

# Clarifying an Elusive Construct: a Systematic Review of Writing Attitudes

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**Abstract** Although research recognizes that student attitudes toward writing have the potential to influence a variety of writing outcomes, there is no consensus as to what writing attitude signifies. Further, disparities between conceptualizations of writing attitude make the extant literature difficult to reconcile. In the present study, we systematically review writing attitude research published between 1990 and 2017. Our search procedure and quality analysis led to the retention of 46 articles examining the writing attitudes of students and teachers. Relatively few studies ( $n = 10$ ) provided an explicit definition of writing attitudes. Further, although the authors of many studies ( $n = 16$ ) conceptualized writing attitude as including a measure of liking/disliking writing, there was considerable variability in both conceptualization and operationalization throughout the literature, with some studies including measures of self-efficacy, perceived value, and other related constructs. Student writing attitudes were measured in a majority of the included studies ( $n = 33$ ), and teacher writing attitudes were measured in substantially fewer studies ( $n = 6$ ). Based on the findings of this review, we offer suggestions for researchers making inferences from studies of writing attitudes. Themes of the reviewed literature and implications for future research are also discussed.

**Keywords** Writing attitudes · Attitudes · Systematic review · Literacy

In his posthumously released *Philosophical Investigations* (2010), Ludwig Wittgenstein, the twentieth century German philosopher and logician, famously wrote “the meaning of a word is

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its use in a language” (sec 43). Allowing this, a word has no underlying or innate meaning, only the meaning it assumes via its use. Words with concrete referents, such as “book,” tend to be fairly straightforward in their uses and meanings. Abstract or theoretical concepts, though, can be more problematic. Due, at least in part, to their lack of physical, real-world referents, abstract concepts tend to be harder to conclusively define, and people’s definitions of such terms likely vary. Alexander (2017) discussed the danger that this phenomenon poses to educational research, noting that “there is no reason to assume that even the same terms being voiced by researchers convey similar meanings” (p. 347). Authors of previous reviews have explored conceptual discrepancies throughout the educational literature, such as in the study of self-regulation (Dinsmore et al. 2008), engagement (Fredricks et al. 2004), and teacher enthusiasm (Keller et al. 2016).

We argue that the study of writing attitudes is similarly plagued by these discrepancies, which make comparing findings between studies difficult. When reading studies of writing attitude in the past, we noticed that authors of these studies differed considerably in how (and whether) they defined writing attitudes, how (and to what extent) they operationalized writing attitudes, and how they connected writing attitudes to other potentially related psychological constructs. We further posit that these variations are likely a result of the misguided belief that the meaning of “writing attitudes” is self-evident. As Alexander (2017) pointed out, there is no “construct dictionary” (p. 347) in educational research, so although researchers may share a broad understanding of what writing attitudes are, it would be overly presumptuous to assume complete conceptual and operational agreement.

This review emerged as a result of our previous attempts to make sense of the writing attitudes literature. We introduce our review by presenting a brief overview of how attitudes in general have been conceptualized as well as how they relate to other affective and motivational factors. We then present a history of the conceptualization of writing attitudes and describe Graham’s (2017) Writer within Community model, which provides a theoretical framework for this review. The aims of this review are to explore discrepancies in how writing attitudes has been defined and measured, summarize characteristics of the literature, and synthesize findings from included studies.

## The Study of Attitudes

The study of attitudes has a long and varied history. Despite at one time being proclaimed “the most distinctive and indispensable concept in contemporary American social psychology” (Allport 1954, p. 43), there is surprisingly little consensus among researchers regarding what attitudes are and what should be included in measurements of attitudes. Although it is beyond the scope of this review to provide a complete history of attitudes (see Crano and Prislin 2008 for a comprehensive discussion), some understanding of their theoretical and conceptual underpinnings is necessary.

At their most basic, attitudes represent how much a person likes or dislikes something (Maio and Haddock 2014). Researchers seem to agree that attitudes are evaluative judgments of an object that include both affective and cognitive components (Crano and Prislin 2008). These evaluated objects can be people, events, behaviors, or abstract entities, and evaluations of them can be positioned along a spectrum ranging from positive to negative (Albarracín et al. 2008). One commonly cited definition of domain-general attitude that preserves these features comes from Fishbein and Ajzen (1975), who define the construct as “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (p.

6). Though this general definition of attitude is widely accepted and used in a variety of educational contexts, attitudes themselves are domain-specific and should be studied as such (Graham et al. 2012; Wigfield 1997).

### **Affective Components of Attitude**

Even though researchers often consider attitude as something of a “meta-construct” comprising affective, cognitive, and motivational components (e.g., Maier et al. 2014), much research tends to focus primarily on the affective components of attitude (e.g., Heddy et al. 2017; Troia et al. 2012; Wigfield 1997). Within the affective domain, attitudes most align with moods (Graham et al. 2007): relatively long-lasting affective states that are less intense than emotions (Boekaerts and Pekrun 2016). In Rosenberg’s (1998) hierarchy of affective levels, moods are situated between emotions, the most transient level of affect, and traits, the most enduring level of affect.

The attachment of attitudes to a specific object of reference is not only one of its most salient features but also perhaps one of its slipperiest, particularly when attitudes are contrasted with emotions. Typically, discrete events (e.g., taking a specific test) trigger emotional responses; these responses then dissipate over time as a person becomes farther removed from the triggering event. Attitudes, however, can be attached to habitual events and/or abstract entities, which lead some researchers to posit that they reside within memory and can be produced on demand (Albarracín et al. 2008). Since emotions and attitudes are distinct phenomena, it is possible for a person to simultaneously have a positive attitude toward an object while experiencing negative emotions. For instance, a student may hold a generally positive attitude toward statistics as a discipline and experience negative emotions after performing poorly on a statistics test. This negative emotional response may have attitudinal consequences, but it is not an attitude in and of itself.

Nevertheless, positive affective states have been positively associated with desirable educational outcomes, such as achievement and the use of more flexible problem-solving strategies (see Boekaerts and Pekrun 2016 for a review). When applying Pekrun’s (2006) control-value theory of emotions to attitude research, we can conceive of the affective components of attitudes as being situated on a plane delineated by two spectra: a valence spectrum (ranging from positive to negative) and an activation spectrum (ranging from strongly encouraging action to strongly discouraging action). For example, enjoyment might be a positive activating emotion whereas hopelessness might be a negative deactivating emotion. The inclusion of an activation component into attitude/emotion research acknowledges that not all positive emotions are associated with beneficial outcomes and that some positive emotions (e.g., relaxation) may actually be detrimental if they result in inaction.

### **Attitude and Motivation**

The relationship between attitude and motivation is somewhat unclear in the literature. Some researchers have considered attitude and motivation related yet theoretically distinct concepts (e.g., Troia et al. 2012), whereas others have considered attitude as a subconstruct of motivation (e.g., Graham et al. 2017). This theoretical distinction has implications on how researchers study attitude in relation to other potentially related motivational variables such as individual interest (Renninger and Hidi 2011), intrinsic value, utility value, attainment value (Wigfield and Eccles 2000), and self-efficacy (Pajares 1996), which have all figured prominently into attitude research.

The affective and motivational components of attitude seem to be complexly intertwined. Research on affect suggests that it includes, among other things, motivational components (Boekaerts and Pekrun 2016), whereas research on motivational beliefs suggests that they include, among other things, affective components (Linnenbrink-Garcia and Patall 2016). Further, according to Linnenbrink-Garcia and Patall (2016), researchers have recently begun to integrate motivational, affective, and cognitive variables to better understand how interactions between such variables influence educational outcomes. Given that research on attitudes has straddled the realms of cognition, motivation, and affect, solidifying the theoretical foundations would uniquely position attitudes research to inform such an integrative approach.

If attitude is to serve as a meta-construct with varying components, it stands to reason that conceptualizations of attitude will vary across studies. Given this, it is critical that researchers clearly define and operationalize attitude in each study. However, contemporary education researchers have been reluctant to do so. Even authors publishing studies in the most selective educational research journals sometimes fail to thoroughly and explicitly define attitudes (e.g., Bowman 2011; Rodgers and Summers 2008). More commonly, the term is buried within strings of near-synonyms (e.g., “beliefs, attitudes, and values” [Metzger and Wu 2008, p. 921], “attitudes, values, beliefs, and skills” [Slavich and Zimbardo 2012, p. 576], “knowledge, skills, attitudes, and dispositions” [Brophy 2008, p. 137]) that, in toto, convey broad and nebulous meanings about what attitude may represent.

## Conceptualizing Writing Attitudes

The study of writing attitudes is a microcosm of the study of attitudes in general. Although one of the purposes of this review is to further explore and catalog the varying definitions and operationalizations of writing attitude, our previous experiences with the literature suggest that the conceptualizations are disparate and include combinations of affective, motivational, and cognitive components.

Knudson’s studies of writing attitudes in the early 1990s (e.g., Knudson 1991, 1992, 1993), which mark one of the earliest attempts to systematically study writing attitudes, employed scales that operationalized writing attitude quite broadly. Although later research criticized these measures as being too broad to allow for writing attitude to be represented as a unidimensional construct (Graham et al. 2007; Troia et al. 2012), they may have set the precedent for the wide range of operationalizations that characterize the writing attitudes literature today. For instance, some studies measure writing attitude using items that indicate enjoyment of writing (Olinghouse and Graham 2009), others measure it using items that indicate the perceived utility value of writing (Knudson 1993), and others measure it using items that indicate self-efficacy for writing (Lee 2013). Further complicating matters, some research situates motivational constructs, such as self-efficacy, as components of writing attitudes (Knudson 1991), whereas other research maintains a distinction between writing attitudes and self-efficacy and instead subsumes them both within motivation (Hsiang and Graham 2016).

One common theme in the literature is that researchers often adapt their conceptualizations and operationalizations of writing attitude to fit the purpose or context of a specific study. This is both reasonable and practical, particularly if we consider writing attitudes to be a meta-construct, because measuring every possible component or subcomponent of writing attitudes may not be feasible or desirable within the scope of a given study. However, as we cautioned previously regarding the study of attitudes in general, this adaptability necessitates that

researchers carefully explicate the theory/theories they situate their research in, their conceptual definition of writing attitudes, and how they measure the variable. Failure to do so could lead to mixed findings that are difficult for researchers to reconcile because it would be unclear whether differences in findings were the result of differences in definition, measurement, participant characteristics, or other factors. Indeed, Graham et al. (2017) note this very issue when comparing the amount of variance in writing performance that student writing attitudes accounted for in their study with what was reported in previous studies.

