



Received: 14 June 2016
Accepted: 18 August 2016
Published: 20 September 2016

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TEACHER EDUCATION & DEVELOPMENT | RESEARCH ARTICLE

Discovering the literacy gap: A systematic review of reading and writing theories in research

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Abstract: Research is failing to consistently report theoretical frameworks, increasing the gap between research and practice, and increasing the difficulty teachers face in effectively matching interventions with student needs. However, this lack of theoretical understanding has not been well documented in the current literature. The purpose of this systematic review is to determine the literacy theories used in published articles within the *Journal of Adolescent and Adult Literacy (JAAL)*. *JAAL* is a peer-reviewed literacy journal that focuses on providing research-based practices for teachers. The present study includes an overview of published theories of reading and writing and the results of coding for these theories within a sample of ninety-four published intervention articles. Through this review, we have uncovered several areas for future research: (1) clarification of the differences between sociocultural and sociocognitive theories, (2) an increased emphasis on the mutual impact of reading and writing, and (3) a need to diversify theories used for reading and writing instruction.

Subjects: Continuing Professional Development; Education Studies; Educational Psychology; Educational Research; Research Methods in Education

Keywords: theory; literacy; classroom interventions; in-service teachers

ABOUT THE AUTHORS

Tracey S. Hodges, Luxi Feng, Li-Jen Kuo, and Erin McTigue are literacy professionals at various stages of their careers. Hodges and McTigue focus on building resilience with struggling readers and writers, while Feng and Kuo focus on second-language learners. All four researchers have an interest in teacher educators. The current project on reading and writing theories blossomed out of their combined interest to prepare highly qualified literacy teachers. They noted that teacher candidates and in-service teachers did not have opportunities to learn theories in their preparation programs, and many journal articles for practitioners did not emphasize theories. To document the specific limitations presented in research, the teach convened and conducted a systematic literature review of what literacy theories were presented with instructional practices. Their work notes that significant gaps in the theories presented do exist, and that many researchers do not explicitly describe the theories that underpin their research endeavors.

PUBLIC INTEREST STATEMENT

Researchers and teachers know that literacy includes both reading and writing; however, research consistently focuses on reading while leaving writing behind. Moreover, teachers are aware that they should be providing clear instruction based on best research-based practices and theoretical understandings. Yet, teachers are not often given specific training on what theories apply to reading, writing, and generalized literacy. In this study, we reviewed research articles written for practitioners to determine how reading and writing theories are applied to best practices. We summarize theories and provide recommendations for including theoretical perspectives in future research. Teachers and literacy professionals benefit from our work by better understanding theories supporting reading and writing in classrooms.

1. Introduction

Teachers strive to enrich students' literacy by helping them become consumers of literature and producers of writing. Classroom teachers recognize that reading and writing complement each other and include the two skills simultaneously in instruction (Gao, 2013; Grabe & Zhang, 2013; Ulusoy & Dedeoglu, 2011). While the overarching term "literacy" encompasses both reading and writing, *theoretical perspectives still treat the two as dichotomies* (Goatley & Hinchman, 2013; Tracey & Morrow, 2012; Unrau & Alvermann, 2013). As a result, while most literacy journals for practitioners offer innovative pedagogies, rarely have the theoretical rationales, frameworks, or platforms supporting the instruction been explicated. This oversight signifies a problem in current research and practice.

Due to the complexity of literacy, one theory is usually insufficient for explaining the benefits and processes of an intervention (Cain & Parrila, 2014). While it is understandable that, researchers may struggle to verbalize the theoretical frameworks underlying teaching practices, it remains critical to articulate the driving theories for instructional practices. Without this clear articulation, teachers may not fully grasp how these strategies or practices developed. Teachers may not be enthusiastic about the word "theory" or the expectation that they should understand theories related to literacy, but this knowledge is invaluable. As Amrein-Beardley and Haladyna (2012) define, theories "help people understand phenomena, guide how people react to and make sense of the natural world, and *should* help frame how people explain and understand phenomena under study" (p. 18). Theories help shape the teachers' understanding of pedagogy and content, but also frame why certain interventions are effective for specific learners (West, 2013). Many teachers utilize research-based practices in their classrooms, but fail to understand the theoretical underpinnings. Once teachers understand the theories for instructional practices, they are more likely to understand the recommended practices to meet the unique needs and developmental levels of their students.

Research in literacy education has found a connection between reading and writing (see Berninger, Abbott, Abbott, Graham, & Richards, 2002), but the absence of articulated theoretical frameworks in articles for reading practitioners has not been well documented in the current literature. Therefore, the purpose of this systematic review of literature is to determine the major theories of literacy, both reading and writing, guiding the practices reported in published articles within *The Journal of Adolescent and Adult Literacy*. We limited our search to *The Journal of Adolescent and Adult Literacy*, chosen for its impact factor (.627), influence in the field, and emphasis on research-based educational interventions. Our aim was to answer the following research question: What theories are guiding research focused on the connection between reading and writing? The following sections provide an overview of the major theories for reading and writing included in this review, a detailed description of the methodology, coding procedures, and results, and conclusions with interpretations of the prevalence of theories used as well as suggestions for future research.

2. Overview of theories

We researched theories in both reading and writing to create a coding scheme, definitions, and examples of interventions to establish common language among our research team and provide higher inter-rater reliability within the results. Much of our research came from two sources (e.g. Alvermann, Unrau, & Ruddell, 2013; Tracey & Morrow, 2012) providing a comprehensive overview of theories in reading and writing. Currently, these two sources provide a comprehensive overview of literacy theories, supported by prominent research in the field. However, we found that even these sources were not all-inclusive. As we reviewed articles, several theories emerged which were not originally included in the coding scheme (e.g. reader response theory, third space theory). Because past and current literature refer to separate theories for reading and writing, instead of intersecting theories, we keep our discussion of the theories separated. Table 1 provides an overview of the theories discussed.

