Origins, methods, and advances in qualitative metasynthesis

Elizabeth Nye[1][*], G. J. Melendez-Torres[1], and Chris Bonell[2]

[1]*Department of Social Policy and Intervention, University of Oxford, Oxford, UK*

[2]*Social Science Research Unit, UCL Institute of Education, London, UK*

*Correspondence to Elizabeth Nye, Barnett House, 32 Wellington Square, Oxford, OX1 2ER, UK. Email: elizabeth.nye@spi.ox.ac.uk.

Word count: 11,786

1

Abstract

Qualitative research is a broad term encompassing many methods (Dixon‑Woods, Fitzpatrick, and Roberts 2001, Evans 2002). Critiques of the field of qualitative research argue that while individual studies provide rich descriptions and insights, the absence of connections drawn between studies limits their usefulness. In response, qualitative metasynthesis serves as a method of interpreting and synthesising qualitative findings across individual studies. More than a broad summary, metasyntheses are not meant to 'sum' all available data; rather, qualitative metasyntheses present new perspectives on topics through interpreting findings from different qualitative studies to create 'third-level' findings for the advancement of both knowledge (Jensen and Allen 1996, Sandelowski 1993) and theory (Glaser and Strauss 1967, Atkins et al. 2008). The diversity of opinion on qualitative metasynthesis is mirrored in its practice. Several different approaches to qualitative metasynthesis have emerged, with most connected to the meta-ethnographic procedures originally outlined by Noblit and Hare (1988). This paper: (1) discusses the key philosophical and methodological issues in the literature on qualitative metasynthesis, (2) highlights key methods that are used in qualitative metasynthesis, (3) illustrates qualitative metasynthesis using six worked examples related to different educational topics, and (4) offers an overview of where the field is going.

Keywords: qualitative metasynthesis, meta-ethnography, reciprocal translation, lines-of-argument synthesis

2

Introduction

This paper addresses qualitative metasynthesis as it has been applied in the field of education. Broadly speaking, qualitative metasynthesis is the systematic review and additional level of interpretation of primary qualitative research studies. While much of the recent methodological development of metasynthesis has occurred in the field of public health, educationalists Noblit and Hare (1988) drew attention to this line of research with their seminal book on meta-ethnography. Meta-ethnography—or, the translation concepts and metaphors across studies—has thus formed the basis for subsequent iterations and adaptations of qualitative metasynthesis, and we will examine meta-ethnography in the context of the historical impetus for qualitative metasynthesis. Then, we will discuss the key philosophical and methodological issues in the literature on qualitative metasynthesis, highlight key methods that are used in qualitative metasynthesis, illustrate six worked examples of qualitative metasynthesis related to different educational topics, and offer an overview of where the field is going.

A brief description of qualitative methodologies

To understand the complexities of qualitative metasynthesis, it is first necessary to engage in a discussion of the core paradigmatic and methodological aspects of qualitative research. Due to the diversity of views on what is qualitative research and how to conduct it, this brief description helps to frame the subsequent discussion on qualitative metasynthesis, as it is grounded in primary qualitative research.

Entrenched in an interpretive paradigm that perceives multiple, socially constructed realities (Jensen and Allen 1996, Sandelowski 1993), qualitative research is the line of inquiry into how people interact with and interpret the world (Atkins et al.

2008, Barroso et al. 2003). It is "the exploration of meanings of social phenomena as experienced by individuals themselves, in their natural context" (Malterud 2001, p. 483). As a whole, qualitative methods aim to understand meaning rather than quantify the effects or distributions of parameters (Green and Thorogood 2009).

Qualitative research is a broad term that encompasses a variety of methods, including ethnography, focus groups, interviewing, and observation (Dixon‑Woods, Fitzpatrick, and Roberts 2001, Evans 2002). Green and Britten (1998) explain that qualitative research allows for the investigation of "attitudes, beliefs, and preferences, and the whole question of how evidence is turned into practice" (p. 1230). As such, qualitative research deals with non-numerical data analysis, focusing instead on narrative data analysis through themes and concepts (Dixon‑Woods, Fitzpatrick, and Roberts 2001, Evans 2002).

Qualitative research is hardly monolithic in its intersecting and overlapping approaches to data collection and analysis data. Overall, a common thread is an interpretive epistemology—an epistemology that aims to understand, for example, how people interpret a phenomenon, perceive a particular issue or problem, or account for a certain behaviour (Green and Thorogood 2009). This interpretive epistemology has been called 'hermeneutic', or understanding the object of study as both parts and whole through experiences and understandings contained in collected data (Zimmer 2006). For example, social realists believe that collected data represents a concrete, commonly shared reality—a perspective arguably more positivistic than interpretive (Fine 1993). Critical realism modifies social realism to note that phenomena exist at different 'levels', including the level at which they concretely occur and the level at which people

4

experience them, with qualitative data focusing on accounts of these phenomena (Houston 2001). Social constructionism dispenses with the idea of commonly experienced reality and instead studies how people construct this reality (Green and Thorogood 2009, Riegler 2005). A 'strong' version of social constructionism holds that all in the world is socially constructed, while a 'weak' version of this epistemology addresses the construction of social structures and phenomena (Houston 2001). Phenomenology addresses the specific 'lifeworlds' of interview subjects by understanding how they relate to and understand specific phenomena, often through presentation of substantial detail and examination of how subjects process their own understandings (Suddaby 2006, Schutz 1962).

Symbolic interactionism deserves special attention, as grounded theory—one of the most widely used approaches to qualitative data analysis was developed by the symbolic interactionists Barney Glaser and Anselm Strauss. Originally developed from a social constructionist standpoint, symbolic interactionism examines how the 'situated self' understands the different dimensions of the lived world as a set of interactions through which meaning is produced and ascribed, with these ascribed meanings called 'symbols' (Fine 1993). These meanings produce interactions, themselves altering the meanings informing them (Blumer, 1992). Symbolic interactionism is a framework, rather than an epistemology or a theory—an approach to sociological analysis instead of a 'way of knowing' (Annells 1997, Suddaby 2006). Research oriented by a symbolic interactionist framework takes as the object of analysis the meanings embedded in the interactions between actors, and how these intersect to produce a social process (Corbin and Strauss 2008). Because symbolic interactionism is a framework rather than an

epistemology, researchers have used various interpretive epistemologies in grounded theory research. While Glaser (2002) posits that grounded theory can be used across epistemologies, Charmaz (2006) argues that grounded theory must be oriented in a social constructionist epistemology to remain true to its original conception. On the other hand, several major grounded theory exponents, while preserving a symbolic interactionist framework, have moved towards an essentially positivist approach (Annells 1997, Corbin and Strauss 2008).

Grounded theory analysis begins with open coding, a close reading of small parts of the data to identify common concepts in different sources, and to understand data in depth (Green and Thorogood 2009). From this, a starting set of codes—or labels attached to the data that identify an idea the data expresses—is systematically assigned to all the data fragment-by-fragment. This coding scheme is constantly updated through constant comparison with newly analysed data during 'axial coding', in which the data are examined to see how codes relate to each other and point to underlying, higher-order 'concepts', into which codes are collapsed (Corbin and Strauss 2008). Corbin and Strauss then describe the process of generating 'categories', an even higher-order set of abstractions that are theoretically saturated collections of concepts. These categories have 'properties'—concepts representing different aspects of the category—and 'dimensions', concepts representing how the properties of the category might vary across different respondents. Throughout analysis, the process should be methodologically auditable, both through generation of frequent memos recorded by the analyst and through records of decisions from open coding to the final theory (Corbin and Strauss

2008, Finfgeld‑Connett 2010, Kearney 2001). Introduced in the 1960s, grounded

theory became a dominant force in Western qualitative research (Thorne et al. 2004).

Three other approaches to qualitative data analysis deserve brief mention here.

The first is thematic analysis, which is a method for the identification of themes within

the data. This method proceeds systematically through interviewing; examination of

data; clustering into themes that are relevant, auditable, and reliable themes; and

presentation of these themes (Saldana 2009). The second method, which is closely

related to thematic analysis, is framework analysis, originally developed for rapid

analysis and policy relevance (Green and Thorogood 2009). Framework analysis

proceeds similarly, but accommodates large amounts of data through mapping of

identified themes. Themes may be defined inductively or deductively, depending on the

research team's needs (Pope, Ziebland, and Mays 2000). Finally, Miles and Huberman

present a method of cross-case analysis that proceeds through the steps of 'data

reduction', 'data display', and formulation of conclusions (Miles and Huberman 1984,

Miles and Huberman 1994). This method is helpful for comparing and contrasting data

both within and across cases. While all three methods are relevant for elaboration of

recurring patterns in the data, they do not invite consideration of underlying themes,

perceptions, and processes in the way grounded theory does. The inductive and

deductive processes of searching for latent concepts and categories through open coding

and axial coding, the imperative to theoretical saturation, and the symbolic interactionist

framework orienting grounded theory towards an explicit examination of social structures

invite a depth and focus of analysis other methods might lack.

