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# Mapping the Methodological Quality of International Primary-Secondary Transitions Research Literature: A Systematic Methodological Review

LITERATURE REVIEW

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## ABSTRACT

This is the first systematic methodological review undertaken of international primary-secondary transitions empirical research. It sought to understand and rate the researcher/s' congruence between their: stated philosophical perspective and methodology; conceptualisation of transitions and methodology; theorisation of transitions and methodology; and the overall quality and rigour of the research. The literature review covered the period 2008–2021. A review of reviews ascertained that no previous studies focused on either the congruence between researcher/s' philosophical stance nor their theorisation of transitions with research methodology. Only one review briefly noted the importance of the congruence between transitions conceptualisation and methodology. Therefore, this review is unique in its purpose and internationally significant.

Five data bases were searched applying specific inclusion criteria (e.g., peer reviewed empirical papers, international, covering the period 2008–2021) resulting in 151 papers. A rigorous and systematic approach was adopted throughout all stages of the research process (searching, screening, describing and mapping, and quality appraisal). 74 papers were cross-checked for quality assurance purposes. A self-developed assessment framework was used in the first phase of analysis. The next phase involved the use of the Mixed Methods Appraisal Tool to assess methodological quality.

Findings indicate that approximately 91% of papers did not state their philosophical perspective. Two thirds of researchers did not provide their conceptualisation of transitions and 59% failed to provide their theoretical perspective. Those studies which offered their conceptualisation and theorisation of transitions were of a higher quality than those which only indicated their conceptualisation or theorisation of transitions.

These findings have implications for researchers to state their conceptualisation and theorisation of transitions. Policy makers and practitioners should be aware of how they understand and action primary-secondary transitions research. As such, this paper provides a unique insight and makes an original and significant contribution to the field.

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Primary-secondary school transitions are critical developmental transitions which can be simultaneously exciting and worrying for children (Jindal-Snape & Cantali, 2019) and significant others who support children during this time (Bagnall et al., 2020). Over primary-secondary school transitions, children experience multiple concurrent and ongoing transitions in their school environment, social interactions, academic expectations, and identity (Jindal-Snape, 2016, 2023). Transitions research since the 1960s (Symonds & Galton, 2014) has focussed on different philosophical perspectives, conceptualisations, theoretical frameworks, and methodological stances (Bagnall & Jindal-Snape, 2023; Jindal-Snape et al., 2020; Jindal-Snape et al., 2021). This is unsurprising, especially given cultural and educational shifts that have taken place within this time period.

Differing philosophical perspectives, conceptualisations and theories have increased researcher/s' sensitivity to the complexity, breadth and nuance of primary-secondary school transitions. Thus, researchers are more adept at understanding and recognising the complexities of transitions than they were in the past (Smyth, 2006). It is acknowledged that differing methods have demonstrated "the potentialities and limitations of particular techniques and procedures" (Grix, 2002, p. 179), providing distinctive ways of approaching the field and the data collected (Richards, 2006).

Further, different philosophical perspectives, conceptualisations (researcher/s' and participant/s') and theoretical frameworks, have implications for research designs, study findings, and interpretations drawn. This is particularly important as previous research designs have led to (1) limited clear benchmarking of outcomes between studies, (2) a misleading negative discourse surrounding primary-secondary school transitions, (3) inaccurate understanding of primary-secondary school transitions as an 'event' as opposed to a 'process', and (4) limiting the potential to develop new or revised theories based on the results (Bagnall & Jindal-Snape, 2023; Jindal-Snape et al., 2021). Together, this can contribute to inequalities in transitions provision in terms of when it is offered, for how long, and what this looks like, which is inhibiting practical and empirical progress within the field (Bagnall & Jindal-Snape, 2023; Jindal-Snape et al., 2021).

More importantly, there can be a *lack of congruence* between different philosophical perspectives, conceptualisations, theoretical frameworks, and methodology, making it difficult to determine the robustness of interpretations drawn from the data. Methodological congruence pertains to the "fit" between the researcher's chosen methodology and their philosophical perspective. Furthermore, the connection between theory, conceptualisation and methodology can also have concomitant implications for ontological and epistemological philosophical decisions in conducting research studies (Chan & Clarke, 2019). Singularly, but also together, lack of congruence between methodology, philosophical perspectives, conceptualisations and theoretical frameworks can limit systematic progress within the field. This presents fewer opportunities to make a positive difference to children's transitions experiences and educational and wellbeing outcomes, in addition to that of their significant others.

The scale and importance of getting primary-secondary transitions right cannot be over-stated, and as a field, it is important that effort is placed on mapping, and critiquing the congruence between different philosophical perspectives, conceptualisations, theoretical frameworks, and methodology. Only then can recommendations be drawn to inform careful planning of coherence within the design of research studies, between methodology *and* philosophical perspective, conceptualisation and theorisation, within primary-secondary school transitions research. This will not only develop richer, robust and trustworthy studies, but also advance the field by contributing to the development of more complex, integrated, emergent and differentiated knowledge (de Melo, 2021). Therefore, a systematic literature review that maps the methodological aspects are crucial. To determine whether such a review exists, we undertook a review of previously published reviews.

## REVIEW OF REVIEWS

As can be seen from the review of existing literature reviews of primary-secondary transitions, only 12 reviews were published between 2008 and 2022; of these none were methodological reviews (Table 1).

NO.	AUTHOR(S)	DATE	TITLE	JOURNAL	METHODO-LOGICAL MAPPING/ REVIEW?	FOCUS ON AREA 1 <sup>1</sup>	FOCUS ON AREA 2 <sup>2</sup>	FOCUS ON AREA 3 <sup>3</sup>	FOCUS ON AREA 4 <sup>4</sup>
1.	Benner	2011	The transition to high school: Current knowledge, future directions	Educational Psychology Review	No	No	No	No	No
2.	Topping	2011	Primary-secondary transition: Differences between teachers' and children's perceptions	Improving Schools	No	No	No	No	Yes, brief overall critique of studies.
3.	Hanewald	2013	Transition between primary and secondary school: Why it is important and how can it be supported	Australian Journal of Teacher Education	No	No	No	No	No
4.	Hughes, Banks, & Terras	2013	Secondary school transition for children with special educational needs: A literature review	Support for Learning	No	No	No	No	Yes, critiqued methodology of the five studies that were included.
5.	Symonds & Galton	2014	Moving to the next school at age 10-14 years: An international review of psychological development at school transition	Review of Education	No	No	No	No	No
6.	Cantali	2017	Moving to secondary school for children with profound and multiple learning difficulties: A review of the literature	PMLD Link	No	No	No	No	No
7.	Pearson, Haycraft, Johnston, & Atkin	2017	Sedentary behaviour across the primary-secondary school transition: A systematic review	Preventive Medicine	No	No	No	No	Yes, undertook methodological quality assessment and study quality scores presented.
8.	van Rens, Haeleermans, Groot, & van den Brink	2018	Facilitating a successful transition to secondary school: (How) does it work? A systematic literature review	Adolescent Research Review	No	No	No	No	No
9.	Evans, Borriello, & Field	2018	A review of the academic and psychological impact of the transition to secondary education	Frontiers in Psychology	No	No	No	No	Yes, briefly to critique the findings.
10.	Jindal-Snape, Hannah, Cantalli, Barlow & MacGillivray.	2020	Systematic literature review of primary-secondary transitions: International research	Review of Education	No	No	Yes, mentioned briefly in the context of longitudinal research design	No	Yes, briefly to critique the findings.
11.	Mumford & Birchwood	2021	Transition: a systematic review of literature exploring the experiences of pupils moving from primary to secondary school in the UK	Pastoral Care in Education An International Journal of Personal, Social and Emotional Development	No	No	No	No	Yes, briefly in the context of data analysis.
12.	Stack, Symonds, & Kinsella	2021	The perspectives of students with Autism Spectrum Disorder on the transition from primary to secondary school: A systematic literature review	Research in Autism Spectrum Disorders	No	No	No	No	No- quality appraisal of studies undertaken but not discussed.