In the following sections, we provide a detailed description of the theories presented in the coded articles. Note that several theories described briefly in Table 1 did not appear in the reviewed articles, so they are not included in the discussion below.

2.1. Schema theory

Schema theory describes a hypothetical knowledge structure in the brain to which new information is compared and processed (Anderson, 1977). When reading, knowledge the reader already has on the subject serves as a framework to process and store new information. Additionally, when readers come across new information, that information is integrated into existing schema or developed into new schema (Alvermann et al., 2013). Text-to-text, text-to-self, and text-to-text connections are frequently seen in literacy interventions and activities, which help facilitate building mental connections, connecting reading to students' life experiences, and bridging current texts with prior readings (Tovani, 2004).

2.2. Social construction theory

Social construction theory is unique in that the theory assumes knowledge is socially constructed and dependent on culture and society, yet it is not a dominant theory in writing research. Alvermann et al. (2013) explains this nicely with, "a social constructionist position in any discipline assumes that any entities we normally call reality, knowledge, thought, facts, texts, selves and so on are construct generated by communities of like-minded peers" (p. 59).

2.3. Transactional theory

Transactional theory describes a series of interactions between readers and text (Rosenblatt, 2013). The basic assumption of this theory is that text does not carry meaning without a reader to offer perspective (Rosenblatt, 2013). Transactional theory states that writers bring different perspectives to the text they author from those of the readers who will later interact with those texts (Rosenblatt, 2013).

2.4. Construction-integration theory

The construction-integration model of reading explains how reading can be separated into a micro and macro level (Kintsch, 2013). The micro-level represents the more localized level of reading, including decoding and phonological awareness. The macro-level represents a more global understanding of reading, focusing on the semantic representation of the text. Together, the micro- and macro-levels explain the two dichotomies of reading, decoding and comprehension. This theory primarily describes reading but can be applied to writing. To explain writing, the micro-level represents the correlation between letters and words, as well as words and sentence. The macro-level would include overall comprehension of a written text and the connections among sentences to form ideas.

2.5. Sociocultural theory

Writing is a social construct that is culturally based and individualized. Currently, sociocultural theory is the dominant framework for writing research (Prior, 2006), which posits that an activity such as writing happens in specific situations and is governed by the rules of a culture or society but can also be individualized to the specific individual. Sociocultural theory builds on Vygotsky's (1980) Zone of Proximal Development (ZPD) and learning from a more knowledgeable other, focusing on social and concrete aspects of learning. Therefore, sociocultural theory views writing and reading as modes of social collaboration and cognitive processing (Prior, 2006). In the studies that championed this theory, reading and writing were seen as collaborations among students and teachers as well as tools for learning in other content areas.

2.6. Sociocognitive theory

Sociocognitive theory derived from sociocultural theory because of growing interest on the sociocultural perspectives of literacy since mid-1980s (Unrau & Alvermann, 2013). Comparison of these two theories leads to a great amount of similarities as both of them involve social interactions within contexts. However, rather than being regarded as an extension of sociocultural theory, sociocognitive theory is also widely applied in research on reading and writing based on its unique emphasis on the readers and writers themselves. While sociocultural theory generally prescribes that students could learn from transactional activities with others who are more competent and knowledgeable, sociocognitive theory emphasizes that students should have judgments and modifications for their improvement during this social process. For example, when a study indicated that students were

given modifications depending on their strategies and goals for self-achievement, we interpreted that the tenets of sociocognitive theory are applied to the study design.

2.7. Motivation theory

Motivation is a complex construct with multiple definitions. Motivation can be defined in terms of a set of psychological constructs such as beliefs, values and expectations (e.g. desire for success, desire to look attractive). It can also be defined in terms of a set of behaviors such as engagement, persistence, choice, effort, confidence, interest, and enjoyment. Wigfield and Guthrie (1995) state that motivation theory has three different theoretical taxonomy categories: (1) self-efficacy, which is the belief that one is a strong reader and is willing to engage in challenging activities; (2) intrinsic motivation and learning goals, which include curiosity, involvement, importance and avoidance; and (3) extrinsic motivation and learning goals based upon competition, the desire to outperform others.

2.8. Reader response theory

Reader response theory suggests that meaning of the text is derived from interactions between readers and the content (Fish, 1980; Holland, 1975; Iser, 1974, 1978; Rosenblatt, 1938, 1978). Each reader, according to their prior knowledge and personal experience, may have different and unique interpretations of the same text. Rather than being judged as either right or wrong, readers' responses are respected and examined individually for their values. Compared to transactional theory, reader response theory emphasizes the readers themselves, while transactional theory emphasizes the text.

2.9. Third space theory

Moje et al. (2004) introduced third space theory to content literacy acquisition in classrooms. They supposed that students' knowledge and experience of their life could be applied to assist their literacy learning. Such strategies may also activate students' interest and motivation for learning activities. Third space theory in reading emphasizes the uniqueness of each individual and their interaction with environment as a hybrid. For classroom implications, third space theory serves as a means to understand students' learning resistance and further guide teachers to find solutions to overcome this.

3. Methods

The present study is a systematic literature review of articles focusing on reading and writing interventions published in the *Journal of Adolescent and Adult Literacy*. Using the matrix method (Garrard, 2011) that includes detailed coding procedures, multiple coders, and inter-rater reliability checks, we reliably synthesize the current research.

3.1. Identification of studies

We implemented a systematic strategy for locating relevant studies published in one peer-reviewed journal, which focuses on articles geared toward practitioners.

3.1.1. Inclusion/exclusion criteria

Included articles had to meet three initial requirements to be included in the initial coding: (1) have been published within the last ten years (2004–2014), (2) explicitly address writing, and (3) explicitly address reading. If one of these three criteria were not met, the article was excluded from the final sample. We did not limit the inclusion criteria by age or grade level, but did note these factors in our coding matrix. Of the 94 articles initially retrieved, 60% ($n = 56$) were excluded and 40% ($n = 38$) were included. The majority of the excluded articles were removed from the final sample for one of the two reasons: (1) the study did not address both reading and writing, or (2) the article did not provide empirical data (i.e. the article was a book review or editorial piece).

