LEARNING HOW TO BECOME A WRITER IN ELEMENTARY SCHOOL: A REVIEW OF THE LITERATURE FROM COGNITIVE, SOCIAL COGNITIVE, DEVELOPMENTAL, AND SOCIOCULTURAL PERSPECTIVES

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ABSTRACT

This article seeks answers to questions, such as how children's writing develops and how young students express themselves in writing at various stages of their development. This article reviews the literature through a wide lens as it examines elementary students' writing and is intended to lead to a more comprehensive understanding of developmental, cognitive, social cognitive, and sociocultural variables that impact writing. Research indicates that as children gain more expertise in writing, they tend to focus more on content and their audience rather than the surface structures of their text. They become more able and willing to make substantial and meaningful revisions in their text and consider that process as a part of writing rather than an add-on activity focusing on superficialities. Error avoidance and knowledge-telling' are replaced by knowledge transformation and meaningful communication that result in qualitatively different writing. Of course, teachers play a major role in this development as what they tend to focus on in class becomes the focus for their children as they learn to express themselves. Even though younger elementary students have fewer automated skills and their cognitive resources are spent on mostly local tasks, they can function as competent problem solvers and writers. They just need scaffolding and instruction based on the understanding that children's cognitive processes are also impacted by their literacy environment and community. Once these general theories of cognition, development, and socialization are well understood, research-based curricula and effective instruction based on best practices can be designed to improve children's writing achievement.

Key words: Literacy Development, Beginning Writing, Writing Research.

INTRODUCTION

How does children's writing develop over time? How do children express themselves in a written form at various stages of writing development? What structures characterize their writing? What factors influence the process of learning how to write? Educational psychologists and cognitive scientists have studied writing development for decades and attempted to find answers to these questions from numerous perspectives, such as cognitive, social cognitive, developmental, and sociocultural. When studying writing, researchers aim at capturing its essence in various ways, for instance by drafting stage process models (Britton, Burgess, Martin, McLoed, & Rosen, 1975) or examining cognitive processes, such as Flower and Hayes (1981) and Bereiter and Scardamalia (1987). Researchers have successfully explained what components play a role in writing, what characterizes the components of the writing process, how they function in a complex system (Flower & Hayes, 1980a), and how the social environment and curriculum may affect the meaningfulness and usefulness of children's writing (Dyson, 2008).

This review contributes to existing literature by laying the foundation for a broad view of learning how to write by weaving various perspectives together into a cohesive and coherent view. This synthesis is not intended to be a comprehensive and exhaustive review of the literature due to the plethora of studies in this area. Instead, this review focuses on the literature through a wide lens as it examines elementary students' writing and is intended to lead to a more comprehensive understanding of developmental,

cognitive, social cognitive, and sociocultural variables that impact writing. Once these general theories of cognition, development, and socialization are well understood, research-based curricula and effective instruction based on best practices can be designed to improve children's writing achievement.

Methods of Inquiry

This article synthesizes cognitive, social cognitive, developmental, and sociocultural theories and associated research findings as they apply to the development of primary school students' writing skills. The search utilized various databases including Dissertation Abstracts International, Education Full Text, Emerald Library, ERIC, and the WRLC catalog. The most useful search terms were basic writing, beginning writing, children's writing, literacy development, process approach for writing, revision for written composition, writing achievement, writing assessment, writing difficulties, writing for publication, writing improvement, writing process, writing skills, writing strategies, and written language. Once the work was selected from key theorists and writing researchers, the articles and books were grouped by area or focus, and an annotated bibliography was created. Once all articles were reviewed and summarized, additional grouping was conducted based on purpose, methodology, and findings.

Primary School Children's Writing Development from Cognitive, Social Cognitive, Developmental, and Sociocultural Perspectives

Cognitive Point of View

Cognitive researchers have developed various models for examining mental processes of knowledge representation and skill acquisition. This section reviews Anderson's Adaptive Control of Thought (ACT) model, Flower and Hayes's model of writing, and the expert vs. novice paradigm in the area of writing.

Anderson's ACT model

Anderson's Adaptive Control of Thought (ACT) model (1983) describes in detail various forms of knowledge as well as their functions. ACT accounts for different mental representations in working and long-term memory. His model distinguishes between declarative knowledge (knowing that something is the case, e.g., "We need to put a period at the end of a declarative sentence.") and procedural knowledge (knowing how to do something, e.g., "Do you know how to support your topic sentence?"), both stored in long-term memory. The basic units of declarative knowledge are i) propositions, i.e., smallest units of meaning, which can be linked together in propositional networks (e.g., "You have to indent a paragraph"), ii) images (e.g., the visual of what a table of contents may look like), and iii) linear orderings (e.g., the alphabetical order of references). Schemas are higher-order integrated units that may incorporate all three basic types of declarative knowledge mentioned above (e.g., one's knowledge about all aspects of writing a book report). Schemas, which are crucial to the inferential process, may be categorized into different groups of natural categories, events, and texts. Natural categories are schemas that include naturally occurring objects, such as dogs and trees. Event schemas contain knowledge representations of particular events, such as a wedding or going to the dentist's office. Text schemas embrace knowledge of various types of texts, such as editorials, textbook chapters, or newspaper articles.

