A Review and Evaluation of Prominent Theories of Writing

Holli R Leggette, Tracy Rutherford, Deborah Dunsford, and Lori Costello

Abstract

Theoretical frameworks bring order to phenomena and provide a context for both research and practice. However, it has only been in the last four decades that theoretical frameworks have guided writing research. Before the 1980s, writing research focused more on mechanics and grammar than on cognitive thought processes related to writing. During the mid-1990s, theories shifted to a more sociocultural view of writing. Therefore, the purpose of this study was to apply theory evaluation criteria to theories of writing to review and evaluate their use and applicability in modern-day writing research. A literature review yielded three theories consistent across publications: cognitive process theory of writing, social cognitive theory of writing, and sociocultural theory of writing. The theories were reviewed and evaluated using accuracy, consistency, fruitfulness, simplicity/complexity, scope, acceptability, and sociocultural utility. Since the 1980s, writing researchers have modified theories to define writing ideas, concepts, and relationships. Cognitive processes should also be included in writing theories because of their importance in knowledge construction. Of the three theories that were reviewed and evaluated, the social cognitive theory of writing was the most complete. Its structure included society's influence on writing and the cognitive processes involved in writing development. Each writing theory brought a unique perspective to writing research, but Flower's theory was a complete theory that incorporated an in-depth look at writing as a product of cognitive processes situated within society. However, more research needs to be done on its applicability in agricultural communications research and practice.

Key Words

writing, evaluation, theories of writing

Introduction

Research is not meaningful without theory, and theory does not have meaning without research to test and generate theory (Camp, 2001). A "theory is a mental activity" (Turner, 1986, p. 4) through which ideas about reality are constructed. Theories are also "set[s] of interrelated universal statements, some of which are definitions and some of which are relationships assumed to be true, together with a syntax, a set of rules for manipulating the statements to arrive at new statements" (Cohen, 1980, p. 171). Theories should "explain the observed facts, … be consistent with observed facts and with the already established body of knowledge, … provide means for its verification, … stimulate new discoveries[,] and indicate further areas in need of investigation" (Ary, Jacobs & Sorensen, 2010, pp. 15–16). More recently, Kitchel and Ball (2014) established a working definition of theory for quantitative research in agricultural education: "used to explain and predict phenomena and … to answer 'what', [*sic*] 'how[,]' or 'why' particular phenomena occurred" (p. 189).

However, discrepancies exist about what defines a theoretical framework (Camp, 2001) and what qualifies as theory in the theoretical paradigm of research (Dudley-Brown, 1997). Strickland (2001) said a theory is useless if it cannot be tested, but Dudley-Brown argued that empirically testing a theory is only one form of evaluation. Fawcett (1989) suggested analyzing a work's purpose through

its description, explanation, or prediction of concrete, explicit phenomena as a way to determine if the work is a theory. Similarly, Chinn and Kramer (1983) said theory is "a set of concepts, definitions, and propositions that projects a systematic view of phenomena by designating specific inter-relationships among concepts for purposes of describing, explaining, predicting, and/or controlling phenomenon" (p. 70).

Creswell (1994) identified three categories of theories—grand, middle-range, and substantive—which could explain the variations in theory definitions. A grand theory is a general and comprehensive theory with abstract concepts that cover all aspects of human experience related to a specific topic. Researchers do not generally test a grand theory, which is developed through years of research and thought (McEwen & Wills, 2014). A middle-range theory has a middle-ground look at reality and is derived from grand theories, practice, or literature reviews. The concepts within the theory are more concrete, and researchers can find testable hypotheses within a middle-range theory. Often times, middle-range theories are models that can be tested (McEwen & Wills). A substantive theory, or practice theory, as explained by McEwen and Wills, is a simple, straightforward view of reality. The concepts within a substantive theory are operationalized, and the outcomes can be easily defined and tested. Substantive theories are often derived from grounded theory studies (McEwen & Wills).

In addition to understanding theories according to category, theory use is the "specification of relationships" in quantitative research and the "explanation of reality" in qualitative research (Camp, 2001, p. 4). Kitchel and Ball (2014) noted that quantitative studies in agricultural education are most often conducted using middle-range and substantive theories. Conversely, a qualitative researcher's perspective of theory is both theory building and theory testing. Theory building is a preferred approach, but it is dependent on the type of qualitative research (Bryman, 2012).

Pre-1970s writing instruction was focused on improving student errors—the mechanics of writing—and was largely explicit to English and the humanities genre (Foster, 1983; Nystrand, 2006; Rose, 1985). However, since that time, writing has become a stimulus of thought with a direct connection to the writer's thought process—"an activity of the mind" (Foster, p. 24). Since the 1980s, writing researchers have worked to develop theoretical and conceptual frameworks related to writing (Becker, 2006). Early empirical writing research was believed to be a precursor to improving writing instruction (Nystrand) and was not built on theoretical frameworks. The early years of writing research focused primarily on investigating writing skill and ability and not on writing as a knowledge creation and human development tool. However, at the end of the 20th century, researchers shifted their work from defining writing to investigating "writing in all its situated contexts, especially beyond school" (Nystrand, p. 22).

Eventually, the work of the early researchers would lead to a writing research movement in the 1970s and 1980s, and the culmination of early research agendas would soon influence theory and model development in writing (Nystrand, 2006). Early writing research was conducted with theoretical underpinnings of cognitive processes without the inclusion of society and culture (Prior, 2006). The cognitive approach described writing as a function of what occurs in the writers' minds, not as a function encouraged and impacted by the social contexts and situations that occur in the world where writers exist (Deane et al., 2008). Prior argued that writing is situated within the social context of the writer and is impacted by communities of practice occurring as a part of the situated social context. Therefore, writing research has become more holistic, focusing more on the situation as a whole and not on the writer and the text.