Across approaches, qualitative research focuses on descriptive, rather than statistical, power. Qualitative studies often eschew large sample sizes for samples capturing a diversity of thought and approaches. Studies frequently stop data collection when data no longer generates substantively new insights (Bowling 2009). Instead of seeking to describe a population phenomenon from a statistical sample, qualitative researchers often seek to capture a broad range of experiences in an effort to find the unifying themes and concepts that tie a variety of experiences together, or that separate some participants from others. Glaser and Strauss (1967) labelled this point 'theoretical saturation'. The goal is not to develop statistical correlations in which one variable predicts another, but to develop explanations of social phenomena useful in a variety of situations. This is 'analytic generalizability', wherein the study results are analysed in light their conceptual and descriptive power, and whether they describe hypotheses consistent with other studies (Mills, Durepos, and Wiebe 2010). This prioritisation of conceptual richness over statistical generalizability poses a problem for those seeking to comprehend and simultaneously understand the findings of several qualitative studies that point to the same object of study.

Foundations and logic of qualitative metasynthesis

The field of qualitative research currently lacks a collective outlook spanning various qualitative findings, despite an increasing amount of published studies (Britten et al. 2002). Critiques directed towards the field of qualitative research argue that while individual studies provide rich descriptions and insights of their selective group of focus, the absence of connections drawn between studies limits their usefulness in understanding phenomena (Jensen and Allen 1996), informing practice (Zimmer 2006),

advising policy (Harden et al. 2004), and developing theory (Estabrooks, Field, and Morse 1994). Indeed the current situation of qualitative studies operating as stand-alone pieces of evidence has led to the terms "cottage industry" (Sandelowski, Docherty, and Emden 1997, p. 366), "one-shot research (Estabrooks, Field, and Morse 1994), and "little islands of knowledge" (Glaser and Strauss 1971, p. 181).

In response to these criticisms, qualitative metasynthesis serves as a method of interpreting and synthesising qualitative findings across individual studies. More than simply a broad summary of previous findings, metasyntheses of qualitative research are not meant to 'sum' all available data; rather, metasyntheses present new perspectives on topics through interpreting findings from different qualitative studies to create 'third-level' findings for the advancement of both knowledge (Jensen and Allen 1996, Sandelowski 1993) and theory (Glaser and Strauss 1967, Atkins et al. 2008).

A commonly cited rationale (Kearney 2001, Sandelowski, Docherty, and Emden 1997, Walsh and Downe 2005) for qualitative metasynthesis arises from 'analytic interruptus'. These metasynthesists find 'interruptus' in the lack of horizontal relationships between qualitative studies to aid in transferring concepts between different studies' accounts. However, Lofland (1970) initially coined 'analytic interruptus' to describe not relations between study-level understandings, but how qualitative research does not carry through to broader 'middle-range' theories. Lofland described qualitative research as 'conceptually impoverished', highlighting the vast gap in theoretical range between large-scale grand theories and the small, context-specific descriptions popular in accounts of qualitative research. The 'interruptus', as discussed by Lofland, occurs in the failure to 'follow through to the implied, logical, or entailed conclusion', the higher-order

9

understandings that characterise 'middle-range' theory. Elsewhere, Strauss (1970) describes the process of 'discovering new theory from previous theory', or the building of theory from initial accounts by adding data and developing increasingly nuanced understandings. Strauss was more concerned with horizontal links between studies, and between accounts within studies. Yet his comment applies to qualitative metasynthesis, in that the existing theory developed by individual studies can be used to develop new theories.

Qualitative metasynthesis first came to prominence with Noblit and Hare's (1988) *Meta-Ethnography: Synthesizing Qualitative Studies*. Though Noblit and Hare were not the first to write on this issue, their approach to synthesis of qualitative evidence began a new and major methodological line of inquiry (Thorne et al. 2004). While qualitative metasynthesis methods have grown and developed in various directions, several elements are common across approaches. The most basic is that qualitative metasynthesis is both 'hermeneutic' and 'dialectical'—or engaged in extracting and reporting constructs within studies, but also in comparing and contrasting between studies to understand variation and commonality (Jensen and Allen 1996, Zimmer 2006). Relatedly, qualitative metasynthesis, like the qualitative research underlying it, is 'interpretive' rather than 'aggregative'—that is, offering new interpretations and insights instead of combining studies, as in quantitative meta-analysis (Jensen and Allen 1996, Thorne et al. 2004, Walsh and Downe 2005). Sandelowski refers to the type of study that would vote-count or otherwise quantify qualitative research as 'metastudy' rather than true qualitative metasynthesis (Thorne et al. 2004).

10

Another common element is the 'reciprocal translation', which, conceptually, is the understanding of one study's findings in terms of other studies' findings in an effort to develop syntheses that are consistent across included studies (Jensen and Allen 1996, Walsh and Downe 2005). A related idea, described in Noblit and Hare's (1988) approach, is the 'third-order construction'. This is the meta-ethnographic equivalent to the second-order construction that is a finding in primary qualitative research. These third-order constructions are the outcome of the qualitative metasynthesis, in the way that second-order constructions are the outcome of the original qualitative report, and first-order constructions are interpretations that the original study informants provide of their experiences (Malpass et al. 2009).

In developing syntheses of qualitative studies, Noblit and Hare (1988) described three main outcomes growing from an initial reciprocal translation. The first is 'reciprocal synthesis', which aims to understand larger constructs expressed by the studies in the inclusion set. A reciprocal synthesis arises when the second-order constructions expressed in studies broadly agree, and can be understood in terms of each other to form third-order constructions. In contrast, a 'refutational synthesis', which exposes and develops heterogeneity in the included studies, arises when contradictions between metaphors expressed in different studies contradict insurmountably and cannot be reciprocally translated. Finally, 'lines-of-argument synthesis' constructs a new, mid-range theory from the findings expressed in the included studies, and is used when studies report 'parts of the whole' phenomenon under investigation. For example, Malpass and colleagues (2012) used qualitative studies of patients at different 'parts' of the process of a mindfulness meditation intervention to develop a lines-of-argument

synthesis of the 'whole' therapeutic process of mindfulness meditation, which they

identified as 'exposure' to the intervention, 'learning new skills' in mindfulness and

coping, and 'transformation' as participants integrated skills into their lives at the

intervention's end. Of these three approaches to meta-ethnography, Noblit reports that

the first is most common, while refutational synthesis remains underutilised (Thorne et al.

2004).

Key philosophical debates

Much of the resistance against collating qualitative research stems from paradigmatic

differences, although there are both epistemological and pragmatic reasons complicating

the accumulation of qualitative findings (Britten et al. 2002). It is recognised that there

are multiple and varying philosophies within the interpretivist paradigm, which impact

qualitative studies to a larger degree than quantitative studies rooted nearer the positivist

end of the paradigm spectrum (Dixon-Woods, Agarwal, et al. 2004). Thus, the critical

question arises of *if* it is appropriate to synthesise across qualitative findings and if so,

how (Atkins et al. 2008).

Those who would argue against the appropriateness of metasynthesising

qualitative research have pointed to the highly contextualised nature of qualitative

findings and concern of watering down individual insights in favour of a generic

summary (Sandelowski, Docherty, and Emden 1997). Reducing qualitative studies into a

summary would indeed be rejected by those who are firmly situated in the interpretivist

paradigm on the basis that there is no one underlying truth (Thorne et al. 2004) and that

searching for such a universal reality breaches core interpretivist tenets of qualitative

research (Zimmer 2006). Another question arising from this field asks whether

qualitative metasynthesis should synthesise across approaches, such as phenomenology or grounded theory (Jensen and Allen 1996)? One possible approach is to carry out simultaneous syntheses across studies grouped by framework and then 'triangulate' to validate findings (Finfgeld‑Connett 2010). Other methods, such as meta-study and meta-narrative, take these differences in methods as foci for analysis in their own right (Paterson et al. 2001, Greenhalgh et al. 2005). Finally, Zimmer (2006) advances that with due attention to the epistemological differences underlying qualitative methodologies, synthesis across qualitative traditions is acceptable and appropriate.