The other type of knowledge representation, procedural knowledge, is represented in forms of production systems that are linked together by one's goal-subgoal structure. This structure necessitates that "if" conditions must be fulfilled for "then" actions to occur (e.g., If I don't know how to spell a word, then I'll use a dictionary). Procedural knowledge can take various forms according to two dimensions, i.e. domain-general vs. domain-specific and automated vs. controlled. Since domain-general procedural knowledge ("If at first you don't succeed, try, try again.") can be applied in many general situations, it is a flexible and weak method and never gets fully automated. On the other hand, domain-specific knowledge (e.g., how to use APA style to format text) is tied to certain specific situations and thus is powerful albeit limited in its applicability. Some domain-specific procedural knowledge can become automated if one practices it enough times. Once a skill becomes automated, it does not require cognitive resources (see automated basic skills,

such as writing in cursive). The other type of domain-specific procedural knowledge, domain-specific strategies, never become automated and require conscious control (e.g., how to craft a paragraph to support a statement).

Declarative knowledge can be learned and modified quickly because it does not directly control behavior whereas procedural knowledge takes time to acquire because once it is automated, it controls action automatically. Because of the limited capacity of working memory (cf. Hayes & Chenoweth, 2007), the human information processing system must include both declarative and procedural knowledge in order to reduce the information processing load. This processing load is decreased by having related pieces of information connected in declarative knowledge and having some of the procedural knowledge automated (cf. Gagne, Walker, & Yekovich, 1993). Anderson's ACT model is an important framework for understanding both what cognitive processes occur during written language production and how. Understanding the features and relationship of long-term and working memory as well as the interconnectedness and interdependence of declarative and procedural knowledge reveal the cognitive challenges that children face when learning how to write.

Flower and Hayes's model of writing

Another important model designed to understand the writing process was developed by Flower and Hayes (1981). Their model characterizes writing as a complex cognitive, problem solving, and goal directed activity and describe it as the following: (i) writing consists of distinct processes, (ii) writing processes are highly embedded, (iii) writing is goal directed, and (iv) writing stimulates one to discover new goals.

Their model of writing consists of two parts: (i) an external task environment of writing and (ii) an internal representation of the writing process that resides within the individual. The task environment consists of the rhetorical problem, which includes knowledge about the topic, audience, the writer's own goals, and other constraining factors as well as the text produced so far. Both the rhetorical problem and the text further constrain text production. The second major section of the model is the internal representation of the writing process that is further divided up into (i) the writer's long-term declarative memory of knowledge of topic, audience, conventions, language usage, and writing plans and (ii) the writer's procedural knowledge of the writing process itself, which has four major subprocesses: planning (generating, organizing, and goal setting), translating, reviewing (evaluating, revising), and monitoring. All these distinguishable subprocesses are interrelated and occur not in a sequence of stages but in an order depending on the writer's goals and developmental level of writing skills.

During the planning stage, writers retrieve from their long-term memory their prior knowledge related to the topic and rely on external materials if necessary in order to build a representation of the problem (Flower & Hayes, 1981). Declarative knowledge must be gathered and organized according to the purpose and needs of the audience by applying cognitive processes, such as evaluating (checking if the latest draft matches the current goal), revising (making appropriate changes if it does not), and selecting and sequencing of the appropriate material during planning. When the plan becomes translated, oftentimes through bursts of language (Hayes & Chenoweth, 2007), the plans may change again. The text keeps being analyzed, revised, and rewritten in view of what has been written so far to achieve topic and audience goals.

When describing a writer's goals, Flower and Hayes (1980a) state that (i) the goal structure is defined according to the writer's developmental stage and (ii) even when the goals are set, they may change due to the influence of the text already produced. The goals set in the planning stage may become metacognitive goals that help the writer monitor all aspects of writing. These goals may be global plans to influence an audience and more local ones related to the surface structure of the text. Both kinds of plans provide logic to the piece, but the global plans provide the overall organizational structure of the written product. Following one's goals does not mean that the writer may not modify her goals during the course of planning and writing or may not go off on a tangent be it necessary; it simply means

that once the author begins to discuss thoughts or ideas, she completes the job and does not leave those ideas unfinished. Effective written communication is achieved by planning, coordinating, and executing the writer's plans through sustained awareness of global and local goals (Martlew, 1986), which is a cognitively resource consuming task.

Experts and novices handle aspects of writing differently in terms of how their cognitive resources are used. Now we turn to discussing differences between expert and novice writers based on the two previously described models.

Novice vs. expert paradigm

Scardamalia and Bereiter (1985) used Anderson's distinction between declarative and procedural knowledge in describing the composing process. They agree with Anderson about the interdependence of content problems (what to say?, i.e., declarative knowledge) and rhetorical problems (how to say it?, i.e., procedural knowledge). Content problems (or declarative knowledge) refer to the writer's own knowledge base, and rhetorical problems (procedural knowledge) relate to the writer's ability to connect ideas together in a cohesive and meaningful whole. The ability to successfully coordinate these two tasks makes an expert.

In terms of declarative knowledge, expert writers have a larger number and more related ideas as well as more refined sets of schemas about the topic, writing process, and text structure. Having more knowledge about a topic helps writers select topics, generate ideas that form the basis of an internal cueing system during idea generation, and write more cohesive texts (that are connected between ideas and sentences) as well as more coherent ones (that are connected across paragraphs) (Harris & Graham, 1999 as cited in Harris et al., 2002).

In terms of procedural knowledge, the differences between experts and novices are just as pronounced. During planning, experts set a goal to communicate meaningfully instead of writing whatever occurs to them (see Scardamalia & Bereiter's concept of "knowledge-telling", 1987) or simply avoiding making errors (Graham & Harris, 2005; Graves, 1983). Novice writers use knowledge-telling strategies because they are not yet able to organize their ideas, plan, or consider their audience's needs (Harris et al., 2002) effectively.