The flexibility of writing attitudes as a construct poses theoretical challenges as well. Namely, if the measurement and definition of writing attitudes fluctuate from study to study, how can researchers fit the construct into a coherent theory with any explanatory power? Promisingly, Graham's (2017) recent Writer within Community (WwC) model of writing provides a useful framework for understanding writing attitudes. The WwC model merges sociocultural and cognitive perspectives in order to offer a more complete understanding of how writing occurs. This model asserts that writing is, at its core, a social activity that takes place within a writing community. The basic components of a writing community include its purpose for engaging in writing, its members (including writers, collaborators, and audiences), its typical practices, and its physical and social environments. These communal components interact reciprocally with community members' cognitive, affective, and motivational resources, including members' prior knowledge, emotions, and beliefs about writing. For example, in a classroom writing community comprised of young children and a teacher, the teacher might tailor the writing purposes and practices toward students with little prior knowledge and uncertain beliefs about writing. These purposes and practices would then influence students' knowledge and motivational beliefs, which would in turn influence community dynamics.

This framework is particularly strong for the study of writing attitudes because its broad scope allows for variability in how writing attitude is measured and its reciprocal structure allows for writing attitude to be positioned as a predictor, mediator, outcome, or other correlate depending upon what is necessary for a given study. Further, the WwC model's acknowledgment of emotion as contributing to writing performance makes it especially conducive for the study of writing attitudes.

If researchers are to study writing attitudes in a formal, meaningful way, they must build upon prior research. This proposition becomes difficult when the prior research is conceptually varied. The aims of this systematic review, then, are to (1) explore how writing attitudes have been defined, conceptualized, and measured, (2) summarize characteristics of the literature, and (3) synthesize findings and themes from included studies.

## Methods

### Inclusion Criteria

We used the following inclusion criteria when selecting articles for the review: (a) writing attitude was a primary variable examined; (b) researchers measured participants' attitudes toward writing in their dominant language; (c) studies were published in peer-reviewed journals; and (d) the term "writing attitude" was used purposefully by the authors. That is, the term writing attitude was used repeatedly and intentionally throughout the article. We did not adopt any criteria related to study design because part of the purpose of the review is to explore how researchers define, conceptualize, and operationalize writing attitude. We posited

that limiting our review to only include studies employing a certain design would artificially narrow our view of the literature.

## Search Procedures

A thorough systematic review of the literature was conducted in multiple phases. First, we searched two international databases: the Education Resources Information Center (ERIC) and Web of Science. We searched full articles using the following search terms to locate studies: “writing attitud\*” or “attitud\* toward writing.” We intentionally chose this narrow set of search terms because one of our primary aims was to identify how writing attitude, rather than its subconstructs or associated constructs, have been studied. Therefore, we did not include the terms: “writing self-efficacy,” “perceived value of writing,” “writing interest,” “writing anxiety” “writing apprehension,” or “writing motivation.” Of course, since there is currently little consensus as to the definition of writing attitudes, constructs such as self-efficacy and value also were measured under the label of writing attitudes in many of the studies included in this review. However, to include all constructs potentially related to attitudes toward writing as search terms in this review would dilute our understanding of the work conducted under this label.

Initial searches were confined to articles written in English and published in peer reviewed journals between 1990 and 2017. Second, we hand searched the following journals that we deemed likely to publish relevant empirical articles: *Journal of Writing Research*, *Reading and Writing Quarterly*, *Research in the Teaching of English*, *Contemporary Educational Psychology*, *Journal of Educational Psychology*, *Reading and Writing*, and *The Reading Teacher*. Third, we contacted authors likely to publish writing attitudes research to obtain unpublished studies or studies that our search criteria may not have captured. Finally, we conducted a legacy search using the reference lists of the included articles.

The initial database and journal hand-searches yielded 226 unique possible articles. After reading abstracts of these articles, we identified 95 studies that warranted further review. We then read the full articles of these texts, which led to the retention of 69 articles meeting our inclusion criteria. Contacting authors likely to publish writing attitude research led to the inclusion of two additional non-duplicate studies, which raised the total to 71. Finally, we conducted a legacy search using reference lists of the included articles. This led to the inclusion of three more studies, raising the total to 74. Of the studies meeting our initial inclusion criteria, six were review articles and 68 were empirical studies. Two of the 68 empirical studies were measurement or scale validation papers (Kear et al. 2000; Shaver 1990).

## Study Quality

To index study quality, we adapted quality criteria for qualitative (Brantlinger et al. 2005), experimental/quasi-experimental (Gersten et al. 2005), and correlational (Thompson et al. 2005) methodologies.<sup>1</sup> Quality criteria for both qualitative and appropriate quantitative methodologies were used to assess mixed methods studies. We scored each criterion on a scale of 0 (criterion not addressed) to 2 (criterion fully addressed) and then summed the scores to assign an overall quality score to each article. If information for the criterion was not present, we assumed that the criterion was not met. Because the number of quality criteria differed for each

<sup>1</sup> Space constraints preclude a more detailed discussion of the quality coding procedures we used. Operationalized quality coding methods are available from the authors upon request.

methodology, we calculated the percentage of possible points each article earned and used this percentage score as our quality threshold. Studies earning less than 60% of the possible quality points were excluded from further analysis. We did not code the six review articles or the two measurement studies for quality because the quality criteria we adapted did not specify guidelines for these types of articles. Further, although we chose to include them in order to document their existence, the review articles were not a primary focus of this review. Since one of the main concerns of this review is to investigate how researchers conceptualize and operationalize writing attitudes, we opted to include both measurement studies a priori.

The first author coded all empirical articles for quality. Initially, the first and second authors coded and discussed 10% of the articles together. Then, to establish reliability, the second author coded an additional 30% of the studies (randomly selected). Agreement between the first and second authors was 0.79.

Of the 66 primary studies that we evaluated for quality, 40 met or surpassed our quality threshold for inclusion into the review. Although we converted the quality score for each study into the percentage earned of the total possible points, the quality indicators used for each methodology (i.e., qualitative, true/quasi experimental, correlational, and mixed methods) are categorically different from one another. Therefore, we refrain here from making cross-method comparisons regarding quality of studies, since such comparisons would be somewhat arbitrary.

For each methodology, we present the two quality indicators that studies earned the lowest percentage of available points on. For each of these indicators, we present the percentage earned of possible points by all studies employing that methodology in parentheses. The quality indicators that qualitative studies earned the fewest points on were “documentation of methods used to establish trustworthiness and credibility are clear” (47%) and “reflections about researchers’ personal perspectives are provided” (50%). The indicators that experimental/quasi-experimental studies earned the fewest points on were “fidelity of implementation clearly described and assessed” (19%) and “includes both inferential statistics and effect size calculations” (47%). The indicators that correlational studies earned the fewest points on were “study effect sizes explicitly compared with those reported in related studies” (26%) and “one or more effect sizes reported for each primary outcome” (61%). We coded mixed methods studies using combinations of the relevant qualitative, experimental/quasi-experimental, and correlational quality codes. Therefore, the lowest-scoring mixed methods indicators are identical to those presented above.

### **Coding of Included Studies**

Due to the variability in the use of the writing attitudes across the studies as well as the variability in the methodologies of the studies reviewed, we did not conduct a meta-analysis. We determined instead that a narrative systematic review would best describe the current literature. We coded studies that met our quality criteria for three categories of data: conceptual/operational, descriptive, and thematic. Coding for these categories allowed us to address the aims of this review. For instance, coding each study for conceptual/operational characteristics allowed us to explore how writing attitudes have been defined and measured in the literature.

**Conceptual and Operational Codes** We coded all studies meeting our quality criteria for conceptual and operational characteristics. Specifically, we categorized studies according to their conceptualization of writing attitude, operationalization and measurement of writing

attitude, and whether they included an explicit definition of writing attitudes as a construct. Using an inductive process, we arrived at conceptual codes by examining how the author(s) of each study described writing attitudes in the text of the article as well as how the author(s) measured writing attitude.

**Descriptive Codes** We also coded studies for descriptive characteristics including sample size, academic level, country of origin, variables examined, and mode of inquiry (i.e., qualitative, experimental/quasi-experimental, correlational, or mixed methods). When coding for academic level, we constructed codes that represent the divisions typical in American schools and, more specifically, in our state. Although we acknowledge that the grades constituting elementary school and middle school differ throughout the USA, in our coding scheme, we consider grades K–5 as elementary school, grades 6–8 as middle school, and grades 9–12 as high school. Further, if a longitudinal study followed participants across multiple academic levels or if a cross-sectional study included participants in multiple academic levels, we assigned multiple codes to that study. Additionally, although preservice teachers may be either undergraduate or graduate students, we opted to create a separate academic level code for preservice teachers because studies sampling preservice teachers have implications specific for this population. We chose to group experimental and quasi-experimental studies together using a single code because we found relatively few of each and because the quality criteria we adapted (Gersten et al. 2005) did not distinguish between these designs.

**Thematic Codes** After coding for descriptive and conceptual characteristics, we conducted a thematic analysis (Braun and Clarke 2006) of the included studies. This analysis involved careful readings, rereadings, and annotation. Throughout the review process, we noted prevalent patterns or themes across the literature. Themes included the use of technology as a means of improving writing attitudes, the relationship between writing attitudes and student age, and the relationship between writing attitudes and gender.

All descriptive, conceptual, and thematic coding was conducted by the first and third authors. Coding discrepancies were discussed until resolved.

## Results

We present the results of our review in the following order. First, we describe our conceptual and operational results, including how studies define, measure, and (implicitly or explicitly) conceptualize writing attitude as a construct. Next, we present our descriptive results, which illustrate study characteristics such as sample size, country of origin, and mode of inquiry. Finally, we detail our thematic results, which describe themes manifesting across the included studies.

### Conceptual Results

As mentioned previously, definitions, conceptualizations, and operationalizations of writing attitude differ throughout the literature. To better understand writing attitudes as a construct and to accomplish the first aim of this review, we investigated conceptual and operational characteristics of the included studies.