Framework development in writing is marked by four eras—Hayes and Flower's work on text production, Bereiter and Scardamalia's work on the development of writing expertise, Levelt's work

on speaking, and both Hayes' and Kellogg's work on the relationship of text writing and working memory (Alamargot & Chanquoy, 2001). However, Wallace, Jackson, and Wallace (2000) argued that, although many writing frameworks exist, the frameworks lack the empirical evidence to inform the teaching writing profession.

In 1991, Raimes proposed theories and practices of teaching writing could be classified according to four elements that guide both education and research: form, writer, content, and reader. The element of form is the "linguistic and rhetorical conventions of the text" (Raimes, pp. 238–239). During the 1960s and 1970s, the teaching of writing was centered on the form-focused approach— formal features of writing (rhetorical form and accurate grammar) instead of writing as a relationship among the reader, writer, and content (Raimes).

Additionally, the element of the writer is the "writer's ideas, experiences, feelings, and composing processes" (Raimes, 1991, pp. 238–239). Writing research of the 1970s influenced the writer-focused approach, which encouraged writers "to think through issues by means of writing about them, to practice generating and revising ideas through the act of writing, and to read, discuss, and interpret texts" (Raimes, p. 241). The writing- process approach described by multiple researchers (e.g., Hayes and Flower, 1980) is a writer-focused approach.

Further, the element of the content is the subject matter of the work (Raimes, 1991). The content-focused approach was the new process approach, focusing more on content than on the features of writing or the writer (Raimes). This approach emphasized that language courses have no value as standalone courses because they are service courses to other subject matter areas (Raimes).

Lastly, the element of the reader related "specifically [to] the expectations of the academic audience" (Raimes, 1991, pp. 238–239). The reader-focused approach overvalued the reader, audience, or discourse community. The reader and content are accentuated, and the writer and his/her expertise get lost in the process.

Placing more emphasis on one element over the other creates an unbalanced stance (Raimes, 1991). Therefore, writers' main goal should be to maintain a balanced stance between all elements of writing (Booth, 1963). Writers need to understand their audience and its expectations and characteristics, so they can determine what and how to write (Alamargot & Chanquoy, 2001). They must constantly control text production so only the pertinent and necessary information is generated and conveyed (Alamargot & Chanquoy). "A balanced approach [of writing] recognizes that the four elements…are not discrete entities to be emphasized and reduced to prescriptions…they are fluid, interdependent, and interactive" (Raimes, p. 246). Writers become readers, readers become writers, content and subject matter are not independent, and form is the product of the reader, writer, and content (Raimes).

Since the early 20th century, agricultural communicators have used writing to disseminate knowledge about the agricultural industry (Boone, Meisenbach, & Tucker, 2000). In recent decades, researchers (Ettredge & Bellah, 2008; Morgan, 2010; Sitton, Cartmell, & Sargent, 2005; Sprecker & Rudd, 1997; Terry et al., 1994) have identified writing as a key competency needed by agricultural communicators. Perhaps, that is because "writing is not just a skill with which one can present or analyze knowledge. It is essential to the very existence of certain kinds of knowledge" (Rose, 1985, p. 348). Writing has been, and continues to be, one form of storytelling in agriculture (Telg & Irani, 2011). Even so, Sitton, Cartmell, and Sargent reported writing was an important part of the course curricula in agricultural communications.

Writing skill is an important component of education, research, and practice, yet the existing theories may lack sufficient empirical evidence that supports writing education. Understanding writ-

ing theories, and how they can be applied, will begin to provide a framework for constructing empirical evidence to modify and update theoretical frameworks in writing. Therefore, the purpose of this study was to apply Dudley-Brown's (1997) theory evaluation criteria to the three prominent writing theories in writing research to review and evaluate their use and applicability in modern-day writing research. Four objectives guided this study:

1. Identify theory evaluation criteria that can be used to evaluate writing theories,
2. Identify the most documented theories in writing research,
3. Review the most documented theories in writing research, and
4. Evaluate the most documented theories in writing research.

Method

The method used in this study was part of the reporting for a larger research project, *A model to augment critical thinking and create knowledge through writing in the social sciences of agriculture*. The research method is fully described within, but similar methods exist as a larger project (Leggette, 2013).

The foundation of this research study is Dudley-Brown's theory evaluation criteria (1997). "To utilize theory appropriately, in all domains of practice, education[,] and research, it is important to know how to describe, analyze[,] and evaluate theory" (Dudley-Brown, p. 76). Theory evaluation, according to Meleis (1985), offers constructive criticism of the framework, modification of the current theory, and researcher appreciation for theory development. Dudley-Brown) noted theory evaluation should be conducted to make an informed analysis of theory before and after it is applied to research and before it is used in education and practice. Theory evaluation is both subjective and objective, but subjectivity can be reached if a set of formal criteria is used (e.g., Dudley-Brown).

Dudley-Brown (1997) proposed a criteria-approach evaluation of nursing theory she created using a culmination of criteria suggested by nursing theory evaluators, one of which was Fawcett's (1989) evaluation of conceptual frameworks. Theoretical framework research within the nursing paradigm has been well-developed and documented for many years. Nursing theory definitions originated in psychology and social sciences with underlying principles rooted in the nurturing instincts of human nature. Longest (2002) said nursing research is focused on societal issues that affect human health determinants (e.g., environment, human behaviors, social factors, biological factors). Shoemaker et al. (2004) defined social science as the "knowledge of nature and the natural world … [and the] study of naturally occurring phenomena, and how they relate to each other, the structure of the universe, and the activity of its elements" (p. 3). Because social science is the study of nature and how things occur in nature and nursing is the study of societal issues related to human health determinants, it may be concluded there is a logical connection between nursing theory and social science theory.