Novice writers may not even consider planning or following any goals; they just get to work right away and produce text by writing whatever occurs to them until they have nothing else to write, at which point they simply "get stuck" and stop. Experts, on the other hand, spend time not only writing but also planning what they are going to write and revising what they have written (Hayes & Flower, 1980). This difference can be explained by the fact that even though expert and novice writers may be given the same assignment, they conceptualize the problem differently and thus solve different problems (Harris et al., 2002; Bryson & Scardamalia, 1991; Flower & Hayes, 1980b; Dyson, 1994). The resulting text is a reflection of both the writer's developmental level of writing skills and the changing goal-subgoal structure of the text. Since novice writers' cognitive resources are allocated to local goals and skills that are not yet completely automated, they do not have sufficient resources to execute complex goal structures.

When writers have more skills automated, more cognitive resources are freed. This process results in two phenomena: (i) students can produce more text, and (ii) they can use their freed cognitive resources in a metacognitive process for planning and executing their written tasks. If the writer does not have many of the basic skills automated, the task of translating (writing ideas down) can be hindered because conscious attention is paid to mechanics instead of a more global process of planning (Anderson, 1983; Flower & Hayes, 1980b; Harris et al., 2002; Scardamalia & Bereiter, 1982). Students become skilled writers by learning to write for a purpose, consider audience needs, set goals, self-monitor (Harris et al., 2002), self-regulate, and internalize strategies to cope with the cognitively complex demands of writing. Experienced writers can pre-plan, plan, and execute their plans any time during the writing process and can switch their attention from the local to global organizational levels and vice versa when needed. Their automated skills conserve cognitive resources for achieving cohesion, coherence, and intelligibility as their goals are sustained throughout the writing process (Martlew, 1983).

Another very important difference between experts and novices is the organization of the text. Novice writers tend to use associative processes wherein the previous idea determines the following idea; expert writers, however, use metacognitive processes to monitor the execution of their goal directed plan for the whole text. Experts are able to "keep in mind" in what direction the text is supposed to go and determine whether they are still on that track. They are more successful at organizing their discourse on both a local level - among ideas within sentences (cohesion) and a global level - across larger chunks of text (coherence).

The last major difference between novices and experts is the quality and quantity of text revisions during and after translation. Expert writers consider revision as an integral part of writing and are able and willing to make substantial changes in the deep structure of the text rather than focus on surface accuracy (Myhill & Jones, 2007). Because expert writers have additional cognitive resources to allocate for viewing their text globally, and they have a more sophisticated representation of their ideas, they are able to make major structural changes in their written product to ensure that their writing is meaningful, meets their readers' needs, and is appropriate for all the constraints of the situation (such as mode, style, and purpose). Novices tend to view revisions as mechanical surface edits and not as global changes (Applebee et al., 1986 as cited in Lehr, 1995). For experts, revision is a part of holistic process of discovering meaning. Expert writers are also more successful in switching between local planning and global decisions (Flower and Hayes, 1981). As metacognitive goals change, the draft is revised to fit the writer's shifting intentions (Sommers, 1982). A writer's intentions can be influenced by both her cognition as well as her social context. The following section reviews the literature from the social cognitive perspective that studies how one's social context influences one's cognition.

Social Cognitive Point of View

According to Flower (1994), the social cognitive perspective focuses on literate action rather than the particular features of text. In other words, attention is focused on literate activities created by social practices in a discourse community that exerts influence on one's written communication. Literacy in the social cognitive perspective is defined as the ability to participate in diverse cultural contexts that are characterized by various discourse features. When one learns these diverse discourse features, one learns "literacies" (Flower, 1994). Being able to participate successfully in one discourse community does not necessarily result in a successful participation in another one. In order to be a member of a particular community's written practice, one must learn to be a part of that community; understand its people, culture, rules, and characteristics; learn what ideas matter; how to frame arguments; and what audiences expect and need (Flower, 1994).

From this perspective, literacy is a social cognitive activity, i.e., a socially situated problem-solving process that is shaped not only by language, people, and text, but also by the way people perceive and define the rhetorical situation, the types of goals they set, and the kinds of strategies they use (Flower, 1994). Literate action is a meaning making cognitive process that is affected by the context in which that individual participates. The cognitive activities of retrieving information, selecting ideas, creating goals, and organizing content according to goals in order to match purpose and audience needs are all social and rhetorical processes simultaneously (Flower, 1994) because an individual's cognition, which is affected by the context of participation and identity, cannot be viewed without taking that social aspect of life into consideration. Wollman-Bonilla and Werchadlo (1999) state that writing is related to the development of self-awareness and the awareness of others' perspectives. A literate act is a meaning making communicative act that simultaneously reflects the writer's cognitive processes and the social, cultural context. Harste, Woodward, and Burke (1984) also believe that learning is more than a cognitive process; it is more like a social event. They view schemas as social cognitive phenomena that incorporate both culture and context.

From the social cognitive perspective, writers need to "read" the situation and express their ideas logically while considering the audience's needs in order to communicate those ideas meaningfully. In order to be

successful in this endeavor, text features such as grammar, syntax, and spelling become secondary (Flower, 1994). They are important only to the degree to which they reflect conventions of a particular context and facilitate communication. However, the important point about the social cognitive perspective is that it reveals the mutual impact the text and the social context have on each other since oral and written discourses are rooted in and influenced by the contexts in which they are created. Individuals use language in order to make sense of the world around them and to communicate with others. Language that reflects the situational context in which it is used (e.g., participants, the activity, and purpose) determines features of a text including the form, syntax, and cohesive devices (Rentel & King, 1983). Thus written discourse is shaped by the mutual impact of the social context and individual cognitive processes.