**Construct Definition** There is no consensus in the literature regarding how to define writing attitude. In fact, many studies neglect to provide an explicit definition of writing attitude. Of the 46 empirical and review studies included in this review, only 10 studies (22%) explicitly defined writing attitudes as a construct (see Table 1).

Many studies defined writing attitude as a primarily affective construct that describes how a person feels either while writing or about writing (e.g., Erdogan 2013; Graham et al. 2012; Troia et al. 2012). Some definitions include other psychological components as well, such as self-efficacy (Boscolo et al. 2012; McGrail and Davis 2011), task interest (Lee 2013), and task engagement/avoidance (Shaver 1990). Additionally, some definitions posit that motivation is a component of writing attitude (Lee 2013; McGrail and Davis 2011), while others position writing attitude as related to but theoretically distinct from writing motivation (Troia et al. 2012).

**Conceptualization** In addition to coding explicit definitions of writing attitude, we inductively coded each study's implicit conceptualization of writing attitude. As we read through the included studies, six conceptual codes emerged: writing attitude as representing enjoyment of writing, writing attitude as representing perceived value of writing, writing attitude as representing writing self-efficacy, writing attitude as representing writing anxiety, writing attitude as a meta-construct, and no clear authorial conceptualization of writing attitude as a construct. Studies falling into three or more conceptual categories (e.g., enjoyment, perceived value, and self-efficacy) were coded as considering writing attitude to be a meta-construct. Studies falling into two conceptual categories were coded as both. Table 1 presents the studies aligning with each conceptual code.

We found that nearly half of the included studies conceptualized writing attitude as representing enjoyment/lack of enjoyment of writing ( $n = 16$ , 40%). In descending order of frequency, the next most common codes were no clear authorial conceptualization ( $n = 9$ , 22.5%), meta-construct ( $n = 8$ , 20%), anxiety ( $n = 6$ , 15%), self-efficacy ( $n = 5$ , 12.5%), and perceived value ( $n = 2$ , 5%). Worth mentioning is that multiple studies ( $n = 3$ ) in the “no clear authorial conceptualization” group were qualitative studies that asked participants to respond to open-ended prompts about writing. For instance, Pruden et al. (2016) had participants “discuss their attitudes toward writing” (p. 7) during interviews, but the authors themselves did not predetermine what writing attitudes are. Though responses to open-ended prompts often aligned with one or more of our conceptual categories (e.g., participants in Pruden et al.'s [2016] study also discussed writing self-efficacy), this was the result of participants' interpretations of what writing attitudes meant rather than researchers' prescriptions of its meaning. Therefore, these three studies were categorized as not having a clear conceptualization as provided by their authors.

**Quantitative Measures of Writing Attitude** The items and scales used to quantitatively measure writing attitudes varied considerably. Numerous authors assessed students' writing attitudes by asking questions related to the enjoyment of writing (e.g., Brindle et al. 2016; Graham et al. 2017). Often, these studies used a Likert or Likert-type scale to measure the extent to which students liked writing (Graham et al. 2012; Lee 2013). Other items required students to contextualize their enjoyment of writing within a specified setting (e.g., “I do writing on my own outside of school” [Graham et al. 1993]) or in comparison to another activity (e.g., “how do you feel about writing instead of playing?” [Graham et al. 2007]).

Items measuring the perceived value of writing as part of writing attitude tended to require participants to consider how useful writing was in the pursuit of some other goal or knowledge.

**Table 1** Conceptualizations of writing attitudes

Writing attitude includes enjoyment of writing	Writing attitude includes perceived value of writing	Writing attitude includes writing self-efficacy	Writing attitude includes writing apprehension or anxiety	Writing attitude as a meta-construct	Writing attitude not clearly defined, conceptualized, or operationalized
Boscolo et al. (2012)	Graham et al. (1993)	Boscolo et al. (2012)	Jenson (1992)	Carter et al. (2004)	Baker (1993)
Brindle et al. (2016)	Lunsford et al. (2013)	Brindle et al. (2016)	Masse (1999)	Erdogan and Erdogan (2013)	Day et al. (1998)
De Smedt et al. (2016)		De Smedt et al. (2016)	Popovich and Masse (2005)	Knudson (1991)	Ketter and Pool (2001)
Erdogan and Erdogan (2013)		Graham et al. (2017)	Riffe and Staacks (1992)	Knudson (1992)	Mahurt (1998) <sup>a</sup>
Graham et al. (2012)		Lee (2013)	Shaver (1990)	Knudson (1993)	McCarthy (2008)
Graham et al. (2007)			Welch (1992)	Li et al. (2014)	Peacock and Breese (1990)
Graham et al. (2017)				McGrail and Davis (2011)	Pruden et al. (2016) <sup>a</sup>
Graham et al. (1993)				Sturm and Rankin-Erickson (2002)	Sachs (2002)
Hsiang and Graham (2016)					Street (2003) <sup>a</sup>
Jeffery and Wilcox (2014)					
Kear et al. (2000)					
Lee (2013)					
Olinghouse and Graham (2009)					
Owston et al. (1991)					
Quadir and Chen (2015)					
Seban (2012)					

Categorizations indicate how the authors primarily conceptualized writing attitudes as a construct. Entries appearing in multiple columns indicate overlap in conceptualization for that study. Reviews and meta-analyses included in this review are not included in this table

<sup>a</sup> Studies that asked open-ended questions that allowed participants to interpret the meaning of “writing attitude” on their own and respond accordingly

Sometimes, this was a general academic goal (e.g., “You have to be a good writer to do well in school” [Knudson 1993]); other times, the goal was specific to a certain content (e.g., “Writing lab reports really helped me to learn about science” [Carter et al. 2004]).

Most of the items measuring writing self-efficacy as part of writing attitude required participants to rate their perceived writing abilities and competencies. Some items focused on writing self-efficacy in a general sense (e.g., “I am good at writing” [Lee 2013]), whereas others focused on writing self-efficacy in more specific contexts. For instance, some items assessed general writing self-efficacy with effort as a caveat (e.g., “I think that we can write very well as long as we put heart in it” [Li et al. 2014]). Still others addressed self-efficacy for a specific writing task (e.g., “I am good at writing a whole composition” [Knudson 1991]) or for a specific aspect of the writing process (e.g., “When I write a text I get some good ideas” [Boscolo et al. 2012]).

Items measuring writing apprehension or anxiety as part of writing attitude often depended on the purposes of the studies. Some items measured general writing apprehension (e.g., “I avoid writing if I can” [Popovich and Masse 2005] and “I’m nervous about writing” [Riffe and Stacks 1992]). Others measured apprehension toward specific writing tasks or processes (e.g., “I have a terrible time organizing my ideas in a composition course” [Shaver 1990]). Further, some items measured students’ apprehension about their writing being evaluated (e.g., “I’m afraid of writing essays when I know they will be evaluated” [Shaver 1990]).

**Qualitative Measures of Writing Attitude** Researchers have also explored writing attitudes using a variety of qualitative methods. Interviews ( $n = 8$ ) were the most common technique used for qualitative data collection in the studies included in this review. Some of the more specific interview questions aligned with our conceptual codes for writing attitudes, such as those asking about participants’ enjoyment of writing (e.g., “What were your favorite writing assignments this semester? Why?” [Jeffery and Wilcox 2014]) and their perceived value of writing (e.g., “What makes writing valuable?” [Lunsford et al. 2013]). Other interview questions were more general, and responses to such questions could have varied significantly (e.g., “how do you see yourself as a ...writer?” [McGrail and Davis 2011], “describe the writing you do in your English class” [Ketter and Pool 2001], and “describe yourself as a writer” [Street 2003]).

Qualitative studies of writing attitudes also included observations and document analysis as means of data collection. For instance, Street (2003) and Mahurt (1998) observed preservice and novice teachers to complement interview data. Massé (1999) collected and read undergraduate student journals over the course of a semester to track how their writing attitudes changed. Similarly, Erdogan and Erdogan (2013) asked students to describe their writing attitudes by comparing writing to something else in a metaphor.

## Descriptive Results

To address the second aim of our study, we investigated descriptive characteristics of the included studies, such as sample size, country of origin, and mode of inquiry. Table 2 presents an overview of the descriptive characteristics, as well as the findings, of the primary studies included in this review.

Sample sizes of the studies included in this review ranged from a case study of three adolescent males (Pruden et al. 2016) to a large-scale analysis of NAEP data from 160,486

eighth grade students (Lee 2013). Over half ( $n = 21$ , 52.5%) of the reviewed studies had sample sizes larger than 100. The majority of the articles sampled elementary students ( $n = 14$ ), middle school students ( $n = 12$ ), or undergraduate students ( $n = 9$ ). Relatively few examined the writing attitudes of teachers ( $n = 6$ ), high school students ( $n = 5$ ), preservice teachers ( $n = 3$ ), graduate students ( $n = 1$ ), or other non-student populations (i.e., bloggers;  $n = 1$ ).

The vast majority ( $n = 29$ , 72.5%) of the articles included in this review were conducted in the USA, with others conducted in Turkey ( $n = 3$ ), China ( $n = 3$ ), Taiwan ( $n = 1$ ), Italy ( $n = 1$ ), the UK ( $n = 1$ ), Belgium ( $n = 1$ ), and the Virgin Islands ( $n = 1$ ).

There does not seem to be one dominant mode of inquiry in the writing attitudes literature. Although many studies were correlational ( $n = 15$ , 37.5%), qualitative ( $n = 11$ , 27.5%), and experimental/quasi-experimental studies ( $n = 9$ , 22.5%) were also fairly common. However, high quality mixed method studies were much less common ( $n = 3$ , 7.5%). As mentioned previously, six studies included in this review were literature reviews or meta-analyses that included some discussion of writing attitudes (Bangert-Drowns 1993; Bruning and Horn 2000; Harris and Graham 2013; Lee and Shute 2010; Troia et al. 2012; Valeri-Gold and Deming 1991). Two studies included were measurement articles that described the validation of new or existing writing attitude scales without reporting other correlational findings (Kear et al. 2000; Shaver 1990).

## Thematic Results

To address the third aim of this review, we present a synthesis of findings and themes of the included studies in the following sections. It is worth noting that not all included studies contributed to the themes described in this section. For descriptions of the results of individual studies, see Table 2.