Table 1. Theories included in coding scheme, with brief definitions

Theoretical category	Theoretical sub-category	Brief definition (from Alvermann et al., 2013)
Constructivism	Schema	Cognitive patterns of thought and knowledge that help people remember and retrieve information
	Psycholinguistic	The unlimited variety of sentences and lexical structures people can create and use to predict word patterns as they read or write
Social constructivism		People learn through social interactions and are influenced by the environment
Transactional		Texts do not carry meaning until a reader or writer interacts with them and infinitely many transactions exist which can change each time a reader or write interacts with the text
Information processing	Gough	Bottom-up approach to reading that emphasizes the grapheme input into the reader's visual system
	LaBerge-Samuels	Focuses on automaticity of sight words that allows for higher order thinking and processing skills
	Rumelhart	Combines top-down and bottom-up processing of words in that reader's take in visual cues about words then apply sight word knowledge or decoding to reading
	Construction-integration	Literacy exists at the micro-level, individual words, and the macro-level, semantic understanding
	Dual-coding	Readers use one of two pathways to read a word—decoding or sight words—and each pathway has distinct processes involved in reading
	Simple view of reading	Comprehension X Decoding = Reading; both comprehension and decoding are essential processes to effective reading
Sociocultural perspective		People primarily learn through social interactions and more knowledgeable others (MKO) to increase their zone of proximal development (ZPD)
Sociocognitive		People learn from creating personal goals and can learn either by personal application or observation of others in the environment
Structuralism		Underlying cognitive structures determine the functions of the brain and processes of literacy
Motivation theory		People want to learn due to efficacy, intrinsic and extrinsic rewards, or social factors
Reader response theory		Like transactional theory, readers must interact with the text for it to carry meaning; however, this theory emphasizes the reader over the text
Third space theory		People's individualized experiences, primarily those that are oppressive in nature, influence, shape, and determine their literacy comprehension

3.1.2. Coding procedures

Three independent researchers collectively read the full text of 94 articles and conducted an in-depth coding procedure to describe the study characteristics. The articles were also coded for the type of reading skill studied (e.g. decoding, fluency, morphological awareness, oral language, phonological/phonemic awareness, reading comprehension, or vocabulary). Qualitatively, we briefly documented the type of writing skill studied (e.g. planning goals, organizing writing, or note-taking).

Finally, we coded each study for theories (see Table 1). Each of the theories could be coded as either a primary theory, indicating the theory was the prominent framework or paradigm for the research, or a secondary theory, meaning the theory supported outcomes of the intervention but was not initially included as part of the theoretical framework. We also coded the theories as either explicitly stated or implicitly stated. If a theory was implicitly stated, we had sufficient evidence to hypothesize that the researchers used this theory as a framework for the study. For example, students show increased interest in reading nonfiction texts as a result of the strategy, which implicitly demonstrates motivation theory even though it is not stated. These four categories for each theory are the focus of our results, discussion, and conclusion.

3.1.3. Inter-rater reliability

A 30% re-coding of all 94 articles revealed a 93.36% inter-rater agreement among three independent coders. A stratified, random sampling was conducted to ensure the inter-rater reliability coding represented both excluded and included articles. The three independent coders agreed 100% on the inclusion and exclusion of articles.

4. Results

We found three trends in our final data-set: (1) two primary theories, sociocultural and sociocognitive, in the reading and writing research were established, (2) one secondary theory, motivation, was consistent in the research, and (3) some disagreement existed among the coders in regards to the two primary theories. These results are detailed in Table 2.

4.1. Sample characteristics of sociocultural theory

Overwhelmingly, sociocultural theory was the most coded for theory in our sample. The majority of articles coded as sociocultural theory used this theory as the primary guiding theory to the research. As previously stated, this is not surprising as sociocultural theory is the leading theory in writing research (Prior, 2006). In only 18.2% ($n = 4$) of the included articles, sociocultural theory was explicitly stated as a secondary theory. In almost all cases, sociocultural theory was secondary to sociocognitive theory. This revealed an interesting controversy in the field that will be explored more in the discussion section. Overall, the three coders agreed on coding 74% of the time. The major discrepancies came from the implicit coding of the sociocultural theory as either a primary or secondary theory as it was sometimes confused with sociocognitive theory.

4.2. Sample characteristics of sociocognitive theory

Among the included articles, sociocognitive theory was another primary theory coded with high frequency. Of the 38 included articles, around 39% ($n = 15$) were coded as sociocognitive theory. Of these, 15 articles, 26.7% ($n = 4$) were coded as primary implicit and 46.7% ($n = 7$) were coded as primary explicit. For example, the article by Felton and Herko (2004) was coded as primary explicit, because the authors clearly identified that they implemented scaffolded instruction and emphasized students' metacognition in writing practice.

4.3. Sample characteristics of motivation theory

The majority of the articles coded as motivation theory used this theory as the secondary theory guiding their research. This phenomenon is logical as motivation appears frequently in classroom teaching as an outcome of other interventions. Because these articles were coded as implicit,