**Table 1** Review of reviews.

1. Congruence between the stated/implied philosophical perspective and the methodology.
2. Congruence between the researcher's conceptualisation of transition and the methodology.
3. Congruence between the researchers' theorisation of transition and their methodology.
4. Quality and rigour of this research.

Further, none of the 12 reviews had considered the congruence between the philosophical perspectives of the studies' authors and the research methodology adopted. Similarly, 11 reviews had not focused on the congruence between researcher/s' conceptualisation of transitions and methodology. The only exception was one review by Jindal-Snape et al. (2020) in which the authors briefly discussed whether the conceptualisation of transitions as an ongoing process would have resulted in more longitudinal studies, with data collection over multiple years and time points. The authors' highlighted that of the 96 papers (from 2008–2018) included in their review, only 46 had reported on studies that used a longitudinal design, with less than one third of these collecting data at more than three time points and over half at two time points. This lack of focus on congruence is not surprising given that a mapping review undertaken by Jindal-Snape et al. (2021) found that most authors, across the world, did not clearly define the conceptualisation of transitions for their studies, and even those who did, did not make it clear whether that had underpinned their research methodology. None of the 12 reviews focused on the author/s' theorisation of transitions and its congruence with methodology.

When it came to reviewing the quality and rigour of the methodology of the included studies, only six reviews highlighted them (namely, Topping, 2011; Hughes et al., 2013; Pearson et al., 2017; Evans et al., 2018; Jindal-Snape et al., 2020; Mumford & Birchwood, 2021). Of these, only two undertook and presented a detailed review of included studies (Hughes et al., 2013; Pearson et al., 2017). The other four included one brief generic statement of quality and rigour (Topping, 2011), one critique of data analysis (Mumford & Birchwood, 2021), and two reviews included critique of methodology when presenting the results (Evans et al., 2018; Jindal-Snape et al., 2020). Some reviews, including the four above and Stack et al. (2021), indicated that they had undertaken a quality appraisal, especially when deciding to include the studies or not, but did not present any data related to that.

Hughes et al.'s (2013) review included five papers on primary-secondary transitions of children with 'special education needs' published between 2000 and 2011. They developed a quality criteria system to rank the included studies, with total possible scores ranging from 0 to 23, with higher scores indicating higher quality. They further provided detailed critique of the methodology of each study. Pearson et al. (2017) included 10 studies in their review, conducted between 1999 and 2015, with a focus on sedentary behaviours across primary-secondary transitions. They assessed the methodological quality of the reviewed papers using a 9 to 10 item quality scale, which measured four dimensions, study population and participation rate, study attrition, data collection and data analysis. They also undertook independent cross-reviews for each paper and presented the quality scores.

None of the reviews in the last 14 years were methodological reviews (see Table 1). Further, given the paucity of reviews that focussed on the congruence between methodology and philosophical perspective, conceptualisation and theorisation, along with limited robust evaluation of the quality and rigour of the studies, the aim of this study was to undertake a methodological review and mapping of international primary-secondary school transitions literature to ascertain the following:

- RQ1** What evidence is there, if any, of congruence between the stated philosophical perspective and the methodology?
- RQ2** What evidence is there, if any, of congruence between the researcher/s' conceptualisation of transitions and the methodology?
- RQ3** What evidence is there, if any, of congruence between the researcher/s' theorisation of transitions and the methodology?
- RQ4** What is the quality and rigour of the research?

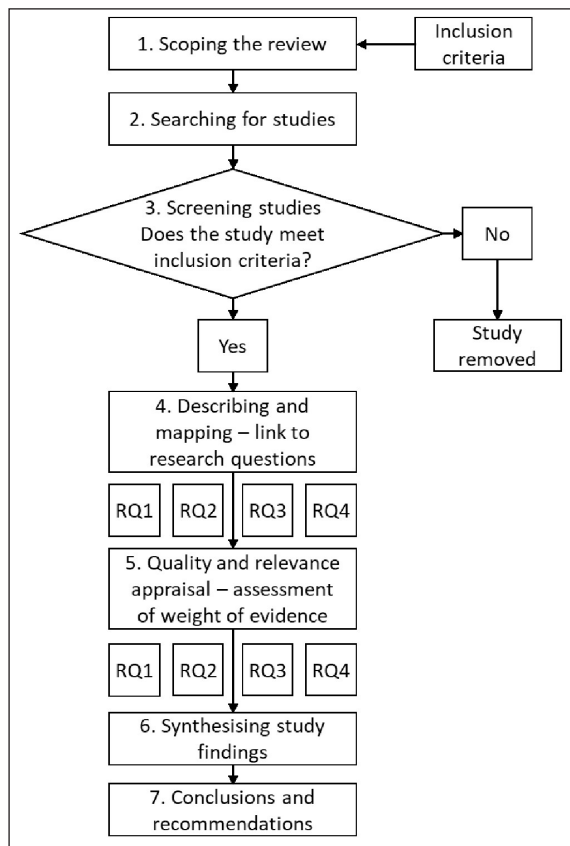
In this context, by methodology we mean research design, data collection methods and data analysis.

## **METHODOLOGY**

### **SYSTEMATIC LITERATURE REVIEW PROTOCOL**

Based on our previous literature review and mapping review (Jindal-Snape et al., 2020; Jindal-Snape et al., 2021), the Evidence for Policy and Practice Information and Co-ordinating Centre's

(EPPI-Centre, 2010) method for undertaking systematic literature reviews was used for the initial search and screening of articles. Subsequently, the Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018) was used to review the included studies. The key steps of the search and subsequent decisions are outlined in Figure 1.



**Figure 1** Based on steps of EPPI-Centre approach to Systematic Literature Review.

**1. Scoping the review:** The authors started with a review of existing literature reviews to scope if there were any on primary-secondary transitions to define the key terms and relevant databases, as well as checking whether similar methodological reviews were available. This guided us in defining inclusion/exclusion criteria to determine literature that should be included in this review (see Table 2).

ASPECT	CRITERIA
Relevance	Relates directly to primary-secondary transitions.
Search Terms	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.
Databases	Web of Science (WoS) (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index); the Education Resources Education Centre (ERIC); British Education Index (BEI); PsycINFO; and Applied Social Sciences Index and Abstracts (ASSIA).
Recency	Between 1 <sup>st</sup> January 2008 and 31 <sup>st</sup> March 2021. The starting date was selected based upon Jindal-Snape et al., (2019) commissioned systematic review covering a ten-year period (2008–2018). This was updated to include the period 2019–2021.
Age-range	10–14 years to include age during transitions from primary to secondary school across international educational systems.
Geographical spread	International, with the country and educational context clearly stated.
Language	English
Research base	Empirical research (either qualitative, quantitative or mixed methods).
Transparency	Explicit methodology (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.

**Table 2** Inclusion criteria.

2. Searching for studies: Only peer reviewed papers were included due to their robustness. We included all empirical studies regardless of the methodologies that met the inclusion criteria (see Table 2). The following databases were searched based on the review of reviews and to cover interdisciplinary perspectives: Applied Social Sciences Index and Abstracts (ASSIA), British Education Index (BEI), Education Resources Education Centre (ERIC), PsycINFO, Web of Science (WoS) (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index). In total, 4,824 records were retrieved for screening (see Figure 2). Reference lists of identified articles were manually searched. Further, relevant journals identified through our knowledge of the field and references found in the literature reviews were searched. These were British Educational Research Journal, British Journal of Special Education, and American Educational Research Journal. The number of additional records obtained through this process was 20, resulting in a total of 4,844 records. The PRISMA flow diagram outlines the process of searching for studies (see Figure 2).

