

Evidence Based Best Practices in the Teaching of Written Expression: Implications for
the Atlantic Provinces Educational Outcomes

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Abstract

This thesis examined evidence-based best practices in the teaching of written expression in two phases. The first phase, linked evidence-based research on writing instruction directly to Atlantic Canada Curriculum outcomes (Grades 4-6) in writing. In the second phase, the Teaching in Action document (Nova Scotia Department of Education, 2007) was analyzed to determine the nature of evidence for the components of effective instruction as explained by the Learning Oriented Teaching (LOT) model (Cate, Snell, Mann, & Vermunt, 2004). Effective components in instruction include the development of basic writing skills, metacognitive skills, motivation and the gradual release of responsibility from teacher to student. This thesis can benefit Nova Scotia teachers as it can serve as a clear and simple reference that links empirically supported teaching practices to curriculum outcomes. It also provides recommendations to enrich outcomes within the English language arts curriculum.

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Writing Development

Writing, like other language based skills, is learned in a social context, being developed through observation of others, through reading, and through formal school-based instruction. Around the age of three, children begin imitating the behaviour of others by scribbling, writing in wavy lines, and creating pseudo-letters. By the age of four or five, they begin to learn the alphabetic principle (i.e., symbols represent speech sounds) and to print (Byrnes, 2007). Children then learn to write words, sentences, and various forms of texts as they develop their knowledge of language (i.e., vocabulary, grammar, syntax, and pragmatics) and topics, gained through experience, exploration of their interests and formal instruction.

In order to become good writers, children need to first develop a basic understanding of sounds and print. Children also need to develop phonological awareness which is the awareness that words are made up of small segments of sound (i.e., phonemes) and that these sounds are represented with letters. Students who lack phonemic awareness struggle to understand letter-sound correspondences and therefore struggle with both word decoding and encoding (i.e., spelling) (Weiser & Mathes, 2011). Students also need to learn how print works in written text; that is, they need to know that English is written from left to right and that sentences start with capital letters and end with punctuation marks. They also need to learn to use appropriate spacing between words, sentences, and paragraphs (Moats, 2009).

The development of writing also relies, in part, on having developed adequate skills in reading. Students learn syntactic rules so that sentences are constructed correctly through reading. Although syntactic knowledge can be developed through oral language, some syntactic rules are found only in text (Fitzgerald & Shanahan, 2000). Through reading, writers also learn

how various forms of text are organized and increase their lexicon which can then translate into improved writing quality (Fitzgerald & Shanahan, 2000). Writers also rely on their skills in reading to review, edit, and revise their compositions. As such, because skills in reading and writing are moderately correlated (Fitzgerald & Shanahan, 2000), instruction in each is necessary for optimal writing development.

When writing, students need not only understand phonemes and rules of print but must also draw upon higher order skills such as self-regulation, persistence, and attentional control (Graham & Harris, 2003). To compose, students must set a goal for writing, understand their audience, generate and transform ideas into acceptable sentences, transcribe, revise, and edit (Graham, Olinghouse, & Harris, 2008). Writing also places great demands on working memory because writers must hold their ideas in temporary storage as they spell words and hand write or type. As well, writers need an awareness of their cognitive processes; that is, they need to have metacognitive skills. Writers also need to consider the audience for whom they are writing. Indeed, writers benefit from having developed a theory of mind, which is the ability to understand that people have their own knowledge and beliefs that are different from their own, and understand that people can interpret the same writing differently (Hetherington, Parke, & Schmuckler, 2003). Children must also have the metacognitive ability to monitor whether or not they understand the writing task and to monitor if they are completing the writing task successfully. They must learn to cyclically plan their writing, evaluate it, and then revise as needed. By the age of six or seven, children typically begin to demonstrate these metacognitive skills (i.e., theory of mind, self-monitoring) (Hetherington, Parke, & Schmuckler, 2003). Poor writers however, have been shown to have metacognitive deficits in that they spend less time on difficult writing tasks and are less likely to review and revise when compared to their more proficient peer writers (Berninger, 2012).

Writing is an extremely complex and challenging mental task (Saddler, Moran, Graham, & Harris, 2004) as it requires a wide range of cognitive, attentional, and metacognitive abilities. It is therefore not surprising that many students struggle to develop skills in writing. Poorer writers typically produce shorter, more incomplete, and poorly organized compositions compared to their more proficient peers. Struggling writers also typically make more mechanical (i.e., spelling and punctuation) and grammatical errors in their writing (Troia & Graham, 2003). As such, struggling writers require more explicit instruction and more opportunities to practice with support and feedback (Veil-Ruma & Houchins, 2007). Writing can be improved when provided with opportunities to observe more skilled writers and when the connection between oral language, reading, and writing is made explicit (Weiser & Mathes, 2011). The following section describes effective instruction practices for writing and highlights concerns in current teaching practices.

Instruction in Writing

Robinson and Howell (2008) outlined three areas of writing that young students require support in. First, instruction is required in basic writing skills including conventions (i.e., spelling, capitalization, and punctuation), constructing sentences, understanding grammar rules, and handwriting. Competence in basic writing skills is fundamental to higher order writing processes (McDonnell et al., 2000). Second, instruction that focuses on supporting students in understanding the concepts of written expression is required. Understanding concepts of writing include recognizing the functions and the purposes of written expression and recognizing that audience impacts writing style. The third area of instruction involves strategies for approaching and completing writing tasks or metacognitive skills. Students should receive instruction on how to execute and regulate the writing process including skills such as, generating ideas; planning; self-monitoring; and revising (Troia & Graham, 2003).

Instruction in the writing process involves strategies for approaching a written task and knowledge of text structure and form. Graham and Perin's (2007) explain that teaching the process of writing involves the following elements: extended opportunity for writing; writing for authentic audiences and purposes; emphasis on the cyclical nature of writing including planning, translating, and reviewing; student ownership of compositions; interaction among peers and among students and teachers; a supportive environment for writing, and opportunity for self-reflection and evaluation of writing. Instruction in the writing process can help students plan and organize their writing proficiently. Writing process instruction can help students set goals based on the audience and genre, access their background knowledge of a topic to develop ideas, and use their knowledge of writing structure to organize their writing. Finally, instruction in process can help students evaluate and revise their writing to improve what they have written. To develop skills in each of these areas, students should be provided with explicit instruction and modeling along with opportunities for guided and independent practice (Byrnes, 2007).

The zone of proximal development, a term coined by Vygotsky, refers to a range of tasks that a child cannot perform or understand independently but can nonetheless achieve with the support of someone more mature (Berk, 2003). Teachers, or more skilled persons, can therefore promote writing development by adjusting their level of assistance to match a child's current level of performance. This may be achieved by breaking tasks down into more manageable parts and by gradually reducing the level of support provided until independent mastery is realized. This process of matching the level of support provided to the level of need is called "scaffolding". Through scaffolding, children develop skills they may not have developed on their own.

Teachers can also improve learning by using the Gradual Release of Responsibility model, developed by Pearson and Gallagher (1983). This model posits that difficult tasks, like

writing, are not learned simply by being told what to do; rather, students develop complex skills when they are provided with modelling, feedback, and ample opportunities for practice. When the Gradual Release of Responsibility model of instruction is used, teachers begin instruction taking on primary responsibility for the task and students learn through focused instruction provided by the teacher. Using what they have learned through focused instruction, students begin practicing the skills they have observed. As students become more knowledgeable and competent, students assume more responsibility for knowing and doing, therefore requiring less and less guidance from the teacher. According to Fisher and Frey (2008), this model is closely related to Vygotsky's zone of proximal development theory.

With the gradual release of responsibility model, teachers begin instruction with focused lessons that include modeling, metacognitive awareness, and think-alouds. When a teacher models a task or a skill, she or he names the skill to be learnt, states why the skill is important and when it should be used, links it to prior learning, and provides a demonstration. Modeling requires direct explanations and instructions. Metacognition involves understanding when something is easy or difficult and knowing whether or not you are successful at a task. Teachers can teach metacognitive skills by modeling how to establish a plan and then monitoring its execution by asking if goals are being met. Without writing themselves, students observe teachers compose a piece of text while he or she comments and reflects on actions. Teachers also provide focused instruction through think alouds. When using think alouds teachers demonstrate a skill as they say aloud their process of thinking. Teachers share their thoughts as they plan, make decisions, solve problems, and evaluate their success. By talking while writing, students get to witness the thinking that is involved, as teachers brainstorm ideas, plan their writing, make word choices, and correct their errors. The purpose of focused instruction in the beginning of

learning is to ensure students have a model from which to work and better understand the internal thinking processes involved in writing tasks (Fisher & Frey, 2008).