Table 2. Theories included in published articles with inter-rater reliability

Theory	Primary implicit	Primary explicit	Secondary implicit	Secondary explicit	Total	Inter-rater reliability (%)
Sociocultural	5 (22.7%)	8 (36.6%)	5 (22.7%)	4 (18.2%)	22 (57.9%)	74
Reading Motivation	3 (13.0%)	6 (26.1%)	14 (60.9%)	0 (0.0%)	23 (60.5%)	87
Sociocognitive	4 (26.7%)	7 (46.7%)	3 (20%)	1 (6.7%)	15 (39.5%)	84
Social Construction	2 (22.2%)	4 (18.2%)	2 (22.2%)	1 (11.1%)	9 (23.9%)	97
Schema	1 (25.0%)	1 (25.0%)	1 (25.0%)	1 (25.0%)	4 (10.5%)	97
Transactional	2 (50.0%)	1 (25.0%)	0 (0.0%)	1 (25.0%)	4 (10.5%)	97
Construction-integration	1 (25.0%)	2 (50.0%)	1 (25.0%)	0 (0.0%)	4 (10.5%)	97
Dual-coding	1 (50.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	2 (5.3%)	100
Structuralism	0 (0.0%)	1 (50.0%)	0 (0.0%)	1 (50.0%)	2 (5.3%)	94
Reader Response	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (2.6%)	100
Third space	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (2.6%)	100
Overall reliability						93.36

researchers did not *acknowledge* that motivation emerged from writing and reading interventions. This oversight could be the product of inadequate knowledge about factors contributing to motivation, such as efficacy, autonomy, extrinsic and intrinsic motivation, and social reasons for reading. Researchers also failed to identify that such factors contributed to the overall reading enthusiasm and comprehension of students.

4.4. Sample characteristics of other noteworthy results

In addition to the three most commonly coded for theories, several other reading and ecological theories emerged in the articles.

4.4.1. Schema theory

Within our sample, only four articles from the total sample represented schema theory, most commonly in the form of pre-reading activities involving writing, such as filling in a graphic organizer of these four articles, one was coded as primary explicit, one as primary implicit, one as secondary explicit, and one as secondary implicit. Despite this discrepancy, the inter-rater agreement for this coding reached 97%.

4.4.2. Social construction theory

In the final sample, 16% ($n = 6$) articles were coded primarily for social construction theory of these articles, two were implicitly coded and 4 were explicitly coded. Only 3 articles were coded as secondary for the social construction theory. While few articles fell into this theory, the three independent coders had 97% agreement about articles being coded as social construction.

4.4.3. Transactional theory

In total, nearly 11% ($n = 4$) of the articles in the final sample were coded as transactional theory; of these four, three were primary and one was secondary explicit. Again, the coders had a 97% inter-rater agreement for this section of coding.

4.4.4. Construction-integration theory

Only four articles were coded for construction-integration theory of the four articles (100%), two were coded as primary explicit, one was coded as primary implicit, and one was coded as secondary implicit the coders had a 97% inter-rater agreement for this coding.

4.4.5. Reader response theory

In our sample, only one article explicitly states using reader response theory. Instead of text, students made observations on natural phenomenon and recorded moon journals for practices in content literacy classrooms (McMillan & Wilhelm, 2007). Students made transactions based on individualized observations, implementing reader response theory.

4.4.6. Third space

Theory One article in our sample related to third space theory and explicitly stated this perspective. The case study found that students who were provided with multimodal thinking opportunities could respond positively, which indicated the effectiveness of the teaching strategies and reading improvement (Benson, 2010).

5. Discussion

According to the results of the systematic review, several findings on reading and writing instructions in classroom are present. Specifically, we found three themes present in our review of the theories: (1) social theories are focused on predominately; (2) motivation theory was used most often as a secondary theory; and (3) articles that stressed writing instruction over reading focused on theories outside of education research. In the following sections, we provide additional evidence for these themes as well as recommendations for teachers and directions for future research.

5.1. Influence of social theories on literacy research

First, based on the research question, we found that social theories play a major role in guiding recent studies focusing on the connection between reading and writing. These theories (e.g. sociocultural and sociocognitive) share similar features by greatly relying on social interactions for teaching and learning. In the samples, this similarity was represented by inclusion of group discussion (e.g. Groenke & Youngquist, 2011; Thompson, 2008), teacher modeling (e.g. Felton & Herko, 2004; McMillan & Wilhelm, 2007) and feedback on assignments (e.g. Fernsten, 2008). Most of these studies were conducted in authentic classroom settings allowing for much peer and teacher modeling. Through social activities, students were able to build their own knowledge, receive help from teachers and peers, and finally achieve their learning goals.

The emphasis on social theories that has marked the last two decades of writing research is in large part a reaction to research on self-efficacy and activity theory (Hayes, 2006). Prior to the 2000s, writing had been well established as a cognitive process (Flower & Hayes, 1981). The work of researchers such as Flower and Hayes (1981) built a foundation for viewing writing as a complex, intricate cognitive mental approach. Yet, in 1996, Hayes updated their cognitive processes model to include affective measures such as motivation. Hayes (1996) claimed that such components influence writers and cannot be ignored. Building on this work, modern researchers have focused on the value of social interactions (Pajares & Valiante, 2006; Prior, 2006).

Second, activity theory has grown in popularity as a way to describe writing practices across cultures and classrooms. An activity such as writing happens in specific situations and is governed by the rules of a culture or society but can be individualized to the specific individual. Writing is a social construct that is culturally based and individualized. The sociocultural theory of writing has been influenced by Vygotsky's (1980) social constructivist approaches as well as Leont'ev's (1981) activity theory. Sociocultural theory is a union of these two theories, focusing on the social and concrete aspects of learning that Vygotsky championed while incorporating the basic premises that collaboration is part of any activity. Therefore, sociocultural theory views writing as a mode of social action and not simply a means of communication (Prior, 2006).

While we found a great deal of evidence that suggests researchers and teachers approach writing from a social lens, we noted a few concerns as well. In many of the studies we coded, social theories were often confused. For example, a researcher might posit that sociocognitive theory dominated the study, but upon reviewing the procedures and examples, we noted that sociocultural theory was actually being used. While the two theories are similar, sociocultural theory and sociocognitive theory have different emphases. Sociocultural theory focuses on the procedure of social interaction, and sociocognitive theory primarily attends to the individuals' unique learning processes. Studies based on sociocultural theory mainly discussed instruction, which were provided on collaborative approach. Students learned and improved from interaction with teachers and more knowledgeable peers. Studies that applied sociocognitive theory focused on students' self-regulation and self-monitoring. Therefore, rather than the whole class, students' cognitive development and improvement were emphasized.