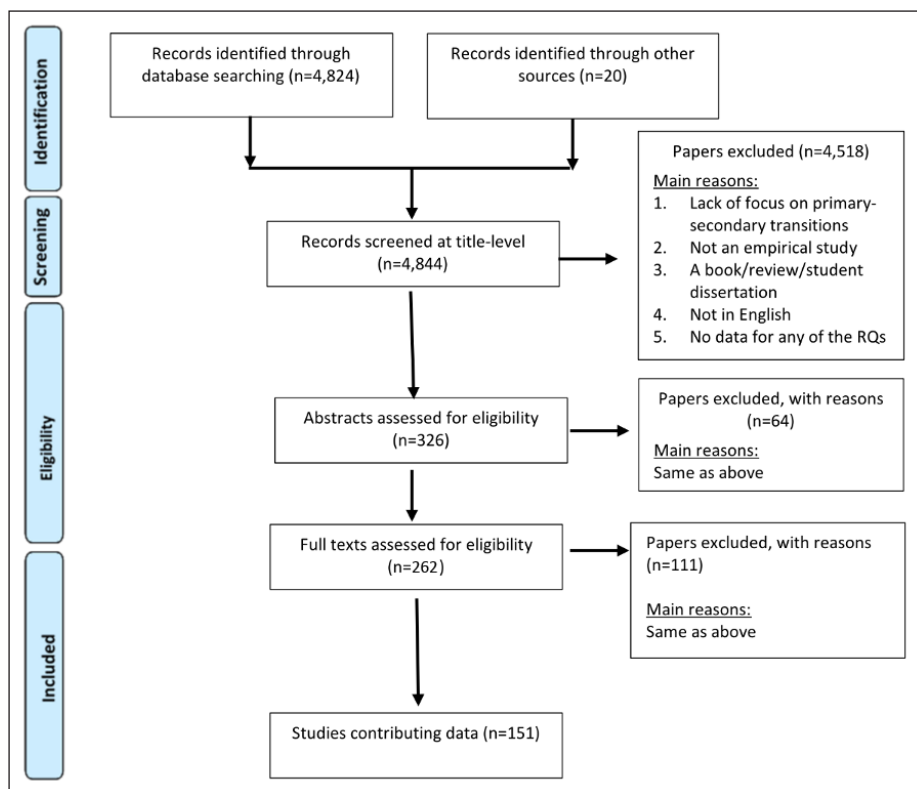


Figure 2 PRISMA flow diagram of study selection.

3. Screening studies: The research team screened the literature using the inclusion criteria (see Table 2). In total, 4,518 records were excluded at title-level due to at least one of these five criteria (see Figure 2): 1. lack of focus on primary-secondary transitions; 2. not an empirical study; 3. a book/review/student dissertation; 4. not in English; 5. no data for any of research questions. This left 326 potential papers for inclusion in the next stage, and their abstracts were reviewed by two authors; resulting in a rejection of another 64 papers based on the criteria above. A full read of 262 papers led to a further rejection of 111 papers due to five main reasons mentioned above. This resulted in 151 studies being included in this review (Figure 2). Throughout this process, the authors carried out further scrutiny and cross-member checking to ensure that no relevant studies were missed and to ascertain the robustness and rigour of the review.

4. Describing and mapping: A standard coding strategy was employed (based on EPPI-Centre, 2010), to extract information about the research questions, sample and research design. A ‘descriptive map’ was produced to create a systematic schema of these variables and their potential links with the systematic review’s research questions. In line with the four research questions, key information was then extracted from each of the 151 papers using a coding scheme. This included 1. stated philosophical perspective and the methodology, 2. researcher’s conceptualisation of transition and the methodology, 3. theorisation of transition and the methodology, and 4. quality and rigour of the research.

## 5. Quality and relevance appraisal: **MMAT**

We researched systematic reviews (Katrak et al., 2004) and methodological critiques of quality appraisal tools for specific types of research including qualitative (Munthe-Kaas et al., 2019), quantitative (Caverlari et al., 2018) and mixed methods (Heyvaert et al., 2013). Based on this review of the literature, we focused on four specific tools: Critical Appraisal Skills Programme (CASP); Joanna Briggs Institute checklists; Weight of Evidence; and MMAT for further scrutiny. The CASP offers eight checklists for different research methodologies (Systematic Reviews, Randomised Controlled Trials, Cohort Studies, Case Control Studies, Economic Evaluations, Diagnostic Studies, Qualitative studies, and the Clinical Prediction Rule). Joanna Briggs Institute provides 13 quality appraisal checklists for Qualitative Research, Quasi-experimental Studies, and Randomized Controlled Trials. A perceived limitation of both the CASP and Joanna Briggs Institute checklists was that they did not include a checklist for mixed methods studies. The Weight of Evidence framework was developed to enable researchers to evaluate the quality and relevance of reviewed research (Gough, 2007). A perceived strength of this approach is that it can be applied to different reviews (e.g., meta-analysis and meta-ethnography) and to studies with different research designs. However, perceived limitations are the lack of sensitivity in the criteria being used; clear guidance for those utilising the framework; and an assumption that there is a shared understanding of each of the criteria.

The critical appraisal tool adopted for this study was the MMAT version 2018 (Hong et al., 2018). MMAT was developed through the findings of a literature review of critical appraisal tools, interviews with users of the tool and an international study with experts (Hong et al., 2018). It appraises the quality of empirical studies focusing on primary research (Abbott, 1998; Port et al., 2014). This includes systematic mixed studies reviews with qualitative, quantitative and mixed methods approaches. Specifically, it appraises the methodological quality of research via the following categories: qualitative research, randomised control trials, non-randomised studies, quantitative descriptive studies and mixed methods studies. As such, MMAT cannot be used for non-empirical, theoretical studies including those involving economic and diagnostic accuracy.

Hong et al. (2018) recommend a minimum of two reviewers to work independently and who have experience of research frameworks. MMAT is formed of two parts: Part one is a checklist, and an explanation of the criteria. Reviewers are advised to respond to two screening questions by responding 'No' or 'Can't tell' (CT) to one or both questions; this might indicate that the papers under review are not empirical studies and cannot be appraised through MMAT. However, if all studies under review are empirical, then reviewers can proceed to Part two. Part two requires reviewers to select the category of the study which they are appraising. Each category has guiding questions which the reviewer must answer based on their critique of the empirical study being reviewed, and can only be answered through: 'Yes', 'No' or 'Can't tell'. Should a response be allocated as 'Can't tell', then this suggests that the paper does not meet the requirements to be answered as 'Yes' or 'No' and would require the reviewer to review companion papers or contact the paper's author(s) for additional clarity. Although Part two has a list of indicators for each criterion, this is not exhaustive, and the reviewing team should agree on additional categories to be uniformly applied. Reviewers are discouraged from calculating an overall score from the criteria ratings. Instead, reviewers are advised to undertake a detailed presentation of the criteria ratings which informs the quality of the studies reviewed. To support this, reviewers might undertake a sensitivity analysis which considers the quality of the studies by contrasting their results. Finally, reviewers are discouraged from including studies with a low methodological quality.

In this study, we utilised MMAT for the four research questions.

To address RQs 1–3, we initially reviewed each study using the questions 'Yes', 'No' or 'Can't tell'. If the question was answered 'Yes', reviewers rated papers using the criteria below. An inductive approach to the analysis was adopted, rather than using previously identified conceptualisations or theoretical frameworks. It is acknowledged that this paper's authors are experienced transitions researchers who took cognisance of their own positionality.



1. Excellent congruence with every aspect of the methodology (research design, data collection methods, data analysis)
2. Good congruence with at least two aspects of the methodology
3. Satisfactory congruence with one aspect of the methodology
4. Unsatisfactory lacks congruence with the methodology

For RQ4, reviewers had to score either RQ 2 and/or 3 as ‘Yes’. Next, reviewers undertook an evaluation of the papers using the specific criteria for each methodological category. If RQ 2 and 3 were graded as ‘No’, then these papers were cross-checked.