Dudley-Brown (1997) noted theory evaluation should be conducted using a set of specific criteria—accuracy, consistency, fruitfulness, simplicity/complexity, scope, acceptability, and sociocultural utility (see Table 1 for a complete description of each criterion). The criteria proposed by Dudley-Brown provided a more quantifiable and observable way to evaluate theory, accounting for objective, subjective, internal, and external criteria in the evaluation. Additionally, Dudley-Brown modified and expanded on Kuhn's (1977) theory evaluation terms and documented theory evaluation researchers as influential in her theory evaluation criteria to ensure it was robust in presentation and evaluation.

Table 1
Definitions of Theory Evaluation Criteria

Criterion	Definition	Related Citations
Accuracy	A world view of the culture where it is used and applied (Dudley-Brown, 1997)	Kuhn, 1977
Consistency	Internal consistency; language, logical order, and connectedness (Newton-Smith, 1981); clarity (Meleis, 1985)	Ary et al., 2010; Barnum, 1998; Chinn & Kramer, 1983; Kuhn, 1977; Meleis, 1985; Newton-Smith, 1981
Fruitfulness	"Fruitful, bountiful, productive, and prolific" (Dudley-Brown, 1997, p. 80); reveals new feelings, phenomena, or unknown relationships (Kuhn, 1977); further research ideas (Newton-Smith, 1981); generate hypothesis (Ellis, 1968); problem-solving, research tradition (Laudan, 1977)	Ary et al., 2010; Barnum, 1998; Ellis, 1968; Hardy, 1974; Kuhn, 1977; Laudan, 1977; Newton-Smith, 1981
Simplicity/ Complexity	Concepts, phenomena, and relationships in the theory (Meleis, 1985); balance of simplicity and complexity (Dudley-Brown, 1997); can be simple[1], complex[2], or pragmatic[3]	Ary et al., 2010[1]; Barnum, 1998[2]; Chinn & Kramer, 1983[1]; Ellis, 1968[2]; Kuhn, 1977[1]; Meleis, 1985[3]; Newton-Smith, 1981[1]
Scope	Phenomenon and its context (Barnum, 1998); based on level of theory (e.g., middle range theory; Dudley-Brown, 1997); increased number of facts and concepts, more significant theory (Ellis, 1968); more general, more useful (Hardy, 1974); focused on developing specific theories (Jacox, 1990); can be broad[1], narrow[2], or pragmatic[3]	Barnum, 1998[3]; Ellis, 1968[1]; Hardy, 1974[1]; Jacox, 1974[2]
Acceptability	Adoption of theory by others (Dudley-Brown, 1997); practice (direction, applicability, generalizability, cost effectiveness, and relevance); education (philosophical statements, objectives, and concepts); research (consistency, testability [research potential or empirical adequacy], and predictability)	Ary et al., 2010; Barnum, 1998; Ellis, 1968; Fitzpatrick & Whall, 2005; Laudan, 1977; Meleis, 1985
Socio-cultural Utility	Social congruence and social significance (Fawcett, 1989; Johnson, 1974; Meleis, 1985); transferability (Dudley-Brown, 1997)	Fawcett, 1989; Johnson, 1974; Meleis, 1985

We used the pragmatic and methodical theory evaluation criteria proposed by Dudley-Brown (1997) because of its inclusion of theory evaluation literature and research. Her evaluation criteria provided us the opportunity to evaluate the concrete, explicit theories through the rigorous theory evaluation criterion. Many of the criterion were transferrable to other disciplines, but some points of the criteria were related directly to nursing. Therefore, we modified Dudley-Brown's nursing theory evaluation criteria to meet the needs of this study.

To modify the criteria, we reviewed related literature (e.g., Barnum, 1998; Ellis, 1968; Hardy, 1974; Jacox, 1974) cited in Dudley-Brown because the literature provided us with descriptions, examples, and criteria that better explained each evaluation criterion. Once we had an in-depth understanding of each criterion, we reviewed each criterion within the context of writing to establish the evaluation criteria for this study. Personal experience, as well as literature on writing theories, provided the data for the qualitative coding template (Saldaña, 2013; see Table 2 for the coding descriptions). A researcher's position helps the reader to clarify how and why the data were interpreted (Merriam, 2009). "The qualitative analyst owns and is reflective about her or his own voice and perspective" (Patton, 2002, p. 41) as the data collector and interpreter (Merriam). As such, the qualitative coding (Saldaña) template included the descriptions, inclusion and exclusion evaluation criteria, and the typical exemplars in the context of writing for each of Dudley-Brown's (1997) criterion.

Table 2

Descriptions, Inclusion and Exclusion Evaluation Criteria, and Typical Exemplars in the Context of Writing for each of Dudley–Brown's (1997) Criterion