After focused instruction, using the Gradual Release of Responsibility model, teachers provide guided instruction by cueing and questioning. Teachers provide support to students so that they can perform some task or understand a concept they cannot do independently. Because students within a classroom have varying levels of skill and knowledge, teachers can provide guided support in small groups. Working in small groups allows teachers to differentiate instruction based on students' need and level of competence. Assignment of students to groups can be based on a shared area of difficulty or interest (Fisher & Frey, 2008).

The final phase of the Gradual Release of Responsibility model of instruction involves peer and independent learning (Fisher & Frey, 2008). This is the phase where students apply the skills that they have learned to new problems. At this stage, learning is increasingly self-directed as students develop their own plan of action, monitor their effectiveness, and work more independently. In writing, this may involve independently selecting a research topic and composing an informational text.

Over time, educational researchers have built a strong case for the importance of using scaffolding and guided instruction in the classroom (Archer & Hughes, 2011). For instance, Swanson (2001) analysed 180 intervention studies and found that regardless of the academic skills being taught, teacher modelling with clear demonstrations, scaffolded instruction, and frequent feedback accounted for the greatest positive impact on academic achievement. It has also been shown that students who receive guided practice and explicit instruction achieve higher academic success than students in control classes (Archer & Hughes, 2011). Similarly, when Vaughn, Gersten, and Chard (2000) examined best practices in teaching writing, they identified

teacher modeling and prompts, explicit instruction, and guided feedback as three instructional elements that account for significant positive effects on academic achievement.

Graham and Harris (2012) stated that motivation to write is also a key ingredient in writing development and should not be ignored. The benefit of motivation is clear as skilled writers have been shown to be more motivated to write than less-skilled writers. And when students demonstrate the desire to write, their writing performance improves (Graham & Harris, 2012). Deci (1992) has suggested that teachers who promote student choice and autonomy can increase intrinsic motivation and situational interest. By increasing interest, persistence, and motivation, learning can then be improved (Hidi & Ainley, 2002; Koller, Baumert, & Schnabel, 2001).

Today, as a result of Vygotsky's, Pearson's and Gallagher's, and Graham and Harris' work, more teachers are scaffolding their instruction, using the Gradual Release of Responsibility model, and trying to increase effort and motivation to write in students (Berk, 2003; Graham & Harris, 2012). Teachers are adjusting their level of support and feedback in response to individual students' level of performance and understanding. Also, more teachers are emphasizing interaction between learners through cooperative learning tasks, whereby one student with greater knowledge and skill level in one area, supports another less advanced student (Berk, 2003).

At the same time, studies report that students do not receive as much specific instruction in the area of writing as they do in reading and mathematics; nor do they spend a lot of time writing in the classroom or at home (Troia, 2002; McDonnell et al., 2000). It has been shown that the amount of time teachers devote to teaching students how to write declines across the grades (Gilbert & Graham, 2010). In Graham et al.'s (2010) study, teachers' evaluation of their preparedness to teach writing worsened with grade level and overall almost fifty percent of

teachers indicated that they were poorly prepared to teach writing. Graham and Harris (2012) have indicated that teachers require support in integrating effective writing interventions and instruction into their current writing programs. The importance of increasing students' time spent teaching and learning writing is clear, as it has been named the number one principle for effective instruction (Archer & Hughes, 2011).

In an American national survey of elementary teachers, it was found that there is considerable variability in the way writing is taught and in how much time is devoted to writing instruction (Cutler & Graham, 2008). Troia (2008) found that teachers often develop their writing program based on personal classroom experience or the experience of teacher colleagues. Informal approaches to writing instruction are still widely used. These informal approaches involve increasing the amount of writing students engage in and delivering feedback that tends to focus on the surface features of writing like spelling and grammar rather than on enhancing organization or content. During teacher training, pre-service teachers are often presented with evidence in the form of testimonials or writing samples from several students, rather than evidence-based programs (Troia, 2008). Teachers therefore often develop teaching practices without direct evidence that their practice actually improves students' writing (Troia, 2008). A more reliable approach to identifying effective teaching practices is to base it on methods validated through empirical research (Troia, 2008).

Empirically validated instruction, or evidence-based instruction, refers to the use of intervention strategies and procedures that are rigorously studied and have demonstrated that they are likely to produce predictable, beneficial, and effective results (Forman & Burke, 2008). Troia (2008) considers instruction based in research a trustworthy approach to teaching because the effect of interventions is quantified in these studies and the strength or impact of intervention

can be measured. Use of empirically supported instruction can therefore increase teachers' confidence that they are having a positive impact on student development.

Learning-Oriented Teaching Model

The Learning-Oriented Teaching (LOT) model is an instructional approach that integrates both the gradual release of responsibility model and the three key components to writing instruction; cognitive skills, metacognitive strategies, and motivation for writing (see Table 1). The LOT model is based in educational psychology (Cate et al., 2004) and parallels research that shows learning is dependent on the development of domain specific knowledge and skills, strategies, and motivation (Alexander, Graham, & Harris, 1996, Graham & Harris, 2012). The model emphasizes that teachers should aim to use teaching practices that have been proven effective and should plan activities with the goal of students being able to fully apply what they have learned and regulate their own learning. As per Pearson and Gallagher's (1983) Gradual Release of Responsibility Model, the LOT model emphasizes that instruction should transition from external guidance from the teacher, through shared guidance, to student independence. The LOT model has been cited in many education research articles (Dolmans, Grave, Walfhagen, & Vleuten, 2005; Dornan & Bundy, 2004), stating that students benefit from a level of teacher guidance that helps students acquire the knowledge and skills required to complete tasks but should not receive so much guidance that students become bored or dependent on their teacher.

The Learning-Oriented Teaching model indicates that curriculum should have clear instructional objectives. That is, curriculum objectives should state what skills students should be expected to learn. In writing, skills include spelling, mechanics, and translating or putting words on paper.

The LOT model advocates that in addition to students learning what to do they must also learn when to do it (Cate et al., 2004; Mayer, 1998). Therefore, instruction in learning strategies

is also required. Learning and metacognitive strategies are used when students apply skills in novel situations. In writing, planning and reviewing are learning strategies that require metacognition. Students should learn to think about what they are going to write and monitor whether what they are writing makes sense (i.e., self-regulate).

The model also states that focusing solely on teaching skills and learning strategies is incomplete, because it ignores students' interest in the task (Cate et al., 2004). A third cognitive process important in instruction is therefore motivation (i.e., interest and self-efficacy). The LOT model suggests that learning can be improved when topics and tasks addressed are personally meaningful to students.

The LOT model was used to analyze the Atlantic Canada curriculum outcomes in writing and supporting document, *Teaching in Action Grades 4-6*, in order to answer whether or not they include objectives in each of these components of learning (i.e., skill/content, motivation, and metacognition) and recommend teaching strategies that progress from modeling, to guided practice, and independent writing. This model serves as a useful tool to analyze curriculum because it emphasizes the importance of including all components of learning when developing instructional plans and curriculum.

Table 1: The LOT Model (Cate et al., 2004, p. 223)

	Source of Guidance of the Learning Process		
Learning Process Component	Full External Guidance (from the teacher only)	Shared Guidance (from both the teacher and the student)	Full External Guidance (from the student only)
Cognitive Skills: What <i>skills or content</i> should be taught?	Lecture, determine objectives, develop questions	Help students apply strategies and develop skills	Students identify and use the writing strategies needed to complete assignments
Metacognitive Skills: What <i>learning strategies</i> should be taught?	Show how and when to use strategies Examples: - model - think alouds - demonstrate	Give no more help than is really needed	Students monitor their progress, revise, and edit
Motivational Skills: How can students be <i>motivated</i> to write?	Organize assignments and set tasks	Help student set their own motives and goals	Students independently develop writing goals, students are motivated and interested

Atlantic Canada English Language Arts Curriculum and Supporting Document, Teaching in Action Grades 4-6

The Atlantic Canada English Language Arts Curriculum (Nova Scotia Department of Education and Culture, 1998) is used by public schools in Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador. The curriculum guide was created by the English language arts curriculum committee made up of educators, administrators, and educational psychologists working in the Atlantic Provinces (Nova Scotia Department of Education and Culture, 1998). The emphasis at all levels of the English language arts curriculum is on what students are able to do as a result of the learning experiences provided by teachers. It has been proposed by the Nova Scotia Department of Education and Culture (1998, p. 2) that the Atlantic Canada English Language Arts curriculum framework provides a coherent, integrated view of the learning and teaching of English Language Arts which reflects current research and theories. The curriculum outcome statements within the document describe what knowledge, skills, and attitudes students are expected to demonstrate as a result of instructional practices.