*Cross-member checking*

Upon completion of the initial review, reviewers undertook a process of cross-member checking. Cross-member checking was undertaken for a sample of each research category (study design). If cross-checking resulted in a discrepancy between the reviewers, a third reviewer was allocated the script for a final opinion. Finally, during subsequent data analysis some additional cross-member checking was undertaken. In total, 74 papers (49%) were subjected to cross-member checking.

6. Synthesising study findings: Grids were created to capture data for each of the four research questions. Subsequently, a Narrative Empirical Synthesis (EPPI-Centre, 2010) approach was used to synthesise the main findings from the mapping exercise and have been presented under the Results section.
7. Discussion and Conclusions: Finally, as can be seen later, the findings were summarised and recommendations were made. Further, limitations of this study are discussed.

## RESULTS

### RQ1: WHAT EVIDENCE IS THERE, IF ANY, OF CONGRUENCE BETWEEN THE STATED PHILOSOPHICAL PERSPECTIVE AND THE METHODOLOGY?

Of the 151 papers, only 15 papers made explicit reference to the researcher/s’ philosophical perspective and for 13 papers the congruence with methodology was rated as excellent (congruence with every aspect of the methodology, namely research design, data collection methods, data analysis). As can be seen from Table 3, of the 13 papers that were rated to

RESEARCHER/S’ PHILOSOPHICAL PERSPECTIVE STATED EXPLICITLY	CONGRUENCE BETWEEN PHILOSOPHICAL PERSPECTIVE AND METHODOLOGY
15	Excellent 13 Good 1 Unsatisfactory 1
<b>Excellent Congruence (all three aspects align: research design, data collection methods, data analysis)</b>	
<i>Researcher</i>	<i>Philosophical perspective</i>
Dismore and Bailey, 2010	Critical Realist perspective
Bloyce and Frederickson, 2012	
Ashton, 2008	Grounded Theory approach
Maher, 2010	
Sime et al., 2021	Interpretive paradigm
Carmen et al., 2011	Participatory action research
Strand, 2019	Qualitative approach
Knesting et al., 2008	Qualitative case study
Kenyon et al., 2020	Quantitative measures
Bagnall et al., 2021a	Quantitative paradigm
Tso & Strnadova, 2017	Social constructionist epistemology
<b>Good congruence (two aspects align)</b>	
Tobell and O’Donnell, 2013	Ethnographic approach
<b>Unsatisfactory congruence</b>	
Foley et al., 2016	Ethnographic approach

**Table 3** Congruence between the explicitly stated philosophical perspective and methodology.

have excellent congruence, 11 employed qualitative approaches, such as, Grounded Theory approach, Qualitative case study, Critical Realist perspective, Participatory action research, Interpretivist paradigm. However, two papers (Bagnall et al., 2021a; Kenyon et al., 2020) stated that they used a quantitative paradigm and quantitative measures respectively (Table 3).

Tobell and O'Donnell (2013) also explicitly stated their philosophical perspective (ethnographic approach), however the congruence with methodological design was rated as good (i.e., congruence with at least two aspects of the methodology). Although Foley et al. (2016) made their philosophical perspective (ethnographic approach) explicit, the congruence with methodological design was rated as unsatisfactory. The reason for this rating was that they reported that ethnographic research formed the basis of this study while employing a mixed methods approach.

**RQ2: WHAT EVIDENCE IS THERE, IF ANY, OF CONGRUENCE BETWEEN THE RESEARCHER/S' CONCEPTUALISATION OF TRANSITIONS AND THE METHODOLOGY?**

In 129 papers (85%) the authors determined the researcher/s' conceptualisation of transitions. Some of the papers referred to one conceptualisation whereas others had multiple conceptualisations (e.g., Bagnall et al., 2021a referred to Discontinuity due to the multiple changes negotiated, Rites of Passage literature and a Multidimensional process) (Table 4).

CONCEPTUALISATION	NO. REFERENCES	EXAMPLE
Change	73	Rice et al., 2011
Normative	23	Felmee et al., 2018
Period of Risk	12	Benner & Wang, 2014
Life course	9	Vasquez-Salgado & Chavira, 2014
Developmental milestone	8	Heinsch et al., 2020
Discontinuity	5	Knesting et al., 2008
Rites of passage	5	Mowat, 2019
Turning point	4	Langenkamp, 2009
Transfer	4	Nowland & Qualter, 2020
Multiple transitions	3	Longobardi et al., 2016
Life span	2	Burchinal et al., 2008
Major event	2	Fortuna, 2014
5 Bridges	1	Ashton, 2008
Moving from one stage to another	1	Strnadova & Cumming, 2014
Move and adjustment	1	Evangelou et al., 2008
Ecological shift	1	Mandy, Murin, Baykaner, Staunton, Hellriegel et al., 2016

**Table 4** Researchers' conceptualisation of transitions.

Note: The figures in Table 4 will not add up to 129 as some researchers employed more than one conceptualisation.

In addition to looking at researcher/s' conceptualisation of transitions the authors were also interested in the congruence between the researcher/s' conceptualisation of transitions and the methodology.

124 papers, out of 129, (96%) were assessed as being excellent in terms of the congruence between the researcher/s' transitions conceptualisation and the methodology. This included: research design, data collection methods, data analysis, sampling strategy, sample size, participant group and participants' views. Of the qualitative studies, 23 were assessed as having excellent congruence (12 had been cross-checked); for quantitative RCT, 8 were assessed as having excellent congruence (6 had been cross-checked); for quantitative non-randomised, 51 were assessed as having excellent congruence (22 had been cross-checked); for quantitative descriptive, 23 were assessed as having excellent congruence (3 had been cross-checked); and for mixed methods, 19 were assessed as having excellent congruence (9 had been cross-checked).

Examples of papers which were assessed as having excellent congruence from each of the study design categories are detailed in Table 5.

STUDY DESIGN	EXAMPLE	CONCEPTUALISATION
Qualitative	Mowat (2019)	Rites of passage
Quantitative RCT	Blossom et al. (2020)	Change
Quantitative non-randomised	Burchinal et al. (2008)	Life span
Quantitative descriptive	Moore et al. (2020)	Life course & developmental milestone
Mixed methods	Davies et al. (2015)	Normative

**Table 5** Examples of excellent congruence between researchers' conceptualisation and methodology.

Two of the papers were rated as good (Munthe & Thuen, 2009, Neal & Frederickson, 2016); and three were rated as satisfactory (Bunn & Boesley, 2019; Raccanello et al., 2021; Uka & Uka, 2020) in terms of congruence between researcher/s' conceptualisation of transitions and the methodology.

It was apparent that irrespective of the study design or conceptualisation of transitions there was excellent congruence with the methodological approach.

### **RQ3: WHAT EVIDENCE IS THERE, IF ANY, OF CONGRUENCE BETWEEN THE RESEARCHER/S' THEORISATION OF TRANSITIONS AND THE METHODOLOGY?**

Of the 151 papers, 86 papers made no reference to researcher/s' theorisation of transitions, and for 3 papers the researcher/s' theorisation of transition was unclear.

However, 62 papers did refer to the researcher/s' theorisation of transitions; of which 14 papers referred to two theories (e.g., Hannah & Topping, 2013), and 3 papers three theories (e.g., Symonds & Hargeaves, 2016). For papers which referred to two theories, reference to *Stage Environment Fit Theory* (Eccles et al., 1989) and *Self-Determination Theory* (Deci & Ryan, 1985), was most common, which is in line with theoretical understanding within the field, pertaining to the links between the two theoretical frameworks. Researcher/s' theorisation of transitions are presented in Table 6.

As shown in Table 6, it was more common for authors to draw on seminal theoretical frameworks to explain the context of school transitions, developed some decades ago and in different educational and cultural contexts. The most popular theorisation being Eccles and Midgley (1989) *Stage Environment Fit Theory* (n = 17), followed by Bronfenbrenner's (1979, 1992) *Ecological Systems Theory* (n = 10), which is in line with Jindal-Snape et al.'s review (2021) findings. In comparison, only two studies referred to more contemporary transitions theorisations such as Jindal-Snape's (2016) *Multiple and Multi-Dimensional Transitions Theory* (n = 2).

