a single higher level school did not lead to changes in friendship patterns, whereas transitions from multiple-feeder schools to a single higher level school resulted in diminished friendship stability, increased social distance, and friendship segregation between pupils.

Environmental factors

In addition to exploring features of educational systems that make a difference to the primary to secondary transition, a few studies provided evidence of the impact of environmental factors. In England, some aspects of the educational system and processes are devolved to the local authorities (LA) and as such there was variability in transition practice of the six LAs that were part of the study [16]. For example, there was a difference in the frequency and timing of the start of the interaction between primary and secondary schools; and those secondary schools who had more funding were able to organise more transition events. Whilst this study did not provide evidence of the impact of this variability, other research has found that transitions, particularly for pupils with ASD [30], are highly dependent on several school-level and system-level factors rather than child-level factors [30]. They highlight the importance of involving pupils in choosing school and improving processes to enable timely decisions about secondary school placement. Booth and Sheehan [35] compared the impact of the school climate on pupil transitions through a longitudinal design. "School climate" refers to the quality and character of school life which can include: norms, beliefs, relationships, teaching and learning practices, and organizational and structural features of the school. UK pupils felt significantly safer within their school environments than the US pupils. In both countries, transitions from smaller primary schools to larger populated schools were found to be highly stressful for pupils. As noted earlier, relationships with peers and teachers were again an important predictor of school satisfaction.

Summary: Characteristics of educational systems that support or hinder the transition experience

There is mixed international evidence about the characteristics of educational systems that support or hinder the transition experience.

- The findings about the impact of age at transition are inconclusive and more research is required.

- There was little research about the impact of Independent vs public schools on transition outcomes. However, the single study with this focus suggested that, overall, pupils who went to independent schools had better educational and mental health outcomes. These were attributed to better resources and good school climate. However, this study was conducted in Australia and there are important limitations in generalising these findings to other contexts.

- The findings regarding the size of school suggest that small to mid-range schools led to optimal impact on transitions, and pupils had a better sense of belonging. However, other findings suggested that moving to a bigger secondary provided more opportunities, such as a larger group of peers to choose friends from.

- There were mixed findings about the benefits of through-schools and schools requiring transition to secondary school.

- The findings regarding the impact of one primary school or multiple primary schools feeding into a secondary school on the transition experience were contradictory.

- A supportive and safe school environment where pupils were involved in the transition process was seen to be important for smooth transitions.

3. Conclusion and Recommendations

This chapter provides a summary of key findings emerging from this systematic literature review. The findings point to a number of important recommendations for educational policy and practice and these are also discussed in this chapter. The review highlighted important gaps and methodological limitations in existing literature on the primary to secondary school transition; the final section of this chapter provides a number of recommendations for future research exploring this topic.

3.1 Summary of Key Findings

What does the evidence from the UK and other countries suggest about the impact of the primary to secondary transition on educational outcomes and wellbeing?

- There is fairly robust evidence that pupils' educational outcomes decline after they move to secondary school. However, it is not clear whether this decline is as a direct result of the transition to secondary school.

- There was evidence of a decline in pupils' motivation, school engagement and attitudes, and an increase in absence and dropping out.

- There is evidence of a negative impact of transitions on wellbeing, a decline in feelings of school belongingness and connectedness, poorer social and emotional health, and higher levels of depression and anxiety.

- Therefore, evidence from the UK and other countries suggests that transition is associated with lower educational and wellbeing outcomes. However, we do not know the long-term impact or if these effects are sustained as most studies did not collect data beyond the immediate period of starting secondary school.

- Positive relationships with teachers and peers was considered important for supporting a successful transition from primary to secondary.

What does the research suggest about the experiences of children and young people during their transition from primary to secondary?

- There was more focus in literature on negative rather than positive transition experiences.

- Pupils and parents are primarily concerned with changes in relationships during the transition from primary to secondary school.

- Several studies have explored peer-related concerns, finding that whilst this is often a primary concern of pupils, the transition can also have a positive effect on opportunities for establishing new friendships.

- Concerns relating to teacher relationships are also reported by pupils.

- There is some evidence that a lack of fit between the pupils' developmental stage and the school environment may impact on how pupils experience the transition from primary to secondary.

- There is some evidence that some pupils experience the changes around curriculum, homework and assessment as positive, whilst others find the volume of homework to be problematic.

- Most studies suggest that pupils experience a dip in school engagement and motivation in secondary schools, however it is not clear whether this is due to the transition itself or other developmental changes.

What are the key factors that make a positive or negative contribution to the primary-secondary transition?

- The key factors that make a positive or negative contribution are those situated within the pupil's ecological system, such as the pupil themselves, family, teachers, peers, and environmental and school factors.

- The same factor can act as a protective and/or negative factor at different times, as well as at the same time.

- However, there is no evidence of, if, and how, these factors interact with each other to make a positive or negative contribution.

What does the evidence suggest about the differential impact of transition on children facing additional educational barriers such as poverty or additional support needs?

- There is little research on the differential impact of additional educational barriers on primary-secondary transitions.