Criterion	Evaluation Criteria
Accuracy	**Description:** True representation of writing, incorporates key components of the writing process **Inclusion criteria:** Author claimed; audience, critical thinking, content and discourse knowledge, context **Exclusion criteria:** Transcription, technology **Typical exemplars:** Contains the writing process (e.g., drafting, editing, revising, feedback, planning)
Consistency	**Description:** Internal consistency, evidence of reliability **Inclusion criteria:** Author claimed; clear, consistent language; logically connected; consistent terms, principles, and methods; clear definitions and concepts; coherent **Exclusion criteria:** Inconsistent **Typical exemplars:** Statement of reliability; consistent language; clear concepts
Fruitfulness	**Description:** New feelings, phenomena, or relationships; explains phenomenon; generates hypothesis; examines prior work; contains development ideas; addresses issues; has research potential **Inclusion criteria:** Author claimed; significant, revelation of new phenomena, solves problems; leads to new research **Exclusion criteria:** Does not contain ideas for further development **Typical exemplars:** Has potential for continued research; Research opportunities are not stagnant
Simplicity/ Complexity	**Description:** Number of phenomena, relationships, and concepts identified in the theory; consistently simple; consistently complex **Inclusion criteria:** Author claimed; easy to understand; simple or complex graphical representation; contains further explanation of hard-to-understand pieces **Exclusion criteria:** Unbalanced—simple concepts and complex concepts within one theory **Typical exemplars:** Clarifies isolated, confused, and hard-to-understand phenomenon
Scope	**Description:** Dependent on the phenomenon and its context **Inclusion criteria:** Author claimed; grand, middle-ranging, or substantive; narrow—focused on specific concepts and facts; broad—general and useful; pragmatic approach **Exclusion criteria:** Scope is not indicative of its purpose **Typical exemplars:** Grand, middle range, or substantive theory
Acceptability	**Description:** Level to which the theory has been adopted and accepted in research and practice; adoption in various contexts within the discipline **Inclusion criteria:** Number of citations, according to Google, based on the time since publication (If it has been accepted by researchers, it would have more citations than a theory that has not been accepted. The longer it has been in publication, the more citations it should have.); critique as usefulness **Exclusion criteria:** Administration **Typical exemplars:** Adaptability to use in practice (e.g., direction, applicability, generalizability, cost effectiveness, relevance); education (e.g., philosophical statements, objectives, concepts); and research (e.g., consistency, testability, predictability)
Sociocultural Utility	**Description:** Takes into account cultures' beliefs, values, and expectations; transferability; consistency of goals and values systems; potential to make a difference in the lives of those who use it **Inclusion criteria:** Consistent with the society in which it was developed; theories adopted for writing in the Western culture may not be relevant to other cultures **Exclusion criteria:** Inconsistent within society **Typical exemplars:** Adaption of Western theories to other cultures

After we identified the evaluation criteria and developed the qualitative coding template, we sought to identify prominent writing theories. First, we reviewed the literature to determine the most documented theoretical frameworks. We used Google Scholar, [University] library, and WorldCat.org to search for literature related to writing theories. To be included in the study, each theory had to be cited within the writing research literature and had to include theory in its title. The literature review yielded three theories—cognitive process theory of writing (Flower & Hayes, 1981), social cognitive theory of writing (Flower, 1994), and sociocultural theory of writing (Prior, 2006). Once we identified the theoretical frameworks to review, we further reviewed the literature to locate the original theory reference. In our search, we found the three original theories, as well as supporting works.

Lastly, we reviewed and evaluated the theoretical frameworks. The review and evaluation process were simultaneous. The review process required us to immerse ourselves into the frameworks to understand the concepts within each theory. While critically reading and evaluating each theory and its supporting literature, we took notes using a replica of Table 2. We sought to find criteria and examples that fit the criteria established by Dudley-Brown (1997). If a theory did not meet the evaluation criteria set forth for a particular criterion (e.g., accuracy), we documented the theory's failure to meet the criteria for that particular criterion. For some criterion, we determined the author indicated the theory met or did not meet a specific set of established criteria and provided an example, which was also documented. After our critical evaluation of each theory, we formulated a narrative from our notes, which we developed using Table 1 and 2, and documented key characteristics for each particular framework as it related to Dudley-Brown's theory evaluation criteria.

Findings

For this study, a theory evaluation criteria was identified and modified for use in the context of writing. Dudley-Brown's (1997) theory evaluation criteria was identified as a pragmatic, methodological approach that has application in writing and other social science disciplines. The criteria was applied to three prominent writing theories—cognitive process theory of writing (Flower & Hayes, 1981), social cognitive theory of writing (Flower, 1994), and sociocultural theory of writing (Prior, 2006)—as a means to review and evaluate the work.

Cognitive Process Theory of Writing (Flower & Hayes, 1981)

Flower and Hayes (1981) developed the cognitive process theory of writing as a foundation to inform research and practice about the thinking processes that occur during the writing process. The theory has four points: (a) "… writing is … a set of distinctive thinking processes which writers orchestrate or organize during the act of composing" (Flower & Hayes, p. 366); (b) the components of the process are hierarchical and can be in embedded within each other; (c) "composing itself is a goal-directed thinking process, guided by the writer's own growing network of goals" (p. 366); and (d) writers should set goals representing their purpose by modifying current goals or create new goals based on experience.

The cognitive process theory of writing, however, is not a traditional stage model (Flower & Hayes, 1981) because writers do not move through linear stages of development before completing a product. Writers move through units of mental processes situated within a hierarchical structure with embedded components (Flower & Hayes). For example, generating ideas is a mental sub process of planning. When writers encounter a problem within the process, they could retreat back to one of the earlier processes and work through the process for that particular problem (Flower &

Hayes). Flower and Hayes referred to the mental processes as the writer's tool kit, which could be used at any point in the process.

Furthermore, the writing process is directed by goals, which are created and modified during the process (Flower & Hayes, 1981). Goal-directed thinking, as described by Flower and Hayes, included describing goals, developing plans to meet those goals, and evaluating the success of those goals. This goal-directed process is also a hierarchical structure, and writers often refer back to their goals. As writers write, knowledge develops, and they create, retrieve, modify, and consolidate goals based on the discovery of new knowledge (Flower & Hayes).

The cognitive process theory of writing (Flower & Hayes, 1981) was consistent, fruitful, complex, middle-range (scope), and acceptable (Dudley-Brown, 1997). The theory was not accurate for the 21st century because it did not include the context's influence on writing. It was consistent because it had coherence with clear, logical connected terms and concepts. Flower and Hayes described their theory as fruitful because it revealed new phenomena, generated hypotheses, discussed ideas for potential research opportunities, and addressed essential issues related to the theory. The complex structure of the theory showed a hierarchical, in-depth look at the writing process. It portrayed writing as a hierarchical structure with multiple sub processes, concepts, and relationships.