Mikhail Bahktin, a key literary theorist, believed that all language is dialogic, meaning that our understandings of words and their uses are developed through interactions with others. He posited the existence of "genres," which are individually tailored for different communicative uses. A genre's specific use (business, technical, or everyday) and its specific audience determine its characteristics in content, style, and structure. Because the form of a text is so tightly interwoven with its social use, Bahktin felt that grammar was not a stale set of conventions but a "living, generative element of language" (Halasek, 2005). Chapman (1999) drew upon Bahktin's work in asserting that genres should be "situated, social, and active." The social context guides and determines textual choices and should be an integral element of a student's learning how to write.

Goodman (1986) cited Pontecorvo and Zucchermaglio (1986), who explored the social context of language development, acknowledging that they focused on various social interactions in the classroom to reveal how they influenced individual students' work with others. They suggested looking at learning based on both outcomes and processes. In the social setting of the classroom, individual cognition can be affected by social exchanges and supports as well as by cultural transmission. As Flower (1994) observed, the students' membership in their community and their knowledge of the people, culture, rules, and characteristics strongly influence the quality of their writing.

Tamor and Bond (1983) concur that besides integrating cognitive processes with the written product itself, models of writing must also include other factors that influence the student, such as the surrounding social and physical environments. Those factors, perceived by the individual, affect the cognitive processes and the product indirectly, in other words, the intrapsychological filter is greatly responsible for the quality and quantity of writing in the classroom.

Social cognitive researchers take into account differences between experts and novice writers in terms of what cognitive processes writers use during composing and what they know and do not know. However, these researchers also state that just because novice writers may not have enough declarative and procedural knowledge to write well, they may not be considered "tabula rasa." The students bring to the writing process valuable background information as well as skills and strategies that reflect the unique cultural context they come from. Children's cultural and social practices and beliefs constitute "funds of knowledge" that can be used to enhance learning (Monkman, MacGillivray, & Levya, 2003). In Flower's (1994) view the unique contribution of the social cognitive perspective is that instead of looking exclusively at the features of literacy, this perspective considers various literacies as problem-solving acts people perform every day in order to take care of their lives.

Langer (1987) identified three principles of the social cognitive perspective. First, learning is socially based. Children's use of literacy reflects the traditions and practices of the environments in which they participate. Second, literacy learning is an interactive process in which children learn not only skills but also appropriate times and ways of using them. Third, the cognitive strategies are influenced by the social context, which, in turn, affects the meaning the learner produces. Depending on what is emphasized in the classroom, children learn either broad skills (related to metacognition and metalinguistics) or narrow (discrete) skills (also Graves, 1983). The social

cognitive perspective emphasizes language and social interactions in the child's environment that affect the child's literacy development (Langer, 1987).

In sum, the social forces of a context and their influences on individual cognitive processes are examined together in the social cognitive perspective. Cognition is always influenced by the context since students learn and acquire much of their knowledge and many of their skills through interaction with adults and peers who themselves are positioned in those sociocultural contexts (Flower, 1994). However, children's writing is equally shaped by their developmental level. The next section of this paper discusses how so.

Developmental Point of View

Young children's writing development (Armbruster, McCarthey, & Cummins, 2005; McCutchen, 2006; Shagoury, 2009) including the prehistory of writing in very young children (Luria, 1978; Vygotsky, 1983) has been extensively studied for the last couple of decades (Juzwik, Curcic, Wolbers, Moxley, Dimling, & Shankland, 2006). There is a plethora of writing research in the early primary grades (Boscolo, 2007; Chapman, 1999). However, as children move from first grade on, fewer primarily developmental studies focus on older primary students' literacy acquisition.

Developmental writing research studies changes in children's written products over time. In the late 1970s, some researchers began to identify developmental stages of writing acquisition examining orthography, syntax, semantics, and spelling (Graves, 1979). Others examined children's writing development based on the work of Piaget (Glazer & Burke, 1994; Wadsworth, 1996).

According to Piaget's theory, children move through stages of development through assimilation (integration of new knowledge into pre-existing schemas) and accommodation (adaptation of thoughts and actions to modify current understanding) to reach equilibrium (cognitive balance by satisfying intellectual needs). Piaget believed that development occurs from egocentrism to a more decentered perspective. Although Piaget did not exclude the role of socialization in language development, he believed it originated within the individual and not from social interaction. Piaget viewed writing as mostly an individual activity - detached from the writer's social context that originates within the author and becomes externalized in a written form (Gere, 1987). Basing their research on Piaget's work, Glazer and Burke (1994) observed that students in the concrete operational stage are able to take perspectives that enable them to begin to consider the audience, which forces them to perfect their writing (Hayes & Bajzek, 2008). Though this perspective regards authors as isolated from society who focus on writing itself rather than the genuine purpose of participating as readers or peer reviewers (Gere, 1987), this point of view acknowledges that children's audience awareness develops and makes children more concerned about some aspects of their writing, such as spelling conventions (Braig, 1986).

Graves (1983) stated that as children's writing develops, they focus on a variety of skills in the following order: (i) spelling, (ii) motor-aesthetic issues, (iii) conventions (punctuation, capitalization), (iv) topic and information, and (v) major revisions (addition and exclusion of information, as well as reorganization). Graves (1983) claims that children are able to make changes in all these aspects of writing to some degree even at their early stages of writing. Graves also believes that development of each aspect depends on what the teacher emphasizes in class. Indeed, what teachers emphasize becomes directly reflected in students' perceptions of what constitutes good writing (Bradley, 2001). When teachers stress adherence to conventions and mechanics as indicative of good writing, students match their writing to the teacher's expectations and may become overly focused on accuracy as the primary goal (Nixon & Topping, 2001). As a result, students are less likely to take risks, and their writing becomes constricted and overly focused on avoiding errors (Kos & Maslowski, 2001; McCarthey, 1993). Children's challenge of written expression is further exacerbated by fewer automated skills and insufficient cognitive resources to address all aspects of writing simultaneously due to the limited capacity of their working memory (Hayes & Chenoweth, 2007; McCutchen, 2006).