Furthermore, in comparison to drawing on theoretical frameworks developed within transitions literature, such as Jindal-Snape's (2016) *Multiple and Multi-Dimensional Transitions Theory*, many researchers applied theories developed in other domains in different contexts, such as Vygotsky's (1978) *Socio-cultural Perspective on Learning* and Pekrun's (2006) *Control Value Theory of Achievement and Emotions*. These theories map onto outcomes, or factors associated with school transition, such as attainment (Wheelan et al., 2021), or school belonging (Cueto et al., 2010), as opposed to the transition process.

Through selected theoretical frameworks, there were also theoretical differences in the presentation of school transitions as an 'event' (e.g., Lazarus and Folkman's (1984) *Cognitive-Transactional Stress Theory* and Coleman's (1989) *Focal Theory of Change*), as opposed to a 'longitudinal process' of assimilation (e.g., Elder's (1998) *Life Course Theory* and Jindal-Snape's (2016) *Multiple and Multi-Dimensional Transitions Theory*). This can shape research design decisions, such as the selection and operationalisation of self-report measures, as discussed in Bagnall and Jindal-Snape's (2023) systematic literature review. This is reflected in the papers which were rated as having excellent congruence with the research methodology and is more problematic for papers which drew on one theoretical framework (e.g., Mackenzie et al., 2012), as opposed to several (Bagnell et al., 2020) demonstrating poor congruence, which is discussed in detail below.

THEORY	NO. REFER- ENCES	EXAMPLE
Of the 54 papers, which were rated as YES and EXCELLENT CONGRUENCE		
<i>Stage Environment Fit Theory</i> (Eccles et al., 1993)	17	Bagnall et al. (2021c)
<i>Ecological Systems Theory</i> (Bronfenbrenner, 1979, 1992)	10	Strnadova and Cumming (2014)
<i>Self-Determination Theory</i> (Deci & Ryan, 1985)	8	Ellerbrock & Kiefer (2013)
<i>Life Course Theory</i> (Elder, 1998)	7	Blossom et al. (2020)
<i>Resilience Theory</i> (Rutter, 1989)	4	Bagnall et al. (2021a)
<i>Person Environment Fit Theory</i> (Eccles & Roeser, 2011)	3	Virtanen et al. (2019)
<i>Focal Theory of Change</i> (Coleman, 1989)	2	Bagnall et al. (2021b)
<i>Cognitive-Transactional Stress Theory</i> (Lazarus & Folkman, 1984)	2	Mackenzie et al. (2012)
<i>Socio-cultural Perspective on Learning</i> (Vygotsky, 1978)	2	Strand (2020)
<i>Cumulative Stress Model</i> (Simmons & Blyth, 1987)	2	Benner and Wang (2014)
<i>Multiple and Multi-Dimensional Transitions Theory</i> (Jindal-Snape, 2016)	2	Barlow (2021)
<i>Self Efficacy Theory</i> (Bandura, 1997)	2	Lofgran et al. (2015)
<i>Theory of School Organisation</i> (Markham & Aveyard, 2003)	1	Moore et al. (2020)
<i>Taxonomy for Transition Programming Model</i> (Kohler, 1996)	1	Tso & Strnadova (2017)
<i>Person-Oriented Approach</i> (Niemi-virta et al., 2019; Wormington & Linnenbrink-Garcia, 2017).	1	Tuominen et al. (2020)
<i>Contextual Action Theory</i> (Young et al., 1996, 2002)	1	Marshall et al. (2019)
<i>Model of Successful Transition</i> (Evans et al., 2018)	1	Whelan et al. (2021)
<i>Sense of Belonging</i> (Faircloth & Hamm, 2005)	1	Cueto et al. (2010)
<i>Control Value Theory of Achievement and Emotions</i> (Pekrun, 2006)	1	Sainio et al. (2021)
<i>Sociometer Theory</i> (Leary & Baumeister, 2000)	1	Poorthuis et al. (2014)
Of the 6 papers, which were rated as YES and GOOD CONGRUENCE		
<i>Stage Environment Fit Theory</i> (Eccles et al., 1993)	3	Pyne and Borman (2020)
<i>Person Environment Fit Theory</i> (Hunt, 1976)	1	Munthe and Thuen (2009)
<i>Ecological Systems Theory</i> (Bronfenbrenner, 1979, 1992)	2	Bagnall et al. (2021b)
<i>Socio-cultural Perspective on Learning</i> (Vygotsky, 1978)	1	Tobell and O'Donnell (2013)
<i>Self-Determination Theory</i> (Deci & Ryan, 1985)	1	Duineveld et al. (2017)
Of the 2 papers, which were rated as YES and SATISFACTORY CONGRUENCE		
<i>Ecological Systems Theory</i> (Bronfenbrenner, 1979, 1992)	1	McCoy et al. (2020)
<i>Socio-cultural Perspective on Learning</i> (Vygotsky, 1978)	1	Mudaly and Sukhdeo (2015)

**Table 6** Researchers' theorisation/s of transitions.

Furthermore, several of the researcher/s' theorisation of transitions followed a negative discourse, such as Lazarus and Folkman's (1984) *Cognitive-Transactional Stress Theory* and Simmons and Blyth's (1987) *Cumulative Stress Model*. Drawing on Bagnall and Jindal-Snape's (2023) systematic literature review findings, and acknowledging that school transitions can be simultaneously exciting and worrying for children (Jindal-Snape, 2016, 2018), this negative discourse is inaccurate; can be leading; and can have negative empirical, practical and political implications. In addition to this, many theoretical frameworks also positioned school transitions as an individual process, which was represented in more seminal theories such as Deci and Ryan's (1985) *Self-Determination Theory*. These theoretical frameworks similarly do not holistically capture the nuance of this period, and instead place significant emphasis on the child's individual characteristics.

In addition to looking at researcher/s' theorisation of transitions, the congruence between researcher/s' theorisation of transition and the methodology was also examined. Of the 62 papers which provided a theorisation of transitions, 54 papers were assessed as excellent in terms of their congruence between the researcher/s' theorisation of transitions and methodology. This included research design, data collection methods and data analysis. Of

the qualitative studies, 12 were assessed as excellent (6 had been cross-checked); Quantitative RCT, 4 were assessed as excellent (1 had been cross-checked); Quantitative non-randomised, 22 were assessed as excellent (11 had been cross-checked); Quantitative descriptive, 9 were assessed as excellent (3 had been cross-checked); and Mixed methods, 7 were assessed as excellent (4 had been cross-checked).

Examples of papers which were assessed as excellent from each of the study design categories are detailed in [Table 7](#).

STUDY DESIGN	EXAMPLE	THEORIZATION(S)
Qualitative	Barlow (2021)	<i>Self-Determination Theory</i> (Deci & Ryan, 1985); <i>Multiple and Multi-Dimensional Transitions Theory</i> (Jindal-Snape, 2016)
Quantitative RCT	Waters et al. (2012)	<i>Ecological Systems Theory</i> (Bronfenbrenner, 1979, 1992)
Quantitative non-randomised	Kingdon et al. (2017)	<i>Life Course Theory</i> (Elder, 1998)
Quantitative descriptive	Virtanen et al. (2020)	<i>Person-Environment Fit Theory</i> (Eccles & Roeser, 2011)
Mixed methods	Bagnall et al. (2021a)	<i>Resilience Theory</i> (Rutter, 1989)

**Table 7** Examples of excellent congruence between researcher’s theorisation of transitions and methodology.

Of the 62 papers which provided a theorisation of transitions, 6 papers were assessed as good in terms of their congruence between the researcher/s’ theorisation of transitions and two aspects of the methodology. For 4 of these papers the aspect of the methodology which was not congruent was the research design, and for the other 2 papers, the aspect of the methodology which was not congruent was within the data collection methods. Of the Qualitative studies, 3 were assessed as good (2 had been cross-checked); Quantitative RCT, 1 was assessed as good (1 had been cross-checked); and Quantitative non-randomised, 2 were assessed as good (1 had been cross-checked).