In the Atlantic Canada curriculum, English language arts is broken down into three strands: Speaking and Listening, Reading and Viewing, and Writing and Other Ways of Representing and is further divided into General Curriculum Outcomes (GCOs) and Specific Curriculum Outcomes (SCOs). In this thesis, the focus was on outcomes specifically within the writing strand and not Other Ways of Representing (e.g., art, posters, drama).

According to the Nova Scotia Department of Education and Culture (1998, p.137) the principles of the writing framework are that students learn to write when they

- a) engage in writing on a frequent and regular basis;*
- b) engage in writing as a process;*
- c) have freedom to write on topics of their choosing;*
- d) receive feedback to their writing;*
- e) work on skills/strategies in the context of writing;*
- f) receive instruction, demonstrations, and modeling of the writing process;*
- g) feel free to take risks with writing;*
- h) read and see the connections between reading and writing;*
- i) have opportunities to write for authentic purposes and for a variety of audiences;*
- j) take increasing responsibility for their own writing growth.*

The writing strand of the curriculum consists of three General Curriculum Outcomes that identify what students are expected to know and be able to do upon completion of their studies in English language arts (i.e., high school). In writing, students are expected (p.16):

- 1. to use writing and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, and experiences and learning, and to use their imagination;*
- 2. to create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes;*

3. *to use a range of strategies to develop effective writing and media products to enhance their clarity, precision, and effectiveness.*

These three General Curriculum Outcomes are further broken down into Specific Curriculum Outcomes (SCOs) which identify what is expected at the end of each grade (i.e., grades four, five, and six) (See Tables 2-4).

The Atlantic Canada English language arts curriculum document does not directly link curriculum outcomes to teaching practice. In other words, the curriculum document does not specify **how** to teach writing or explicitly state what instructional practices teachers should use in order to help students achieve the grade level outcomes. Teachers must therefore refer to other documents, resources and educational training to inform their teaching practice and develop lesson plans. The Nova Scotia Department of Education has released a document titled, *Teaching in Action Grades 4-6* (Nova Scotia Department of Education, 2007). This document is a supplement to the curriculum document (Nova Scotia Department of Education, 2007). The *Teaching in Action Grades 4-6* document describes how teachers should teach writing. It defines modes (e.g., expressive, transactional) and types (e.g., narrative, persuasive) of writing and also outlines the components of writing instruction that teachers can use in their practice. The *Teaching in Action Grades 4-6* document was analysed to determine if it informs teachers of evidence-based best practices in writing. Table 2 summarizes the four components of writing instruction named in the document.

Table 2: Teaching in Action Grades 4-6 Writing Instructional Components

Teaching in Action (Grades 4-6): A Teaching Resource (p. 61-67)	
Writing Instructional Components	
Modelled Writing	<ul style="list-style-type: none"> - highest level of support provided to students - teacher explicitly models and demonstrates writing various forms and genres
Shared Writing	<ul style="list-style-type: none"> - students help the teacher compose a text - teacher scribes and thinks aloud to demonstrate the process of writing - can be done with whole class or with small groups
Guided Writing	<ul style="list-style-type: none"> - a small group of students with common needs practice a specific skill or strategy with teacher support - the students write independently, within the small group, and the teacher provides feedback
Independent Writing	<ul style="list-style-type: none"> - students practice skills and strategies on their own - an opportunity for students to apply what they have learned

Purpose

This thesis summarizes evidence-based practices in writing instruction and links them to the Atlantic Canada elementary English language arts curriculum outcomes for grades four to six. The purpose for this connection is to make evidence-based practices more relevant and meaningful to Nova Scotia teachers and to encourage the use of evidence-based practice within upper elementary classrooms. The General and Specific Curriculum Outcomes and Teaching in Action Grades four to six document were also analyzed to determine if they direct teachers to

what content and learning strategies should be taught in upper elementary grades and if they direct teachers in how to motivate students, using the learning-oriented teaching (LOT) model as a lens.

This thesis therefore has two purposes:

1. To determine how the Nova Scotia English Language Arts curriculum outcomes in writing for grades four to six align with evidence-based best practices.
2. To determine to what extent the Atlantic Canada English language arts writing curriculum and Teaching in Action Grades 4-6 documents align with the Learning-Oriented Teaching Model. In other words, do these documents inform teachers of not only what content should be taught, but also inform them of the importance of motivating students and teaching learning strategies so that all components of the learning process are covered. As well, do these documents promote gradual release of responsibility practices?

The focus of this thesis is on **writing** specifically, because in today's schools writing instruction requires greater attention, as it is often overlooked (Robinson & Howell, 2008). Greater attention, both in research and classroom instruction, is given to children's skills in reading and mathematics (Saddler & Graham, 2005). It is often assumed that proficient readers will become proficient writers, however, many students who have average reading skills have severe difficulties with writing (Graham & Perin, 2007).

Curriculum outcomes for grades four to six are the focus because good instruction early in writing development is essential to reducing writing difficulties (Saddler et al., 2004). Providing effective early instruction in writing may reduce the number of students who develop long-term difficulties and who require remediation (Graham & Harris, 2002).

Method

PHASE 1: Review of Published Literature and its Link to the Atlantic Canada English Language Arts Curriculum Guide

The first step of phase one was to review the literature on evidence-based writing instruction and interventions. Studies chosen were published between 1990 and 2012 and retrieved from electronic databases including Academic Search Premier, Child Development and Adolescent Studies, Educational Resources Information Center (ERIC), PsycINFO, and PsycARTICLES. Search terms used include “writing instruction”, “strategy instruction”, “planning”, “revising”, “editing”, “collaboration”, “motivation”, “spelling”, “sentence combining”, “grammar”, “mechanics”, “goal setting” and “technology”.

Studies were included if they used either an experimental or quasi-experimental design to examine the effect of different teacher-led instructional writing practices on the writing skills of participants. Participants had to be eight to twelve years of age or enrolled in North American or European schools in grades four through six. The impact of instruction on students’ writing skills was measured quantitatively using various scoring guides or norm-referenced measures such as the Test of Written Language, third edition (Hamill & Larsen, 1996).

The second step, was to summarize the evidence-based instructional methods and relate them directly to the curriculum outcomes presented in tables two through four. As well, recommendations are presented that teachers can use to inform instruction when students are struggling to achieve grade four to six outcomes.

PHASE 2: Analysis of Teaching in Action Grades Four to Six

Phase 2 was an analysis of the document, Teaching in Action Grades Four to Six (Nova Scotia Department of Education, 2007). This analysis involved looking for evidence of the three components of learning instruction (i.e., content/skill, motivation, and metacognition) and

evidence of gradual release of responsibility, where the teacher provides explicit modelling, guided instruction and independent work as recommended by the LOT model.

Review of Research, Link to Curriculum Guides and Recommendations for Practice

PHASE 1: Evidence-Based Instructional Practices for Upper Elementary School Students

Linked to Atlantic Canada English Language Curriculum Outcomes

There are various methods for teaching writing that have been shown to be effective through true and quasi-experimental studies. Instruction in both writing skills and the writing process has been shown to improve students' overall quality of compositions. Instruction in spelling, sentence and text structure and in using prewriting, planning, revising, and self-regulation strategies have been shown to be beneficial. As well, the ability to make performance goals and to write collaboratively has also been found to improve writing quality (Boscolo & Ascorti, 2004; Graham & Perin, 2007; Graham et al., 2008).

A point repeated throughout the research (Archer & Hughes, 2011) is the need for explicit instruction. Explicit instruction involves the teacher breaking down the act of writing into specific skills and strategies, modeling those skills and strategies, and providing the opportunity for students to practice independently and collaboratively. As advocated by the learning-oriented teaching model, teachers are expected to guide students through the learning process by providing knowledge and skills, with the ultimate goal of students developing the ability to work and learn independently (Cate, Snell, Mann, & Vermunt, 2004).

The following section integrates evidence-based practices in instruction for writers in grades four to six with the Atlantic Canada English language arts curriculum outcomes. The curriculum outcomes in writing are presented in tables two through four and the evidence-based practices related to the outcomes follow. The instructional methods outlined may be used in a

range of settings, including whole classrooms and small groups. These evidence-based practices are appropriate for typically achieving writers as well as for students who are struggling to meet expectations in writing.