5.2. Using motivation as a secondary instead of primary theory

Our second theme was that the results showed motivation theory was mostly coded as a secondary theory. The criteria for coding certain studies with motivation theory as a secondary theory included: (1) students had positive affective feedback on their reading and writing ability through instructions; (2) students reported improvement on self-efficacy and confidence on reading and writing tasks; and (3) students showed increasing intrinsic interest and metacognition for reading and writing. However, none of the sample studies clearly took students' motivation into consideration when the activities were designed. Therefore, this finding suggested that motivation could be a possible by-product from social-approach instruction. We conclude that reading and writing instruction should consider cognitive, as well as social and motivational influences.

The Common Core State Standards and other legislative actions focus predominately on academic achievement and give little attention to affective measures. This could be one reason why motivation is considered a secondary outcome to educational interventions and research-based practices. However, both teachers and researchers note that to gain “meaningful insights into their students [teachers] must look beyond cognitive measures and build profiles that include motivational components as well” (Conradi, Jang, & McKenna, 2014, p. 128). Yet, Conradi et al. (2014) also reports that many researchers either do not define motivational constructs appropriately or define them implicitly. This exacerbates the confusion with terms that relate to motivation, but also sets a standard that motivation should not be addressed as a primary concern. Rather, motivation is a product of some other intervention or practice.

The second concern with motivation comes from the type of motivation teachers are hoping to influence. A great deal of research has been conducted on both extrinsic and intrinsic motivation (Gambrell, 2011, 2015; Guthrie & Klauda, 2014; Marinak & Gambrell, 2008). From these studies, researchers have learned that students are more motivated to continue reading when they receive rewards related to reading (Gambrell, 2015; Marinak & Gambrell, 2008). For example, if children reach their reading goal and as a result, get to choose the next book the teacher reads aloud to the class, the children build more engagement and enjoyment for reading. This same research has also shown that extrinsic rewards can be detrimental to students’ reading motivation because students do not wish to continue reading when the reward is taken away. Additionally, children do not learn the value of reading, but rather, if they complete a reading task they get a sticker, free pizza, or piece of candy. For children who do not meet their goals, there are additional structures set up to help them be successful. Children who are struggling benefit from the read-alouds and are also allowed to choose books at different times, thus ensuring they develop a value and enjoyment for reading.

Due to the complexities in types of motivation, definitions for motivation, and the battle over extrinsic and intrinsic rewards, it becomes evident why motivation is not a primary focus in most of the research articles we coded. To avoid many of these conflicts and controversies in the research, the researchers may have purposefully been vague about the ways their interventions and practices influenced motivation. Additionally, the researchers themselves may have been less knowledgeable about motivation, yet wanted to acknowledge that the instructional practice could benefit motivation.

5.3. Extending writing research beyond education

Finally, a small number of sample articles were coded for other reading theories. These articles emphasized writing instruction more than reading instruction. The reading process was mentioned and discussed in the text, but the research question and exploration for the study were focused on writing practices. Abbott, Berninger, and Fayol (2010) conducted a longitudinal study on the relationship between reading and writing, and their results supported a significant correlation between reading and writing on both word-level and text-level. Therefore, our finding that reading theories could be transferred to explain writing instruction followed previous studies on the bidirectional and reciprocal relationship between reading and writing, and further supported that reading and writing instructions are correlated and should not be provided to students separately.

While reading research has many theories guiding its implementation and practice (Unrau & Alvermann, 2013), writing research has consistently fallen behind. To date, there are very few theories supporting and explaining writing research, particularly those that originate with an educational focus. Instead, many theories to support writing come from psychology, sociology, and even anthropology (Prior, 2006). Taking this one step further, theories that explain both reading and writing, in conjunction, are also limited. Therefore, for a study like the present one that seeks to understand how theories support instructional practices that influence both reading and writing, the task is quite complicated. It is not surprising, then, that many researchers pulled from theories outside of education research to explain their instructional practices.

5.4. Recommendations for teachers

Teachers should be reflective consumers of research and should identify which practices in research work best for their students. Through our work, we highlight that even among researchers, there is confusion about how theories are used and how they are defined. Teachers can assist in alleviating many of these concerns by utilizing the practices and providing feedback to researchers. Through this open dialog, teachers and researchers can work to more comprehensively define and discuss theoretical frameworks for the benefit of the students.

Second, we recommend that teachers focus on the theoretical understandings of best practices they read in research. By doing so, teachers will learn what theories guide their own teaching style and for what students each practices works best. Additionally, when teachers become more cognizant of how and why practices work, they will help move the field forward by demanding that researchers are open about their own theoretical lenses. From this movement, we would hope to see more clarity among published research.

5.5. Implications for future research

Through this work, we noted that many of the articles we coded either only implicitly stated a theory to guide their practice, or completely omitted using a theory. By not acknowledging and describing the theoretical framework, researchers make it more difficult for teachers to understand those theories and implement them into their own practices. Additionally, if teachers do not understand the theories that define the practice, teachers might use the instructional practice ineffectively (Wright, Franks, Kuo, McTigue, & Serrano, 2015). Therefore, we recommend that researchers clearly express the theoretical framework in terms that can be easily understood and implemented by classroom teachers.

Secondly, we noted that researchers consistently used the same theories repeatedly in research. Little diversity among types of theories existed, which could be a result of recent legislative changes, societal changes, or pedagogical changes. For example, few articles were coded for, either implicitly or explicitly, as transactional theory, and an overwhelming number of studies used a social theory. While it is likely that social theories dominate in education, it may also be true that the researchers themselves have limited knowledge of theories. Researchers should carefully select theories to support their work, to continue to move the field forward. We suggest future research that focuses on researchers' understandings and views toward theories as a way to address these concerns.