Based on the substantive theory definition cited by Creswell (1994) and discussed by McEwen and Wills (2014), the cognitive process theory of writing was a middle-range theory because it is a model that can be tested. It was more descriptive, and provided an understanding of the phenomenon. Because of its number of citations and "circle of contagiousness" (Meleis, 1985, p. 159), it has been accepted by writing researchers. As of July 2015, the theory had 3,279 citations on Google Scholar. Further, it was useful because it can be applied to practice, education, and research. However, the theory did not meet the criteria of sociocultural utility because it did not include its transferability, its relationship to society, or its inclusion of community practices and their impact on the writing process. Although the cognitive process theory of writing has been the research base for several writing models, it is missing the inclusion of society's influence on the writing process. With the addition of social context, this theory could be stronger.

Social Cognitive Theory of Writing (Flower, 1994)

Flower (1994) called for an integration, especially in education, of social and cognitive theory in her book *The construction of negotiated meaning: A social cognitive theory of writing* because "neither social nor cognitive theory makes genuine sense without the other" (Flower, p. 33). Writing is a constructive process often shaped and carried out in a complex environment guided by the attitudes and feelings of not only the writer, but also the society and people who surround him or her (Flower). "The forces clustered around the poles of self and society, public and private, convention and invention, social and cognitive, [*sic*] are all forces that can give structure to a writer's meaning, guide composing, or set criteria …" (Flower, p. 34). This construction becomes moments of active meaning negotiation that causes the writer to deal with multiple forces while bringing meaning to a situation (Flower).

Flower (1994) contended that meaning is socially shaped through reproduction, conversation, and negotiation. Reproduction is one-way communication; whereas, conversation and negotiation are both dialogic processes. Knowledge production using reproduction is an unconscious process of text production (Flower). "New texts can be defined as a reconfiguration of prior texts" (Flower, p. 56) through the process of connecting previous meaning with new information to develop new meaning, which is an example of knowledge transformation (Bereiter & Scardamalia, 1987).

Constructing meaning in written conversation is shared knowledge with a community (Clark,

1990). Conversation is involvement (Brandt, 1990) that occurs through interaction (Flower, 1994). Partners in conversation use discussion and dialogue to construct meaning—at points clarifying where the conversation stands and agreeing to move forward. Meaning by conversation "draw[s] attention to a relatively undirected process, in which meaning is nourished, shaped, and expanded by existing within a stream of possibilities" (Flower, p. 65).

However, Flower (1994) postulated that meaning is best shaped through negotiation, and writers internally and externally negotiate meaning. "Negotiation draws our gaze to a dilemma-driven and goal[-]directed effort to construct meaning in the face of forces" (Flower, p. 66). In the presence of negotiated meaning, individuals are ready-to-share freethinkers with a unique understanding and conceptualization of information (Flower). The process of constructing negotiated meaning is influenced by outside forces (e.g., language, teachers, collaborators, discourse convention) and voices or knowledge (e.g., goals, constraints, opportunities, experiences, wisdom, conflict; Flower).

The social cognitive theory of writing (Flower, 1994) was accurate, consistent, fruitful, complex, middle range (scope), acceptable, and had sociocultural utility. The theory was important for writing research because it emphasized the role that society and community play in writing, as well as the role of cognitive processes in writing. Research studies have shown that writing and writing development are influenced by society and cognitive processes; however, theorists had failed to recognize such a relationship until Flower did so in 1994. Additionally, Flower presented a theory that was consistent, logical, and connected, as well as consistent in assumptions and propositions.

Flower's theory (1994) was fruitful because it revealed new phenomena, and the undocumented relationship between social context and cognitive processes in writing. It also examined the literature that led to its development, showed potential to solve problems, and provided ideas for further research. Flower claimed her theory was complex and described an intricate number of concepts, phenomena, and relationships in the theory. The theory was middle range (McEwen & Wills, 2014) because it covered a significant number of related concepts and facts. Additionally, the social cognitive theory of writing met the criteria of acceptability because, as of July 2015, it had been cited 521 times according to Google Scholar. It also had potential for usefulness in practice, education, and research paradigms. Lastly, the theory met the criteria for sociocultural utility because it represented a significant practice in society and had the potential to make an impact on society's writing education outcomes. The theory was transferable and consistent with the cultural values and beliefs systems within education.

Sociocultural Theory of Writing (Prior, 2006)

Early writing research related to cognitive processes was not representative of the complex intricacies of writing, so researchers began investigating the "social, historical, and political contexts of writing" (Prior, 2006, p. 54). Prior noted since this shift in the writing research paradigm, more empirical research has been conducted using the sociocultural theory approach. Sociocultural theory is not a new concept—it has complex interdisciplinary linkages that include diverse terms, concepts, and contexts (Prior).

Sociocultural theory contended that "activity is *situated* in concrete interactions that are simultaneously *improvised* locally and *meditated* by prefabricated, historically provided tools and practices" (Prior, 2006, p. 55). The mediated activity within the theory involves three elements: externalization through oral and written communication, co-action through collaboration with people and objects, and internalization through perception of reality and learning (Prior). During activity, people form institutions, and the world is personalized through their beliefs and values, which leads to a social-

ized and individuated individual (Prior). An iconic figure within sociocultural theory is Lev Vygotsky. His work "produced a rich set of studies, theories, methods, and goals for research" within the sociocultural theory paradigm (Prior). Additionally, Vygotsky has conducted research on childhood writing and on "ways that writing meditates problem solving and memory" (Prior, p. 55).

Writing, as a sociocultural approach, "involves dialogic processes of invention. Texts … are parts of streams of meditated, distributed, and multimodal activity" (Prior, p. 57). The individual writer participates in activities that extend beyond the individual (e.g., knowledge, distribution, reading). In a school setting, teachers are as much involved in the writing process as students are because teachers set deadlines and guidelines while simultaneously mentoring the students in the writing process (Prior). Using a sociocultural approach, learning to write, as explained by Daiute (2000), is "being socialized into a set of values, practices, and symbol systems" (p. 256), where the activities are group specific and not universal practices. Deane et al. (2008) said sociocultural stresses that "community practices deeply influence what sort of writing tasks will be undertaken, how they will be structured, and how they will be received, [which] emerge in specific social contexts and exist embedded within an entire complex of customs and expectations" (p. 13).