A major issue on which Sandelowski and Barroso (2007) stake a clear position is whether qualitative metasyntheses should be based on purposive or comprehensive samples of studies. Though Thomas and Harden (2008) clearly assert the value of systematic search and retrieval in generating a qualitative metasynthesis, Sandelowski and colleagues (Sandelowski and Barroso 2007, Sandelowski, Docherty, and Emden 1997, Sandelowski 2012) state that a purposive sample is appropriate, as this is the same logic that guides primary qualitative research. However, because qualitative reports are themselves partly interpretations and partly summaries, it is an open question whether a purposive sample could truly lead to theoretical saturation, especially when nuances between themes and the relationships between themes expressed in different studies could continue to inform analysis in ways not otherwise detected through purposive sampling.

Moreover, application of primary qualitative data sampling principles such as 'saturation' does not quite translate to a metasynthesis context, because the nature of published studies is to add something new to the literature base, suggesting that the data

(i.e., each study) should diverge rather than converge (Dixon-Woods et al. 2006). The question remains, then, of how much data is sufficient when conducting a qualitative meta-synthesis (Jensen and Allen 1996).

Furthermore, consideration of the quality of individual qualitative studies creates additional tension, as the practice of critically appraising qualitative research has reached no consensus on whether or how it should be accomplished (Britten et al. 2002, Chapple and Rogers 1998). Should qualitative studies be excluded based on quality, and how is quality appraised (Walsh and Downe 2005)? One argument posits that the inability to define a 'unified' qualitative research paradigm means that each study should be judged on its own merits, rather than on one set of guidelines (Rolfe 2006). Conversely, Dixon-Woods, Shaw, et al. (2004) posit that certain characteristics of qualitative research reporting and conduct are constant, regardless of methodology. Sandelowski and Barroso (2007) recommend appraisal, while advising against excluding studies based on perceived quality. Thus, including or excluding studies on the basis of quality is understandably contentious. In a quantitative meta-analysis, researchers utilise sensitivity analyses to test for any influence of studies deemed to be of lesser quality on those meeting the criteria for high quality research. However, the process by which researchers might conduct sensitivity analyses on qualitative data is less certain (Dixon-Woods et al. 2006).

Along a more practical vein, empirical studies testing the use of thesaurus terms versus free-text terms versus broad-based terms when applying the same computerised search strategies commonly used in quantitative reviews to a qualitative context demonstrate such searches are not similarly productive for qualitative research (Shaw et

al. 2004). It is the case that often qualitative studies are published outside of peer-reviewed journals registered with electronic databases, and that when they are in such journals they are not easily retrieved due to how they are abstracted (Green and Thorogood 2014). All of this indicates that conducting a systematic search for qualitative studies is not as straightforward compared to similar searches for quantitative trial studies.

Finally, is qualitative metasynthesis intended to be a practice-relevant endeavour, particularly given Noblit's later reservations regarding its use in the clinical paradigms of evidence-based practice (Thorne et al. 2004)? Given the subjectivity and reflexivity inherent in all qualitative research enterprises, it is an open, inadequately addressed question in the application of metasynthetic knowledge to clinical practice how the positivist and interpretive paradigms meet, if not reconcile, to allow knowledge transfer from one to the other (Paterson et al. 2001, Zimmer 2006).

Methodological issues in practice

The diversity of opinion on qualitative metasynthesis is mirrored in its practice. Even in those papers embracing Noblit and Hare (1988), many approaches exist. Researchers have found the idea of reciprocal translation difficult to put into practice (Atkins et al. 2008). For example, Tondeur et al. (2012) conducted a reciprocal translation of qualitative studies describing strategies for integrating technology into the classroom (see Box A). They arranged studies chronologically, with the first paper identified as their 'index paper', or starting point. They then synthesised the first two papers by "comparing the themes from paper one with paper two" (Tondeur et al. 2012, p. 136). This synthesis was used to study the third paper, with each subsequent paper being

included in the synthesis one-by-one. The outcome was a set of third-order constructions that described a larger interpretive framework (Noblit and Hare 1988). However, the authors describe the difficulties of simplifying and reducing the complexity found in the primary qualitative studies during translation (Tondeur et al. 2012).

[Box A near here.]

Jamal et al. (2013) describe a clearer translation process. After rating each study for its conceptual richness and grouping the studies according to specific health topics, they identified high quality papers as 'index papers' under each topic grouping, and spiralled the reciprocal translation out from these points. For each of the two syntheses, the reciprocal translation was then developed by checking how papers' second-order constructions mapped onto the other papers in the set, and then taking those second-order constructions with the most explanatory power—that is, those second-order constructions that best mapped across included studies—to develop the reciprocal translation. Jamal et al. (2013) then extend their analysis to create a lines-of-argument synthesis arising from these reciprocal translations.

In sum, even those studies taking a meta-ethnographic approach Noblit and Hare (1988) demonstrate various approaches to reciprocal translation and metasynthesis. These critiques of both the concept and processes of systematically reviewing and metasynthesising qualitative research must be weighed against those directed towards the current field of qualitative research existing in isolation without a cumulative knowledge base. Green and Thorogood (2014) explain two strengths of systematically reviewing qualitative research to include: (1) identifying common themes across contexts providing the opportunity to discuss the generalisability of some findings (typically not a goal of

16

primary qualitative research) and (2) assessing how individual qualitative methods impact the amount and type of data generated in primary qualitative studies.

Other researchers in favour of advancing metasynthesis methods have argued that to "claim that generalisation is not possible is to deny the transferability of any shared meanings or generative mechanisms" (Britten et al. 2002, p. 214), and that the findings from qualitative metasyntheses offer new insights, which are greater than the sum of their parts (Campbell et al. 2003). Indeed, proponents of metasynthesis maintain that systematically reviewing and metasynthesising qualitative findings advance both the qualitative and quantitative research fields in a number of relevant ways, including: generating mid-range theory (Estabrooks, Field, and Morse 1994), developing concepts (Campbell et al. 2003), and adding range and complexity to effectiveness studies (Atkins et al. 2008). Furthermore, Brown and Lan (2015) utilise qualitative metasynthesis to examine how national educational policies may have influenced educators perspectives of 'school readiness', and their conclusions have policy-relevant implications (see Box B). [Box B near here.]

Methods for qualitative metasynthesis

This discussion now turns its attention to demonstrating the large diversity in metasynthetic approaches manifest in the literature. Rather than exhaustively cataloguing different approaches (Barnett-Page and Thomas 2009, Dixon-Woods, Agarwal, et al. 2004), this discussion demonstrates the need for an assessment of current metasynthetic practice.

Several different approaches to qualitative metasynthesis have emerged, with most connected to the original procedures Noblit and Hare (1988) outlined originally.

17

Atkins and colleagues (2008) interpreted the steps Noblit and Hare laid down as

beginning with a research question; locating, filtering, and appraising reports of

qualitative studies; 'reading the studies'; understanding interrelations between studies;

developing 'reciprocal translations' between studies; and then 'synthesizing' the studies

and 'expressing' this synthesis.

Of note is that Noblit and Hare (1988) demonstrate the development of reciprocal

translations and the synthesis of these translations, but they offer little guidance as to how

to accomplish these steps. At an early point in the methodological development of meta-

ethnographic methods, it appeared that the different approaches, like Noblit and Hare's

method, tended to remain vague in the details of their execution (Sandelowski, Docherty,

and Emden 1997). However, Sandelowski and colleagues (1997) laid down what they

believed to be several principles, including purposive sampling of studies, metasynthesis

only of studies rooted in the same qualitative epistemology, and a target sample of about

10 studies (see Box C).

[Box C near here.]

An important variant of the Noblit and Hare (1988) approach is 'critical

interpretive synthesis' (Dixon-Woods et al. 2006). Dixon-Woods and colleagues begin

by rejecting the reciprocal translation as adequate for capturing the complexity inherent

in collections of qualitative research. Instead, they adopt the lines-of-argument synthesis,

arguing that qualitative metasynthesis should be critical—engaged in how researchers

construct the interpretations of the phenomenon—and interpretive, or engaged in how the

interpretations offered by researchers compare and contribute to higher order

understandings. They describe the output of their metasynthesis as the 'synthetic

18

argument', a term clearly connected with the conceptual heritage of the 'lines-of-argument synthesis' (Barnett-Page and Thomas 2009, Dixon-Woods et al. 2006, Noblit and Hare 1988).