**Writing Attitude and Writing Achievement** Of the studies in this review that investigated the relationship between writing attitude and writing achievement, most found that students' writing attitudes positively predicted factors associated with writing achievement, such as writing length, writing quality, and longest correct word sequence (Graham et al. 2012; Graham et al. 2012; Graham et al. 2017; Lee 2013). At least in young students, this relationship appears to be unidirectional (Graham et al. 2007). In only one study (Olinghouse and Graham 2009) was writing attitude not associated with a measure of writing achievement or quality. In this study, the authors reported negative, weak, and non-significant correlations between writing attitude and story quality ( $r = -.08$ ) and between writing attitude and story length ( $r = -.18$ ). Further, students' writing attitudes seem to have a unique influence on their writing achievement beyond that of their reading attitudes (Graham et al. 2012) and, when writing attitude is considered alongside writing self-efficacy, beyond their strategic writing behaviors (Graham et al. 2017). Some evidence indicates that writing achievement differs considerably for students with the most negative attitudes and students with the most positive attitudes; depending upon the indicator of writing attitude used, effect sizes of attitudes on writing performance ranged from  $d = 0.5$  to  $d = 0.9$  (Lee 2013).

It is worth noting that relatively few studies in this review examined the relationship between writing attitudes and writing achievement. Most of those that did sampled elementary students, with Lee's (2013) study of eighth grade students being the only exception. Also, worth considering is that though Graham et al. (2012) found writing attitude predicted writing

**Table 2** Review of descriptive characteristics and findings of included studies

Study	Sample characteristics and data source	Correlates	Explicit definition of writing attitude	Findings
Baker (1993)	193 second semester undergraduate students	Writing attitude, writing achievement, portfolio-based instruction	NA	Students' posttest attitude scores not related to course grades. Attitudes did not vary as a result of type of instruction.
Boscolo et al. (2012)	114 fourth grade students	Writing achievement, writing attitudes, and linguistic games	Writing attitude concerns both liking writing and competence in writing (p. 30)	Intervention led to increases in writing attitudes.
Brindle et al. (2016)	156 teachers	Teacher writing attitudes, teachers writing self-efficacy, teacher writing instructional attitude, evidence based instructional practices, time spent writing	NA	Teacher writing attitude correlated with evidence-based teaching and evidence-based writing instruction. In regression with other predictors, teacher writing attitude did not predict any outcome.
Carter et al. (2004)	80 undergraduates	LabWrite program, science content knowledge, lab report writing	NA	Students in the LabWrite group had significantly more positive attitudes toward writing lab reports than students in the control group.
Day et al. (1998)	58 undergraduates	Writing attitudes and writing achievement	NA	Internet-based class had a higher mean gain for attitude toward writing than non-tech class. Same for achievement
De Smedt et al. (2016)	128 teachers and 800 fifth and sixth grade students	Teacher attitudes toward writing and writing instruction, teacher efficacy for writing, classroom writing practices, amount of time writing	NA	Teachers tended to have fairly positive writing attitude and writing instructional attitude. Adding teacher writing attitude and teacher writing instructional attitude did not improve model, which suggests that they do not account for unique variance in predicting student writing performance.
Erdoğan and Erdoğan (2013)	594 elementary fifth graders	Writing attitudes	"A cognitive characteristic of how the individual feels about writing" p. 347	Participants perceive writing as "something that is liked" more often than "something that is boring"
Erdoğan (2013)	24 Turkish preservice teachers	Writing attitude, writing skills, creative drama method	"Attitude toward writing is an affective feature that related with how individual feels himself/herself while writing." p. 45.	Creative drama method improved the participants' writing skills and attitudes toward writing.

Table 2 (continued)

Study	Sample characteristics and data source	Correlates	Explicit definition of writing attitude	Findings
Erdogan (2013)	24 Turkish preservice teachers	Writing attitude, writing skills, creative drama method	“Attitude toward writing is an affective feature that related with how individual feels himself/herself while writing,” p. 45.	Creative drama method improved the participants’ writing skills and attitudes toward writing.
Graham et al. (2012)	241 elementary first and third graders	Writing attitude, reading attitude, writing quality, literacy, gender, socioeconomic status	“an affective disposition involving how the act of writing makes the writer feel, ranging from happy to unhappy,” p. 53	Reading and writing attitudes are separable constructs; reading attitudes more positive than writing attitudes; writing attitude predicts writing quality
Graham et al. (2007)	241 elementary first and third graders	Writing attitude, writing achievement, gender	“An affective disposition involving how the act of writing makes the author feel, ranging from happy to unhappy,” p. 518	Writing attitude influences writing achievement unidirectionally; girls had more positive writing attitudes than boys.
Graham et al. (2017)	227 fourth graders	Writing attitudes, writing self-efficacy, strategic writing behavior, writing quality, writing length	NA	Strategic writing behavior, motivational variables (writing self-efficacy and writing attitude grouped together) accounted for statistically significant and unique variance in predicting writing quality. Motivational variables (grouped together) accounted for unique variance in predicting writing length. Writing attitude correlated with writing self-efficacy (0.37) and strategic approach to writing (0.39). LD students possessed less knowledge than classmates. LD students also had less positive attitudes toward writing than classmates.
Graham et al. (1993)	68 elementary fourth graders	Writing attitude, self-efficacy, writing knowledge.	NA	Teachers in the study generally had positive writing attitudes. When grouped with 2 other belief items (“I like to teach writing” and “I am effective at teaching writing”), teacher writing attitude significantly predicted writing instructional practices.
Hsiang and Graham (2016)	1102 teachers of grades 4–6	Writing attitude, writing instructional practices, writing instructional attitude, writing instructional self-efficacy.	NA	
		Writing attitude, writing across disciplines	NA	

**Table 2** (continued)

Study	Sample characteristics and data source	Correlates	Explicit definition of writing attitude	Findings
Jeffery and Wilcox (2014)	40 middle and high school students			Students expressed more positive relative to negative stances toward writing in English Language Arts, but more negative relative to positive stances toward writing in social studies, science, and math.
Jenson (1992)	135 undergraduates	Writing achievement and writing attitudes	NA	Accelerated courses were less effective than the regular courses at improving writing attitudes and writing achievement.
Kear et al. (2000)	974 students in grades 1–12	Writing attitudes	NA	Validation of the Writing Attitude Survey.
Ketter and Pool (2001)	3 high school teachers; 5 students	Writing attitudes, high stakes testing, writing instruction	NA	Teachers' writing attitudes inextricably linked to instructional behaviors; focus on test preparation negatively influenced writing instruction.
Knudson (1991)	398 fourth to eighth graders	Writing attitude, writing achievement, age	NA	Development of writing attitude survey for grades 4–8; writing attitude negatively associated with age.
Knudson (1992)	394 first to third graders	Writing attitude, writing achievement	NA	Development of a writing attitude survey for grades 1–3; writing attitude negatively associated with age.
Knudson (1993)	870 9th–12th graders	Writing attitude, gender, age, ethnicity.	NA	Girls had more positive attitudes toward writing than boys; 12th grade students had significantly more positive attitudes toward writing than other grades; no significant effect of ethnicity on writing attitude.
Lee (2013)	160,486 eighth grade students taking the NAEP writing test	Writing attitude, writing achievement, learning behaviors, gender	Attitudes are “typically measured by motivation or interest” p. 166	Significant gender differences in writing attitudes; females with negative writing attitudes outperformed males with positive writing attitudes.
Li et al. (2014)	109 fourth grade students	Writing attitude, writing achievement, wiki-based writing	NA	Wiki intervention had a significant positive effect on writing attitude
Lunsford et al. (2013)	39 undergraduate students	Writing attitude, writing value	NA	Students do not feel their writing is valuable; teachers should emphasize building identity in student writers.
Mahurt (1998)			NA	

Table 2 (continued)

Study	Sample characteristics and data source	Correlates	Explicit definition of writing attitude	Findings
Masse (1999)	6 preservice teachers, 7 undergraduates	Writing attitude, attitudes toward teaching writing, writing workshop Writing attitude and writing achievement.	NA	Writing attitude improved after taking a class that incorporated writing workshop. Instructor reading of student journals may enable instructors to better understand students' attitudes and thereby help them improve as writers. No Child Left Behind has had a negative impact on teacher writing attitudes and attitudes toward writing instruction.
McCarthy (2008)	18 teachers	Teacher writing attitudes, attitudes toward writing instruction, NCLB	NA	Blogging associated with positive writing attitudes; students became more connected to audience and the writing process when blogging. Second grade students had more positive writing attitudes than fourth grade students. Writing attitude not a predictor of writing quality or of writing length in multiple regressions.
McGrail and Davis (2011)	16 fifth grade students and their teacher	Writing attitudes, blogging	Attitude comprises motivation, excitement, confidence, and interests/emotions	Writing attitude scores significantly higher for students using a computer than for students writing by hand. Students noted that they liked writing by hand more than writing on a computer.
Olinghouse and Graham (2009)	64 (32 of each grade) second and fourth graders	Writing attitude, writing performance, writing discourse knowledge	NA	Identified two types of students: optimists and pessimists. Optimists demonstrated positive writing attitudes over course of semester; pessimists developed more negative writing attitudes.
Owston et al. (1991)	118 eighth grade students	Writing attitude, writing achievement, word processing	NA	Intervention led to increased writing attitudes; choice provided students with ownership over writing; intervention led to increased SE in participants. Reading and writing habits are significant predictors of the adoption of blogs.
Peacock and Breese (1990)	26 11-year-old students	Writing attitudes, writing practices, writing with a computer	NA	Journalism majors had more positive attitudes toward writing than less writing intensive mass
Popovich and Massé (2005)	127 undergraduate students	Writing attitude, writing apprehension.	NA	
Pruden et al. (2016)	3 sixth grade students	Writing attitudes, Narrative Theater intervention, writing self-efficacy	NA	
Qadir and Chen (2015)	210 bloggers	Writing attitude, writing habits, blog adoption.	NA	
Riffe and Stacks (1992)	532 undergraduates	WA, writing apprehension.	NA	

**Table 2** (continued)

Study	Sample characteristics and data source	Correlates	Explicit definition of writing attitude	Findings
Sachs (2002)	90 graduate and undergraduate students	Writing attitude, academic experience, learning approach, academic ability, luck, knowledge orientation	NA	communication majors. Female students had more positive writing attitudes than male students. Developed a path model for students' attitude toward writing a thesis
Seban (2012)	42 elementary students	Writing attitude, writing achievement, process writing approach.	NA	Authoring cycle intervention had a positive effect on students' attitudes toward writing; no effect on writing achievement
Street (2003)	5 preservice teachers	Writing attitude, attitude toward teaching writing	NA	Positive writing attitude associated with positive attitude toward teaching writing.
Sturm and "The feelings and beliefs students have about their writing ability and about written language tasks" p. 128	Computer-assisted planning associated with improvements in writing attitude; planning conditions outperformed no planning condition on writing achievement.	Rankin-Erickson (2002)	27 middle school students	Writing attitude, writing achievement, planning strategies, writing with computers
Welch (1992)	18 sixth grade students	Writing attitude, writing quality, PLEASE meta-cognitive strategy	NA	PLEASE strategy was associated with improvements in writing attitude and meta-cognitive ability development.