Sociocultural theory of writing has three themes: "redrawing the oral-literate divide, emerging schooled literacies, and writing in college and beyond" (Prior, 2006, p. 58). The oral-literate divide category focused on writing in the home and community, writing as an organized production, and the use of text in a social, purposeful, and contextual paradigm (Prior). Additionally, Prior stated that emerging schooled literacies is "a mode of participation in worlds of peer, group, school, and society" (p. 61), going beyond the home and community and defining writing as an even deeper sociocultural practice. Writing in college is much like emerging school literacies in that it focuses on the classroom practices. It is genre specific, and the genre is chosen by the teacher, students, discipline, and institution (Prior). "Writers [need] to continually learn new genres and textual practices" (p. 63) because of the complexity of literacy and the need to transfer knowledge and adapt to new situations (Prior).

The sociocultural theory of writing (Prior, 2006) was consistent, fruitful, simple, middle-range (scope), acceptable, and had sociocultural utility. It incorporated context and research base but failed to incorporate the cognitive processes and the writing process. Therefore, the theory is not accurate for the present-day writing paradigm. Prior's theory was, however, consistent because it was coherent and connected and used consistent terms, principles, and methods. The sociocultural theory of writing was fruitful because it had potential to generate hypothesis, examined the literature that led to its development, showed potential to solve problems, and provided ideas for further research.

Additionally, the sociocultural theory of writing (Prior, 2006) was a simple theory because it was easy to understand and brought order to individualized, isolated studies. It was a middle-range theory (McEwen & Wills, 2014) that covered writing in multiple contexts, from home to school to workplace, and was derived from the grand sociocultural theory and the literature. Additionally, Prior's sociocultural theory of writing met the criteria of acceptability because, as of July 2015, it had been cited 219 times according to Google Scholar. The theory has been influential in writing research and writing education research and has shown usefulness to practice, education, and research paradigms. Lastly, the theory met the criteria for sociocultural utility because it accounted for different contexts within the writing community (Prior). The theory is transferable and consistent with cultural values and beliefs systems. Overall, with more research, theory testing, and modifications to include a deeper understanding of the writing process, Prior's sociocultural theory of writing has potential to become a more broadly used theory in writing and writing education.

Of the three theories that were reviewed and evaluated, the Flower's (1994) social cognitive

theory of writing was the most complete. Its structure included both society's influence on writing as well as the cognitive processes involved in writing development. Each writing theory brought a unique perspective to writing research, but Flower's social cognitive theory of writing was a complete theory that incorporated an in-depth look at writing as a product of cognitive processes situated within society.

Discussion

Theoretical frameworks are important to the development of empirical research, but many definitions exist about what defines a theoretical framework, also noted by Camp in 2001. As Creswell (1994) stated, three levels of theories exist: grand, middle-ranging, and substantive. The different levels of theory play an important role in how theoretical frameworks are defined and used, ultimately impacting how they are applied in research and practice, which McEwen and Wills described in 2014.

The seven criteria proposed by Dudley-Brown (1997) provided a thorough framework for theory evaluation. Because a goal of any type of research should be to enhance and expand on theory, or to develop robust theory based on empirical research, theories need to be evaluated using a set of pragmatic and methodical evaluation criteria (e.g., Dudley-Brown). Because Dudley-Brown's evaluation criteria were founded in the nursing profession, and the nursing profession has roots in social science, it was logical to use her evaluation criteria in analyzing writing theories. The evaluation criteria were supported by a long-standing literature base (e.g., Kuhn, 1977; Laudan, 1977; Newton-Smith, 1981) and provided criteria descriptions that could be used to review and evaluate different levels of theories in a variety of contexts.

Since the 1980s, writing researchers have modified and adapted writing theories to better depict writing ideas, concepts, and relationships (Nystrand, 2006). Writing research has progressed from empirical research related to grammar and mechanics to the cognitive processes involved with writing and society's role in the writing process (Prior, 2006). Writing is situated within the social context of the writer and is impacted by communities of practice that occur as a part of the situated social context (Prior). Cognitive processes and social context are intricate pieces of writing theories that cannot be used alone to define writing. Flower (1994) intertwined the two domains when she introduced the social cognitive theory of writing, contending writing is constructed through a set of cognitive processes guided by society and/or social context. The cognitive process theory of writing (Flower & Hayes, 1981), social cognitive theory of writing (Flower), and sociocultural theory of writing (Prior) emerged as the most prominent writing theories of the last three decades.

The review and evaluation of prominent writing theories showed evidence that the frameworks were diverse in their description of writing ideas, concepts, and relationships; structure and level of theory (McEwen & Wills, 2014); and classification according to the four elements described by Raimes (1991). Each writing theory brought a unique perspective to writing research and represented writing during its respective era. Flower's (1994) social cognitive theory of writing was the most complete writing theory because it incorporated an in-depth look at writing as a product of cognitive processes situated in the society. "Neither social nor cognitive theory makes genuine sense without the other" (Flower, p. 33).

Recommendations and Implications

This review and evaluation of writing theories provides a basis for research, as well as practice, in agricultural communications. Reviewing the prominent writing theories sheds light on the exist-

ing theoretical frameworks in writing and provides researchers and practitioners a synopsis of three frameworks that could be used to advance the agricultural communications discipline. For writing research to be applicable in the 21st century, vigorous empirical research must be conducted because empirical research that investigates writing as a cognitive process guided by social context is limited (Prior, 2006). Therefore, more empirically sound writing theories that are exclusive to certain social contexts, such as the discourse communities within agriculture, should be developed to better understand writing as a cognitive process in specific social contexts.