Even though writing continues to present many challenges to most primary school students, by third grade they may also experience a sense of accomplishment. Authentic

writing activities highlight the meaningful purposes of writing and may increase students' motivation and pride in their own writing (Cicalese, 2003). In later years, writing mechanics in most children's written products show some observable improvement: most children use cursive writing instead of printing; utilize punctuation, capitalization, and spelling more correctly; write in paragraphs to aid organization; seem to understand that writing is a means of communicating meaning; and view writers (themselves) as "composer-authors" who can produce various texts depending on the situation and context (Klein, 1985).

Nonetheless, according to Klein (1985), it is only by the intermediate school years that students realize the importance of audience and attempt to organize the overall structure of their writing according to the needs of their readers. As children at this age become more aware of writing as a means of communication, they begin to comprehend that various forms and modes of writing require various styles, syntactic structures, and vocabulary. Children also become more capable of producing texts using rhetorical devices that help provide overall organization for the writing piece (Klein, 1985). As opposed to Gere's view (1987), Klein's developmental account of elementary students' writing development may underestimate children's potential ability to consider aspects of the text on a discourse level as opposed to the surface structure. Klein stated that children in the primary grades tend to write in the same way regardless of form of writing (narrative, expository, or creative) or purpose (to inform, persuade, or entertain). Klein further stated that children at this age take no rough notes or outlines, prepare no rough drafts, and consider changes to their writing as addenda rather than revisions. Farris (1997) also agreed that editing one's work is a challenge at this age. Contrary to Klein, Farris (1997) believed that intermediate elementary students are able to write more drafts to complete their written task. At this age it is still challenging for children to prioritize and select their ideas, thus most of the time every idea that occurs to them is recorded on paper (see "knowledge-telling," Scardamalia & Bereiter, 1987; Hayes & Bajzek, 2008). This haphazard approach to writing may be countered through the use of supportive and authentic classroom environments that utilize peer response as well as teacher feedback, and through interactive writing that helps to alleviate cognitive demands by providing feedback in the form of metacognitive prompting and monitoring towards one's goals (Harris, Graham, Mason, & Saddler, 2002; Yarrow & Topping, 2001).

Reviewing and revising are demanding and cognitively taxing processes for primary school children. A number of researchers concur that students can learn to edit and revise at an earlier age if teachers emphasize revision as part of composing a text rather than a series of cosmetic fixes tacked on to the end of the writing process, and if students write for a purpose in authentic classrooms (Matsumura, Patthey-Chavez, Valdes, & Garnier, 2002; McIver & Wolf, 1998; Wollman-Bonilla & Werchadlo, 1999). Lehr (1995) writes that students' negative perceptions of revision can change when feedback focuses less on correcting mechanics and more on investigating and encouraging content growth. Through query-based investigations about content, students can relate to the "questioning reader" and become more aware of audience perspectives (Wollman-Bonilla, 1999). Moreover, global strategy instruction in planning and revising has a strong positive effect on students' writing performance (Graham & Harris, 2005). With the appropriate support students at this age are able to consider their text both on the global and local levels and revise on a deep level when collaborating with peers and participating in writing conferences (Cave, Yekovich, & Walker, 2010).

Sociocultural Point of View

As researchers were examining the nature of writing and the learner, they realized that diverse students, their diverse backgrounds, and their prior knowledge had to be accounted for in order to describe their literacy development (Byrnes & Wasik, 2008; Dyson, 1993; Monkman et al., 2003). Scinto (1986) describes the sociocultural perspective as an area of research that does not examine language at the level of text. Instead of linguistic aspects of the written product, this perspective focuses attention on the sociocultural variables, such as meta-awareness and functional uses of writing in different settings of various communities and cultures including

home and school. Researchers in the sociocultural perspective examine how writing is used in different settings of various communities and their cultures. They view text as a product of interactions of multiple social contexts. They believe that the factors that influence writing and the written product comprise the writer, the text, and the context, including the teacher, the classroom aides, the researchers, and classmates together with the more long-term influences of the writer's home life and culture. Written language is considered by McNamee (1990) to be "social-cultural" because its development is affected by people, their patterns of communication, and their use of written language to express themselves and mediate activities in their lives.

Vygotsky, a sociocultural theorist, viewed language development as a social process. Children, in his view, learn by participating in and being stimulated by interactions with adults and peers. In these social interactions adults or other competent peers provide modeling, scaffold the learning process, and encourage children to extend their knowledge. Vygotsky assumed that even though language acquisition and learning are partly biological, instruction is critical in the child's zone of proximal development (ZPD): the space bounded on one side by what a child can accomplish alone and the other by what she can accomplish with help from an adult or more advanced peer. The zone constantly shifts as an individual acquires knowledge and skills and becomes increasingly self-sufficient (Witte, 2005, ed. by Haas).

From this perspective the relationship of the individual and society forms one of the foundational principles of communicative writing where the inherent social and communicative aspects of language are emphasized (Vygotsky, 1978). Vygotsky believed that interactive dialogue is crucial for development and recommended that children be encouraged to respond to their peers' writing in order to underscore the communicative role of written language (Wollman-Bonilla, 1999). In this perspective, since language has a social genesis, communication between individual and society is critical for language development, peer response plays a major role in providing opportunities for communication between the individual and society, and the learning environment with its social features determines what knowledge the children acquire and how they apply that knowledge.