NA not available

achievement measures in third grade students, writing attitudes did not predict achievement measures in first grade students.

**Writing Attitude and Gender** Studies included in this review unanimously found that females tend to have more positive writing attitudes than do males (Graham et al. 2012; Graham et al. 2007; Knudson 1993; Lee 2013; Riffe and Stacks 1992). Further, gender differences may develop as early as first grade (Graham et al. 2012; Graham et al. 2007) and persist through middle school (Lee 2013), high school (Knudson 1993), and into students' undergraduate years (Riffe and Stacks 1992).

Results of Lee's (2013) study suggest that gender may moderate the relationship between writing attitude and achievement. Even when reporting the same level of writing attitudes, females earned considerably higher writing scores than males ( $d = 0.4-0.6$ ). Further, female students with negative attitudes still outperformed males with positive attitudes. However, this interaction may only hold for older students, since Graham et al. (2007) found differences in writing attitude between males and females but no differences in writing achievement.

**Writing Attitude and Age** Most evidence indicates that younger students have more positive attitudes toward writing than do older students (Graham et al. 1993; Knudson 1991; Knudson 1992; Olinghouse and Graham 2009), although most students also have generally positive attitudes about writing, at least through the eighth grade (Erdogan and Erdogan 2013; Graham et al. 1993; Lee 2013). Despite being generally positive, findings across studies seem to suggest that writing attitudes decline with age. Across the studies included in this review, second graders reported more positive attitudes than fourth graders (Olinghouse and Graham 2009), third grade students reported more positive attitudes than their fifth grade peers (Knudson 1992), fourth graders reported more positive attitudes than sixth graders (Knudson 1991), and students in the fourth and fifth grades had more positive writing attitudes than students in the seventh and eighth grades (Graham et al. 1993).

This decline may not begin immediately when students enter school nor does it necessarily persist throughout students' K-12 education. Findings by Graham et al. (2007) show no age-based differences in writing attitudes for students in the primary grades (i.e., grades 1–3). Considered along with the findings from other studies, this suggests that writing attitude may not begin to decline until later in elementary school. Further, Knudson (1993) found that 12th grade students had significantly more positive attitudes toward writing than did high school students in other grades. No studies included in this review investigated whether or how students' writing attitudes change between high school and college.

**Teachers' Writing Attitude** Several studies in this review investigated teachers' and preservice teachers' writing attitudes. Often, these studies investigated how teachers' writing attitudes influenced their instructional practices (e.g., Brindle et al. 2016; Hsiang and Graham 2016; Mahurt 1998; Street 2003). Although teachers seem to have generally positive attitudes toward writing (Brindle et al. 2016; De Smedt et al. 2016; Hsiang and Graham 2016), the implications of their writing attitudes on classroom instructional practices and student outcomes are less clear. For instance, Brindle et al. (2016) found that, despite being correlated with use of evidence-based instructional practices and time students spent writing, teacher writing attitudes did not predict either outcome when included in a regression with other predictors (e.g., teacher writing self-efficacy). Similarly, De Smedt et al. (2016) found that

teacher writing attitude did not directly predict student writing performance, though they posited that it may have an indirect effect.

However, some other studies found that teacher writing attitude was related to desirable teacher behaviors. In a study with Chinese teachers, Hsiang and Graham (2016) found that teacher writing attitude, when entered into a model along with other belief variables such as teacher writing self-efficacy, significantly predicted evidence-based instructional practices. Qualitative studies support this positive association. In case studies of two exemplary high school teachers, Ketter and Pool (2001) noted that “attitudes and behavior of the teachers were inextricably linked” (p. 357). Street’s (2003) observational study of preservice teachers further corroborated this. After observing a teacher (Tracy) with a negative writing attitude, he wrote, “quite obviously, Tracy’s poor writing attitudes carried over into the classroom and seemed to have a negative influence on her classroom instruction” (pp. 38–39), noting that her lessons were typically “uninspired” (p. 38) and devoid of enthusiasm. Inversely, he noted that preservice teachers with positive writing attitudes “simply had more to offer their students than did the other participants” (p. 46). Monica, a preservice teacher with a positive writing attitude, taught engaging lessons and regularly modeled for her students. She also indicated that her “passion for writing” (p. 42) influenced her decisions to model writing regularly.

**Writing Attitude and Technology Use** Since technology is becoming increasingly prevalent in the classroom, writing researchers have been interested in how various instructional technologies influence students’ attitudes toward writing. Results of these studies overwhelmingly support the notion that student writing attitudes are positively associated with technology use, particularly when technology conditions are compared to pen and paper conditions (e.g., Carter et al. 2004; Li et al. 2014; Owston et al. 1991; Sturm and Rankin-Erickson 2002). Only one study included in this review (Peacock and Breese 1990) found that students liked writing more by hand than with a computer.

Furthermore, the positive association between writing attitude and technology use persists across a variety of technologies and digital writing tools, including Internet-based instructional delivery (Day et al. 1998), digital planning programs (Sturm and Rankin-Erickson 2002), non-collaborative digital writing platforms such as word processing software (Carter et al. 2004; Owston et al. 1991; Pruden et al. 2016), and collaborative digital writing platforms such as wikis and blogs (Li et al. 2014; McGrail and Davis 2011).

Nevertheless, platform-specific features may influence writing attitudes in different ways. For example, participants in the study conducted by Pruden et al. (2016) reported that the study’s digital writing platform afforded them more choice in what they wrote about, which in turn led them to be more interested in their writing tasks. Students using collaborative digital writing platforms (e.g., blogs or wikis) reported feeling more connected to and aware of their audience, which was related to more positive writing attitudes (Li et al. 2014; McGrail and Davis 2011). Participants using both individualistic and collaborative platforms indicated feeling more ownership over their writing (Li et al. 2014; McGrail and Davis 2011; Pruden et al. 2016). For instance, Kade, a struggling writer, noted that he “like[s] how you get to choose your own [topic]” in the *Narrative Theatre* module and that he “put[s] forth more effort if [he] like[s] what [he is] writing” (Pruden et al. 2016, p. 11). Similarly, when reflecting on blogging, one student responded “when I’m making a new post I put myself in the reader [sic] shoes. I make sure that my reader won’t get bored after he/she is finish [sic]. Also I make sure after they finish reading the post, that they understand it” (McGrail and Davis 2011, p. 430). Also worth noting is that the relationship between writing attitude and blogging may be bidirectional. That is, research

indicates that blogging may lead to improved writing attitudes (McGrail and Davis 2011) and that writing attitudes positively predict blog adoption (Quadir and Chen 2015).

**Discipline-Specific Writing Attitudes** Most studies in this review investigated general writing attitudes or students' writing attitudes in English Language Arts (ELA) classes. However, a handful of studies ( $n = 6$ ) examined discipline-specific writing attitudes in non-ELA classes (Carter et al. 2004; Day et al. 1998; Jeffery and Wilcox 2014; Popovich and Masse 2005; Riffe and Stacks 1992; Sachs 2002). Some research suggests that not only does writing differ by domain, but student perceptions of these the demands in each domain and their attitudes toward writing in these domains differ as well (Jeffery and Wilcox 2014). More specifically, students may have more positive attitudes toward writing tasks that allow for some infusion of subjectivity, which they associate more with ELA classes than with math, science, or social studies classes (Jeffery and Wilcox 2014).

Two of these discipline-specific studies (Popovich and Masse 2005; Riffe and Stacks 1992) used the Mass Communication Writing Apprehension Measure (MCWAM) to explore the writing attitudes of undergraduates majoring in mass communications disciplines. Riffe and Stacks (1992) found that journalism majors had significantly more positive writing attitudes than did students majoring in less writing-intensive mass communication disciplines, such as business. Within journalism, Popovich and Masse (2005) used Q methodology, a form of person-centered analysis, to further divide students into two factors: optimists and pessimists. In this study, optimists maintained a positive writing attitude throughout a semester-long class, whereas pessimists' writing attitudes declined over the course of the semester.

Two other studies examined students' attitudes toward discipline-specific genres of writing: the lab report (Carter et al. 2004) and the thesis (Sachs 2002). Sachs (2002) estimated a path model for students' attitude toward writing a thesis. In this model, academic experience and learning approach directly predicted students' attitude toward writing a thesis and mediated the influence of academic ability, luck, and knowledge orientation. Carter et al. (2004) found that using LabWrite, a digital tool designed to scaffold the process of writing a lab report, led students to write better lab reports and develop more positive attitudes toward writing lab reports.

## Discussion

We presented the results of this review in three different sections, each of which aligned with one of our three aims. In our conceptual results, which addressed our first aim, we presented how the authors of studies included in this review have defined, conceptualized, and operationalized writing attitudes. We found that a minority of the studies included explicitly defined writing attitudes and that there was considerable variability in conceptualizations and operationalizations. In our descriptive results, which addressed our second aim, we presented descriptive characteristics of the studies included in this review. We found that most studies were quantitative in nature, were conducted in the USA, and investigated the writing attitudes of a range of target populations. In our thematic results, which addressed our third aim, we presented syntheses of findings and themes across the included studies. Such themes included investigations of the relationship between writing attitudes and writing achievement, between writing attitude and technology use, and of gender-based differences in writing attitude.

In the following section, we discuss these results. We draw connections between studies and make inferences about results when appropriate. We also discuss directions for future research and the importance of conceptual clarity.