Agricultural communicators know writing is necessary, but may not understand the theoretical underpinnings of writing and writing development. However, theoretical frameworks within the writing research paradigm have the potential to make substantial contributions to writing research, education, and practice in agricultural communications. Agricultural communications' researchers, educators, and practitioners should be open to change, adaption, and modification of writing theories and work continuously to make the frameworks more reliable, credible, and applicable in the profession. Many communication theories guide research and practice in agricultural communications, but few writing research studies or courses are grounded in a writing theory.

Regardless of how much research has been done on writing and the best ways to facilitate writing education, "the chilling truth is that we are no closer to knowing how to teach writing than we were at the beginning of the process movement" (Wallace et al., 2000, p. 93). The same is true for teaching writing in agricultural communications. Much of what exists in the literature about writing in agricultural communications is related to undergraduate competencies (Morgan, 2010, 2012; Morgan & Rucker, 2013; Sitton, Cartmell, & Sargent, 2005; Watson & Robertson, 2011), which does not inform the profession on how to teach writing. Moving from understanding what graduates need to succeed to understanding how to teach students what they need to succeed is important for the profession. Because theories "help develop or guide a program, through which aspects of the program itself are researched" (Kitchel & Ball, 2014, p. 186), those who teach writing in agricultural communications need to understand writing theories so that stronger writing programs can be designed.

Although writing is a creative skill that is often used to document stories in agriculture, researchers have not investigated how students use writing to create knowledge and develop into communicators who can tell the written story. Nystrand (2006) suggested writing should be investigated in all contexts; however, writing has not been investigated in all contexts related to agriculture. Using theory to teach writing courses may help students improve their cognitive process, knowledge creation, and ability to write effectively, improving the knowledge transformation process (Bereiter & Scardamalia, 1987). Understanding the relationship between text production and cognitive processes is a start to transforming writing education in agricultural communications and throughout the agricultural industry.

References

Adelman, C. (2009). *Encyclopedia of case study research.* Thousand Oaks, CA: SAGE Publications.

Alamargot, D., & Chanquoy, L. (2001). General introduction: A definition of writing and a presentation of the main models. In G. Rijlaarsdam (Series Ed.), D. Alamargot, & L. Chanquoy, *Studies in writing: Through the models of writing* (Vol. 9, pp. 1–29). Boston, MA: Kluwer Academic Publishers.

Ary, D., Jacobs, L. C., & Sorenson, C. (2010). *Introduction to research in education* (8th ed.). Belmont, CA: Thomson-Wadsworth.

Barnum, B. S. (1998). *Nursing theory: Analysis, application, evaluation* (5th ed.). Philadelphia, PA: Lippincott.

Becker, A. (2006). A review of writing model research based on cognitive processes. In A. Horning, & A. Becker (Eds.) *Revision: History, theory, and practice* (pp. 25–49). Anderson, SC: Parlor Press

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Boone, K., Meisenbach, T., & Tucker, M. (2000). *Agricultural communications: Changes and challenges.* Ames, IA: Iowa State Press.

Brandt, D. (1990). *Literacy as involvement: The acts of writers, readers, and texts.* Carbondale, IL: Southern Illinois University Press.

Bryman, A. (2012). *Social research methods* (4th ed.). New York, NY: Oxford University Press.

Camp, W. G. (2001). Formulating and evaluating theoretical frameworks for career and technical education research. *Journal of Vocation Education Research, 26*(1).

Chinn, P. L., & Kramer, M. K. (1983). *Theory and nursing: A systematic approach.* St. Louis, MO: C.V. Mosby.

Clark, G. (1990). *Dialogue, dialectic, and conversation: A social perspective on the function of writing* (Studies in Writing and Rhetoric Series). Carbondale, IL: Southern Illinois University Press.

Cohen, B. P. (1980). *Developing sociological knowledge: Theory and method.* Englewood Cliffs, NJ: Prentice-Hall.

Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches.* Thousand Oaks, CA: SAGE Publications.

Daiute, C. (2000). Writing and communication technologies. In R. Indrisano, & J. R. Squire (Eds.) *Perspectives on writing: Research, theory, and practice* (pp. 251–276). Newark, DE: International Reading Association.

Deane, P., Odendahl, N., Quinlan, T., Fowles, M., Welsg, C., & Bivens-Tatum, J. (2008). *Cognitive models of writing: Writing proficiency as a complex integrated skill* (Report No. ETS RR-08-55). Princeton, NJ: Educational Testing Service.

Dudley-Brown, S. L. (1997). The evaluation of nursing theory: A method for our madness. *International Journal of Nursing Studies, 34*(1), 76–83. doi: 10.1016/S0020-7489(96)00024-7

Ellis, R. (1968). Characteristics of significant theories. *Nursing Research, 17*(3), 217–222.

Ettredge, T. M., & Bellah, K. A. (2008, February). *A curriculum for al communication programs: A synthesis of research.* Paper presented at the Southern Association of Agricultural Scientists, Dallas, TX.

Fawcett, J. (1989). *Analysis and evaluation of conceptual models of nursing* (2nd ed.). Philadelphia, PA: F. A. Davis.

Fitzpatrick, J. J., & Whall, A. L. (2005). *Conceptual models of nursing: Analysis and application* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Flower, L. (1994). *The construction of negotiated meaning: A social cognitive theory of writing.* Carbondale, IL: Southern Illinois University Press.

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365–387.

Foster, D. (1983). *A primer for writing teachers: Theories, theorists, issues, problems.* Upper Montclair, NJ: Boynton/Cook Publishers, Inc.

Hardy, M. E. (1974). Theories: Components, development, evaluation. *Nursing Research, 23*(2), 100–107.

Hayes, J. R., & Flower, L. S. (1980). Identifying the organization of the writing process. In L. W. Gregg, & E. R. Steinberg (Eds.), *Cognitive processes in writing* (pp. 3–30). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Jacox, A. (1974). Theory construction in nursing: An overview. *Nursing Research, 23*(1), 4–12.