6. Conclusion

In many schools today, reading overpowers writing; however, they are equally important skills for students to learn. Two distinctions emerged through this review: (1) writing can be used as a tool for reading, and (2) reading can be used as a tool to inform writing. While these two distinctions did not represent different areas of research, further exploration of the differences should be part of research. Additionally, we found that a limited number of theories were used to inform research regarding writing, reading, and the link between the two constructs. More diversity in theories representing these constructs can broaden the field and focus on more specific aspects of both reading and writing. Relevant and well-developed theories should help drive the research in productive directions; however, the current state of theories informing writing research seems to be lagging behind the research. Finally, the field needs to make clear the definitions and uses for sociocultural and sociocognitive theories. Often, in our review, they overlapped or were not defined adequately. This confusion can lead to misinformation and miscommunication of study findings.

Although we had limitations with this study, the results still provided some useful thoughts for implication on classroom arrangement and curriculum design. Social-approach instructions may benefit students' cognitive and motivational development. Multi-domain factors should be integrated during teaching as we found connections between social, cognitive, and motivational factors. Most importantly, the bidirectional and reciprocal relationship between reading and writing should be emphasized (Abbott et al., 2010). Instead of being taught separately, instruction combining reading and writing may be more beneficial for students (Ehri, 2000).

Funding

The authors declare no direct funding for this research.

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Citation information

Cite this article as: Discovering the literacy gap: A systematic review of reading and writing theories in research, Tracey S. Hodges, Luxi Feng, Li-Jen Kuo & Erin McTigue, *Cogent Education* (2016), 3: 1228284.

References

References marked with an asterisk indicate studies included in the review sample.

Abbott, R., Berninger, Virginia W., & Fayol, M. (2010).

Longitudinal relationships of levels of language in writing and between writing and reading in grades 1 to 7. *Journal of Educational Psychology*, 102, 281–298. <http://dx.doi.org/10.1037/a0019318>

*Adams, A. E., & Pegg, J. (2012). Teachers' enactment of content literacy strategies in secondary science and mathematics classes. *Journal of Adolescent and Adult Literacy*, 56, 151–161. doi:10.1002/JAAL.00116

*Alsop, J. (2013). Teaching literature in an age of text complexity. *Journal of Adolescent and Adult Literacy*, 57, 181–184. doi:10.1002/JAAL.239

Alvermann, D. E., Unrau, N. J., & Ruddell, R. B. (Eds.). (2013). *Theoretical models and processes of reading* (6th ed.). Newark, DE: International Reading Association.

Amrein-Beardsley, A., & Haladyna, T. (2012). Validating a theory-based survey to evaluate teaching effectiveness in higher education. *Journal on Excellence in College Teaching*, 23, 17–42.

Anderson, R. C. (1977, June). *Schema-directed processes in language comprehension*. Paper presented at the NATO International Conference on Cognitive Psychology and Instruction, Amsterdam.

*Benson, S. (2010). "I don't know if that'd be English or not": Third space theory and literacy instruction. *Journal of Adolescent and Adult Literacy*, 53, 555–563. <http://dx.doi.org/10.1598/JAAL.53.7.3>

Berninger, V. W., Abbott, R. D., Abbott, S. P., Graham, S., & Richards, T. (2002). Writing and reading: Connections between language by hand and language by eye. *Journal of Learning Disabilities*, 35, 39–56. <http://dx.doi.org/10.1177/002221940203500104>

Cain, K., & Parrila, R. (2014). Introduction to the special issue. Theories of reading: What we have learned from two decades of scientific research. *Scientific Studies of Reading*, 18, 1–4. <http://dx.doi.org/10.1080/10888438.2013.836525>

*Cervetti, G., & Pearson, P. D. (2012). Reading, writing, and thinking like a scientist. *Journal of Adolescent and Adult Literacy*, 55, 580–586. doi:10.1002/JAAL.00069

Conradi, K., Jang, B. G., & McKenna, M. C. (2014). Motivation terminology in reading research: A conceptual review.

Educational Psychology Review, 26, 127–164.

<http://dx.doi.org/10.1007/s10648-013-9245-z>

Ehri, L. (2000). Learning to read and learning to spell. *Topics in Language Disorders*, 20, 19–36.

<http://dx.doi.org/10.1097/00011363-200020030-00005>

*Engstrom, E. U. (2005). Reading, writing, and assistive technology: An integrated developmental curriculum for college students. *Journal of Adolescent and Adult Literacy*, 49, 30–39. doi:10.1598/JAAL.49.1.4

*Fecho, B., Coombs, D., & McAuley, S. (2012). Reclaiming literacy classrooms through critical dialogue. *Journal of Adolescent and Adult Literacy*, 55, 476–482. doi:10.1002/JAAL.00057

*Felton, M. K., & Herko, S. (2004). From dialogue to two-sided argument: Scaffolding adolescents' persuasive writing. *Journal of Adolescent and Adult Literacy*, 47, 672–683.

*Fernsten, L. A. (2008). Writer identity and ESL learners. *Journal of Adolescent and Adult Literacy*, 52, 44–52. <http://dx.doi.org/10.1598/JAAL.52.1.5>

Fish, S. (1980). *Is there a text in this class? The authority of interpretive communities*. Cambridge, MA: Harvard University Press.