- There is some evidence that pupils with additional barriers benefit from differentiated support provided by schools for their transition to secondary school.

What does international evidence suggest about the characteristics of educational systems that support or hinder the transitional experience?

- There is mixed, and at times inconclusive, international evidence about the characteristics of educational systems that support or hinder the transition experience.

- Existing literature has explored: age at transition; impact of Independent vs public schools; size of school; the impact of through-schools versus schools requiring transition to secondary school; and the effect of one primary school or multiple primary schools feeding into a secondary school.

- Regardless of these characteristics, a supportive and safe school environment which involved pupils in the transition process was important for smooth transitions.

3.2 Recommendations for Policy and Practice

Overall, the literature review found that there was robust evidence to indicate a decline in pupils' educational outcomes after they moved to secondary school, along with declines in motivation, school engagement and attitudes towards some subjects, and an increase in levels of school absence. Similarly, there was evidence of a negative impact on wellbeing, including poorer social and emotional health, and higher levels of depression and anxiety. However, whether this impact was as a result of the transition to secondary school and what proportion of pupils experienced this decline were less clear. Further, the link between educational and wellbeing outcomes is not clear.

Although the reviewed literature was primarily international with very few Scottish studies, it provided us with insights that should be helpful for supporting primary-secondary transitions in a Scottish context. Please note that these recommendations are based on existing literature and do not necessarily reflect current policy and practice across Scotland. They represent the views of the authors.

School belongingness, understood broadly as feeling included, respected and supported by others in the school, emerged as important to primary-secondary transition experience. There was evidence of a decline in the feeling of school belongingness following the transition to secondary school. However, promoting school belonging in primary school and facilitating a strong sense of

belongingness in secondary school can have a positive impact on pupils' mental health and school engagement.

> **Recommendation 1:** Schools transition practices should support the development of a sense of school belonging; this is important for pupils' educational and wellbeing outcomes. Exploring pupils' sense of school belonging in primary school before they transition to secondary school may help schools identify those who may experience more difficult transitions.

The literature review also revealed the importance of pupil and teacher relationships for both educational outcomes and wellbeing. Supportive and caring teachers have a positive impact on the experience of transitioning to secondary school.There was robust evidence that good relationships with peers, parents and teachers led to positive and good social integration which helped pupils to be resilient to the transition and accompanying changes. It is therefore important that pupils have multiple positive and stable relationships.

> **Recommendation 2:** Both primary and secondary schools should support pupils in developing strong peer networks through planned activities, such as small group work and assigning peer buddies from secondary schools. They should be encouraged to join a range of activities and clubs in the community and in their schools. Further, it is important that pupils are put in the same secondary school classes with some of their peers from primary school so that they have an opportunity to make new friends.

> **Recommendation 3:** Schools should provide opportunities which enable pupils to form secure attachments with a number of professionals in primary and secondary schools, such as teachers, pupil support workers and guidance staff. Familiarisation with new peers and teachers through organized visits to the new school should be enacted as early as possible, e.g., use of the swimming pool or other facilities in P5 or P6; secondary school staff visiting the primary school over a period of time; residential experience(s) with cluster school pupils (and those anticipated to move from outwith the cluster).

The review also found that there is lack of consistency in the pedagogical approaches used by primary and secondary school teachers. Further, it was reported that pupils believed there was a lack of communication between their secondary school teachers as they found the volume of homework to be a bigger problem than the level of difficulty, with some pupils favouring challenging homework.

Recommendation 4: Better ongoing dialogue is required between primary and secondary schools, as well as within secondary schools, to ensure that there is continuity of pedagogical approach. Primary and secondary school teachers should have opportunities to work in each other's classes so that they are able to understand each other's pedagogical approaches and introduce more consistency. Local authorities and initial teacher education programmes should facilitate opportunities for primary and secondary school teachers to collaborate.

The transition to secondary school often involves experiencing differences in the physical environment of the school. For example, pupils, especially those with ASN, reported feeling concerned about the larger environment of the secondary school. In addition, the transition often involves changes to the structure of the school day. In Scotland, pupils in primary schools tend to stay in one classroom and are taught by one teacher. When pupils move to secondary school, they are taught by multiple teachers and different classes. Overall, the findings about the impact of: the size of school; age at the time of transition to secondary school; through/nonthrough-school; and single/multiple primary moving to one secondary, were inconclusive.

Recommendation 5: It is important that there is a policy level overview of how schools in Scotland should be structured and what resources should be provided to schools to facilitate successful transitions. This could involve efforts to reduce the differences pupils experience between primary and secondary school. For example, pupils could be taught by a number of teachers in the final years of primary school, along with learning to move from one classroom to another.

The review also found that pupils are better able to have a successful transition if they are good at problem solving, can understand and manage their own and others' emotions, and are able to have stable friendships.

Recommendation 6: The school curriculum and teachers' pedagogical approach should encourage problem based learning and learning of emotional and social skills.