Another major approach to qualitative metasynthesis, called the 'meta-study', describes a process simultaneously metasynthesising and reciprocally translating methods, results, and discussion to understand how these three sections interact and form mid-range theory relating to the object of study (Paterson et al. 2001). (It is noted that this version of 'meta-study' is different from the 'meta-study' which Sandelowski describes elsewhere as primarily a vote-counting summary (Thorne et al. 2004). The 'meta-methods' analysis elaborates the different methods, data, and epistemologies used to examine the phenomenon of interest (Barnett-Page and Thomas 2009). Unlike Dixon-Woods and colleagues' (2006) critical interpretive synthesis, the meta-study's 'meta-methods' and 'meta-discussion' form distinct parts of the final analysis, where the parts are then integrated to view how each informs the other. Paterson and colleagues' metasynthetic method shares much in common with 'meta-narrative', an emergent approach to research synthesis that concerns itself as well with how these different epistemologies shape results and understandings of the phenomenon. In particular, meta-narrative is used in mixed-methods reviews, in which quantitative and qualitative evidence are examined together (Greenhalgh et al. 2005).

Finally, one of the most recent approaches to qualitative metasynthesis is Thomas and Harden's (2008) 'thematic analysis' approach, which marshals qualitative evidence for practice-based relevance and for intervention development and evaluation (see Box D). This method involves line-by-line coding of the findings of a study to develop

19

specific hypotheses to inform systematic reviews and intervention development and without the articulated underpinnings of grounded theory.

[Box D near here.]

A grounded theory-inspired approach (see Box E) develops the metasynthesis by constant comparison through line-by-line coding of study findings and recording analytic memos (Finfgeld‑Connett 2010). Finfgeld‑Connett (2010) asserts that a well-developed metasynthesis using these approaches to triangulate across studies with different qualitative methodologies, which she terms *meta-interpretation*, improves generalizability and transferability of the findings of the metasynthesis, though the author does not further explain these benefits. Another grounded theory-inspired method of qualitative meta-synthesis emphasises the role of metaphors—the building block of qualitative analysis—in developing 'grounded formal theory' from the findings of qualitative studies (Kearney 2001).

[Box E near here.]

Next steps for qualitative metasynthesis

As meta-ethnography and qualitative metasynthesis are relatively new, the development of these analytic approaches and extension of these methods to new challenges are relatively diffuse. Much of the methodological work to advance this method has taken place in the health sciences. However, this does present an opportunity for educationalists to 'reclaim' and develop metasynthetic methods to meet their specific needs. We identify three key ways in which qualitative metasynthesis is advancing as a method: in terms of the aspects of systematic review methodology needed to support successful metasyntheses, in terms of the methods used to analyse qualitative studies and

to use the results of that analysis, and in terms of the discursive, methodological and paradigmatic dimensions of qualitative metasynthesis.

Laying the groundwork for successful metasyntheses

One key way in which methods for qualitative metasynthesis are developing is in respect of the systematic review methodology needed to set up metasyntheses, search for relevant studies and report the outcomes of the metasynthesis. One important recent contribution in this regard is the SPIDER tool to define key parameters for a qualitative metasynthesis (Cooke, Smith, and Booth 2012). Analogous to the population, intervention, comparison and outcome heuristic used to guide systematic reviews of intervention effectiveness, SPIDER stands for sample, phenomenon of interest, design, evaluation, and research type. Cooke and colleagues (2012) suggest that using the SPIDER tool is a more effective way to define the key 'parameters' for a systematic review of qualitative research.

Once the question has been set, the issue of how to search for studies presents itself. Systematic reviewers in the field of education have long acknowledged the challenges inherent in searching for qualitative research, due to the panoply of methods, approaches, and key terms, as well as the highly variable indexing of (Thomas and Harden 2008). The development of specific guidelines for searching for different types of studies to inform systematic reviews is most advanced for randomised trials—for example, the Cochrane highly sensitive search strategies for randomised trials (Higgins and Green 2008)—but work on best practices in locating qualitative studies continues apace. Reflecting and analysing their experience in searching for qualitative studies to inform four different systematic reviews, Stansfield, Brunton, and Rees (2014) suggest

that it is important to 'search wide and dig deep' by using a wide variety of databases and

sources, including grey and fugitive literature, and by using sensitive search strategies. In

this regard, it may be of utility for educationalists undertaking systematic reviews of

qualitative research to consider searching health-oriented databases such as MEDLINE or

PubMed and Embase, which are especially broad in their reach and well-indexed.

However, qualitative research itself may not be well detected by subject headings

corresponding to method (Bradley 2012). Some metasynthesists have rejected the idea

that a one-stage search is even appropriate for systematic reviews of qualitative research

and that search strategies, while auditable, should be considered emergent and

documented as such in reports. That is, systematic reviews of qualitative research should

be iterative and driven by a 'berry-picking' approach (Finfgeld‑Connett and Johnson

2013).

Finally, complete and transparent reporting of qualitative metasyntheses is

important in the interest of both systematic review methodology and strong qualitative

research practice (see Box F). The myriad guidelines for reporting other types of

studies—such as PRISMA for systematic reviews of interventions (Liberati et al. 2009)

and COREQ for qualitative research (Tong, Sainsbury, and Craig 2007)—taken together

with the unsuitability of other frameworks for reporting qualitative metasyntheses,

suggest that systematic reviews of qualitative research require a bespoke reporting

guideline. That guideline has come in the form of Enhancing transparency in reporting

the synthesis of qualitative research, or ENTREQ (Tong et al. 2012). As qualitative

metasynthesis evolves, it is likely that reporting guidelines will continue to evolve as

well.

22

[Box F near here.]

Horses for courses and qualitative metasynthesis

Previous reviews have identified the proliferation of methods for qualitative

metasynthesis (Barnett-Page and Thomas 2009, Dixon-Woods, Agarwal, et al. 2004,

Hannes and Macaitis 2012, Melendez-Torres, Grant, and Bonell 2015). However,

methods continue to grow and develop as qualitative metasynthesists innovate to meet

their specific needs, and as metasynthesists seek to overcome the qualitative-quantitative

divide across different systematic reviews.

New analytic methods. Much of the work on development of new analytic

methods has been in response to specific disciplinary or contextual issues that arise in

doing a systematic review of qualitative research. To our knowledge, there has not been

a specific method recently developed to meet the needs of educationalists, though of

course the germinal work in meta-ethnography was conducted by a team of educational

anthropologists (Noblit and Hare 1988). However, recent work by social workers on

'qualitative interpretive metasynthesis' (Aguirre and Bolton 2014) has been led by a need

to translate the principles of qualitative metasynthesis into the values of social work, for

example by focusing on 'synergistic understandings' that reflect social workers'

engagement with clients' ecological systems as opposed to isolated themes arising from a

meta synthesis of qualitative studies.

As an example of the development of methods to meet specific contextual issues,

'best fit' framework synthesis (Carroll et al. 2013) builds on previous work in framework

synthesis (Brunton et al. 2006) to quickly work through qualitative studies and extend a

priori conceptual frameworks in contexts where findings of a qualitative metasynthesis

23

are required to be responsive and quickly delivered. Carroll and colleagues (2013) simultaneously assemble relevant qualitative studies and theoretical frameworks, and the use a synthesis framework to code information from the primary studies. Data that cannot fit into the framework are then examined to nuance or extend the framework.

Putting systematic reviews together. An emerging method in this field includes the 'mixed methods systematic review', which incorporates elements from both quantitative systematic reviews and meta-analyses as well as from qualitative metasyntheses. Again, although instructive examples are found among health research—notably Harden et al. (2004) and Oliver et al. (2005)—rather than education, this suggests that a unique opportunity exists to bridge the gap between qualitative and quantitative educational research.

Such a cross-synthesis between quantitative and qualitative review findings may be conducted a number of ways, including according to a mixed methods convergent parallel design. The convergent parallel design involves a phase in which qualitative and quantitative data are concurrently yet independently collected and analysed, followed by a phase which sees these two strands joined together and the data merged for subsequent interpretation and discussion (Creswell and Plano Clark 2011). Based in pragmatism, this design places the mixed methods nature of the research question at the centre, casting aside any controversies arising from paradigm differences between constructivism and positivism in favour of applying a practical approach to research (Creswell and Plano Clark 2011). This design may be most appropriate to answer mixed methods research questions because it allows for the synthesis of corresponding data across qualitative and

quantitative results so as to more fully illuminate the phenomenon of interest, valuing

each strand equally without placing one above the other (Creswell and Plano Clark 2011).

It is important to point out that while the linear nature of written reports may

suggest that the strand reported first is conducted first and the strand reported second is

conducted after the first, this is not the case. In a convergent parallel design, both strands

are conducted in tandem.