*Fisher, D., & Frey, N. (2012). Motivating boys to read: Inquiry, modeling, and choice matter. *Journal of Adolescent and Adult Literacy*, 55, 587–596. doi:10.1002/JAAL.00070

*Flanigan, K., & Greenwood, S. C. (2007). Effective content vocabulary instruction in the middle: Matching students, purposes, words, and strategies. *Journal of Adolescent and Adult Literacy*, 51, 226–238. <http://dx.doi.org/10.1598/JAAL.51.3.3>

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32, 365–387. <http://dx.doi.org/10.2307/356600>

*Freedman, L., & Carver, C. (2007). Preservice teacher understandings of adolescent literacy development: Naive wonder to dawning realization to intellectual rigor. *Journal of Adolescent and Adult Literacy*, 50, 654–665. <http://dx.doi.org/10.1598/JAAL.50.8.4>

Gambrell, L. B. (2011). Seven rules of engagement: What's most important to know about motivation to read. *The Reading Teacher*, 65, 172–178. <http://dx.doi.org/10.1002/trtr.2011.65.issue-3>

Gambrell, L. B. (2015). Getting students hooked on the reading habit. *The Reading Teacher*, 69, 259–263. <http://dx.doi.org/10.1002/trtr.1423>

Gao, Y. (2013). The effects of summary writing on reading comprehension: The role of mediation in EFL classroom. *Reading Improvement*, 50, 43–47.

Garrard, J. (2011). *Health sciences literature review made easy* (3rd ed.). Ontario: Jones & Bartlett Learning LLC.

*Glenn, W. J. (2007). Real writers as aware readers: Writing creatively as a means to develop reading skills. *Journal of Adolescent and Adult Literacy*, 51, 10–20. <http://dx.doi.org/10.1598/JAAL.51.1.2>

Goatley, V. J., & Hinchman, K. A. (2013). Using research to make sensible literacy decisions within current educational initiatives. *Language and Literacy Spectrum*, 2357–2368.

Grabe, W., & Zhang, C. (2013). Reading and writing together: A critical component of English for academic purposes teaching and learning. *TESOL Journal*, 4, 9–24. <http://dx.doi.org/10.1002/tesj.65>

*Grant, M., Lapp, D., Fisher, D., Johnson, K., & Frey, N. (2012). Purposeful instruction: Mixing up the "I," "we," and "you". *Journal of Adolescent and Adult Literacy*, 56, 45–55. doi:10.1002/JAAL.00101

*Groenke, S. L., & Youngquist, M. (2011). Are we postmodern yet? Reading monster with 21st-century ninth graders. *Journal of Adolescent and Adult Literacy*, 54, 505–513. doi:10.1598/JAAL.54.7.4

Guthrie, J. T., & Klauda, S. L. (2014). Effects of classroom practices on reading comprehension, engagement, and

- motivations of adolescents. *Reading Research Quarterly*, 49, 387–416.
- Hayes, J. R. (1996). A new framework for understanding cognition and affect in writing. In C. M. Levy & S. Ransdell (Eds.), *The science of writing: Theories, methods, individual differences, and applications* (pp. 1–27). Mahwah, NJ: Erlbaum.
- Hayes, J. R. (2006). New directions in writing theory. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 28–40). New York, NY: Guilford.
- Holland, N. (1975). *Five readers reading*. New Haven, CT: Yale University Press.
- *Houp, G. W. (2009). Lana's story: Re-storying literacy education. *Journal of Adolescent and Adult Literacy*, 52, 698–707.
<http://dx.doi.org/10.1598/JAAL.52.8.5>
- *Huang, S. (2011). Reading "further and beyond the text": Student perspectives of critical literacy in EFL reading and writing. *Journal of Adolescent & Adult Literacy*, 55, 145–154. doi:10.1002/JAAL.00017
- *Hughes, J. M., King, A., Perkins, P., & Fuke, V. (2011). Adolescents and "autographics": Reading and writing coming-of-age graphic novels. *Journal of Adolescent and Adult Literacy*. doi:10.1598/JAAL.54.8.5
- Iser, W. (1974). *The implied reader: Patterns of communication in prose fiction from Bunyan to Beckett*. Baltimore, MD: Johns Hopkins University Press.
- Iser, W. (1978). *The act of reading: A theory of aesthetic response*. Baltimore, MD: Johns Hopkins University Press.
- *Juchniewicz, M. M. (2012). Visible voices: Literacy identity and the invisible homeless. *Journal of Adolescent and Adult Literacy*. doi:10.1002/JAAL.00060
- Kintsch, W. (2013). Revising the construction-integration model of text comprehension and its implications for instruction. In D. E. Alvermann, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 47–90). Newark, DE: International Reading Association.
- *Kohnen, A. M. (2013). Informational writing in high school science. *Journal of Adolescent and Adult Literacy*, 57, 233–242. doi:10.1002/JAAL.220
- Leont'ev, A. N. (1981). *Problems of the development of mind*. Moscow: Progress.
- Marinak, B., & Gambrell, L. B. (2008). Intrinsic motivation and rewards: What sustains young children's engagement with text? *Literacy Research and Instruction*, 47, 9–26.
<http://dx.doi.org/10.1080/19388070701749546>
- *Massey, D., & Riley, L. (2013). Reading math textbooks: An algebra teacher's patterns of thinking. *Journal of Adolescent and Adult Literacy*, 56, 577–586. doi:10.1002/JAAL.187
- *McMillan, S., & Wilhelm, J. (2007). Students' stories: Adolescents constructing multiple literacies through nature journaling. *Journal of Adolescent and Adult Literacy*, 50, 370–377.
<http://dx.doi.org/10.1598/JAAL.50.5.4>
- Moje, E. B., Ciechanowski, K. M., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004). Working toward third space in content area literacy: An examination of everyday funds of knowledge and discourse. *Reading Research Quarterly*, 39, 38–70. doi:10.1598/RRQ.39.1.4
- *Montelongo, J., Herter, R. J., Ansaldo, R., & Hatter, N. (2010). A lesson cycle for teaching expository reading and writing. *Journal of Adolescent and Adult Literacy*, 53, 656–666.
<http://dx.doi.org/10.1598/JAAL.53.8.4>
- *Morse, M. L. (2008). Under the big top: Using the Hartford circus fire of 1944 to teach literacy strategies to Connecticut's content area teachers. *Journal of Adolescent and Adult Literacy*, 52, 296–307.
- *Olson, C. B., Land, R., Anselmi, T., & AuBuchon, C. (2010). Teaching secondary English learners to understand, analyze, and write interpretive essays about theme. *Journal of Adolescent and Adult Literacy*, 54, 245–256. doi:10.1598/JAAL.54.4.2
- *Padak, N. D., & Bardine, B. A. (2004). Engaging readers and writers in adult education contexts. *Journal of Adolescent and Adult Literacy*, 48, 126–137.
- Pajares, F., & Valiante, G. (2006). Self-efficacy beliefs and motivation in writing development. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 158–170). New York, NY: Guilford.
- *Paulson, E. J., & Armstrong, S. L. (2011). Mountains and pit bulls: Students' metaphors for college transitional reading and writing. *Journal of Adolescent and Adult Literacy*, 54, 494–503. doi:10.1598/JAAL.54.7.3
- *Perry, M., Wessels, A., & Wager, A. C. (2013). From play building to devising in literacy education: Aesthetic and pedagogical approaches. *Journal of Adolescent & Adult Literacy*, 56, 649–658. doi:10.1002/JAAL.195
- Prior, P. (2006). A sociocultural theory of writing. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 54–66). New York, NY: Guilford.
- *Ranker, J. (2008). Making meaning on the screen: Digital video production about the Dominican republic. *Journal of Adolescent and Adult Literacy*, 51, 410–422.
<http://dx.doi.org/10.1598/JAAL.51.5.4>
- Rosenblatt, L. (1938). *Literature as exploration*. New York, NY: Noble and Noble.
- Rosenblatt, L. (1978). *The reader, the text, the poem: The transactional theory of the literary work*. Carbondale, IL: Southern Illinois University Press.
- Rosenblatt, L. M. (2013). The transactional theory of reading and writing. In N. Unrau, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 923–956). Newark, DE: International Reading Association.
<http://dx.doi.org/10.1598/0710>
- *Shelton, K. S. (2004). Using written conversation in middle school: Lessons from a teacher researcher project. *Journal of Adolescent and Adult Literacy*, 47, 492–507.
- Silliman, E. R., & Wilkinson, L. C. (1994). Discourse scaffolds for classroom intervention. In G. P. Wallach & K. G. Butler (Eds.), *Language learning disabilities in school-age children and adolescents* (pp. 145–173). Boston, MA: Allyn & Bacon.
- *Spires, H. A., Hervey, L. G., Morris, G., & Stelpflug, C. (2012). Energizing project-based inquiry: Middle-grade students read, write, and create videos. *Journal of Adolescent and Adult Literacy*, 55, 483–493. doi:10.1002/JAAL.00058
- *Spitler, E. (2011). From resistance to advocacy for math literacy: One teacher's literacy identity transformation. *Journal of Adolescent and Adult Literacy*, 55, 306–315. doi:10.1002/JAAL.00037
- *Stewart, M. A. (2013). Giving voice to Valeria's story: Support, value, and agency for immigrant adolescents. *Journal of Adolescent and Adult Literacy*, 57, 42–50. doi:10.1002/jaal.217
- Sun, R., & Fleischer, P. (2012). A cognitive social simulation of tribal survival strategies: The importance of cognitive and motivational factors. *Journal of Cognition and Culture*, 12, 287–321.
<http://dx.doi.org/10.1163/15685373-12342077>
- *Thompson, M. (2008). Multimodal teaching and learning: Creating spaces for content teachers. *Journal of Adolescent & Adult Literacy*, 52, 144–153.
<http://dx.doi.org/10.1598/JAAL.52.2.5>
- Tovani, C. (2004). *Do I really have to teach reading? Content comprehension, grades 6–12*. Portland, ME: Stenhouse Publishers.