Of the 62 papers which provided a theorisation of transitions, 2 papers were assessed as satisfactory in terms of their congruence between the researcher/s’ theorisation of transitions and one aspect of the methodology. For one paper, this was the analysis (McCoy et al., 2020) and for the other the research design (Mudaly & Sukhdeo, 2015). Of the Qualitative studies, 1 was assessed as satisfactory (1 had been cross-checked); and Quantitative descriptive, 1 was assessed as satisfactory (1 had been cross-checked).

#### RQ4 WHAT IS THE QUALITY AND RIGOUR OF THE RESEARCH?

As noted earlier in the section on quality appraisal, to progress to RQ4, reviewers had to score either RQ 2 and/or 3 as ‘Yes’. Of the 151 included review papers, 6 were not rated in RQ4 as both RQ2 and RQ3 were rated as ‘No’ (Bailey & Baines, 2012; Dæhlen, 2017; Keay et al., 2015; Lester et al., 2019; Pallisera et al., 2016; Schwerdt & West, 2011).

The numbers of included papers in each methodological category are detailed in [Table 8](#).

METHODOLOGICAL CATEGORY	NO. IN CATEGORY	EXAMPLE
1. Qualitative	34	Ashton, 2008
2. Quantitative randomized controlled trials	8	Pyne & Borman, 2020
3. Quantitative non-randomized	57	Boone & Demanet, 2020
4. Quantitative descriptive	25	Iimura and Kibe, 2020
5. Mixed methods	21	Booth & Sheehan, 2008
Total	145	

**Table 8** Numbers in each methodological category.

For each of the categories we evaluated whether each of the 5 criteria were ‘Yes’/‘No’/‘CT’. The criteria were specific to each category and are detailed in [Tables 9–13](#).

Using the MMAT critical appraisal tool, primary-secondary transitions studies which adopted a qualitative methodological approach and design were generally found to be of a high standard,

CRITERIA	YES	NO	CT
1.1. Is the qualitative approach appropriate to answer the research question?	34	0	0
1.2. Are the qualitative data collection methods adequate to address the research question?	32	1 (Mudaly & Sukdeo, 2015)	1 (Bunn & Boesley, 2019)
1.3. Are the findings adequately derived from the data?	31	1 (Mudaly & Sukdeo, 2015)	2 (Brewin & Stratham, 2011; Knesting et al., 2008)
1.4. Is the interpretation of results sufficiently substantiated by data?	31	1 (Mudaly & Sukdeo, 2015)	2 (Brewin & Stratham, 2011; Knesting et al., 2008)
1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	29	1 (Mudaly & Sukdeo, 2015)	4 (Brewin & Stratham, 2011; Bunn & Boesley, 2019; Knesting et al., 2008; Sime et al., 2021)

**Table 9** Qualitative methodological category.

CRITERIA	YES	NO	CT
2.1. Is randomization appropriately performed?	7	0	1 (Farmer et al., 2011)
2.2. Are the groups comparable at baseline?	7	0	1 (Farmer et al., 2011)
2.3. Are there complete outcome data?	5	1 (van Rens et al., 2020)	2 (Farmer et al., 2011; Waters et al., 2012)
2.4. Are outcome assessors blinded to the intervention provided?	6	0	2 (Blossom et al., 2020; Farmer et al., 2011)
2.5. Did the participants adhere to the assigned intervention?	7	0	1 (Farmer et al., 2011)

**Table 10** Quantitative randomized controlled trials methodological category.

CRITERIA	YES	NO	CT
3.1. Are the participants representative of the target population?	44	12 (Benner & Wang, 2014; Ding, 2008; Duineveld et al., 2017; Gillison et al., 2008; Jordan et al., 2010; Lester et al., 2013; Lofgran et al., 2015; McIntosh et al., 2008; Poorthuis et al., 2014; Riglin et al., 2013; Skinner and Saxton, 2020; Vaz, Parsons et al., 2014; Vaz, Falkmer et al., 2014; Vaz et al., 2015)	1 (Yadav et al., 2010)
3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	57	0	0
3.3. Are there complete outcome data?	21	24 (Benner & Wang, 2014; Bialecka- Pikul et al., 2019; Bloyce & Frederickson, 2012; Burchinal et al., 2008; Ding, 2008; Duineveld et al., 2017; Engelsa et al., 2019; Gillison et al., 2008; Kingdon et al., 2017; Lemos et al., 2020; Longobardi et al., 2016; Madjar et al., 2018; Mandy, Murin, Baykaner, Staunton, Hellriegel et al., 2016; Martinez et al., 2011; McIntosh et al., 2008; Neal et al., 2016; Ng-Knight et al., 2019; Nowland & Qualter, 2020; Poorthuis et al., 2014; Rice et al., 2021; Riglin et al., 2013; Tuominen et al., 2020; van Rens et al., 2020; West et al., 2010)	11 (Anderson et al. 2020; Arens et al., 2013; Atteberry et. al, 2022; Coelho et al., 2020; Deieso & Fraser, 2018; Lofgran et al., 2015; Naser & Dever, 2019; Rosenblatt & Elias, 2008; Skinner & Saxton, 2020; Vasquez-Salgado & Chavira, 2014; Yadav et al., 2010)
3.4. Are the confounders accounted for in the design and analysis?	39	8 (Benner & Wang, 2014; Bloyce & Frederickson, 2012; Lemos et al., 2020; Lofgran et al., 2015; Rice et al., 2021; Vaz, Parsons et al., 2014; Vaz, Falkmer et al., 2014; Vaz et al., 2015)	10 (Deieso & Fraser, 2018; Felmlee et al., 2018; Jordan et al., 2010; Kingdon et al., 2017; Madjar et al., 2018; Nielsen et al., 2017; Skinner & Saxton, 2020; van Rens et al., 2020; West et al., 2010; Yadav et al., 2010)
3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	56	0	1 (Benner & Wang, 2014)

**Table 11** Quantitative non-randomized studies methodological category.

CRITERIA	YES	NO	CT
4.1. Is the sampling strategy relevant to address the research question?	20	4 (Raccanello et al., 2021; Uka & Uka, 2020; Virtanen et al., 2019; Virtanen et al., 2020)	1 (McCoy et al., 2020)
4.2. Is the sample representative of the target population?	19	6 (Benner et al., 2017; Frey et al., 2009; Longobardi et al., 2019; Raccanello et al., 2021; Strnadova & Cumming, 2014; Uka & Uka, 2020)	0
4.3. Are the measurements appropriate?	21	3 (Deacy et al., 2015; Virtanen et al., 2019; Virtanen et al., 2020)	1 (McCoy et al., 2020)
4.4. Is the risk of nonresponse bias low?	19	2 (Longobardi et al., 2019; Whelan et al., 2021)	4 (Deacy et al., 2015; Moore et al., 2020; Rice et al., 2011)
4.5. Is the statistical analysis appropriate to answer the research question?	20	4 (Benner et al., 2017; Uka & Uka, 2020; Virtanen et al., 2019; Virtanen et al., 2020)	1 (McCoy et al., 2020; Strnadova & Cumming, 2014)

**Table 12** Quantitative descriptive studies methodological category.

CRITERIA	YES	NO	CT
5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	12	8 (Carmen et al., 2011; Davis et al., 2015; Foley, 2016; Finney et al., 2020; Lovette-Wilsona et al., 2022; MacKenzie et al., 2012; Peter & Brooks, 2016; Scanlon et al., 2016)	1 (Booth et al., 2014)
5.2. Are the different components of the study effectively integrated to answer the research question?	19	2 (Dillon & Underwood, 2012; Finney et al., 2020)	0
5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	19	2 (Finney et al., 2020; Scanlon et al., 2016)	0
5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	13	4 (Foley et al., 2016; Finney et al., 2020; Fortuna, 2014; Scanlon et al., 2016)	4 (Bagnall et al., 2021c; Makin et al., 2017; MacKenzie et al., 2012; Peter & Brooks, 2016)
5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	16	5 (Davis et al., 2015; Dillon & Underwood, 2012; Finney et al., 2020; MacKenzie et al., 2012; Scanlon et al., 2016)	0