### How Is Writing Attitude Conceptualized?

Our findings indicate that, across the literature, researchers typically consider writing attitudes as primarily an affective construct, which is in line with general conceptualizations of attitude (Crano and Prislin 2006) as well as recent attitude research in other domains (e.g., Heddy et al. 2017). More specifically, these studies maintain the notion of writing attitude as an evaluative judgment of writing that is built upon affective reactions. For instance, studies often asked participants the extent to which they enjoy writing (e.g., Boscolo et al. 2012; Brindle et al. 2016; Kear et al. 2000) or the extent to which writing makes them happy (e.g., Erdogan 2013; Li et al. 2014), which illustrate attitude as a judgment about writing stored in memory that is informed by previous reactions to writing. Studies examining the extent to which writing made participants anxious (e.g., Masse 1999; Riffe and Stacks 1992; Welch 1992) similarly positioned writing attitude as a judgment informed by previous affective reactions, albeit negative ones. This affective focus further aligns with Graham's (2017) Writer within Community theoretical framework, which posits that emotions influence long-term memory resources that students draw upon when writing.

However, some studies also focused on components of participants' writing attitudes that are not strictly affective and have cognitive or conative characteristics. For instance, numerous studies included writing self-efficacy, a multidimensional appraisal of one's ability to succeed on a given writing task that includes cognitive, conative, and affective processes (Bandura 1994), as a component of writing attitude (e.g., Boscolo et al. 2012; Lee 2013; Knudson 1992). Others included participants' perceptions of the value of writing as a component of writing attitude (e.g., Carter et al. 2004; Knudson 1993; Lunsford et al. 2013). The inclusion of such components as part of attitude is also in line with Crano and Prislin's (2006) conceptualization of attitude as integrating both affective and cognitive reactions; however, it also raises theoretical questions about which constructs are components of writing attitudes and which are simply related to writing attitudes. That is, can writing self-efficacy, for example, be completely subsumed under the larger concept of writing attitude, or is it a distinct psychological construct that is related to writing attitude?

The studies included in this review offer little in response to this theoretical issue. Because the measurement and conceptualization of writing attitude itself varies across the studies included, it is difficult to draw meaningful comparisons between writing attitude and other psychological constructs. Adding to this difficulty, few studies made intra-study comparisons between writing attitude and other constructs. Graham et al. (2017) found small to moderate correlations between writing attitude and writing self-efficacy ( $r = .37$ ) and between writing attitude and strategic writing behaviors ( $r = .39$ ), and some qualitative evidence suggests that students may not like writing because they do not think they are good at it (Ketter and Pool 2001). Further, relatively few studies ( $n = 10$ ) explicitly defined writing attitudes. This scarcity of definitions suggests either a reluctance by researchers to engage with writing attitude as a distinct theoretical construct or a misguided belief that the definition of writing attitude is self-evident.

The prevalence of such conceptual ambiguity has been long recognized in educational psychology research (see, e.g., Alexander 2017; Dinsmore et al. 2008; Fredricks et al. 2004; Keller et al. 2016). The results of this review suggest that the study of writing attitudes is

similarly hamstrung by ambiguity. Indeed, this conceptual variability seems to preclude drawing definitive theoretical conclusions about the structure of writing attitudes as a construct. Additionally, it also hinders researchers' ability to draw conclusions between studies and accumulate a coherent knowledge base.

From a practical perspective, there might be advantages to measuring writing attitudes narrowly. Using attitude items that measure only participants' summary evaluations of writing along a spectrum from like to dislike may lead to shorter attitude scales. Employing shorter attitude scales could allow researchers to collect more data on other constructs of interest without fear of survey response fatigue, which tends to increase measurement error on questions asked toward the end of longer surveys (Egleston et al. 2011). Of course, the appropriateness of different levels of measurement specificity depends upon the purpose of the study (Fredricks et al. 2004). Narrower measures of writing attitude may sacrifice theoretical clarity for practical utility, which is a dilemma researchers must consider when planning studies.

### Study Characteristics: Where, How, and with Whom?

**Where** Most of the primary studies included in this review ( $n = 29$ , 72.5%) were conducted with participants in the USA, and there seem to be multiple plausible explanations for this. Most simply, it may be that researchers in the USA publish more scholarly articles than do researchers from other countries (King 2004), so this national disparity might hold regardless of the discipline being reviewed. Our inclusion of only articles published in English could have also biased our findings. However, it may be that this disparity is particular to writing attitudes research. Future research may wish to empirically investigate international trends in research publication by discipline or domain to discern whether different countries produce more (or less) research in specific areas.

**How** There does not seem to be one dominant methodology in writing attitudes research. We believe that this methodological diversity both strengthens the literature and speaks to researchers' varying interests in writing attitudes. Whereas the qualitative research primarily focused on how students' writing attitudes form and change, most correlational studies examined relationships between writing attitudes and other variables of interest, and experimental/quasi-experimental studies most often tested whether implementing specific interventions altered students' writing attitudes. Further, this diversity in how researchers investigate writing attitudes is consistent with domain-general notions that attitudes both contribute to behaviors and are susceptible to influence by numerous processes (Crano and Prislin 2008; Maio and Haddock 2014).

**With Whom** Predominantly, studies included in this review were conducted with younger students, either elementary school students ( $n = 14$ ) or middle school students ( $n = 12$ ), though a considerable number sampled undergraduate students ( $n = 9$ ). As Graham et al. (2007) suggest that younger students' writing attitudes may be less solidified than older students', since their attitudes are informed by fewer writing experiences. Given this, the assumption in much of the literature seems to be that if researchers and practitioners alike can "catch" students with negative attitudes early, then they might be more successful in improving their attitudes than they would be if these students were older and had already amassed several negative writing experiences (Zumbrunn and Bruning 2013).

Convenience sampling might explain the considerable number of studies sampling undergraduate students. Another explanation, though, may involve a shift in how writing is viewed in higher education when compared to how it is viewed in K-12 education. Lunsford et al. (2013) suggest that writing serves as a sort of “symbolic capital” (p. 471) in universities and one that is highly valued by members of academia. Undergraduate students, however, may not hold writing in the same esteem, with some viewing it as a distasteful requirement (Slinger-Friedman and Patterson 2012) rather than as a valuable form of currency. This potential disconnect in perceptions about writing between members of the academy—who are often the researchers conducting these studies—and their students might explain the number of studies focusing on undergraduates. However, if this is the case, it seems worth noting that no studies included in this review examined the writing attitudes of college instructors. This may be one avenue for future research.

## Gender Differences

Unsurprisingly, studies included in this review unanimously found that females tended to have more positive writing attitudes than did males (e.g., Graham et al. 2012; Graham et al. 2007; Knudson 1993). These findings are consistent with traditional gender stereotypes and support previous research indicating that females are often more motivated in language arts than are their male peers (Meece et al. 2006). Further, attitude may operate differently as a predictor of writing achievement for females and males, since females and males sometimes demonstrate different levels of writing achievement even when reporting similar writing attitudes (Lee 2013).

Although numerous studies found that females typically have more positive writing attitudes than males, no studies included in this review examined the causes of these differences at any academic level. Given that these gender-based differences in writing attitude seem to develop as early as the first grade (Graham et al. 2012; Graham et al. 2007) and persist throughout school, qualitative and mixed method research that further investigates the causes of these differences is much needed. Further still, experimental and quasi-experimental studies might seek to investigate whether interventions differentially affect males’ and females’ writing attitudes.

## Malleability of Writing Attitudes

The studies in this review suggest that writing attitude is a malleable belief. First, students’ attitudes toward writing seem to be sensitive to various types of writing interventions, including technology interventions (e.g., Li et al. 2014; McGrail and Davis 2011; Sturm and Rankin-Erickson 2002), strategy interventions (e.g., Welch 1992), and changes in the classroom’s general approach to writing (e.g., Boscolo et al. 2012; Seban 2012).

Studies in this review also indicated that, barring any interventions, students’ writing attitudes decline as they age. As is the case with gender-based differences in writing attitude, there is no research examining why student writing attitudes might decline with age. Changes in the modes of writing that students typically engage in, changes in the amount of writing they are required to produce, and numerous other factors could explain this phenomenon. Thus, future research is necessary to understand the development and developmental trends of writing attitudes as students progress through school.

Though more research is needed, there seem to be promising steps researchers and instructors can take to improve students' writing attitudes, and these improvements often can be effected in a relatively short amount of time. Evidence suggests that technological interventions may improve writing attitudes of elementary school students (e.g., Li et al. 2014; McGrail and Davis 2011), middle school students (Owston et al. 1991; Pruden et al. 2016; Sturm and Rankin-Erickson 2002), and undergraduates (e.g., Carter et al. 2004; Day et al. 1998). Less clear, however, are the mechanisms by which these interventions change students' writing attitudes. Qualitative data provide several possible explanations. Some students indicated that they enjoyed the collaborative features of tools such as blogs or wikis, which allowed them to comment on others' writing as well as receive peer comments on their own writing (Li et al. 2014; McGrail and Davis 2011). Others indicated that digital platforms allowed them more choice in their writing, which led to more positive attitudes (Pruden et al. 2016). Alternatively, Sturm and Rankin-Erickson (2002) contend that technology interventions can make writing less onerous for students by providing supports that reduce the cognitive burdens placed on them. Given that some prior research has found a positive association between writing attitude and handwriting quality (Olinghouse and Graham 2009), it may also be that using a computer ameliorates the relationship between poor handwriting and writing attitude.

It is worth noting that the provision of collaboration, choice, and cognitive scaffolding can be accomplished without the use of technology, and it is therefore unclear whether technology is merely a convenient way to incorporate these features into writing instruction or whether there is something intrinsically beneficial for students' writing attitudes in the use of technology itself. Though these findings are promising, particularly considering the more prevalent role technology plays in today's classrooms, future research is needed to understand the power of instructional interventions to improve student attitudes toward writing.

### Teachers' Writing Attitudes

The seven studies included in this review examining either teachers' or preservice teachers' writing attitudes raise questions about the ways in which teacher writing attitudes matter. That is, when considered together, these studies do not present overwhelming evidence either in favor of or against teachers' writing attitudes as positive influences on desirable outcomes.

Findings from two qualitative observational studies (Ketter and Pool 2001; Street 2003) seem to suggest that teachers' writing attitudes influence their classroom behaviors. According to Street (2003), teachers with positive attitudes toward writing had livelier classrooms and taught more engaging writing lessons, whereas teachers with negative writing attitudes did little more than passively assign writing and wait for students to complete it. Hsiang and Graham (2016) offer support for this positive influence of teacher writing attitudes on good teaching; they found that, when grouped with other beliefs items, teacher writing attitude predicted teachers' use of evidence-based writing instructional practices.