Discursive and methodological issues

As has been argued by many interpretivists, the qualitative paradigm, however diffuse it

may be, is fundamentally at odds with systematic reviews of qualitative research. Indeed,

a key area in which qualitative metasynthesis is developing is in outlining the discursive

issues it presents for social scientists, including educationalists. For example, Riese,

Carlsen, and Glenton (2014) have recently argued that even in anthropologically oriented

understandings of education, qualitative metasynthesis can be helpful both to build up

theoretical understandings across contexts and to problematise traditional understandings

of a research field. Their argument, which essentially is oriented towards the

development of an applied anthropology that is analytically generalisable, does not

demand a specific analytic approach, aside from a general orientation towards

interpretivism. Riese and colleagues (2014) also point out that as a method, systematic

reviews of qualitative research can be used to set the agenda for future social research.

Within the operation of qualitative metasynthesis, methodologists continue to

seek clarity on 'how' studies are synthesised. This bears obvious parallels to continue

innovation in analysis of primary qualitative data. Melendez-Torres, Grant and Bonell

(2015) examined a set of 61 qualitative metasyntheses to establish a taxonomy of how

these metasyntheses undertook to achieve reciprocal translation. They divided the approaches used into four categories: one in which reciprocal translation was based on a visual representation, such as a map of concepts or a grid of second-order constructs, one in which reciprocal translation been with a 'key paper' and then examined subsequent papers to develop the synthesis (see Boxes A and F), one in which study themes were used as the basis of the reciprocal translation either by combining them into similar categories or by comparing them across studies, and one in which metasynthesists used an approach similar to primary qualitative research in coding study results line by line. This taxonomy, though developed in public health, offers a parsimonious classification to understand the diversity of approaches in qualitative metasynthesis. In addition to Melendez-Torres, Grant, and Bonell (2015) taxonomy of operations of reciprocal translation, one research group has described that meta-ethnography involves two processes, the first of which is 'reading', or engagement with the text of the studies 'to appraise; familiarise; identify; extract; record; organise; compare; relate; map; stimulate; and verify'(Lee et al. 2014, p. 8), and the second of which is 'conceptual innovation', or the development of key metaphors that go beyond the primary studies, rather than merely restating them. Lee and colleagues (2014) point out that conceptual innovation is not inevitable in meta-ethnographies, due in part to the path-dependency of research narratives.

Conclusion

This paper has reviewed paradigmatic and methodological aspects of qualitative research before exploring the historical movement, core theoretical and practical issues of qualitative metasynthesis. The spectrum of methods reflects the different approaches to

qualitative research visible at the primary study level. As such, in order for meaningful progress in this area to contribute to educational practices, researchers must be both transparent and comprehensive in their reporting of chosen metasynthesis aims and methods. The opportunity to apply qualitative metasynthesis alongside quantitative systematic reviews and meta-analyses that are already more widely accepted in the education field opens up future discovery of novel insights for theory development as well as everyday practice and research agendas. Given the multiple ecological levels at which educational policies and practices are initiated in addition to the recognition of children's individual learning needs, much can be gained by a broader uptake of qualitative metasynthesis and in turn mixed methods cross-syntheses within the field of educational research.

Sponsorship

None to declare.

Box A. Preparing pre-service teachers to integrate technology in education: a synthesis of qualitative evidence (Tondeur et al. 2012)

In their 2012 paper on integrating technology in education, Tondeur and colleagues aimed to identify strategies for instructing pre-service teachers on how to incorporate technology in their lessons. To do this, the authors conducted a key word search in the electronic database Web of Science, which while not fully elaborated in the paper, somehow resulted in 144 studies to be assessed initially by reading their abstracts for relevance to this metasynthesis.

The 23 studies that passed this examination were then critically appraised using the Critical Appraisal Skills Programme (CASP) checklist for qualitative research (1988). Although potential included studies were systematically and rigorously appraised, the authors did not exclude studies based on poor ratings or lack of comprehensively reported methodologies. This is in contrast to the previous example of Riese and colleagues (2012; Box A), which did exclude studies based on underdeveloped descriptions. This quality appraisal was explicitly included as the third phase of Tondeur and colleagues' meta-ethnography, which otherwise closely aligned with Noblit and Hare's original (1988) description. The authors chose to chronologically translate each study into the next, such that the first paper to be published served as the 'index paper' whose themes were compared with those of the second paper to be published as so forth. Throughout this process, the concepts were reduced and abstracted by "merging and collapsing" (p. 136) themes of similar groupings. The authors flag such reduction as a potential limitation of their study in that they acknowledge the "reduced…importance of the contextuality of the results…the results of the review cannot simply be generalized to

other teacher training institutions in different parts of the world" (p. 142).

       The findings of this metasynthesis are reported at both a micro and institutional level. While the authors do not go so far as to explicitly provide guidance to practitioners based on their findings, they do assert, "…it seems to be important that pre-service teachers have the possibility to see and experience the pedagogical integration of technology in the classroom during their training experiences" (Tondeur et al. 2012, p. 142). Additionally, they argue that unless theory is delivered alongside practical instruction, "the knowledge and the skills pre-service teachers gained from a separate stand-alone course process are likely to remain isolated and unused" (p. 142). Thus, although couched in their report as not generalizable to other contexts, the authors do express a desire that the themes from this metasynthesis inform policy makers and practitioners in this area.

Box B. A qualitative metasynthesis comparing U.S. teachers' conceptions of school readiness prior to and after the implementation of NCLB (Brown and Lan 2015)

This 2015 paper by Brown and Lan focuses on teachers' notions of school readiness and whether/how their understandings changed with the implementation of the No Child Left Behind (NCLB) Act in the United States. They search electronic databases and conduct key-word searchers in relevant journals, although a comprehensive list of databases and journals is not provided as in some of the other examples. It is similarly unclear how many references were generated by the initial searches and what was the procedure for narrowing down this initial list to result in their first 38 potential studies. In applying a quality control to these potential included studies, Brown and Lan chose the criteria of publication in a peer-reviewed journal as indication that the reported study was of sufficient quality for inclusion in the metasynthesis. Their reasoning was that in the process of submission, peer review, revision, and ultimate publication, any study should had been rigorously assessed by academic peers and thus its trustworthiness would be higher than reports in non-peer-reviewed publications. By excluding studies not published in peer-reviewed journals, the authors further purged their potential included studies to 17. The authors do acknowledge the potential limitation of this form of quality control, writing that "it might have such unintended consequences as filtering out research findings that contradict the findings of this metasynthesis" (Brown and Lan 2015, p. 4). Given that one of the three types of meta-ethnography described by Noblit and Hare (1988) is that of refutational hypothesis, and that such refutational metasyntheses are more rare in the literature than reciprocal translations or lines of argument syntheses, this limitation is well noted. Their final set of included studies

numbered 12 (six pre-NCLB and six post-NCLB), as they sought to purposively restrict their included studies to between six and 10 papers, as per guidelines by (Major and Savin-Baden 2010).

Based in meta-ethnographic roots, Brown and Lan name their process as qualitative metasynthesis and follow the procedures outlined in Major and Savin-Baden's (2010) book on qualitative research synthesis. Whereas Noblit and Hare's (1988) meta-ethnography contains seven phases, Brown and Lan modelled their qualitative metasynthesis off of the four-step process described by Major and Savin-Baden (2010). In this process, which can be roughly mapped on to meta-ethnography, the first step 'beginning the process' entails phases one through four of meta-ethnography, followed by step two 'analysis' (phase five), step three 'synthesis' (phase six), and step four 'interpretation' (phase seven). During the analysis and synthesis stages, Brown and Lan identified initial codes from the studies that led to the development of primary and ultimately secondary themes.

The findings of this metasynthesis conclude that there was indeed a shift in how teachers' constructed meaning of 'school readiness' with the implementation of the NCLB Act. The authors posit that increasing focus on academic outcomes will intensify this shift between nativism (school readiness as a within-child concept, i.e., maturity) towards empiricism (school readiness as the result of preschool teachers' work to prepare children), even as it perpetuates a fairly limited, White middle-class perception of what it means for children to be ready for school. Thus, it appears that with this shift in attitudes about school readiness, teachers increasingly view it as their responsibility to train preschool-aged children on expectations aligned with White, middle-class values for

academic/social skills. Brown and Lan argue that from these findings, more work needs to occur when training teachers to "understand the messiness of the construct of school readiness" (2015, p. 10). Thus, the findings from their metasynthesis are intended if not to direct *how* practice needs to change to as least serve as a call for change in practice and policy.