**Table 13** Mixed methods methodological category.

with 27 papers (79%) rated as 'Yes' for all criteria. In contrast, one study (Mudaly & Sukdeo, 2015) was rated as 'No' for four of the five criteria. This study did not discuss the methods adopted and the authors present their analysis and interpretations within the discussion section. In addition, the findings were deemed to be unclear. Two papers (Brewin & Stratham, 2011; Knesting et al, 2008) were rated as 'CT' for three of the five criteria (see Table 9). Brewin and Stratham (2011) adopted a longitudinal research design collecting data at two time points from one cohort who had already experienced the move to secondary school. In contrast, Knesting et al. (2008) adopted a longitudinal research design collecting data at three time points in the first year of secondary school from pupils and at two time points from parents and teachers. Thus, a minority of papers have detracted from the overall high standard of qualitative studies. The majority of studies adopted a longitudinal design. However, given the small numbers it would be inappropriate to conclude that adopting a longitudinal design impacts on the overall quality of studies in this category.

The critical appraisal of primary-secondary transitions studies which adopted a quantitative randomised controlled trials methodological approach and design were found to be of a good standing. Three out of eight papers (38%) were rated as 'Yes' for all criteria (Pyne & Borman, 2020; Waters et al., 2014a; Waters et al., 2014b). One paper was rated as 'No' for one criterion (van Rens et al., 2020). The van Rens et al. (2020) paper indicated a high level of attrition with 371 children (54%) participating in the post transition data collection. One paper (Farmer et al., 2011) was rated as 'CT' on all five criteria. This was a longitudinal study with schools randomly

assigned to an intervention (teachers received professional development) group and a control group. Thus, a few papers detracted from the overall standard. All studies which were rated as 'No' or 'CT' on at least one criterion were of a longitudinal design. Again, given the small number of studies, it would be inappropriate to conclude that adopting a longitudinal design impacts on the overall quality of studies in this category.

All 57 papers in this category used measurements appropriate to both the outcome and intervention. Fifty-six of the 57 papers administered the intervention as intended. In one paper it was not possible to determine this (Benner & Wang, 2014). In most papers (n = 44) the participants were representative of the target population. Only 21 papers were rated as 'Yes' for having complete outcome data. In contrast, 24 papers were rated as not having a complete data set. In deciding what was rated as a complete outcome data set for longitudinal studies, we used the figure of 10% for up to one year and 25% for more than one year. Most papers (n = 39) were rated as 'Yes' for the criterion of confounders being accounted for in the design and analysis. Eight papers were rated as 'No' and 10 as 'CT' for that criterion. Of the 57 papers, only 14 (25%) were rated as 'Yes' for all criteria. It appears that this was due to issues with attrition in longitudinal studies. This is not a surprising finding in transition studies due to the nature of the phenomenon (Jindal-Snape and Cantali, 2019).

Of the 25 quantitative descriptive studies, there was a range of 19–21 papers rated as 'Yes' in the five criteria. For criterion 4.2, six papers were rated as 'No' as the sample was not considered to be representative of the target population. Three papers were rated as 'No' for three criteria, although not for the same criteria (Uka & Uka, 2020; Virtanen et al., 2019; Virtanen et al., 2020). Similarly, McCoy et al. (2020) was rated as 'CT' for three criteria. Two papers were rated as 'No' in two criteria (Benner et al., 2017; Raccanello et al., 2021). Strnadova and Cumming (2014) was rated as 'No' in one criterion and 'CT' in another criterion. Twelve papers out of 25 papers (48%) were rated as 'Yes' for all five criteria. Six of the 11 papers with at least one criterion rated 'No' adopted a longitudinal design. Two of the 5 papers with at least one criterion rated 'CT' adopted a longitudinal design.

Of the 21 mixed methods studies, there was a range of 12–19 papers rated as 'Yes' in the five criteria. For criterion 5.1 eight papers were rated as 'No' as they did not provide an adequate rationale for using a mixed methods design to address the research question. One paper (Finney et al., 2020) was rated as 'No' for all five criteria. In addition, one paper (Scanlon et al., 2016) was rated as 'No' for four criteria. One paper was rated 'No' for two criteria and 'CT' for one criterion (Mackenzie et al., 2012). Eight papers (38%) were rated as 'Yes' for all five criteria. Five of the 10 papers (50%) with at least one criterion rated 'No' adopted a longitudinal design. Three of the 5 papers with at least one criterion rated 'CT' adopted a longitudinal design.

To further investigate the relationship between researcher/s' conceptualisation and theorisation of transitions and the assessed quality of papers, the authors analysed the number of papers where RQ2 was rated as 'Yes' and RQ3 was rated as 'No' or 'CT' (n = 73); where RQ3 was rated as 'Yes' and RQ2 was rated as 'No' or 'CT' (n = 6); and where RQ2 and RQ3 were rated as 'Yes' (n = 56). Thereafter, the authors calculated the number of papers where all 5 MMAT criteria were 'Yes'. Based on findings, where RQ2 was rated as 'Yes' and RQ3 was rated as 'No' or 'CT', the proportion was 40% (29 out of 73). In addition, where RQ3 was rated as 'Yes' and RQ2 was rated as 'No' or 'CT', the proportion was 33% (2 out of 6). Finally, where RQ2 and RQ3 were rated as 'Yes', the proportion was 52% (29 out of 56).

## DISCUSSION AND CONCLUSIONS

This is the first systematic methodological review of primary-secondary school transitions literature published since 2008. The study has provided us with unique insights to address the four research questions i.e, evidence of congruence between the methodology and stated philosophical perspective, conceptualisation of transition, theorisation of transition, and the quality and rigour of this research. In addition, it raises important questions to be addressed in future research.

However, before the authors recap the unique insights, it is important to acknowledge the limitations of this study. The authors endeavoured to be rigorous in their approach at the different stages of the review and mapping process (searching, screening, describing and



mapping, and quality appraisal) using cross-checking and regular communication amongst team members to discuss queries. Nevertheless, it is acknowledged that the authors may have omitted relevant papers during the searching and screening stages. Papers not written in English were excluded. Nevertheless, there was an international reach of papers (e.g., Albania, Austria, Netherlands, Israel and Finland). Further, to ensure consistency across the reviewing team (with only one reviewer who did not have English as a first language), it was decided to review English language papers. Similarly, the authors may have miscategorised papers during the mapping stages in relation to the philosophical perspective, conceptualisation and theorisation of transitions of the researchers. At the quality appraisal stage, given the number of included papers ( $n = 151$ ), it was not practical for every paper to be assessed by two reviewers as recommended in the guidance (Hong et al., 2018). With this in mind, the authors cross-checked 74 papers (49%). Furthermore, the authors are experienced researchers with familiarity in qualitative, quantitative and mixed methods research. At Stage 1 of the MMAT screening stage, there are two screening questions: are there clear research questions?; and do the collected data allow to address the research questions? The authors contacted the MMAT tool developers to clarify whether research questions were required to move to stage 2 of the process and were advised “We agree with you that several papers don’t present research questions but have clear objectives/aims. We treat research questions and aims similarly” (Q.N. Hong, personal communication, April 12, 2021). As further evidence of approaches taken to mitigate poor consistency in applying the MMAT criteria, in addressing the criterion ‘Are there complete outcome data?’ in categories 2 (quantitative randomized controlled trials) and 3 (quantitative non-randomized), the authors followed MMAT guidance “agree among your team what is considered complete outcome data in your field and apply this uniformly across all the included studies” (Hong et al., 2018, p.4). Attrition rates were set at a maximum of 10% attrition for longitudinal studies of one year or less and 25% for more than one year.