However, Hsiang and Graham's (2016) inclusion of writing attitude into their model along with other beliefs items makes it difficult to discern the unique contribution of teachers' writing attitude on their instructional practices, and it may be that beliefs other than writing attitude contribute more to classroom behaviors. Findings from Brindle et al. (2016) support this, since teacher writing attitude, though correlated with use of evidence-based teaching and writing practices, failed to significantly predict either evidence-based teaching or evidence-based writing instructional practices after controlling for other predictors. Further, De Smedt

et al. (2016) found that teacher writing attitude did not significantly predict student writing performance.

Context, policy, and other institutional factors may play a role in the relationships between teachers' writing attitudes, their instructional practices, and student outcomes. National educational policies may not only affect teachers' writing attitudes, but they may also dictate instructional practices beyond the influence of these attitudes (McCarthy 2008). Even school-level policies, norms, and dynamics may intervene. For instance, Mahurt (1998) found that, despite having positive writing attitudes toward writing and, more specifically, toward process writing, novice teachers had trouble translating these attitudes into classroom practice. More research is needed to reconcile the interactions between teachers' attitudes, their practices, and their instructional contexts.

Taken together, findings of these studies investigating teacher writing attitudes might suggest that teachers' attitudes indirectly predict performance. Quantitative studies may not have employed models that fully capture the relationships between writing attitudes and desirable outcomes that qualitative researchers have observed in the classroom. Some research outside of the domain of writing supports the notion that teacher beliefs may have an indirect effect on student achievement. For instance, Keller et al. (2016) propose that teacher enthusiasm might indirectly predict student achievement. Studies that directly test potential mediators of the relationship between teacher writing attitude and student performance, such as student motivational variables, are an important next step.

## Conclusions

### Limitations

The findings of this review should be considered in light of its limitations. First, it is possible that we missed studies that would have met our criteria for inclusion into the review. We attempted to minimize this risk by conducting our review in multiple phases; however, we cannot be certain that we found every relevant study. Second, because we intentionally limited our search terms to best capture research explicitly labeled as investigating writing attitudes, we may have failed to locate potentially relevant studies examining constructs related to writing attitudes (e.g., writing self-efficacy). As mentioned previously, we made this choice based on our belief that searching for related constructs would muddy our understanding of writing attitude as a construct. Third, due to the variability of the measures used in the included studies, we did not conduct a meta-analysis. Therefore, this review cannot estimate summary effect sizes for any of the relationships described herein.

### Future Directions

Based on the findings of this review, there are numerous avenues for future research on writing attitudes. We have briefly described some of these in the discussion presented above; however, we further list broad directions for future research below.

First, researchers may want to consider how writing attitude fits into the theories that are most frequently used to frame research on students' writing motivation and performance. Many theories explicitly describe the contributions of constructs related to attitudes. For example, Social Cognitive Theory (Bandura 1986) emphasizes the role of self-efficacy in

motivation and behavior, and Expectancy-Value Theory (e.g., Wigfield and Eccles 2000) emphasizes the roles of various types of value in motivation. Graham's (2017) recent Writer within Community framework, which highlights the importance that the interplay between emotions, beliefs, and cognition has on writing, offers a promising theoretical development for better understanding writing attitude. Future research on writing attitude should seek to strengthen the theoretical foundations of writing attitude as a construct, potentially by exploring which theories provide the best framework.

Second, longitudinal research on writing attitude is needed to track how writing attitudes develop over time in both intervention and business-as-usual conditions. Although findings from cross-sectional studies seem to suggest that student writing attitudes decline with age, these studies sampled different participants and used different measures of writing attitude, which limits the comparisons researchers can make among them. Longitudinal studies would provide a better understanding of students' writing attitude development over the course of their academic careers. Further, researchers employing longitudinal designs could target transition periods (e.g., high school to college) that might be especially volatile for students' writing attitudes. No studies included in this review sought to track student writing attitudes across such a transition.

Third, future studies should further investigate discipline- and genre-specific writing attitudes. Research on other constructs indicates that not only are beliefs domain-specific, but they are also specific to certain types of tasks within a domain (Bruning et al. 2013). Findings reported by Jeffery and Wilcox (2014) suggest that students' writing attitudes may be similarly variable at the task or genre level. Although some research has explored writing attitudes related to specific genres (e.g., Carter et al. 2004; Sachs 2002), most studies in this review examined domain-general writing attitudes or writing attitudes specific to English/Language Art classes. A more nuanced understanding of discipline- and genre-specific writing attitudes has the potential to lead to better predictive utility of writing attitude measures.

Fourth, future studies should identify and disentangle factors that may contribute to writing attitudes. Since writing attitudes as a construct is underdeveloped, qualitative and mixed methods studies will likely offer valuable insights into why participants have the attitudes they do as well as what factors are most salient in their development. For instance, qualitative and mixed methods studies might help clarify the relationships between writing attitude and other constructs, such as writing self-efficacy, perceived value of writing, and writing anxiety.

Finally, although some studies in this review have found that various interventions and types of instruction are associated with improvements in students' writing attitudes, more research is needed in this area. Replications of past studies would allow researchers to be more confident that interventions are indeed effective. Extensions on intervention studies might seek to test whether (and for how long) students' improvements in writing attitude hold in business-as-usual conditions. For example, numerous studies reviewed here have found that providing students with digital writing platforms can improve students' writing attitudes (e.g., Li et al. 2014; McGrail and Davis 2011; Pruden et al. 2016). However, it is unclear whether these improvements persist in pen-and-paper writing environments or other non-intervention contexts.

## Final Thoughts

Writing attitude is a versatile construct that remains relevant across many contexts and throughout students' academic careers and beyond. It can be included in models as a predictor, mediator, or outcome variable, and it can be studied both quantitatively and qualitatively. It is malleable

enough to be worth attempting to change through intervention and stable enough to reside in a person's memory. This versatility makes the construct valuable for both researchers and practitioners alike. However, this versatility requires researchers to be particularly cognizant of how they conceptualize and measure writing attitudes. That is, because the term is used in so many disparate contexts and endeavors, researchers cannot assume that the meaning of writing attitude is self-evident or that their implicit definition aligns with everyone else's. To revisit the words of Gordon Allport, if writing attitude is to remain a "distinctive and indispensable" (1954, p. 43) construct, researchers must be thoughtful and explicit in how we study it.

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#### Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

## References

References marked with an asterisk indicate studies included in the systematic literature review

- Albarracín, D., Wang, W., Li, H., & Noguchi, K. (2008). Structure of attitudes: judgments, memory, and implications for change. In W. D. Crano & R. Prislin (Eds.), *Attitudes and attitude change: frontiers of social psychology* (pp. 19–39). New York: Psychology Press.
- Alexander, P. A. (2017). Issues of constructs, contexts, and continuity: commentary on learning in higher education. *Educational Psychology Review*, 29(2), 345–351.
- Allport, G. W. (1954). The historical background of modern social psychology. In G. Lindzey (Ed.), *Handbook of social psychology* (Vol. 1, pp. 3–56). Cambridge: Addison-Wesley.
- \*Baker, N. W. (1993). The effect of portfolio-based instruction on composition students' final examination scores, course grades, and attitudes toward writing. *Research in the Teaching of English*, 27(2), 155–174.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*, Prentice-Hall series in social learning theory. Englewood Cliffs: Prentice-Hall.
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachandran. *Encyclopedia of human behavior*, 4, 71–81.
- \*Bangert-Drowns, R. L. (1993). The word processor as an instructional tool: a meta-analysis of word processing in writing instruction. *Review of Educational Research*, 63(1), 69–93.
- Boekaerts, M., & Pekrun, R. (2016). Emotions and emotion regulation in academic settings. In L. Como & E. M. Anderman (Eds.), *Handbook of educational psychology*. Abingdon: Routledge.
- Boscolo, P., Gelati, C., & Galvan, N. (2012). Teaching elementary school students to play with meanings and genre. *Reading & Writing Quarterly*, 28(1), 29–50.
- Bowman, N. A. (2011). Promoting participation in a diverse democracy a meta-analysis of college diversity experiences and civic engagement. *Review of Educational Research*, 81(1), 29–68.
- Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children*, 71(2), 195–207.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- \*Brindle, M., Graham, S., Harris, K., & Hebert, M. (2016). Third and fourth grade teacher's classroom practices in writing: a national survey. *Reading & Writing*, 29(5), 929–954.
- Brophy, J. (2008). Developing students' appreciation for what is taught in school. *Educational Psychologist*, 43(3), 132–141.
- \*Bruning, R., & Horn, C. (2000). Developing motivation to write. *Educational Psychologist*, 35(1), 25–37.
- Bruning, R., Dempsey, M., Kauffman, D. F., McKim, C., & Zumbunn, S. (2013). Examining dimensions of self-efficacy for writing. *Journal of Educational Psychology*, 105(1), 25–38.