Box C. Research on mentor education for mentors of newly qualified teachers: a qualitative meta-synthesis (Aspfors and Fransson 2015)

In their 2015 paper on educating mentors for newly qualified teachers, Aspfors and Fransson sought to identify common themes across studies on mentor education as well as insights into how to advance mentor education as a field. Similarly to the Koerting and colleagues (2013) example, Aspfors and Fransson widened their search for relevant studies beyond just that of electronic databases. They also searched peer-reviewed journals and perused reference lists of included studies. While systematic reviews of quantitative studies aim for comprehensiveness when sampling, it is yet to be universally decided whether reviews of qualitative research should also seek an all-inclusive sample or if primary qualitative research sampling techniques such a purposive sampling are appropriate. In this example, Aspfors and Fransson follow recommendations along the purposive sampling argument and actively seek ten to 12 included studies for their metasynthesis (Bondas & Hall, 2007 as cited in Aspfors & Fransson, 2015). In addition to the inclusion criteria related to their topic, the authors used publication in a peer-review journal as a proxy for assessment of high quality research. Thus, studies not published as peer-review articles were excluded on the grounds of lack of quality.

Aspfors and Fransson based their analysis on an adapted meta-ethnography, which is also based in Sandelowski and Barroso's (2007) qualitative research synthesis. For this process, when they were initially relating the themes from different included studies, the authors applied qualitative content analysis, in which they proceeded from open coding to categorisation across codes to a yet higher level of abstraction. This resulted in a metasynthesis that produced three broad dimensions within which the

authors situation aspects of mentor education: (1) the educational context (e.g., national educational policy); (2) the interplay of theory and practice, which "are inseparable units, where one cannot be understood without the other" (Aspfors and Fransson 2015, p. 83); and (3) the relationship between mentors as a way to build an open culture for trust. More specifically, the researchers were able to identify common themes, including the importance of the school context in facilitating the mentor education, the extent to which mentors were able to concurrently practice the theoretical concepts or relate the concepts to previous practice, the benefits of self-reflection, and the role of positive relationships between mentor and mentee. These findings, more than just describing the concepts of the primary qualitative studies, identify overarching dimensions that the authors posit are necessary for consideration when establishing and implementing mentor education programmes.

Box D. Barriers to, and facilitators of, parenting programmes for childhood behaviour problems: a qualitative synthesis of studies of parents' and professionals' perceptions (Koerting et al. 2013)

Koerting and colleagues focused on improving children's home learning environment through examining barriers and facilitators to parent training programmes in their 2013 metasynthesis. The authors studied aspects related to both initial access to these parent programmes as well as continued participation, and they sought views from either parents attending the programmes or professionals facilitating the trainings. In addition to their search of electronic databases, which was elaborated in an appendix, Koerting and colleagues highlighted the necessity of performing additional web-based searches as well as perusing reference lists of included studies to avoid overlooking relevant reports that might not have surfaced in the original database search. These methods are common among more traditional systematic reviews of quantitative studies, but are perhaps even more relevant for reviews of qualitative research given the previously discussed practical limitations of how qualitative research studies are catalogued online.

As with some of the other examples provided here, Koerting and colleagues applied EPPI-Centre criteria when appraising the quality of potential included studies. Unlike some other studies, the authors did exclude a paper based on a determination of poor quality; however, the specific reasons that paper was deemed to be poor quality are not elaborated. While even the process of appraising the quality of qualitative studies can be controversial, it has been shown thus far that educational metasyntheses often do conduct some type of quality appraisal. However, more variable is the decision of whether to exclude studies, as done in this metasynthesis, for poor quality.

Koerting and colleagues applied a thematic synthesis approach in this metasynthesis, resulting in findings that, while still interpretive, are much more integrative than those reported in other examples following a meta-ethnographic approach. After coding each line of findings in the primary studies, the authors grouped these codes first into descriptive categories and subsequently into analytical themes. After working and re-working the multiple layers of codes, the authors went back to the original studies and applied their new framework when re-coding the findings sections. The result is a four-part description of the barriers/facilitators to initial access/continued participation, which are discussed in a preliminary way as moderated by type of respondent (e.g., parents or professionals). The authors were able to identify differences between parents' and professionals' views, with parents indicating concerns about barriers to service access and continued engagement, often with a focus on difficulties balancing their work responsibilities and caring for other children in the home. Professionals, in contrast, provided more views on both barriers and facilitators, but their concerns revolved more around challenges in provision of services. Since this metasynthesis was predominantly descriptive in its thematic approach, the interpretation does not extend to positing a larger framework of how these processes interact or inform practice.

Box E. Peer relations in peer learning (Riese, Samara, and Lillejord 2012)

Riese and colleagues, in their (2012) paper on students' peer learning, sought to explore both the social and relational processes of peer learning in the educational environment through metasynthesising primary qualitative research with thick descriptions. They gathered qualitative research examples through a systematic electronic database search, detailed in their report. They applied three criteria against which they judged potential included studies: (1) studies should have been carried out in a school setting with a teacher facilitating peer learning with such significant student collaboration that created and maintained relationships between peers; (2) studies explore the processes of peer learning and relations that are formed between the students; and (3) studies produced thick descriptions that could be compared with those of other studies (i.e., richly analysed and sufficiently reported). In addition to these inclusion criteria, Riese and colleagues appraised the quality of included studies following guidelines advanced by Elliott, Fischer, and Rennie (1999) and which they include in an appendix (Riese, Samara, and Lillejord 2012). While it is unclear whether studies were excluded based on the result of this quality assessment, it is clear that studies deemed to be insufficiently developed with regard to the thickness or richness of their descriptions were indeed excluded from this metasynthesis on peer learning.

In analysing their included studies, Riese and colleagues followed a meta-ethnographic process in which they apply a grounded theory approach to examine the processes involved in peer learning. To this end, their analysis involved three stages of increasing levels of abstraction, as the first sought to identify all themes in the primary studies, then to compare those themes across studies, and finally to find novel insights.

In response to critiques of metasynthesis methods, the authors clarify that, "Rather than considering the included studies as cases to be compared, we regard them as *texts* in a scientific discourse on peer learning…This implies an understanding of theory as identification of social rules that underlie and govern social patterns, rather than as law-like expressions of the nature of social behaviour" (Riese, Samara, and Lillejord 2012, p. 608). Thus, they emphasise that they interpreted the findings of the primary studies rather than the original data from those studies. It is in this way that they come to the new understandings termed 'third order interpretations' in the final step of their analysis.

Finally, Riese and colleagues directly link their new, metasynthesised interpretation of peer learning to applicability for practitioners (i.e., teachers) when they provide guidance for *how* educators should go about integrating peer learning into the classroom. They write, "…it is of crucial importance to pay attention to the social relations that exist between members of a group prior to the design of the peer learning programme and in the development of the programme. In peer group interaction, peer relations must be perceived as integral to the design and instructional practices of the peer learning programme as they mediate action in both productive and less productive manners" (Riese, Samara, and Lillejord 2012, p. 618). Thus, this metasynthesis extends beyond a thematic description of different types of peer learning processes and not only posits a theory for the mechanisms by which peer learning is or is not effective, but they go one step further to advise practitioners on how to set up peer learning in a way to encourage beneficial results.

Box F. The school environment and student health: a systematic review and meta-ethnography of qualitative research (Jamal et al. 2013)

In their 2013 meta-ethnography, Jamal and colleagues examined the processes through which young people's health was influenced by their social and physical school environment. In this thoroughly reported study, readers are directed to the previously published study protocol for additional specifics regarding search strategy and terms etc. (Bonell et al. 2011). The practice of publishing a protocol provides greater transparency in the research field regarding intended aims and proposed analyses, which can guard against reporting or publication bias given undesirable or underwhelming findings. While typically more discussed among a quantitative tradition (e.g., randomised controlled trials and systematic reviews of trials), this practice in qualitative metasynthesis allows for much greater coverage and depth in methodological descriptions (in the protocol) and thus more room to report interpretations and findings in the main paper.

Indeed, this metasynthesis sought out studies with thick descriptions by rating potential included studies as 'high', 'medium', or 'low' in conceptual richness. The authors additionally applied criteria from EPPI-Centre guidelines to appraise the quality of included studies. While they did not exclude studies with lower ratings, Jamal and colleagues used these ratings to inform their interpretation, using studies deemed to be of higher quality as the starting point or 'index papers' in their metasynthesis.

Unlike the other metasyntheses described in this paper, Jamal and colleagues created an evidence map following their initial search for relevant studies. They took this map to key stakeholders (e.g., young people, policy makers) for consultation and setting

priorities of their research agenda. In this way, we see how the exchange of knowledge was bidirectional between the research team and stakeholders. Additionally, this process provides an example of how an *a priori* protocol need not stymie the exploratory and inductive process of qualitative research.