Further, it was found that pupils' expectations about transition to secondary school were related to how they then experience the transition. Pupils who expected a positive transition were more likely to have a positive transition. Research to date has primarily focused on the negative aspects of the transition to secondary school. This encourages a negative discourse around transitions with a focus on 'problems' rather than the benefits.

> **Recommendation 7:** The discourse around primary-secondary transitions needs to change at a national level. It is important that at policy and practice level more emphasis is put on celebrating the positive experiences and outcomes as this could lessen the concerns of pupils prior to their transitions.

Parental involvement was found to improve educational outcomes as well as facilitating a successful transition. Parent-led transition processes or schools that had strong parent-teacher partnership approaches were found to be more successful in supporting pupils, especially those with ASN. However, parents were not always included in the transition process.

> **Recommendation 8**: Parents should be involved as equal partners in transition planning and preparation.

Pupils with ASN may have particular needs during the transition to secondary school. For example, there was evidence of pupils with ASN having heightened anxiety during the transition, which then had a negative impact on their mental health and attainment. The anxiety levels increased when there was uncertainty. However, there was also evidence that some pupils with ASN preferred the more structured environment of the secondary school.

> **Recommendation 9:** Schools should appropriately tailor their transition processes for pupils with additional support needs. Schools should also be aware that transitions can trigger additional support needs for some pupils who were previously not identified as having ASN.

However, prior to making policy level or practice changes, it is important that we learn from this systematic literature review and design a robust study to address gaps in our understanding of the primary-secondary transition in the Scottish context. This is the focus of the next section of this chapter.

3.3 Recommendations for Future Research

In this section, we detail key gaps in literature and make recommendations for future research. The literature review provides an insight into the most appropriate research design for a robust study of the impact of primary-secondary transitions.

Firstly, although all the studies collected data before and after the transition from primary to secondary school, only a limited number of studies used a longitudinal design that went beyond the initial period of starting secondary school. Therefore, whilst we understand the short-term transition experience we know less about the long-term impact and if these effects are sustained.

> **Recommendation 1:** A longitudinal design should be used, ideally commencing when the pupils are in P6 and following them until the end of S2 with multiple data collection points over each year (e.g., twice per year towards the start and end of each school year, balanced with not leading to research fatigue for participants).

Most studies reported negative findings with few exploring the positive impact and experiences of transition. This provides an unbalanced picture of the transition to secondary school. It is important that future studies focus on what pupils are looking forward to, in addition to what is worrying them during the transition to secondary school. Further, none of the studies captured all four aspects that were found to play an important role in the experience of transitioning to secondary school, i.e., relationships with peers, parents and teachers; academic matters; engagement and motivation; and the physical environment. Therefore, currently it is difficult to understand how these aspects might interact with each other.

> **Recommendation 2:** Research questions and data collection instruments should focus on both positive and negative aspects of transitions, with specific questions about relationships between the pupils and all significant others, academic matters, engagement and motivation, and the physical environment.

The literature review showed that there are multiple systems (i.e. collections of people and places) involved in supporting or hindering the transition to secondary school. This means that the transition to secondary school is not a straightforward area to research. Crucially, none of the studies collected data from all stakeholders within the child's ecological system. In addition, in the studies we reviewed, community was not mentioned as a protective or risk factor. Therefore, future research should aim to capture data from all people

and places that influence children's development, including information about the role of the community. Robust research designs that collect data from all systems over time are required to fully understand how these systems influence the child's transition as well as how these systems interact with each other to support/hinder a successful transition.

> **Recommendation 3:** Data should be collected from pupils, parents and siblings, significant others in the pupils' and schools' community and professionals.

Further, none of the studies captured data about significant others' transitions which again limits our understading of the interaction of transitions and impact it might have on an individual's transitions. It is important to bear in mind that pupils will be experiencing multiple transitions during the transition to secondary school and will trigger transitions for others such as parents, siblings and professionals (see Multiple and Multi-dimensional Transitions Theory, Jindal-Snape 2016).

> **Recommendation 4:** The research questions in the study should focus on transitions of pupils as well as the transitions they might have triggered for others, and vice versa.

Finally, this literature review identified a number of gaps in the research evidence, including:

- Only a limited number of studies focussed on the differential impact of transition to secondary school on pupils with ASN

- Similarly, a limited number of studies focussed on how the characteristics of educational systems impact on the transition to secondary school

- No study has comprehensively included data relating to pupil characteristics (e.g. ASN or typically developing); education system features; and geographical location (e.g. rural vs urban)

- Only a limited number of studies have collected data from more than one stakeholder group, such as pupils and teachers

> **Recommendation 5:** These gaps require further exploration in future research. In order to disentangle the impact of different factors on the transition to secondary school, research should explore the transition experience across a range of pupils and various education systems. Therefore, the demographics should include rural/urban schools, with (i) through-schools/not through-schools, (ii) different sizes of primary/secondary schools, (iii) moving from one primary to one secondary/several primary to one secondary school (iv) different socio-economic areas, and (v) sample of typically developing children/those with ASN and significant others, such as siblings, parents, teachers.

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