Wertsch (1985) described Vygotsky's view of cultural development as a movement towards higher mental functions that first appear on an interpsychological plane before the intrapsychological one. According to this perspective, social and cultural factors are assumed to exert influence on the individual's cognition placed in those contexts. Vygotsky's view, as cited by Zebroski (1994), on the social and cultural foundation of cognition was that the social act directs individual cognition, which in turn exerts influence on the social act. Because of the interrelated nature of individual cognition and social and cultural act, individual consciousness cannot be understood unless it is considered as both individual and social simultaneously. Since writing is a social activity, children learn how to write through interacting with others through print (Temple, Nathan, Temple, & Burris, 1993). Instead of only examining students' individual cognitive processes, sociocultural researchers describe students' learning as learning to do school (Dyson, 1984), i.e., learning to play one's role in the classrooms activities.

To understand writing and the difficulties students may have during this activity, writing researchers in this perspective examine how sociocultural aspects of life, such as socioeconomic status, ethnic heritage, education and literacy levels as well as gender influence the culture of the context with which one identifies and how that particular context affects the features of writing and its use in one's life (Purcell-Gates, 1995). Purcell-Gates (1995) cited Gee (1989) for whom literacy is more than just reading and writing; it is a part of a larger "discourse," a "way of being" a "sociocultural identity kit." From this point of view, learning correct ways of letter formation, grammar, syntax, spelling, and other surface structures is not sufficient for appropriate and meaningful communication. In order to communicate successfully, one needs to learn all features of a "discourse" by being immersed in its sociocultural context and by communicating with its members.

Monkman et al. (2003) argues that educators must make learning writing relevant to children's social milieu. Rogoff

and Lave (1984) argue that instruction should focus on three planes (personal, social, and cultural) as the interrelated areas where learning occurs. Indeed, learning cannot be isolated from its social context, and considering students' cultural backgrounds in writing makes their literacy experiences relevant and meaningful (Monkman et al., 2003). Researchers note that peer collaboration and interaction can help scaffold the learning process and greatly enhance the quality of the written product (Cicalese, 2003; Yarrow & Topping, 2001; Graham & Harris, 2005).

Freire, an important social reconstructionist, viewed literacy as not just reading the word, but "reading the world." He stressed the importance of active participation in the world as both a critic and creator (Freire & Macedo, 1987 as cited in Monkman et al., 2003). Essentially, Freire saw literacy as a proactive force that could be used to make changes in one's world.

In sum, the sociocultural perspective focuses on the social, communicative aspects of writing and the supportive social context in which children can obtain the kinds of assistance they need to learn to communicate in writing (McLane, 1990).

Conclusion

So how do children express themselves as their writing skills develop? What factors influence the process of learning how to write? As children gain more expertise in writing, they tend to focus more on content and their audience rather than the surface structures of their text (such as spelling and other conventions.) They become more able and willing to make substantial and meaningful revisions in their text and consider that process as part of writing rather than an add-on activity focusing on superficialities. Error avoidance and 'knowledge-telling' are replaced by knowledge transformation and meaningful communication that result in qualitatively different writing. Of course, teachers play a major role in this development as what they tend to focus on in class becomes the focus for their children.

Even though younger elementary students have fewer automated skills and their cognitive resources are spent on mostly local tasks, they can function as competent problem solvers and writers if their teachers provide appropriate scaffolding and instruction and understand that children's writing is influenced by their literacy environment and community.

In summary, this paper reviewed elementary school students' writing development from developmental, cognitive, social cognitive, and sociocultural perspectives. Students' texts are a product of numerous cognitive processes and developmental factors that are mediated by not only the individual's mental capabilities but the context in which those individual are embedded. Authentic writing activities and appropriate scaffolding can ensure that children remain motivated to engage in literate activities and take risks to share their world with us.

Reference

[1]. **Anderson, J. R. (1983).** *The architecture of cognition.* Cambridge, MA: Harvard University Press.

[2]. **Armbruster, B., McCarthey, S. J., & Cummins, S. (2005).** Writing to learn in elementary classrooms. In R. Indrisano & J. Paratore (Eds.), *Learning to write, writing to learn: Theory and research in practice* (pp. 71-96). Newark, DE: International Reading Association.

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

[4]. **Boscolo, P. (2007).** Writing in primary school. In C. Bazerman (Ed.), *Handbook of research on writing: History, society, school, individual, text* (pp. 293-309). New York: Erlbaum.

[5]. **Bradley, D.H. (2001).** How beginning writers articulate and demonstrate their understanding of the act of writing. *Reading Research and Instructio*n, 40, 273-296.

[6]. **Braig, D. (1986).** Six authors in search of an audience. In B.B. Schieffelin & P. Gilmore (Eds.), *The acquisition of literacy: Ethnographic perspectives.* Vol. XXI. Norwood, NJ: Ablex Publishing Corporation.

[7]. **Britton, J., Burgess, T., Martin, N., McLoed, A., & Rosen, H. (1975).** *The development of writing abilities*. London, England: Macmillan.

[8]. **Bryson, M., & Scardamalia, M. (1991).** Teaching writing to students at risk for academic failure. In B. Means, C. Chelemer, & M. Knapp (Eds.), *Teaching advanced skills to*

at-risk students (pp.141-167) Hillsdale, NJ: Erlbaum.