When translating the themes and concepts from one study into the others, Jamal and colleagues first grouped the studies based on the type of health outcome reported in the primary study. After identifying key themes within each outcome type, relationships between these themes/outcomes were established. Finally, as their focus was on the processes of school environment on students' health, the authors established their line of argument interpretation. The authors note how young people sought to create and maintain a 'tough' reputation, as this would allow them entry into friend groups with other 'tough' young people, thus providing safety. Understandings of masculinity in the school environment were reflected in this 'toughness'. Furthermore, 'unowned' (p. 6) spaces such as staircases and toilets provided opportunities for risky health behaviours compared to classrooms, which were associated with oversight provided by the class teacher. In addition, young people reported that their teachers were 'disconnected' (p. 6) from their day-to-day realities, particularly from those young people whose home lives were particularly unstable or those who identify as Black. Finally, because of their disconnection from school, young people sought to 'escape' (p. 7) the school area when possible, such as during lunch periods, which in turn saw them purchasing unhealthy foods and beverages from local shops or smoking. Thus, Jamal and colleagues reached the conclusion that students "not only react to schools' institutional systems for ordering instructional and regulatory practices, but they also promote their own parallel,

competing version of these…'orders'…where students' family and/or community culture is immersed in urban 'street culture', with relatively little hope of conventional social advancement, this will permeate the local student-network and thus shape both students' action and, in turn, the institutions' regulatory response" (2012, p. 8). It is clear, then, that this metasynthesis extended beyond describing the themes found in the primary studies to posit a theory by which students and educational institutions act and react to each other in ways that influence health decisions.

References

Aguirre, Regina TP, and Kristin Whitehill Bolton. 2014. "Qualitative interpretive meta-synthesis in social work research: Uncharted territory." *Journal of Social Work* 14 (3):279-294.

Annells, Merilyn. 1997. "Grounded theory method, part I: Within the five moments of qualitative research." *Nursing inquiry* 4 (2):120-129.

Aspfors, Jessica, and Göran Fransson. 2015. "Research on mentor education for mentors of newly qualified teachers: A qualitative meta-synthesis." *Teaching and Teacher Education* 48:75-86.

Atkins, Salla, Simon Lewin, Helen Smith, Mark Engel, Atle Fretheim, and Jimmy Volmink. 2008. "Conducting a meta-ethnography of qualitative literature: lessons learnt." *BMC medical research methodology* 8 (1):21.

Barnett-Page, Elaine, and James Thomas. 2009. "Methods for the synthesis of qualitative research: a critical review." *BMC medical research methodology* 9 (1):59.

Barroso, Julie, Claudia J Gollop, Margarete Sandelowski, Janet Meynell, Patricia F Pearce, and Linda J Collins. 2003. "The challenges of searching for and retrieving qualitative studies." *Western journal of nursing research* 25 (2):153-178.

Bonell, Chris, Angela Harden, Helene Wells, Farah Jamal, Adam Fletcher, Mark Petticrew, James Thomas, Margaret Whitehead, Rona Campbell, and Simon Murphy. 2011. "Protocol for a systematic review of the effects of schools and school-environment interventions on health: evidence mapping and syntheses." *BMC public health* 11 (1):453.

Bowling, Ann. 2009. *Research methods in health: Investigating health and health services*. 3rd ed. Maidenhead: Open University Press.

Bradley, Susan M. 2012. "Examination of the Clinical Queries and Systematic Review "hedges" in EMBASE and MEDLINE." *Journal of the Canadian Health Libraries Association* 33 (1):34.

Britten, Nicky, Rona Campbell, Catherine Pope, Jenny Donovan, Myfanwy Morgan, and Roisin Pill. 2002. "Using meta ethnography to synthesise qualitative research: a worked example." *Journal of Health Services Research & Policy* 7 (4):209-215.

Brown, Christopher P, and Yi-Chin Lan. 2015. "A qualitative metasynthesis comparing US teachers' conceptions of school readiness prior to and after the implementation of NCLB." *Teaching and Teacher Education* 45:1-13.

Brunton, Ginny, Sandy Oliver, Kathryn Oliver, and Theo Lorenc. 2006. "A Synthesis of Research Addressing Children's, Young People's and Parents' Views of Walking and Cycling for Transport."

Campbell, Rona, Pandora Pound, Catherine Pope, Nicky Britten, Roisin Pill, Myfanwy Morgan, and Jenny Donovan. 2003. "Evaluating meta-ethnography: a synthesis of qualitative research on lay experiences of diabetes and diabetes care." *Social science & medicine* 56 (4):671-684.

Carroll, Christopher, Andrew Booth, Joanna Leaviss, and Jo Rick. 2013. ""Best fit" framework synthesis: refining the method." *BMC medical research methodology* 13 (1):37.

Chapple, Alison, and Anne Rogers. 1998. "Explicit guidelines for qualitative research: a step in the right direction, a defence of the'soft'option, or a form of sociological imperialism?" *Family practice* 15 (6):556-561.

Charmaz, Kathy. 2006. "Constructing grounded theory: A practical guide through qualitative research." *SagePublications Ltd, London*.

Cooke, Alison, Debbie Smith, and Andrew Booth. 2012. "Beyond PICO The SPIDER Tool for Qualitative Evidence Synthesis." *Qualitative health research* 22 (10):1435-1443.

Corbin, Juliet, and Anselm Strauss, eds. 2008. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. London: Sage.

Creswell, J. W., and V. L. Plano Clark. 2011. *Designing and conducting mixed methods research*. 2nd ed. Thousand Oaks, CA: SAGE.

Critical Appraisal Skills Programme (CASP). 1988. *Ten questions to help you make sense of qualitative research*. Oxford: CASP.

Dixon-Woods, Mary, Shona Agarwal, Bridget Young, David Jones, and Alex Sutton. 2004. *Integrative approaches to qualitative and quantitative evidence*: Health Development Agency London.

Dixon-Woods, Mary, Sheila Bonas, Andrew Booth, David R Jones, Tina Miller, Alex J Sutton, Rachel L Shaw, Jonathan A Smith, and Bridget Young. 2006. "How can systematic reviews incorporate qualitative research? A critical perspective." *Qualitative research* 6 (1):27-44.

Dixon-Woods, Mary, Rachel L Shaw, Shona Agarwal, and Jonathan A Smith. 2004. "The problem of appraising qualitative research." *Quality and Safety in Health Care* 13 (3):223-225.

Dixon‐Woods, Mary, Ray Fitzpatrick, and Karen Roberts. 2001. "Including qualitative research in systematic reviews: opportunities and problems." *Journal of evaluation in clinical practice* 7 (2):125-133.

Elliott, Robert, Constance T Fischer, and David L Rennie. 1999. "Evolving guidelines for publication of qualitative research studies in psychology and related fields." *British Journal of Clinical Psychology* 38 (3):215-229.

Estabrooks, Carole A, Peggy Anne Field, and Janice M Morse. 1994. "Aggregating qualitative findings: an approach to theory development." *Qualitative Health Research* 4 (4):503-511.

Evans, David. 2002. "Database searches for qualitative research." *Journal of the Medical Library Association* 90 (3):290.

Fine, G. 1993. "The sad demise, mysterious disappearance, and glorious triumph of symbolic interactionism." *Annual Review of Sociology* 19:61-87.

Finfgeld‐Connett, Deborah. 2010. "Generalizability and transferability of meta‐synthesis research findings." *Journal of advanced nursing* 66 (2):246-254.

Finfgeld‐Connett, Deborah, and E Diane Johnson. 2013. "Literature search strategies for conducting knowledge‐building and theory‐generating qualitative systematic reviews." *Journal of advanced nursing* 69 (1):194-204.

Glaser, Barney G. 2002. "Conceptualization: On Theory and Theorizing Using Grounded Theory." *International Journal of Qualitative Methods* 1 (2).

Glaser, Barney G., and Anselm L. Strauss. 1971. *Status passage*. London: Routledge & Kegan Paul.

Glaser, Barney, and Anselm Strauss. 1967. "The discovery grounded theory: strategies for qualitative inquiry." *Aldin, Chicago*.

Green, Judith, and Nicky Britten. 1998. "Qualitative research and evidence based medicine." *BMJ: British Medical Journal* 316 (7139):1230.

Green, Judith, and Nicki Thorogood. 2009. *Qualitative methods for health research*. Vol. 2nd ed., *Introducing qualitative methods*. Los Angeles, CA: Sage.

Green, Judith, and Nicki Thorogood. 2014. *Qualitative methods for health research*. Vol. 3rd ed., *Introducing qualitative methods*. Los Angeles, CA: Sage.

Greenhalgh, T., G. Robert, F. Macfarlane, P. Bate, O. Kyriakidou, and R. Peacock. 2005. "Storylines of research in diffusion of innovation: A meta-narrative approach to systematic review." *Social Science & Medicine* 61 (2):417-430.

Hannes, Karin, and Kirsten Macaitis. 2012. "A move to more systematic and transparent approaches in qualitative evidence synthesis: update on a review of published papers." *Qualitative Research* 12 (4):402-442.