Table 3

General Curriculum Outcome One for Grades 4-6

<p>General Curriculum Outcome One <i>Students will be expected to use writing and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, experiences, and learnings and to use their imaginations (Department of Education and Culture, 1998, p. 16).</i></p>
<p>Grade Four SCOs (p. 48)</p> <ol style="list-style-type: none"> 1. <i>Use strategies in writing and other ways of representing to:</i> <ul style="list-style-type: none"> - <i>formulate questions and organize ideas</i> - <i>generate topics of personal interest and importance</i> - <i>discover and express personal attitudes, feelings, and opinions</i> - <i>compare their own thoughts and beliefs to those of others</i> - <i>describe feelings, reactions, values, and attitudes</i> - <i>record experiences</i> - <i>formulate goals for learning</i> - <i>practice strategies for monitoring their own learning</i> 2. <i>Experiment with different ways of making their own notes (e.g., webbing, jot notes, matrix)</i> 3. <i>Experiment with language, appropriate to purpose, audience, and form, that enhances meaning and demonstrates imagination in writing and other ways of representing</i>
<p>Grade Five SCOs (p. 68)</p> <ol style="list-style-type: none"> 1. <i>Use a range of strategies in writing and other ways of representing to</i> <ul style="list-style-type: none"> - <i>frame questions and answers to those questions</i> - <i>generate topics of personal interest and importance</i> - <i>record, develop, and reflect on ideas, attitudes, and opinions</i> - <i>compare their own thoughts and beliefs to those of others</i> - <i>describe feelings, reactions, values, and attitudes</i> - <i>record and reflect on experiences and their responses to them</i> - <i>formulate and monitor goals for learning</i> - <i>practice and extend strategies for monitoring learning</i> 2. <i>Expand appropriate notemaking strategies from a growing repertoire (e.g., outlines, charts, diagrams)</i> 3. <i>Make deliberate language choices, appropriate to purpose, audience, and form, to enhance meaning and achieve interesting effects in imaginative writing and other ways of representing</i>
<p>Grade Six SCOs (p. 88)</p> <ol style="list-style-type: none"> 1. <i>Use a range of strategies in writing and other ways of representing to</i> <ul style="list-style-type: none"> - <i>Frame questions and design investigations to answer their questions</i> - <i>Find topics of personal importance</i> - <i>Record, develop, and reflect on ideas</i> - <i>Compare their own thoughts and beliefs to those of others</i> - <i>Describe feelings, reactions, values, and attitudes</i> - <i>Record and reflect on experiences and their responses to them</i> - <i>Formulate goals for learning</i> - <i>Practice and apply strategies for monitoring learning</i> 2. <i>Select appropriate notemaking strategies from a growing repertoire</i> 3. <i>Make language choices to enhance meaning and achieve interesting effects in imaginative writing and other ways of representing</i>

General Curriculum Outcome One

1.1. Motivation

The first General Curriculum Outcome in writing highlights the need for students to write about topics of “personal interest and importance” and is therefore supported by research. Pajares (2003) and Pajares and Valianted (1997) have found that apprehension towards writing and low self-efficacy for writing is correlated with poorer writing outcomes both in skills and process. Applying the skills and strategies taught by teachers requires both intention and effort on the part of the student. If a student does not value the strategies taught or believe that they are effective, then students will not exert the effort needed to write successfully.

Graham and Harris (2004) and Troia (2002) have emphasized the need for writing tasks to be personally meaningful and challenging in order to improve students’ motivation for writing. Strategies shown to positively affect motivation include creating opportunities for students to write for real audiences and writing for many purposes (e.g., to write to an editor about a local issue, create anti-bullying or fundraising posters, write a mystery to be included in a school collection) (Graham & Harris, 2004). By assigning purposeful writing, students are said to appreciate the power and influence of writing, and will develop greater ownership of the writing strategy (Troia, 2002). Also, students should receive enthusiastic praise and reinforcement for their efforts (Graham & Harris, 2004).

1.2. Goals for Improved Writing

The Specific Curriculum Outcomes, in Table 2, also align with research that shows developing goals for learning and personal improvement can lead to better performance (Graham & Harris, 2004) and that students should select appropriate language for the purpose and audience. Studies involving both typical writers and struggling writers have shown that providing students with specific goals to improve their work can have a positive impact on

writing quality (e.g., Ferretti, Lewis, & Andrews-Weckerly, 2009; Graham & Perin, 2007).

Goals used to improve writing can focus on specific types of information that should be included in a paper (e.g., reasons to support a thesis) or they can focus on making specific types of revisions (e.g. add three new things to the paper).

In a study completed by Ferretti et al. (2009), students in the control group were provided with a general goal; they were asked to write a letter to their teachers about whether they should increase the amount of homework or not. The experimental group was presented with subgoals in addition to the general goal of writing the persuasive letter. The subgoals included such things as “say very clearly what your opinion is”; “think of two or more reasons to back up your opinion”; and “write a conclusion that summarizes your opinion”. Compared to students who received the general goal, students given the elaborated goal produced more persuasive essays and were more likely to include alternative viewpoints therefore improving the overall quality of writing (Ferretti et al., 2009).

Midgette, Harris and MacArthur (2008) have also shown that students sometimes struggle to consider the questions, attitudes, and perspectives of those who read their writing. They struggle to write in a way that is clear and in sequence and to provide enough detail that readers find their work appealing and engaging. Awareness of audience is therefore an essential skill for good writing. In the Midgette et al. (2008) study, students were assigned a goal to improve their communication with an audience; that is they were directed to think about readers who might disagree with them and to find a way to counter their opinions. Students who were presented with this goal to improve their writing wrote essays that were more persuasive than essays in the control group (Midgette et al., 2008).

1.3. Knowledge of Text Structure or Form

General Curriculum Outcome One states that students should “make deliberate language choices based on form” therefore aligning with research (Crowhurst, 1991; Fitzgerald & Teasley, 1986; and Scardamalia & Paris, 1985), that has shown that students who develop knowledge of text structure and form improve the quality of their writing. Lessons in text structure involve explicitly teaching students the structure of various types of text, such as narratives or persuasive essays. Students can use their knowledge of various writing patterns and forms to help them choose the overall structure of text, to inform their ideas and information included in text, and help them decide the appropriate language and vocabulary to use.

In a study completed by Crowhurst (1991) students were first presented with an outline of the structure of a persuasive text and then asked to find, underline, and label the structural elements taught in a persuasive text. Students were then provided with daily persuasive topics in which they brainstormed pros and cons and then practiced writing using the persuasive writing structure. Compared to the control group (students who only read novels and wrote book reports), students who received instruction in text structure wrote more organized papers, created better quality conclusions, and included greater elaboration of their reasons.

Recommendations to Support Students in Grades Four to Six Working Toward General Curriculum Outcome One:

1. An important element in instruction is addressing obstacles that interfere with skills development such as the lack of motivation for writing. Therefore, providing students who are not motivated with the opportunity to write for real audiences or for a purpose that is particularly meaningful to individual students will be helpful. Giving students the opportunity to choose or develop their own writing assignments or topics can improve their motivation for and commitment to the task (Graham & Harris, 2004; Troia, 2002).

2. Giving students specific goals or expectations for their writing assignments rather than providing a broad assignment, such as to write a narrative story and setting subgoals for each student will assist in the development of the writing process. (Ferretti, Lewis, & Andrews-Weckerly, 2009; Graham and Perin, 2007). For example, students could be asked to: describe the characters and setting; have an exciting opening paragraph; and have a clear problem and solution in their story. In addition to specifying what information should be included in a text, students could be asked to make specific types of revisions such as being asked to add five adjectives or to correct five spelling errors.
3. Explicitly teaching students the structure or form of various texts including narrative and persuasive texts also is important. Students can then read various texts and be asked to find, underline, and label the structural elements taught. Students should then be guided in applying these structural elements to their own writing (Crowhurst, 1991; Fitzgerald & Teasley, 1986; Scardamalia & Paris, 1985).