[9]. Byrnes, J.P., & Wasik, B.A. (2008). *Language and literacy development: What educators need to know*. New York: Guilford Press.

[10]. Cave, A., Yekovich, F.R., & Walker, C. (2010). The effect of a Technology-rich Authentic Learning Environment on young urban learners' intentionality in writing. *i-manager's Journal of Educational Technology*, *6*(4), 21-46.

[11]. Chapman, M. (1999). Situated, social, active: Rewriting genre in the elementary classroom. *Written Communication*, 16, 469–490.

[12]. Cicalese, C. (2003). *Children's perspectives on interactive writing versus independent writing in primary grades*. Retrieved from http://www.eric. ed. gov.

[13]. Dyson, A.H. (1984). Learning to write / Learning to do school. *Research in the Teaching of English*, 18, 233-264.

[14]. Dyson, A.H. (1993). *Social worlds of children learning to write in an urban primary school.* NY: Teachers College Press.

[15]. Dyson, A.H. (1994). Confronting the split between "the child" and children: Toward new curricular visions of the child writer. *English Education*, 26(1), 12-28.

[16]. Dyson, A.H. (2008). Staying in the (curricular) lines: Practice constraints and possibilities in childhood writing. *Written Communication*, 25(1), 119-159.

[17]. Farris, P.J. (1997). *Language arts: Process, product, and assessment.* Guildford, CT: Brown & Benchmark.

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

[19]. Flower, L., & Hayes, J.R. (1980a). The cognition of discovery: Defining a rhetorical problem. *College Composition and Communication, 31*(1), 21-32.

[20]. Flower, L., & Hayes, J.R. (1980b). The dynamics of composing: Making plans and judging constraints. In L.W. Gregg & E.R. Steinberg (Eds.), *Cognitive processes in writing.* Hillsdale, NJ: Lawrence Erlbaum.

[21]. Flower, L., & Hayes, J.R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365-87.

[22]. Freire, P., & Macedo, D. (1987). *Literacy: Reading the word and the world.* South Hadley, MA: Bergin & Harvey.

[23]. Gagne, E.D., Walker Yekovich, C.W., & Yekovich, F.R. (1993). *The cognitive psychology of school learning* (2nd ed.). NY: HarperCollins College Publishers.

[24]. Gee. J.P. (1989). Literacy, discourse, and linguistics: Introduction. *Journal of Education*, 171, 5-17.

[25]. Gere, A.R. (1987). *Writing groups: History, theory, and implications*. Carbondale, IL: Southern Illinois University Press.

[26]. Glazer S.M., & Burke, E.M. (1994). *An integrated approach to early literacy: Literature to language*. Boston, MA: Allyn and Bacon.

[27]. Goodman, Y.M. (1986). (Ed.). *How children construct literacy: Piagetian perspectives.* Newark, DE: International Reading Association.

[28]. Graham, S., & Harris, K.R. (2005). Improving the writing performance of young struggling writers: Theoretical and programmatic research from the Center on Accelerating Student Learning. *The Journal of Special Education*, *39*(1), 19-33.

[29]. Graves, D.H. (1979). Research update: What children show us about revision. *Language Arts*, *56*(3), 312-319.

[30]. Graves, D.H. (1983). *Writing: Teacher and children at work.* Portsmouth, NH: Heinemann.

[31]. Halasek, K. (2005). An enriching methodology: Bakhtin's dialogic origin and the teaching of writing. *Written Communication, 22*(3), 355-362.

[32]. Harris, K.R., Graham, S., Mason, L.H., & Saddler, B. (2002). Developing self-regulated writers. *Theory into Practice*, *41*(2), 110-115.

[33]. Harste, J.C., Woodward, V.A., & Burke, C.L. (1984). *Language stories and literacy lessons*. Portsmouth, NH: Heinemann Educational Books, Inc.

[34]. Hayes, J.R., & Bajzek, D. (2008). Understanding and reducing the knowledge effect: Implications for writers. *Written Communication, 25*(1), 104-118.

[35]. Hayes, J.R., & Chenoweth, N.A. (2007). Working memory in an editing task. *Written Communication, 24*(4),

283-294.

[36]. Hayes, J.R., & Flower, L.S. (1980). Identifying the organization of writing processes. In L. Gregg & E. Steinberg (Eds.), *Cognitive processes in writing: An interdisciplinary approach* (pp. 3-30). Hillsdale, NJ: Lawrence Erlbaum Associates.

[37]. Juzwik, M.M., Curcic, S., Wolbers, K., Moxley, K.D., Dimling, L.M., & Shankland, R.K. (2006). Writing into the 21st century: An overview of research on writing, 1999 to 2004. *Written Communication*, *23*(4), 451-476.

[38]. Klein, M.L. (1985). *The development of writing in children pre-K through grade 8.* Englewood Cliffs, NJ: Prentice Hall.

[39]. Kos, R., & Maslowski, C. (2001). Second graders' perceptions of what is important in writing. *The Elementary School Journal*, *101*(5), 567-585.

[40]. Langer, J. (Ed.). (1987). *Language, literacy, and culture: Issues of society and schooling*. Norwood. NJ: Ablex.

[41]. Lehr, F. (1995). *Revision in the writing process*. Retrieved from http://www.ed.gov/ databases/ ERIC_Digests/ed 37 9664.html

[42]. Luria, A.R. (1978). The development of writing in the child. In M. Cole (Ed.), *The selected writings of A. R. Luria*. White Plains, NY: Sharpe.

[43]. Martlew, M. (1983). Problems and difficulties: Cognitive and communicative aspects of writing development. In M. Martlew (Ed.), *The psychology of written language: Developmental and educational perspectives*. NY: John Wiley & Sons.