Harden, Angela, Jo Garcia, Sandy Oliver, Rebecca Rees, Jonathan Shepherd, Ginny Brunton, and Ann Oakley. 2004. "Applying systematic review methods to studies of people's views: an example from public health research." *Journal of Epidemiology and Community Health* 58 (9):794-800.

Higgins, Julian PT, and Sally Green. 2008. *Cochrane handbook for systematic reviews of interventions*. Vol. 5: Wiley Online Library.

Houston, S. 2001. "Beyond social constructionism: Critical realism and social work." *British Journal of Social Work* 31 (6):845-861.

Jamal, Farah, Adam Fletcher, Angela Harden, Helene Wells, James Thomas, and Chris Bonell. 2013. "The school environment and student health: a systematic review and meta-ethnography of qualitative research." *BMC public health* 13 (1):798.

Jensen, Louise A, and Marion N Allen. 1996. "Meta-synthesis of qualitative findings." *Qualitative health research* 6 (4):553-560.

Kearney, Margaret H. 2001. "Levels and applications of qualitative research evidence." *Research in nursing & health* 24 (2):145-153.

Koerting, J, Elizabeth Smith, MM Knowles, S Latter, H Elsey, DC McCann, M Thompson, and EJ Sonuga-Barke. 2013. "Barriers to, and facilitators of, parenting programmes for childhood behaviour problems: a qualitative synthesis of studies of parents' and professionals' perceptions." *European child & adolescent psychiatry* 22 (11):653-670.

Lee, Richard Philip, Ruth Isla Hart, Rose Mary Watson, and Tim Rapley. 2014. "Qualitative synthesis in practice: some pragmatics of meta-ethnography." *Qualitative Research*:1468794114524221.

Liberati, Alessandro, Douglas G Altman, Jennifer Tetzlaff, Cynthia Mulrow, Peter C Gøtzsche, John PA Ioannidis, Mike Clarke, PJ Devereaux, Jos Kleijnen, and David Moher. 2009. "The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions:

45

explanation and elaboration." *Annals of internal medicine* 151 (4):W-65-W-94.

Lofland, John. 1970. "Interactionist imagery and analytic interruptus." *Human nature and collective behavior: Papers in honor of Herbert Blumer*:35-45.

Major, Claire Howell, and Maggi Savin-Baden. 2010. *An introduction to qualitative research synthesis: Managing the information explosion in social science research*: Routledge.

Malpass, Alice, Havi Carel, Matthew Ridd, Alison Shaw, David Kessler, Debbie Sharp, Mark Bowden, and Julia Wallond. 2012. "Transforming the perceptual situation: a meta-ethnography of qualitative work reporting patients' experiences of mindfulness-based approaches." *Mindfulness* 3 (1):60-75.

Malpass, Alice, Alison Shaw, Debbie Sharp, Fiona Walter, Gene Feder, Matthew Ridd, and David Kessler. 2009. ""Medication career" or "Moral career"? The two sides of managing antidepressants: A meta-ethnography of patients' experience of antidepressants." *Social science & medicine* 68 (1):154-168.

Malterud, Kirsti. 2001. "Qualitative research: standards, challenges, and guidelines." *The lancet* 358 (9280):483-488.

Melendez-Torres, G. J., Sean Grant, and Chris Bonell. 2015. "A systematic review and critical appraisal of qualitative metasynthetic practice in public health to develop a taxonomy of operations of reciprocal translation." *Research Synthesis Methods*.

Miles, Mattheu B, and A Michael Huberman. 1984. "Qualitative data analysis: A sourcebook of new methods." In *Qualitative data analysis: a sourcebook of new methods*. Sage publications.

Miles, Matthew B, and A Michael Huberman. 1994. *Qualitative data analysis: An expanded sourcebook*: Sage.

Mills, Albert J, Gabrielle Durepos, and Elden Wiebe. 2010. *Encyclopedia of case study research*. Vol. 2: Sage Publications.

Noblit, George W, and R Dwight Hare. 1988. *Meta-ethnography: Synthesizing qualitative studies*. Vol. 11: Sage.

Oliver, Sandy, Angela Harden, Rebecca Rees, Jonathan Shepherd, Ginny Brunton, Jo Garcia, and Ann Oakley. 2005. "An emerging framework for including different types of evidence in systematic reviews for public policy." *Evaluation* 11 (4):428-446.

Paterson, B. L., S Thorne, C Canam, and C Jillings. 2001. *Meta-study of qualitative health research: a practical guide to meta-analysis and meta-synthesis.* Thousand Oaks, CA: Sage.

Pope, Catherine, Sue Ziebland, and Nicholas Mays. 2000. "Qualitative research in health care: Analysing qualitative data." *BMJ: British Medical Journal* 320 (7227):114.

Riegler, A. 2005. "Editorial: The constructivist challenge." *Constructivist Foundations* 1 (1):1-8.

Riese, Hanne, Benedicte Carlsen, and Claire Glenton. 2014. "Qualitative Research Synthesis: How the Whole Can Be Greater than the Sum of Its Parts." *Anthropology in Action* 21 (2):23-30.

Riese, Hanne, Akylina Samara, and Sølvi Lillejord. 2012. "Peer relations in peer learning." *International Journal of Qualitative Studies in Education* 25 (5):601-624.

Rolfe, Gary. 2006. "Validity, trustworthiness and rigour: quality and the idea of qualitative research." *Journal of advanced nursing* 53 (3):304-310.

Saldana, Johnny. 2009. "An introduction to codes and coding." *The coding manual for qualitative researchers*:1-31.

Sandelowski, Margarete. 1993. "Rigor or rigor mortis: the problem of rigor in qualitative research revisited." *Advances in nursing science* 16 (2):1-8.

Sandelowski, Margarete. 2012. "Metasynthesis of qualitative research." In *APA handbook of research methods in psychology: Research designs: Quantitative, qualitative, neuropsychological, and biological*, edited by H. Cooper, 19-36. Washington, DC: American Psychological Association.

Sandelowski, Margarete, and Julie Barroso. 2007. *Handbook for synthesizing qualitative research*: Springer Publishing Company.

Sandelowski, Margarete, Sharron Docherty, and Carolyn Emden. 1997. "Focus on qualitative methods Qualitative metasynthesis: issues and techniques." *Research in nursing and health* 20:365-372.

Schutz, A. 1962. *Collected papers*. Vol. 1. The Hague: Martinus Nijhoff.

Shaw, Rachel L, Andrew Booth, Alex J Sutton, Tina Miller, Jonathan A Smith, Bridget Young, David R Jones, and Mary Dixon-Woods. 2004. "Finding qualitative research: an evaluation of search strategies." *BMC medical research methodology* 4 (1):5.

Stansfield, Claire, Ginny Brunton, and Rebecca Rees. 2014. "Search wide, dig deep: literature searching for qualitative research. An analysis of the publication formats and information sources used for four systematic reviews in public health." *Research Synthesis Methods* 5 (2):142-151.

Strauss, A. L. 1970. "Discovering new theory from previous theory." In *Human nature and collective behavior: Papers in honor of Herbert Blumer*, edited by T. Shibutani, 46-53. New Brunswick, NJ: Transition Books.

Suddaby, Roy. 2006. "From the editors: What grounded theory is not." *Academy of management journal* 49 (4):633-642.

Thomas, James, and Angela Harden. 2008. "Methods for the thematic synthesis of qualitative research in systematic reviews." *BMC medical research methodology* 8 (1):45.

Thorne, Sally, Louise Jensen, Margaret H Kearney, George Noblit, and Margarete Sandelowski. 2004. "Qualitative metasynthesis: reflections on methodological orientation and ideological agenda." *Qualitative health research* 14 (10):1342-1365.

Tondeur, Jo, Johan Van Braak, Guoyuan Sang, Joke Voogt, Petra Fisser, and Anne Ottenbreit-Leftwich. 2012. "Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence." *Computers & Education* 59 (1):134-144.

Tong, Allison, Kate Flemming, Elizabeth McInnes, Sandy Oliver, and Jonathan Craig. 2012. "Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ." *BMC medical research methodology* 12 (1):181.

Tong, Allison, Peter Sainsbury, and Jonathan Craig. 2007. "Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups." *International Journal for Quality in Health Care* 19 (6):349-357.

Walsh, Denis, and Soo Downe. 2005. "Meta‐synthesis method for qualitative research: a literature review." *Journal of advanced nursing* 50 (2):204-211.

Zimmer, Lela. 2006. "Qualitative meta‐synthesis: a question of dialoguing with texts." *Journal of advanced nursing* 53 (3):311-318.