- Tracey, D. H., & Morrow, L. M. (2012). *Lenses on reading: An introduction to theories and models* (2nd ed.). New York, NY: Guilford Press.
- Ulusoy, M., & Dedeoglu, H. (2011). Content area reading and writing: Practices and beliefs. *Australian Journal of Teacher Education*, 36(4), 1–17.
- Unrau, N. J., & Alvermann, D. E. (2013). Literacies and their investigation through theories and models. In N. Unrau, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 47–90). Newark, DE: International Reading Association.
<http://dx.doi.org/10.1598/0710>
- *Vagle, M. D. (2011). Lessons in contingent, recursive humility. *Journal of Adolescent and Adult Literacy*, 54, 362–370. doi:10.1598/JAAL.54.5.6
- *Vasudevan, L. M. (2006). Looking for angels: Knowing adolescents by engaging with their multimodal literacy practices. *Journal of Adolescent and Adult Literacy*, 50, 252–256.
<http://dx.doi.org/10.1598/JAAL.50.4.1>
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Boston, MA: Harvard University Press.
- West, J. (2013). Deep and lifelong learning: When theory and SoTL intersect. *Journal of the Scholarship of Teaching and Learning*, 13, 11–20.
- Wigfield, A., & Guthrie, J. T. (1995). *Dimensions of children's motivations of reading: An initial study* (Research Report No. 34). Athens, GA: National Reading Research Center.
- *Williams, B. T. (2004). Boys may be boys, but do they have to read and write that way? *Journal of Adolescent and Adult Literacy*, 47, 510–515.
- *Wilson, N. S., Grisham, D. L., & Smetana, L. (2009). Investigating content area teachers' understanding of a content literacy framework: A yearlong professional development initiative. *Journal of Adolescent and Adult Literacy*, 52, 708–718.
<http://dx.doi.org/10.1598/JAAL.52.8.6>
- *Witte, S. (2007). That's online writing, not boring school writing: Writing with blogs and the talk back project. *Journal of Adolescent and Adult Literacy*, 51, 92–96.
- Wright, K. L., Franks, A. D., Kuo, L. J., McTigue, E. M., & Serrano, J. (2015). Both theory and practice: Science literacy instruction and theories of reading. *International Journal of Science and Mathematics Education*, 1–18. doi:10.1007/s10763-015-9661-2



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