Table 4

General Curriculum Outcome Two for Grades 4-6

<p>General Curriculum Outcome Two <i>Students will be expected to create texts collaboratively and independently, using a wide variety of forms for a range of audiences and purposes (Department of Education and Culture, 1998 p. 16).</i></p>
<p>Grade Four SCOs (p. 50)</p> <ol style="list-style-type: none"> 1. <i>Create written and media texts, collaboratively and independently, in different modes (expressive, transactional, and poetic) and in a variety of forms</i> <ul style="list-style-type: none"> - <i>recognize that particular forms require the use of specific features, structures, and patterns</i> 2. <i>Demonstrate an awareness of purpose and audience</i> 3. <i>Invite responses to early drafts of their writing/media productions</i> <ul style="list-style-type: none"> - <i>use audience reaction to help shape subsequent drafts</i>
<p>Grade Five SCOs (p. 70)</p> <ol style="list-style-type: none"> 1. <i>Create written and media texts, collaboratively and independently, in different modes (expressive, transactional, and poetic) and in an increasing variety of forms</i> <ul style="list-style-type: none"> - <i>use specific features, structures, and patterns of various text forms to create written and media texts</i> 2. <i>Address the demands of a variety of purposes and audiences</i> <ul style="list-style-type: none"> - <i>make choices of form, style, and content for specific audiences and purposes</i> 3. <i>Invite responses to early drafts of their writing/media productions</i> <ul style="list-style-type: none"> - <i>use audience reaction to help shape subsequent drafts</i> - <i>reflect on their final drafts from a reader's/viewer's/ listener's point of view</i>
<p>Grade Six SCOs (p. 90)</p> <ol style="list-style-type: none"> 1. <i>Create written and media texts using an increasing variety of forms</i> <ul style="list-style-type: none"> - <i>demonstrating understanding that particular forms require the use of specific features, structures, and patterns</i> 2. <i>Address the demands of an increasing variety of purposes and audiences</i> <ul style="list-style-type: none"> - <i>make informed choices of form, style, and content for specific audiences and purposes</i> 3. <i>Invite responses to early drafts of their writing/media productions</i> <ul style="list-style-type: none"> - <i>use audience reaction to help shape subsequent drafts</i> - <i>reflect on their final drafts from a reader's/viewer's/listener's point of view</i>

General Curriculum Outcome Two

2.1. Collaborative Writing

The second curriculum outcome can be linked to the research that shows students who work collaboratively can improve their quality of writing (Graham et al., 2008; Graham & Perin, 2007). Collaborative or peer support writing involves instructional arrangements where students help each other in one or more aspects of their writing. It has been shown that when students work together to plan, draft, revise and edit their writing, their compositions are improved (Graham, Olinghouse, & Harris, 2008). Compared to students who write independently, students who write collaboratively show better generalization of writing strategies in later tasks (Graham et al., 2008; Graham & Perin, 2007).

In a study by Boscolo and Ascorti (2004) students who helped one another revise their text performed better than students who simply had their work corrected by their teacher without the opportunity for peer collaboration. Similarly, when asked to provide their peers with feedback on their writing, students wrote better quality compositions compared to when working independently (Olson, 1990).

2.2. Text Form and Audience

Like General Curriculum Outcome One General Curriculum Outcome Two states that students should learn various forms of writing (Crowhurst, 1991; Fitzgerald & Teasley, 1986; Scardamalia & Paris, 1985), and should learn to consider the purpose and the audience (Midgette, Harris, & MacArthur, 2008). Curriculum outcome two also indicates that students should develop metacognitive skills, when writing for various purposes and audiences, as they progress from grade four to grade six. In grade four students are only expected to be aware that there are various forms of writing, but by grade six students are expected to be able to select

appropriate forms and styles of writing, depending on their purpose and audience. This progression from awareness to selection of form and style indicates that students are expected to write with greater independence or less guidance from the teacher and to use metacognitive skills such as planning. This progression also indicates that teachers should gradually reduce the level of support they provide from grades four to six and should expect students to work with greater independence.

Recommendations to Support Students in Grades Four to Six Working Toward General Curriculum Outcome Two:

1. Students should be encouraged and enabled to work together to plan, draft, revise and edit their writing. Rather than work independently, have students read their peers' writing and provide feedback, with the goal to improve upon their work (Boscolo & Ascorti, 2004 & Olson, 1990).
2. Explicitly teaching students the structure or form of various texts including narrative and persuasive texts coupled with having students read various texts and asking them to find, underline, and label the structural elements taught improves the writing act (Crowhurst, 1991). Students should then be guided in applying these structural elements to their own writing.
3. Awareness of audience is an essential skill for good writing. When students struggle to consider the questions, attitudes, and perspectives of those who read their persuasive writing, direct them to think about readers who might disagree with their viewpoint and to find a way to counter the readers' opinions (Midgette, Harris, & MacArthur, 2008). Also, students should be directed to write clearly, in sequence and to provide enough detail that readers find their compositions appealing, easy to follow along, and engaging.

Table 5

General Curriculum Outcome Three for Grades 4-6

<p>General Curriculum Outcome Three <i>Students will be expected to use a range of strategies to develop effective writing and other ways of representing and to enhance their clarity, precision, and effectiveness</i> (Department of Education and Culture, 1998, p. 16).</p>
<p>Grade Four SCOs (p. 52)</p> <ol style="list-style-type: none"> 1. <i>Develop a range of prewriting, drafting, revising, editing, proofreading, and presentation strategies.</i> 2. <i>Demonstrate an understanding of many conventions of written language in final products</i> <ul style="list-style-type: none"> - <i>correctly spell many familiar and commonly used words</i> - <i>demonstrate an increasing understanding of punctuation, capitalization, and paragraphing</i> - <i>demonstrate a growing awareness of appropriate syntax</i> - <i>use references while editing (e.g. dictionaries, classroom charts, electronic spell checkers, checklists)</i> 3. <i>Use technology with increasing proficiency in writing and other forms of representing</i> 4. <i>Demonstrate a commitment to shaping pieces of writing and other representations through stages of development</i> 5. <i>Select, organize, and combine relevant information from two or more sources to construct and communicate meaning</i>
<p>Grade Five SCOs (p.72)</p> <ol style="list-style-type: none"> 1. <i>Use a range of prewriting, drafting, revising, editing, proofreading, and presentation strategies</i> 2. <i>Demonstrate an increasing understanding of the conventions of written language in final products</i> <ul style="list-style-type: none"> - <i>use basic spelling rules and show an understanding of irregularities</i> - <i>use appropriate syntax in final products</i> - <i>use references while editing (e.g., dictionaries, classroom charts, electronic spell checkers, checklists, thesauri, other writers)</i> 3. <i>Use technology with increasing proficiency to create, revise, edit, and publish texts</i> 4. <i>Demonstrate commitment to shaping and reshaping pieces of writing and other representation through stages of development and refinement</i> 5. <i>Select, organize, and combine relevant information, from three or more sources to construct and communicate meaning</i>
<p>Grade Six SCOs (p.92)</p> <ol style="list-style-type: none"> 1. <i>Select from a range of prewriting, drafting, revising, editing, proofreading, and presentation strategies to develop effective pieces of writing and other representations</i> 2. <i>Use the conventions of written language in final products</i> 3. <i>Use technology with increasing proficiency to create, revise, edit, and publish texts</i> 4. <i>Demonstrate commitment to shaping pieces of writing and other representations</i> <ul style="list-style-type: none"> - <i>Select, organize, and combine relevant information, from three to five sources</i>

General Curriculum Outcome Three

General Curriculum Outcome Three points to the importance of teaching the writing process as well as spelling and conventions (i.e., capitals and punctuation). McDonnell and others (2000) emphasize the need for students to have basic skills in writing so that difficulties in spelling, grammar, and transcribing do not interfere with higher order writing processes (McDonnell et al., 2000).

3.1 Grammar

In a meta-analysis of writing instruction (Graham & Perin, 2007) teaching grammar was shown to have no statistically significant effect on writing quality. The difficulty with interpreting these results, however, is that grammar instruction is often the control condition in studies rather than the experimental condition. Since additional and more focused research is needed in this area, no recommendations for grammar instruction are provided in this thesis.

3.2. Sentence Composition

Students are expected to “use appropriate syntax”. Research has shown that children can benefit from instruction in creating sentences (Graham & Harris, 2002; Saddler &Graham, 2005). Sentence generation is one of the major processes skilled writers use as they compose. To write sentences writers must deal with a number of demands including word selection, grammar, clarity, and rhythm (Saddler & Graham, 2005). Less skilled writers typically construct shorter and simpler sentences that contain errors in grammar and vocabulary compared to their more proficient peers (Newcomer & Barenbaum, 1991). Sentence combining is one instructional method shown to improve students’ sentence construction skills, as well as their skills in revising, and overall quality of writing (Graham & Harris, 2002). Instruction in sentence combining helps students craft more syntactically complex sentences and sentences that match more closely the message they want to convey. When Saddler and Graham (2005) linked

sentence combining instruction with another instructional method; peer-assisted learning strategies (PALS), a greater positive effect was achieved (i.e., students made better revisions and improved the quality of their sentences). The PALS approach was designed by Fuchs and Fuchs (1997) and involves stronger and weaker students working together in pairs to practice a targeted skill. When the sentence-combining and PALS approach are combined students work together, after modeling by the teacher, to create compound sentences, paragraphs with a series of related sentences, and a story which is later revised (Saddler & Graham, 2005).