[44]. Martlew, M. (1986). The development of written language. In K. Durkin (Ed.) *Language development in the school years.* Cambridge, MA: Brookline Books.

[45]. Matsumura, L.C., Patthey-Chavez, G.G., Valdés, R., & Garnier, H. (2002). Teacher feedback, writing assignment quality, and third-grade students' revision in lower- and higher-achieving urban schools. *Elementary School Journal*, *103*(1), 3-25.

[46]. McCarthey, S.J. (1993). *Can teachers' images of good writing conflict with goals of process writing?* Retrieved from http://ncrtl.msu.edu/http/reports/html/ pdf/ rr934.pdf

[47]. McCutchen, D. (2006). Cognitive factors in the development of children's writing. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook on writing research*. New York: Guilford Press.

[48]. McIver, M.C., & Wolf, S.A. (1998, November). *Writing conferences: Powerful tools for writing instruction* (CSE Tech. Rep. No 494). Los Angeles: University of California, Center for Research on Evaluation, Standards, and Student Testing.

[49]. McLane, J.B. (1990). Writing as a social process. In L.C. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology*. Cambridge University Press.

[50]. McNamee, G.D. (1990). Learning to read and write in an inner-city setting: A longitudinal study of community change. In L.C. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology.* Cambridge University Press.

[51]. Monkman, K., MacGillivray, L., & Leyva, C. H. (2003). Literacy on three planes: Infusing social justice and culture into classroom instruction. *Bilingual Research Journal, 27*(2), 245-258.

[52]. Myhill, D., & Jones, S. (2007). More than just error correction: Students' perspectives on their revision processes during writing. *Written Communication, 24*(4), 323-343.

[53]. Nixon, J.G., & Topping, K.J. (2001). Emergent writing: The impact of structured peer interaction. *Educational Psychology, 21*(1) 41-58.

[54]. Pontecorvo C., & Zucchermaglio, C. (1986). *P*assage to literacy: Learning in a social context. In Y.M. Goodman (Ed.), *How children construct literacy: Piagetian perspectives*. Newark, DE: International Reading Association.

[55]. Purcell-Gates, V. (1995). *Other people's words: The cycle of low literacy.* Cambridge, MA: Harvard University Press.

[56]. Rentel, V., & King. M. (1983). Present at the beginning. In P. Mosenthal, L. Tamor, & S. A. Walmsley (Eds.), *Research on writing: Principles and methods.* NY: Longman.

[57]. Rogoff, B., & Lave, J. (Eds.). (1984). *Everyday cognition: Its development in social context.* Cambridge, MA: Harvard University Press.

[58]. Scardamalia, M., & Bereiter, C. (1982). How children cope with the cognitive demands of writing. In M.F. Whiteman, C.H. Frederiksen, & J.F. Dominic (Eds.), *Writing: The nature, development and teaching of written communication.* Hillsdale, NJ: Lawrence Erlbaum Associates.

[59]. Scardamalia, M., & Bereiter, C. (1985). Fostering the development of self-regulation in children's knowledge processing. In S.F. Chipman, J. W. Segal, & R. Glaser (Eds.), *Thinking and learning skills: Research and open questions* (pp. 563-577). Hillsdale, NJ: Lawrence Erlbaum Associates.

[60]. Scardamalia, M., & Bereiter, C. (1987). Knowledge telling and knowledge transforming in written composition. In S. Rosenberg (Ed.), *Advances in applied linguistics.* New York, NY: Cambridge University Press.

[61]. Scinto, L.F.M. (1986). *Written language and psychological development.* Orlando, FL: Academic Press, Inc.

[62]. Shagoury, R. E. (2009). *Raising writers: Understanding and nurturing young children's writing development*. Boston: Pearson.

[63]. Sommers, N. (1982). Responding to student writing. *College Composition and Communication, 33*(2), 148-156.

[64]. Tamor, L., & Bond, J.T. (1983). Text analysis: Inferring process from product. In P. Mosenthal, L. Tamor, & S. A. Walmsley (Eds.), *Research on writing: Principles and methods.* NY: Longman.

[65]. Temple, C., Nathan, R., Temple, F., & Burris, N.A. (1993). *The beginnings of writing.* Boston, MA: Allyn and Bacon.

[66]. Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes.* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Trans. & Eds.) Cambridge, MA: Harvard University Press.

[67]. Vygotskty, L.S. (1983). The prehistory of written language. In M. Martlew (Ed.), *The psychology of written language.* New York, NY: John, Wiley & Sons, Ltd.

[68]. Wadsworth, B.J. (1996). *Piaget's theory of cognitive and affective development: Foundations of constructivism.* NY: Longman.

[69]. Wertsch, J.V. (1985). *Vygotsky and the social formation of mind.* Cambridge, MA: Harvard University Press.

[70]. Witte, S.P. (2005). Research in activity: An analysis of speed bumps as mediational means. *Written Communication, 22*(2), 127–165.

[71]. Wollman-Bonilla, J. E., & Werchadlo, B. (1999). Teacher and peer roles in scaffolding first graders' responses to literature. *The Reading Teacher*, *52*(6), 598-607.

[72]. Yarrow, F., & Topping, K. J. (2001). Collaborative writing: The effects of metacognitive prompting and structured peer interaction. *British Journal of Educational Psychology, 71*, 261-282.

[73]. Zebroski, J. T. (1994). *Thinking through theory: Vygotskian perspectives on the teaching of writing*. Portsmouth, NH: Boynton/Cook Publishers.

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