In terms of congruence between the philosophical perspective and methodology, we found that apart from two studies where the focus was on a quantitative paradigm, researcher/s mainly seemed to make their philosophical perspective known when they used an interpretivist paradigm ( $n = 4$ ), grounded theory ( $n = 2$ ), social constructionist epistemology ( $n = 1$ ), critical realist perspective ( $n = 2$ ), qualitative case study ( $n = 1$ ), participatory action research and ethnographic approach ( $n = 2$ ). This raises important questions about why researcher/s who had a positivistic/quantitative paradigm did not consider it necessary to provide their philosophical perspective whereas others did. Does this relate to the position of particular paradigms being considered to be more established than others to the extent that they are considered to be the default position? Or is it because in certain paradigms there is greater emphasis on the researcher/s’ positionality and hence the importance of highlighting their worldview from the start? Or is it the case that researcher/s using interpretivist/grounded theory etc. want to place themselves away from the previously dominant paradigms and philosophical perspectives? These are questions that cannot be answered by a literature review but highlight implications regarding potential areas for future research.

Most importantly, it is of concern that 136 papers had not stated their philosophical perspective. This inhibits our understanding of whether there is congruence between the researcher/s’ worldview and methodological decisions made by them, creating uncertainty about the rigour of the studies (Chan & Clarke, 2019). The potential implications here are that these studies may not be as rigorous and thus are limiting the development of the field.

When considering the congruence between conceptualisation of transitions and methodology, the authors found that they were able to ascertain researcher/s’ conceptualisation in 85% ( $n = 129$ ) of papers. Across these papers, a total of 16 different conceptualisations became apparent; a total of 154 mentions. It is important to be mindful that some studies referred to more than one conceptualisation. Change as transition was evident as the conceptualisation being used the most (47%), with the next highest frequency being normative (15%). Of these 129 papers, a significant majority ( $n = 124$ , 96%) were assessed as having excellent congruence between conceptualisation and methodology. It is important to highlight that although the methodology used in the studies varied, there was a good match between a range of conceptualisations and methodology. Further, the robustness of this analysis was established due to a high degree of cross-checking (49%) between the authors of this study.

A clear implication is that despite this congruence, conceptualising transitions as change, for instance, can lead to research that investigates childrens' transition experiences only at particular times, when the biggest change might be envisaged, i.e., before leaving primary school and soon after starting secondary school. This limits our understanding of transitions as it focusses on the period when things are in a state of flux for children, their families and significant others. From other studies it is evident that children adapt to moving schools over time and collecting data over multiple time points across primary and secondary school are more likely to provide us with a full picture (Gilbert et al., 2021; Jindal-Snape & Cantali, 2019). As can be established from this paper's review of reviews, the current study is the only one to date which has explored researcher/s' transitions conceptualisation and methodological stance. Therefore, an implication for future researchers is to explicitly state their conceptualisation of transitions in their publications.

Overall, only in 62 (41%) papers, researcher/s presented their theorisation of transitions with 14 referring to two theories. This lack of theorisation is compounded by researcher/s using theories which were: developed outside the context of transitions; generated some decades ago; used uncritically without an attempt to develop or acknowledge the researcher/s'/children's particular educational or cultural contexts; adopting a negative and unbalanced discourse; and located transitions outcomes within the child (although some also looked at the role of the environment and significant others).

Despite these issues, it was found that 54 of the 62 papers were excellent in terms of the congruence between researcher/s' theorisation of transitions and the methodology they had adopted. Again, this was irrespective of the theorisation and methodology used.

Given that theorisation of a key concept, transitions in this case, is essential to drive the methodology, it is important that researcher/s carefully consider the theory(ies) underpinning their research and ensure it grounds every aspect of their study. For example, in some studies researcher/s referred to it in the introduction but not again (Jindal-Snape et al., 2021). Also, it is worth noting, as highlighted by this paper's review of reviews, the current study is the only one to date which has explored researcher/s' theorisation of transitions and congruence with methodological stance. A clear implication of these findings is that the field will not develop in a robust fashion as any subsequent researcher who uses these studies to inform their work will be basing their research on a weak theoretical foundation. Further, this raises implications as to the conclusions and recommendations of subsequent studies. If subsequent research does not address this issue, then the field will be placed in a vacuum of constraint; thus limiting the progress and criticality of the topic.

The use of MMAT provided the authors with a robust approach to reviewing the quality and rigour of each study using criteria most relevant to the methodological approach adopted by the researcher/s. A range of methodologies has been used within primary-secondary transitions research, the highest frequency being quantitative non-randomized (39%) and the second highest frequency being qualitative (23%). The authors found that a high proportion of qualitative studies were rigorous and of good quality (79%) based on the number of papers where all 5 criteria were rated as 'Yes'. Next in rank ordering were quantitative descriptive studies with 48%. Third equal in rank order were quantitative randomized controlled trials and mixed methods studies with 38% considered to be good quality. The lowest ranking was for studies employing a quantitative non-randomized methodology with 25%.

Looking at the intersectionality between RQ1 and RQ4, it is an interesting and illuminative finding that qualitative studies were ranked top of the five study design categories based on the percentage of studies rated as 'Yes' for all criteria. Linking that to the finding that qualitative researchers are more likely to articulate their philosophical stance (13 out of the 15 papers), one could argue that this results in higher quality papers as assessed using the MMAT tool. However, given that this represents only 38% of studies in the qualitative category, it is difficult to reach a firm conclusion.

Findings appear to indicate that there is a relationship between researcher/s' conceptualisation and theorisation of transitions and methodological quality. Those researcher/s who offered both their conceptualisation and theorisation of transitions were appraised as being higher quality than those that only provided either (1) their conceptualisation or (2) their theorisation of transitions. Furthermore, findings support the conclusion that where researcher/s only

offer their conceptualisation of transitions this results in enhanced quality compared to those who solely indicated their theoretical perspective. However, there were only 6 papers in the category where only theorisation was offered, and as such the authors are unable to reach a firm conclusion in this regard.

Only one third of researchers provided their conceptualisation of transitions and 41% offered their theoretical perspective. Based on these findings the authors would encourage researchers to provide their conceptualisation and theorisation of transitions to enhance the quality of their studies and further the field of transitions research. In addition, due to the relatively low number of researchers who offer both their conceptualisation and theorisation of transitions, an implication is that it is important that policy writers and practitioners are mindful of how they interpret and implement transitions research findings in their respective fields. This could be the focus of future research.

Therefore, as this is the only study that has unpacked the quality and rigour of research in such a systematic manner, it offers a unique contribution to the field of transitions research and, as such, has significant implications for policy and practice.

## DATA ACCESSIBILITY STATEMENT

Data analysis was performed on previously published articles.

## ETHICS AND CONSENT

This research did not involve human participants and therefore did not require institutional ethics approval.

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## COMPETING INTERESTS

Elizabeth F. S. Hannah is Deputy Editor of IJELT.

William D. Barlow is a member of the *Primary-Secondary School Transitions* special issue editorial team.

Charlotte Bagnall is a member of the *Primary-Secondary School Transitions* special issue editorial team.

Divya Jindal-Snape is Editor-in-Chief of IJELT and a member of the *Primary-Secondary School Transitions* special issue editorial team.

All four authors were removed from the review process to ensure independent review and editing.

## AUTHOR CONTRIBUTIONS

All authors contributed to the design of the study. DJ-S, CB, EFSH undertook different phases of the literature search; DJ-S carried out the review of reviews; EFSH, WDB, CB carried out appraisal and cross-checking of the reviewed papers; and all authors contributed to drafting the article. EFSH and WDB should be considered co-first authors.

## EDITORIAL AND PEER REVIEW INFORMATION

**Editor(s):** Lisi Gordon

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