Johnson, D. E. (1974). Development of theory: A requisite for nursing as a primary health profession. *Nursing Research, 23*(5), 372–377.

Kitchel, T., & Ball, A. L. (2014). Quantitative theoretical and conceptual framework use in agricultural education research. *Journal of Agricultural Education, 55*(1), 186–199. doi: 10.5032/jae.2014.01186

Kuhn, T. S. (1977). Objectivity, value judgments, and theory choice. In T. S. Kuhn (Ed.), *The essential tension: Selected studies in scientific tradition and change* (pp. 320–339). Chicago, IL: University of Chicago Press.

Laudan, L. (1977). *Progress and its problems: Toward a theory of scientific growth.* Berkeley, CA: University of California Press.

Longest, Jr., B. B. (2002). *Health policymaking in the United States* (3rd ed.). Chicago, IL: Health Administration Press; Washington, DC: AUPHA Press.

McEwen, M., & Wills, E. M. (2014). *Theoretical basis for nursing* (4th ed.). Philadelphia PA: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Meleis, A. I. (1985). *Theoretical nursing: Development and progress.* Philadelphia, PA: J. B. Lippincott Co.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Morgan, A. C. (2010). Competencies needed by agricultural communication graduates: An industry perspective. *Journal of Applied Communications, 94*(1–2), 19–32.

Morgan, A. C., & Rucker, K. J. (2013). Competencies needed by agricultural communication undergraduates: An academic perspective. *Journal of Applied Communications, 97*(1), 50–65.

Newton-Smith, W. (1981). *The rationality of science.* Boston, MA: Routledge & Kegan Paul.

Nystrand, M. (2006). The social and historical context for writing research. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 11–27). New York, NY: The Guilford Press.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: SAGE Publications.

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: The Guilford Press.

Raimes, A. (1991). Instructional balance: From theories to practices in the teaching of writing. In J. E. Alatis (Ed.), *Georgetown University round table on languages and linguistics 1991: Linguistics and language pedagogy: The state of the art* (pp. 238–249). Washington, DC: Georgetown University Press.

Rose, M. (1985). The language of exclusion: Writing instruction at the university. *College English, 47*(4), 341–359.

Saldaña, J. (2013). *The coding manual for qualitative researchers.* Los Angeles, CA: SAGE Publications.

Scribner, S., & Cole, M. (1981). Unpackaging literacy. In M. F. Whiteman (Ed.), *Variation in writing: Functional and linguistic-cultural differences* (pp. 71–88). Hillsdale, NJ: Lawrence Erlbaum Associates.

Shoemaker, P. J., Tankard, Jr., J. W., & Lasorsa, D. L. (2004). *How to build social science theories.* Thousand Oaks, CA: SAGE Publications.

Sitton, S., Cartmell, D. D., & Sargent, S. (2005). Developing public relations curricula in agricultural communications. *Journal of Applied Communications, 89*(3), 23–37.

Sprecker, K. J., & Rudd, R. D. (1997). Opinions of instructors, practitioners, and alumni concerning curricular requirements of agricultural communication students at the University of Florida. *Journal of Agricultural Education, 38*(1), 6–13.

Strickland, O. L. (2001). An instrument's conceptual base: It's link to theory [Editorial]. *Journal of Nursing Measurement, 9*(1), 3–4.

Telg, R., & Irani, T. A. (2011). *Agricultural communications in action: A hands-on approach.* Boston, MA: Cengage Learning.

Terry, R., Jr., Vaughn, P. R., Vernon, J. S., Lockaby, J., Bailey-Evans, F., & Rehrman, M. (1994). Enhancing the agricultural communications curriculum: A vision for the future. (Unpublished doctoral dissertation), Texas Tech University, Lubbock, TX.

Turner, J. H. (1986). *The structure of sociological theory* (5th ed.). Belmont, CA: Wadsworth.

Wallace, R., Jackson, A., & Wallace, S. L. (2000). *Reforming college composition: Writing the wrongs.* Westport, CT: Greenwood Press.

Watson, T., & Robertson, J. T. (2011). Perceptions of agricultural communications freshmen regarding curriculum expectation and career aspirations. *Journal of Applied Communications, 95*(3), 6–20.

About the Authors

Dr. Holli. R. Leggette is an assistant professor at Texas A&M University in the Department of Agricultural Leadership, Education, and Communications. Leggette's research is focused on understanding, evaluating, and improving writing skills of the present and future professionals in agriculture. Much of her work is based on her conceptual model to augment critical thinking and create knowledge through writing in the social sciences of agriculture.

Dr. Tracy Rutherford is a professor of agricultural communications and journalism and an associate head of undergraduate programs in agricultural leadership, education, and communications at Texas A&M University. Rutherford's research is focused on visual communication and teaching and learning in agricultural communications.

Dr. Deborah Dunsford is a senior lecturer of agricultural communications and at Texas A&M University in the Department of Agricultural Leadership, Education, and Communications. Dunsford's research is focused on student writing, issues management, strategic communications planning, and writing evaluation.

Ms. Lori Costello is a doctoral student at Texas A&M University in the Department of Agricultural Leadership, Education, and Communications. Costello's research interests include writing skills in agricultural disciplines, influence of advertising on the consumer buying decision process, and brand engagement.

Whelan, E.M. & Stare, F.J. (1975). *Panic in the pantry: food facts, fads and fallacies*. Buffalo, NY: Atheneum.

About the Authors

Jim Evans served as an agricultural communications faculty member at the University of Illinois for more than 33 years with special research interest in communications education and professional development in this field. A life member of ACE, he continues in retirement as a volunteer associate in the Agricultural Communications Documentation Center, an international resource and service. Scott Heiberger manages media relations and publications for the National Farm Medicine Center/ National Children's Center for Rural and Agricultural Health and Safety. He serves on the Board of the International Society for Agricultural Safety and Health and is managing editor of the peer-reviewed Journal of Agromedicine.