3.3. *Spelling*

General Curriculum Outcome Three specifies that students will “correctly spell many familiar and commonly used words” and “use basic spelling rules and show an understanding of irregularities”. Students can develop skills in spelling both through reading and writing. Spelling requires matching the sounds of language with the appropriate letters, and remembering and recording letter patterns, in order to share a message (Wanzek, Vaughn, Wexler, Swanson, Edmonds, & Kim, 2006). To write independently, students must first think about what they want to write and then choose the words that can be used to express their ideas appropriately. Selecting words to write correctly and meaningfully requires students to have morphological (i.e. how words are constructed, or patterns in words), syntactic (i.e. how words go together to form sentences), and semantic (i.e. meaning of words) knowledge (McMurray, 2006). Words are recalled using lexical (visual), phonological (auditory) and motor processes (McMurray, 2006). Spelling is more complex than reading as it requires an exact sequence of letters, often without contextual clues, and requires a greater number of sound-to-letter decisions (Fulk & Stormont-Spurgin, 1995). Given the complexity of spelling, one can understand why spelling difficulties persist in the general student population and why they are so common among students with learning disabilities.

Spelling problems can interfere with composing in several ways. First, having to focus on spelling interferes with higher order writing processes, such as planning and revising which can result in poorer writing quality and fluency overall (Graham, 1999). The more automatic spelling skills become, the more resources in working memory are available for higher level composition skills and the greater the likelihood that writing will improve. Second, spelling errors also interfere with the message the writer is trying to convey and can cause teachers to score compositions with many spelling errors lower than identical compositions without the errors (Viel-Ruma, Houchins, & Fredrick, 2007). Third, poor spellers often fail to produce writing that contains the sophisticated, multi-syllabic vocabulary used by their same-aged peers (MacArthur, 1996). Fourth, difficulties with spelling can lead to avoidance of the writing activity because students believe that they cannot write. Avoidance and negative beliefs may then further inhibit writing development and may interfere with their performance in other academic areas (Graham, 1999). Given the detrimental effects poor spelling can have on written expression, it is clear that learning to spell correctly should be a key component to students' academic programs.

Traditional spelling instruction has persisted in school despite research showing its ineffectiveness. Traditional spelling practices include assigning the same weekly spelling lists to all students and administering weekly tests, writing words multiple times, and having students write sentences using spelling words. Templeton and Morris (1999) have shown that traditional practices often result in students memorizing the words and receiving satisfactory grades on these tests, only to later spell the same and similar words incorrectly because they failed to learn the underlying spelling patterns. Another problem with this method of spelling instruction is that all students are assigned the same spelling lists, which fails to diversify instruction to suit individual needs and interests.

According to Graham and Harris (2002), effective spelling instruction includes four components. First, students should receive instruction in how to spell words they use frequently in writing. Second, they should learn how to generate reasonable spellings for unknown words through instruction in phonemic awareness, grapheme-phoneme correspondences, and common spelling patterns and rules. Third, students should learn how to check and correct any spelling errors that occur using a dictionary or spell checker or by asking for support from others. Finally, students need to develop a desire or motivation to spell correctly which can be fostered by teachers when they model correct spelling and correcting, and by providing opportunities for students to display their work.

Troia and Graham (2003) advise similar procedures for teaching spelling. Students should have a minimum of 60-75 minutes each week devoted to spelling instruction. Words studied should come from a variety of sources including student's reading materials, their own writing, self-selected words, and words used frequently (i.e., high frequency words). Students should be taught sound-letter associations (i.e., phoneme-grapheme), common spelling patterns, and helpful spelling rules. Students benefit most from immediate feedback; that is after writing a test or word list, students should correct their misspelling immediately. Students should also work together to learn new spelling words. To promote retention, previously taught words should be reviewed periodically. Teachers should also review their students' writing looking for correct spelling of studied words and provide feedback and reinforcement. Students should receive explicit instruction in using dictionaries, spell checkers and other resources to determine the spelling of unknown words and then be encouraged to use them. Personalized dictionaries of commonly used and misspelled words should be kept by students. Teachers can also post difficult words or words that deviate from regular spelling patterns on a wall chart or word wall.

For elementary grade students whose difficulties with phonemic awareness results in poor spelling, word boxes have been shown to be effective (Joseph, Chafouleas, & Skinner, 2005). In word box spelling activities, students write letters in the boxes of a drawn rectangle as they pronounce each sound of a word in order. These word boxes provide a visual structure for analyzing the sounds of spoken words and allow for immediate corrective feedback. As the teacher or student articulates each sound in a word, students first move counters into the boxes, then move letters into the boxes, and finally write letters in the boxes. This spelling strategy is typically used in a one-to-one or small group setting, but has also been validated in a whole-class format. Word box activities can be conducted by the teacher or completed in small peer groups.

Spelling Wizards is an intervention that has resulted in substantial gains in spelling accuracy in late-elementary, general education classrooms which included students with severe disabilities (McDonnell, Thorson, Allen & Mathot-Buckner, 2000). It is a game-like intervention, whereby students work together in mixed-ability triads. Each student is given an individualized word list that matches individual need, and in groups of three students take turns being the “word wizard” who writes and orally spells words, “word conjurer” who says the word, and “word keeper” who checks the word wizard’s spelling.

The Add-a-Word for Spelling Success intervention has been shown to improve spelling for poor spellers as well as normally progressing students and students with diagnosed language-based disabilities in elementary and middle school grades. The Add-a-Word procedure has five steps for daily spelling practice. Each child uses an individual spelling list. Students first study a word by softly pronouncing it and looking at it closely. They then copy the word onto the spelling practice sheet and check that it is correct. Next, the student covers the word and writes it from memory. The student then uncovers the word and compares his second spelling to his or her first spelling. At this point, if a word is spelled incorrectly, it is erased and the procedure is

repeated. Once each word on the spelling list has been studied in this way, students work in pairs to administer practice tests. Words that are spelled correctly for two consecutive days are considered to have been learned and are replaced on the spelling list by a new word. Dropped words are tested periodically to ensure they have been retained.

A similar spelling strategy developed by Fulk (1996) uses five steps (say the word, write and say the word, check spelling, trace and say the word, and write the word from memory) has shown large improvements in spelling compared to traditional practices (i.e., all students receive the same list, practice independently at home, and are tested several days later).

Similar to the Add-a-Word strategy is the error self-correction procedure (Alber & Walshe, 2004; Grskovic & Belifiore, 1996) in which students compare a misspelled word to a correctly spelled model and then copy the word correctly if a mistake had been made. When using the self-correction procedure, middle-school students have learned more words per week on average, improved their scores on spelling tests, and maintained these gains three weeks after the intervention compared to control groups. Morton, Heward and Alber (1998) found that when studying word lists, immediate error correction (i.e., correction after each word) results in better performance than delayed error correction (i.e., correction after all ten words from a list are written). Error correction can be effective when completed by the individual student, teacher, or peer (Wanzek et al., 2006). Computer-assisted programs whereby the computer offers instruction and immediate spelling feedback are also effective (Wanzek et al., 2006).

To summarize, common elements of the spelling interventions described include explicit instruction, multiple practice opportunities in spelling words, and immediate feedback.

3.4. Word Processing and Technology

This outcome also introduces the expectation that students should use technology (e.g., spell checker and word processing) to improve their writing. Children who struggle with writing

skills often benefit from the use of technology, such as spell-checkers. Spelling checkers can significantly help students correct their errors (MacArthur, Graham, Haynes, & De La Pax, 1996). Spell check tools flag incorrect spelling for students and provide suggestions for alternate spellings of the intended words. Spell check programs should not however, replace the explicit teaching of spelling rules because these programs do have limitations. One significant limitation is that they often fail to detect incorrect use of homonyms and homophones. When students' words are severely misspelled, the correct spelling may not appear in the list of suggestions. Also, students need to be able to recognize the correct spelling in the list of suggestions and know when words are flagged inappropriately by the computer (e.g. proper names or slang). To overcome these limitations, some word processors include speech synthesis to pronounce the words in the list of suggestions. To be effective, students must be taught explicitly how to use the software. Students should also receive lessons in typing so as not to slow writing fluency. Instruction in typing should continue at least until students can type as fluently as children can typically handwrite (e.g. 15 words per minute) (MacArthur, 2009).

Word processors are flexible writing tools that can be used to support all aspects of the writing process including planning, drafting, revising, and publishing (MacArthur, Graham, Haynes, & De La Pax, 1996). They make it easier to extend, reorganize, and edit text without recopying thus creating text with fewer errors (MacArthur, 2008). A meta-analysis of word processing programs showed moderate to large effects on the length and quality of compositions for both low and typically achieving students (Goldberg, Russell, & Cook, 2003).