- Carter, M., Ferzli, M., & Wiebe, E. (2004). Teaching genre to English first-language adults: a study of the laboratory report. *Research in the Teaching of English*, 38(4), 395–419.
- Crano, W. D., & Prislin, R. (2006). Attitudes and persuasion. *Annual Review of Psychology*, 57, 345–374.
- Crano, W. D., & Prislin, R. (2008). *Attitudes and attitude change*. *Frontiers of social psychology*. New York: Psychology Press.
- \*Day, T. M., Raven, M. R., & Newman, M. E. (1998). The effects of world wide web instruction and traditional instruction and learning styles on achievement and changes in student attitudes in a technical writing in agricomunication course. *Journal of Agricultural Education*, 39(4), 65–75.
- \*De Smedt, F., Keer, H., & Merchie, E. (2016). Student, teacher and class-level correlates of Flemish late elementary school children's writing performance. *Reading & Writing*, 29(5), 833–868.
- Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review*, 20(4), 391–409.
- Egleston, B. L., Miller, S. M., & Meropol, N. J. (2011). The impact of misclassification due to survey response fatigue on estimation and identifiability of treatment effects. *Statistics in Medicine*, 30(30), 3560–3572.
- \*Erdogan, T. (2013). The effect of creative drama method on pre-service classroom teachers' writing skills and attitudes towards writing. *Australian Journal of Teacher Education*, 38(1), 45–61.
- \*Erdogan, T., & Erdoğan, Ö. (2013). A metaphor analysis of the fifth grade students' perceptions about writing. *The Asia-Pacific Education Researcher*, 22(4), 347–355.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: an introduction to theory and research (Addison-Wesley series in social psychology)*. Reading: Addison-Wesley Pub.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109.
- Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C., & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children*, 71(2), 149–164.
- Graham, S. (2017). A writer(s) within community model of writing. In C. Bazerman, V. Berninger, D. Brandt, S. Graham, J. Langer, S. Murphy, P. Matsuda, D. Rowe, & M. Schleppegrell (Eds.), *The lifespan development of writing*. Urbana: National Council of English.
- \*Graham, S., Schwartz, S. S., & MacArthur, C. A. (1993). Knowledge of writing and the composing process, attitude toward writing, and self-efficacy for students with and without learning disabilities. *Journal of Learning Disabilities*, 26(4), 237–249.
- \*Graham, S., Berninger, V., & Fan, W. (2007). The structural relationship between writing attitude and writing achievement in first and third grade students. *Contemporary Educational Psychology*, 32(3), 516–536.
- \*Graham, S., Berninger, V., & Abbott, R. (2012). Are attitudes toward writing and reading separable constructs? A study with primary grade children. *Reading & Writing Quarterly*, 28(1), 51–69.
- \*Graham, S., Harris, K. R., Kiuahara, S. A., & Fishman, E. J. (2017). The relationship among strategic writing behavior, writing motivation, and writing performance with young, developing writers. *The Elementary School Journal*, 118(1), 82–104.
- \*Harris, K. R., & Graham, S. (2013). "An adjective is a word hanging down from a noun": learning to write and students with learning disabilities. *Annals of Dyslexia*, 63(1), 65–79.
- Heddy, B. C., Danielson, R. W., Sinatra, G. M., & Graham, J. (2017). Modifying knowledge, emotions, and attitudes regarding genetically modified foods. *The Journal of Experimental Education*, 85(3), 513–533.
- \*Hsiang, T. P., & Graham, S. (2016). Teaching writing in grades 4–6 in urban schools in the Greater China Region. *Reading and Writing*, 29(5), 869–902.
- \*Jeffery, J. V., & Wilcox, K. (2014). 'How do I do it if I don't like writing?' Adolescents' stances toward writing across disciplines. *Reading and Writing*, 27(6), 1095–1117.
- \*Jenson, R. M. (1992). Can growth in writing be accelerated? An assessment of regular and accelerated college composition courses. *Research in the Teaching of English*, 26(2), 194–210.
- \*Kear, D. J., Coffman, G. A., McKenna, M. C., & Ambrosio, A. L. (2000). Measuring attitude toward writing: a new tool for teachers. *The Reading Teacher*, 54(1), 10–23.
- Keller, M. M., Hoy, A. W., Goetz, T., & Frenzel, A. C. (2016). Teacher enthusiasm: reviewing and redefining a complex construct. *Educational Psychology Review*, 28(4), 743–769.
- \*Ketter, J., & Pool, J. (2001). Exploring the impact of a high-stakes direct writing assessment in two high school classrooms. *Research in the Teaching of English*, 35(3), 344–393.
- King, D. A. (2004). The scientific impact of nations. *Nature*, 430(6997), 311–316.
- \*Knudson, R. E. (1991). Development and use of a writing attitude survey in grades 4 to 8. *Psychological Reports*, 68(3), 807–816.
- \*Knudson, R. E. (1992). Development and application of a writing attitude survey for grades 1 to 3. *Psychological Reports*, 70(3), 711–720.

- \*Knudson, R. E. (1993). Development of a writing attitude survey for grades 9 to 12: effects of gender, grade, and ethnicity. *Psychological Reports*, 73(2), 587–594.
- \*Lee, J. (2013). Can writing attitudes and learning behavior overcome gender difference in writing? Evidence from NAEP. *Written Communication*, 30(2), 164–193.
- \*Lee, J., & Shute, V. J. (2010). Personal and social-contextual factors in K–12 academic performance: an integrative perspective on student learning. *Educational Psychologist*, 45(3), 185–202.
- \*Li, X., Chu, S. K., & Ki, W. W. (2014). The effects of a wiki-based collaborative process writing pedagogy on writing ability and attitudes among upper primary school students in Mainland China. *Computers & Education*, 77, 151–169.
- Linnenbrink-Garcia, L., & Patall, E. (2016). Motivation. In L. Corno & E. M. Anderman (Eds.), *Handbook of educational psychology*. Abingdon: Routledge.
- \*Lunsford, A. A., Fishman, J., & Liew, W. M. (2013). College writing, identification, and the production of intellectual property: voices from the Stanford study of writing. *College English*, 75(5), 470–492.
- \*Mahurt, S. F. (1998). Writing instruction: university learning to first-year teaching. *National Reading Conference Yearbook*, 47, 542–554.
- Maier, M., Rothmund, T., Retzbach, A., Otto, L., & Besley, J. C. (2014). Informal learning through science media usage. *Educational Psychologist*, 49(2), 86–103.
- Maio, G., & Haddock, G. (2014). *The psychology of attitudes and attitude change*. Thousand Oaks: Sage.
- Massé, M. (1999). Evaluating students' progress by reading their journals. *Journalism & Mass Communication Educator*, 54(3), 43–56.
- \*McCarthy, S. J. (2008). The impact of No Child Left Behind on teachers' writing instruction. *Written Communication*, 25(4), 462–505.
- \*McGrail, E., & Davis, A. (2011). The influence of classroom blogging on elementary student writing. *Journal of Research in Childhood Education*, 25(4), 415–437.
- Meece, J. L., Glienke, B. B., & Burg, S. (2006). Gender and motivation. *Journal of School Psychology*, 44(5), 351–373.
- Metzger, S. A., & Wu, M. J. (2008). Commercial teacher selection instruments: the validity of selecting teachers through beliefs, attitudes, and values. *Review of Educational Research*, 78(4), 921–940.
- Olinghouse, N. G., & Graham, S. (2009). The relationship between the discourse knowledge and the writing performance of elementary-grade students. *Journal of Educational Psychology*, 101(1), 37–50.
- \*Owston, R. D., Murphy, S., & Wideman, H. H. (1991). On and off computer writing of eighth grade students experienced in word processing. *Computers in the Schools*, 8(4), 67–88.
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66(4), 543–578.
- \*Peacock, M., & Breese, C. (1990). Pupils with portable writing machines. *Educational Review*, 42(1), 41–56.
- Pekrun, R. (2006). The control-value theory of achievement emotions: assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, 18(4), 315–341.
- \*Popovich, M. N., & Massé, M. H. (2005). Individual assessment of media writing student attitudes: recasting the mass communication writing apprehension measure. *Journalism & Mass Communication Quarterly*, 82(2), 339–355.
- Pruden, M., Kerkhoff, S., Spires, H., & Lester, J. (2016). Enhancing writing achievement through a digital learning environment: case studies of three struggling adolescent male writers. *Reading & Writing Quarterly*, 33(1), 1–19.
- \*Quadir, B., & Chen, N. S. (2015). The effects of reading and writing habits on blog adoption. *Behaviour & Information Technology*, 34(9), 893–901.
- Renninger, K. A., & Hidi, S. (2011). Revisiting the conceptualization, measurement, and generation of interest. *Educational Psychologist*, 46(3), 168–184.
- \*Riffe, D., & Stacks, D. W. (1992). Student characteristics and writing apprehension. *Journalism Educator*, 47(2), 39–49.
- Rodgers, K. A., & Summers, J. J. (2008). African American students at predominantly white institutions: a motivational and self-systems approach to understanding retention. *Educational Psychology Review*, 20(2), 171–190.
- Rosenberg, E. (1998). Levels of analysis and the organization of affect. *Review of General Psychology*, 2(3), 247–270.
- \*Sachs, J. (2002). A path model for students' attitude to writing a thesis. *Scandinavian Journal of Educational Research*, 46(1), 99–108.
- \*Seban, D. (2012). Researching the effect of authoring cycle on third grade students' attitudes, self-perception and writing ability. *Egitim ve Bilim*, 37(164), 147.
- \*Shaver, J. P. (1990). Reliability and validity of measures of attitudes toward writing and toward writing with the computer. *Written Communication*, 7(3), 375–392.
- Slavich, G. M., & Zimbaro, P. G. (2012). Transformational teaching: theoretical underpinnings, basic principles, and core methods. *Educational Psychology Review*, 24(4), 569–608.

- Slinger-Friedman, V., & Patterson, L. M. (2012). Writing in geography: student attitudes and assessment. *Journal of Geography in Higher Education*, 36(2), 179–195.
- \*Street, C. (2003). Pre-service teachers' attitudes about writing and learning to teach writing: implications for teacher educators. *Teacher Education Quarterly*, 30(3), 33–50.
- \*Sturm, J. M., & Rankin-Erickson, J. L. (2002). Effects of hand-drawn and computer-generated concept mapping on the expository writing of middle school students with learning disabilities. *Learning Disabilities Research & Practice*, 17(2), 124–139.
- Thompson, B., Diamond, K. E., McWilliam, R., Snyder, P., & Snyder, S. W. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children*, 71(2), 181–194.
- \*Troia, G., Shankland, R., & Wolbers, K. (2012). Motivation research in writing: theoretical and empirical considerations. *Reading & Writing Quarterly*, 28(1), 5–28.
- \*Valeri-Gold, M., & Deming, M. P. (1991). Computers and basic writers: a research update. *Journal of Developmental Education*, 14(3), 10–12.
- \*Welch, M. (1992). The PLEASE strategy: a metacognitive learning strategy for improving the paragraph writing of students with mild learning disabilities. *Learning Disability Quarterly*, 15(2), 119–128.
- Wigfield, A. (1997). Reading motivation: a domain-specific approach to motivation. *Educational Psychologist*, 32(2), 59–68.
- Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, 25(1), 68–81.
- Wittgenstein, L. (2010). *Philosophical investigations*. Hoboken: John Wiley & Sons.
- Zumbrunn, S., & Bruning, R. (2013). Improving the writing and knowledge of emergent writers: the effects of self-regulated strategy development. *Reading and Writing*, 26(1), 91–110.