3.5. Prewriting Activities

The third outcome in writing also sets the expectation that students will progress through all stages in writing from planning to revision and publishing. Research has shown that instruction in the writing process can help students plan and organize their writing proficiently

(Graham & Perin, 2007). There are various prewriting activities shown to improve writing quality. Preplanning can include making notes, creating semantic webs, or drawing pictures prior to writing. Another effective strategy is to have students gather information from the internet about a topic, listen to information, or watch a demonstration prior to writing (Brodney, Reeves, & Kazelskis, 1999).

Norris, Reichard & Mokhtari (1997) found that students who draw before writing on a self selected topic tend to produce a greater number of words, sentences, and ideas than those who do not draw, and also found drawers' writing to be of better quality overall.

Concept maps, graphic organizers, and outlines are commonly used in writing instruction as planning tools. They are visual representations of different ideas and their relationship to one another. When instructed how to use these tools, students have been shown to produce longer and more organized writing (Brodney et al, 1999, Sturm & Rankin-Erickson, 2002).

3.6. Strategy Instruction

Self-Regulated Strategy Development (SRSD) is an instructional program for teaching planning and revising strategies for writing and self-regulatory strategies. In addition to explicitly teaching strategies for the process of writing and teaching procedures for regulating these strategies, SRSD aims to increase students' knowledge of the writing process and to help form positive attitudes about writing. SRSD involves six stages of instruction (activation of background knowledge, group discussions, modeling, memorizing, scaffolding, and independent practice). Self-Regulated Strategy Development is one of the most promising and well-researched writing interventions (Graham, McKeown, Kiuhare, & Harris, 2012). It has been shown to work effectively for typically-achieving students, low-achieving students, and for students with a variety of special needs.

De La Paz & Graham (2002) used a strategy program that instructed students to develop a plan for writing, to set goals, and to organize ideas. The program also focused on teaching students to review and revise their plan as needed, to include transition words, use interesting vocabulary, and to vary their sentence length and type. Students who participated in the De La Paz and Graham (2002) program wrote longer compositions with more mature vocabulary, compared to students who did not participate.

Writing Workshop is another strategy-based approach to teaching writing whereby teachers work with students through the process of writing. Similar to the SRSD approach, the Writing Workshop emphasizes planning and organizing ideas, drafting, editing, and publishing or sharing with others (Calkins, 2003; Graves, 1983). Students are encouraged to select topics of interest and to write for authentic audiences. The writing workshop includes teacher-led mini-lessons on basic writing skills (e.g., spelling, grammar, and sentence structure), instruction in higher level strategies (e.g. planning, effective introductions, editing) and conferences between teachers and students to provide individualized support. The Writing Workshop also emphasizes the importance of sustained daily writing and recommends that students write for a minimum of 20 minutes each day. This process writing approach has been shown to improve writing outcomes (Graham & Perin, 2007; Pritchard & Honeycutt, 2006).

3.7. Self-regulation

As stated previously, writing involves the coordination of various mental activities, including planning, translating, and revising (Glaser & Brunstein, 2007). This coordination of activities requires writers to flexibly switch their attention between different tasks. As students write they must read what they have written, make corrections in basic things like spelling and punctuation, and edit to ensure they are conveying the message they have intended. Struggling writers often struggle to monitor their work in this way. In addition to teaching composing skills,

the SRSD method also teaches students how to self-regulate (e.g., set goals, evaluate progress, and self-reflect). Several studies (e.g., Brunstein & Glaser, 2011; Harris et al., 2006; Graham et al., 2005) have investigated if instruction in self-regulation uniquely contributes to improved writing by comparing strategy instruction alone to strategy instruction and self-regulation taught together. In these studies, self regulation included teaching students: to self-monitor while they planned their stories by using a chart and reflecting critically on their quality of work; to self-assess by using a checklist to evaluate their stories; to self-monitor for revision by thinking of how they could improve their draft; and to set achievement goals which could include the grade they wanted to receive as well as goals for improving later writing. These studies show that self-regulation strategies do indeed add to the strategy instruction.

Recommendations to Support Students in Grades Four to Six Working Toward General Curriculum Outcome Three:

1. For students whose difficulties with phonemic awareness result in poor spelling, word boxes have been shown to be effective for elementary grade students (Joseph, Chafouleas, & Skinner, 2005).
2. The Spelling Wizards (McDonnell, Thorson, Allen & Mathot-Buckner, 2000) and Add-a-Word for Spelling Success programs are other programs shown to successfully improve writing.
3. Students should receive instruction in how to spell words they use frequently in writing. They should learn how to generate reasonable spellings for unknown words through instruction in phonemic awareness, grapheme-phoneme correspondences, and common spelling patterns and rules. Students should learn how to check and correct any spelling errors that occur by checking a dictionary, using a spell checker, asking for support for

others, and reading text aloud in reverse order to locate misspellings (Graham and Harris, 2002).

4. Spelling checkers can help students correct their spelling errors, flagging incorrectly spelled words and providing alternate spellings. Spell check programs should not however, replace the explicit teaching of spelling rules because these programs do have limitations. To be effective, students must be taught explicitly how to use the software. Students should also receive lessons in typing so as not to slow the rate of writing. Instruction in typing should continue at least until students can type as fluently as children can typically handwrite (e.g. 15 words per minute), (MacArthur, 2009).
5. Word processors are flexible writing tools that can be used to support all aspects of the writing process including planning, drafting, revising, and publishing. They make it easier to extend, reorganize, and edit text without recopying and they provide the ability to create attractive publications with fewer errors (MacArthur, 2008).
6. There are various prewriting activities shown to improve writing quality. Preplanning can include making notes, creating semantic webs, or drawing pictures. Another effective strategy is to have students gather information from the internet about a topic, listen to information, or watch a demonstration prior to writing (Brodney, Reeves, & Kazelskis, 1999).
7. Instructing students how to use concept maps, graphic organizers, and outlines to plan their compositions has proven valuable. Students who have been shown how to use these tools produce longer and more organized writing (Brodney et al, 1999, Sturm & Rankin-Erickson, 2002).
8. When students struggle to monitor and evaluate their own writing, have students use a checklist to evaluate their stories (Brunstein & Glaser, 2011; Harris et al., 2006; Graham

et al, 2005). These checklists can first be developed and taught by the teacher who will set the expectations for individual writing assignments, but gradually students should be taught to create their own checklists in order to develop independent self-monitoring and revising skills.

9. Self-Regulated Strategy Instruction (SRSD) can increase students' knowledge about the writing process and help them form positive attitudes about writing and their writing capabilities (Graham, McKeown, Kiuhare, & Harris, 2012). SRSD includes six instructional strategies including developing background knowledge, describing strategies and their benefits, teacher modeling, memorizing strategies, guided instruction, and independent use of strategies.

Given the above review of published literature, it is clear that there are a variety of activities and interventions that can be implemented to improve students' writing. It is evident that instruction in both writing skills and the writing process can improve students' overall quality of writing. Also, many of the Atlantic Canada General and Specific Curriculum Outcomes in writing align with evidence-based interventions. By linking these curriculum outcomes directly to best practices, Atlantic Canadian teachers might be able to support their students with greater ease.

PHASE 2: Analysis of Teaching in Action Grades 4-6 Document

Although the curriculum document does not specify how to teach writing, the Teaching in Action Grades 4-6 document is a supplement to the curriculum document that describes how teachers should teach writing (Nova Scotia Department of Education, 2007). It defines modes (e.g., expressive, transactional) and types (e.g., narrative, persuasive) of writing and also outlines the components of writing instruction that teachers can use in their practice. The Teaching in Action document (2007) aligns closely with learning theories (i.e. Learning Oriented Teaching

Model, Gradual Release of Responsibility) and evidence-based writing instruction practices that emphasize explicit instruction and modelling for effective teaching. It explains that writing instruction should include four instructional components; modelled, shared, guided, and independent writing (p. 61-67).

Modelled writing begins with explicit modelling by the teacher in which teachers use think alouds to demonstrate the writing process. According to the document (Nova Scotia Department of Education, 2007) teachers should show students well-written pieces and explain what makes them strong and demonstrate how weak compositions can be improved (p. 61). Modelled writing is like the full-external guidance stage in the LOT model, as it is the component of instruction where the highest level of support is given to students.

The next component of writing in the Teaching in Action document (Nova Scotia Department of Education, 2007) is shared writing. During shared writing teachers are expected to compose a common text with students. In this stage, teachers are often doing most of the transcribing while students and teachers share ideas, plan, and discuss the writing piece (Nova Scotia Department of Education, 2007, p. 63).

Based on what is known about cognition and learning, this teacher modelling and demonstrating of skills is particularly important for novice and intermediate learners (Archer & Hughes, 2011). Scaffolding and guided instruction is important because they lack knowledge and experience with writing. Without knowledge and experience, young writers cannot draw upon long-term memory of writing skills and strategies and therefore require support and structure in the form of scaffolding and guided instruction (Archer & Hughes, 2011).

During guided writing a small group of students with common needs are brought together to practice a specific skill or strategy (Nova Scotia Department of Education, 2007, p. 64). It is considered a step between modelled and independent writing. Guided writing and shared writing

parallel the second stage within the LOT model, shared guidance where students receive support from their teacher in applying strategies and skills learned during the full-external guidance stage.

Teacher-led small group instruction has been found to be the most effective approach to teaching skills (Archer & Hughes, 2011). Teaching in groups is likely more effective than whole class instruction because it allows for closer monitoring, more immediate feedback, and frequent responding from the teacher (Elbaum, Vaughn, Hughes, Moody, & Schumm, 2000). Also by grouping students based on academic needs, teachers are able to match their instruction to students' instructional level and can increase students' opportunity for student-teacher interaction and questioning.

The final component of writing instruction in the Teaching in Action document (Nova Scotia Department of Education, 2007) is independent writing. Independent writing is a structured writing time when students practice writing on their own. It is an opportunity for students to apply what they have learned from teacher modelling and from shared and guided practice (p.66). Independent writing matches the LOT models' final stage of instruction, full-external guidance where students independently choose and apply the writing strategies needed to fulfill a writing goal.

Of course, opportunity for practice is an essential part of learning. Independent practice helps students store strategies and skills in memory, therefore increasing automaticity and reducing frustration (Swanson & Saxe-Lee, 2000). During initial practice opportunities student performance can be closely monitored so that correction and feedback can be provided so that students do not spend time practicing errors. By increasing time engaged in and practicing a task, students' performance improves (Archer & Hughes, 2011).

The Teaching in Action document (Nova Scotia Department of Education, 2007) is a resource for teachers to use when teaching written expression, that refers to best teaching practices identified in research. This document describes a teaching model whereby the level of support is reduced as students learn and develop their skills. When teachers implement the components of writing (i.e., modeled, shared, guided, and independent), as described in the document, they are indeed implementing evidence-based teaching practices.

Discussion, Limitations and Recommendations for Practice and Further Research

Given the above analysis of the Atlantic Canada Curriculum Outcomes in writing (Department of Education and Culture, 1999), it is evident that many of the curriculum outcomes can be aligned with evidence-based practice, if only loosely. The difficulty however in connecting the outcomes to research lies in how vague and imprecise the curriculum outcomes are. In particular, the curriculum is not structured in a way that makes it clear what should be taught in each grade level. Outcomes are non-specific, so there can be considerable overlap in the lessons and skills presented by teachers across grade levels. There is also the potential for important skills or modes and types of writing to be overlooked, if teachers do not communicate with one another what they have covered from year to year.

While teachers should be granted some autonomy and authority in their daily lesson plans, this flexibility and the nonspecific outcomes might, in part, explain the variability in teacher instruction and in the success that students experience (Kaufman, et al., 2002). According to Kaufman et al., (2002) and the LOT model (Cate et al., 2004) a complete curriculum specifies content and skills for teachers to cover, presents a timeline for when these skills should be covered, and offers effective instructional materials and strategies.

With non-specific outcomes, teachers are left developing their own programs in writing and setting their own expectations for student learning. For example, General Curriculum Outcome One names various learning strategies and skills that students should learn including setting goals, considering audience, and knowledge of text form. The development of these learning strategies have indeed been shown to improve students' quality of writing (Ferretti, Lewis, & Andrews-Weckerly, 2009; Graham and Perin, 2007), but how these strategies are taught depend largely on how individual teachers interpret the outcomes and choose to teach them. For example, Ferretti et al., (2009) found that elaborated and specific goals for writing produce better writing than broad goals. Without the specification in the curriculum outcomes, to have students make specific and detailed goals for writing, teachers can implement the less effective practice of creating broad goals for writing.

To make curriculum more coherent, it is recommended that curriculum outcomes in writing become more specific so that teachers know what to teach in each grade level. For example, the spelling patterns (e.g., consonant blends, affixes) to be taught and assessed could be specified by grade. Also, outcomes could clarify which forms or text structures are expected to be taught to students each year. Clarifying what is expected in each grade level may result in more consistent teaching within grade levels in all schools. It is also important to note that, having specific outcomes does not eliminate the ability to differentiate instruction based on students' needs. Rather, when individual students are struggling to achieve their grade level expectations, teachers can refer to the outcomes from earlier grades to guide instruction.

A challenge in developing a writing curriculum that states specifically what is expected at each grade level, is that reading, writing, speaking and listening are closely connected. It is difficult to isolate writing instruction, as students who struggle with reading often struggle with writing. Nonetheless, the absence of clearly-articulated curriculum outcomes may make lesson

planning challenging, repetitive, or incoherent for teachers, which in the end can result in less success achieved by students (Kaufman, et al., 2002).

In addition to making curriculum outcomes more specific, it is also recommended that curriculum and evidence-based practices be clearly connected. In recent years, organizations and researchers have undertaken the task of reviewing the research on effective instruction in writing, however, none have been found to link the research to curriculum outcomes. While the number of instructional strategies designated as evidence-based has increased substantially, there is also evidence that the frequency with which these interventions are implemented is still low (Forman & Burke, 2008). Translating evidence-based practices into actual use in schools has been an area of limited success (Troia & Graham, 2003; Vaughn, Klingner, & Hughes, 2000). This is, in part, a result of teacher training, as trainees are not consistently presented with research in evidence-based programs (Troia, 2008). The presentation of current research and training in the implementation of evidence-based practices should be a focus in teacher training programs. Practicing teachers should also receive on-going training to ensure they understand the curriculum within the grade they teach. They should also engage in professional development that presents research-based interventions so that teachers can implement them successfully and feel confident in their ability to meet student needs.

One benefit of this thesis, is that more teachers may see evidence-based practice as useful and understand that it is a reliable approach to instruction. Teachers might also be encouraged by seeing how closely the Teaching in Action Grades Four to Six document (Nova Scotia Department of Education, 2007), aligns with effective teaching practices represented in the LOT (Cate, Snell, Mann, & Vermunt, 2004) and Gradual Release of Responsibility models (Pearson & Gallagher, 1983; Fisher & Frey, 2008).

Increasing the use of evidence-based best practices, in our schools will require teachers and other members of the school team (e.g., administrators, school psychologists) to increase their awareness and skills, as well as establish a plan to maintain the sustained use and fidelity of these practices (Malouf & Schiller, 1995). Malouf and Schiller (1995) suggest three factors that need to be considered in the application of research-based practices: (1) increasing teacher knowledge; (2) understanding teachers' attitudes toward research and the ways it affects their teaching; and (3) understanding how local (i.e. provincial) demands and expectations affect implementation. By summarizing research-based practices and connecting them to Atlantic Canadian writing curriculum this thesis could help address factor one by expanding teachers' repertoire of teaching strategies.

The current study also used evidence-based writing strategies, and proposed recommendations for teachers to help students in grades four through six achieve greater success in writing. While this thesis attempted to transcend a literature review by integrating research, formulating recommendations, and explaining effective teaching practices, it is important to acknowledge that the recommendations are not sufficiently comprehensive to develop a complete writing program or curriculum. Many aspects of writing instruction have not been researched. There is a need for further research on and dissemination of writing interventions that work, so that teachers have access to more interventions and teaching methods that can support students.

An area for future research should be to examine instructional strategies in writing with input from teachers. Access to empirical research and good recommendations will not in themselves lead to improved teaching practice. Treatment fidelity, commitment, and appreciation for the program also are required. Given that research has suggested that educators do not always use evidence-based practices, it would be useful to investigate teachers' thoughts on the value

and usefulness of these practices. One of the factors that Malouf and Schiller (1995) suggested as being important in the application of research-based practices was to obtain an understanding of teachers' attitudes toward research and its implications. The current thesis did not address this factor, so it should be considered in future research.

In an attempt to increase teachers' understanding and knowledge of evidence best practices and effective instruction in writing, this thesis can be shared with current students in the Bachelor of Education, Masters of Education, and School Psychology programs within Nova Scotia. From reading this thesis, aspiring and practicing teachers may better understand the curriculum outcomes that are linked to research and might be encouraged to adopt more evidence-based practices in their classroom. This thesis can benefit Nova Scotia teachers as it can serve as a clear and simple reference that links empirically supported teaching practices to curriculum outcomes.

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