

**STRATEGIC TEACHING IN ESL WRITING:
EFFECTS OF SELF-REGULATORY INSTRUCTION
ON WRITING PERFORMANCE AND SELF-EFFICACY BELIEFS**

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ABSTRACT

This study examined the effectiveness of an instructional approach, strategy plus self-regulatory instruction, that was designed to promote writing proficiency and self-efficacy perception. A randomized pre-test-post-test intervention-comparison investigation was applied to 40 students attending a local high school in central China. I established a self-regulatory routine and combined this routine with instruction in writing strategies for the intervention group. No such self-regulatory routine was taught to strategy-only students. Results indicated that students who received the self-regulatory intervention wrote qualitatively better essays and reported a higher level of writing self-regulatory efficacy than their comparison counterparts. Students who received self-regulatory intervention did not display any comparative advantages in composing longer stories nor did develop they higher levels of efficacy in self-regulated learning and academic efficacy. Results are discussed as they relate to previous research, limitations of the present study are identified, and areas in need of future research are proposed.

Keywords: self-regulated learning; metacognition; self-regulatory instruction; story writing; self-efficacy.

DEDICATION

献给最爱的妈妈和爸爸

你们总是在我身边

谢谢你们对我无私的付出

This thesis is dedicated to my beloved mother,

and my father who sees me from heaven.

I thank you and love you.

This research could not have been done without you.

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1: INTRODUCTION

Writing is a complex and demanding task, and successful writing requires strategic knowledge (O'Malley *et al.*, 1985; Oxford, 1990) as well as active and deliberate self-regulation of the writing process (Englert & Raphael, 1988; Ferrari, Bouffard, & Rainville, 1998; Flower & Hayes, 1980; Graham & Harris, 1992; Hayes & Flower, 1986). According to the expert model of writing proposed by Flower and Hayes (1980; Hayes & Flower, 1986), the writing process involves three components: planning and organizing ideas, translating ideas into text, and revising both ideas and the form of writing. Self-regulated learning refers to the self-directive processes and self-beliefs that enable students to skillfully transform their mental abilities into academic products, such as a composition.

Research suggests that the development of self-regulatory mechanisms can be fostered by and improved through instruction (Harris, Graham, Mason, & Saddler, 2002). One empirically validated method for teaching strategies is the Self-regulated Strategy Development (SRSD) approach (Glaser & Brunstein, 2007; Harris & Graham, 2006). The primary goals of SRSD related to writing are to help students: (a) master the expert model of writing; (b) develop self-regulated writing strategies; and (c) form positive attitudes about writing and about themselves as writers. Of particular importance to this investigation was an experiment conducted by Glaser and Brunstein (2007). Their study specifically examined whether SRSD instruction that emphasized

task-specific strategies and self-regulatory procedures could provide a meaningful contribution to students' acquisition of composition skills in fourth grade. It generated affirmative results. Nevertheless, Glaser and Brunstein (2007) argued that one issue still remained, which self-regulation procedures and in which combinations were most effective in promoting students' learning at different stages of developing skilled writing. Inspired by Glaser and Brunstein's (2007) study, the present investigation replicated the writing strategies for story writing (BBE format, 7-W questions, and style elements; described later) and extended self-regulatory instruction to a modified process.

In previous investigations, self-regulatory instruction had a strong impact on improving the writing performance of upper-elementary and middle school students with effect sizes typically exceeding .80 (Graham & Harris, 2003) in four areas: quality, writing knowledge, approach to writing, and self-efficacy (Bandura & Schunk, 1981; Graham & Harris, 2003; Saddler, 2006). Consistent with the literature, the present study used two criteria to evaluate the effectiveness of the self-regulatory instruction: writing proficiency and personal efficacy. Importantly, most of the research completed to date in this area has involved students with writing problems or learning difficulties. For instance, approximately 70% of the studies reviewed by Zimmerman and Risemberg (1997) and all studies reviewed by Saddler (2006) have this characteristic. Although such research is useful and needs to be continued, theory building and instructional design would benefit from the inclusion of a broader and more representative range of participants. Further, data on the effects of self-regulatory instruction on self-efficacy

have been mixed (cf. Graham *et al.*, 1991; Page-Voth & Graham, 1999). Researchers have repeatedly called for additional inquiries into how writers with average ability develop self-regulatory behaviours, what the role of instruction plays in this development, and what are the linkages between self-regulation and motivation to write (Graham *et al.*, 1991; Graham & Harris, 1994, 2000; Zimmerman & Risemberg, 1997).

In addition, although research on composing processes has identified similarities in the behaviours and strategies of L1 and L2 writers, there is a paucity of experimental research investigating the effectiveness of self-regulatory instruction in facilitating second language learning. It is generally recognized that many ESL (English as Second Language) students have difficulties with academic writing (Mohan & Lo, 1985). Although Kaplan (1972; cf. Mohan & Lo, 1985) claimed that difficulties in academic writing by ESL students are due to cross-cultural differences in rhetoric, some research suggests that interference from the first language is not an important factor at the rhetorical level of second language composition. Rather, what is more critical is students' general level of development in composition (Mohan & Lo, 1985). Both native and ESL skilled writers adopt the same recursive composition process that involves planning, translating, and reviewing (Glaser & Brunstein, 2007; Graham & Harris, 2000; Silva, 1993; Zamel, 1983). To better understand how developing writers could be assisted and motivated to improve their proficiency in academic writing, this study extends sophisticated approaches of effective writing to a broader experimental sample.

In summary the literature suggests that, when applied to help students develop better approaches to writing, self-regulatory interventions can be associated with gains in writing proficiency and perceptions of self-efficacy. The present study used self-regulatory instruction in story writing and expanded upon previous recommendations by exploring some additional avenues for investigation.

1.1 The Present Study

The present study used a pretest-posttest experiment to assess an instructional intervention of writing strategies and self-regulatory procedures in an ESL setting. The purpose of the study was to investigate whether the deliberately designed instructional intervention could effectively contribute to students' acquisition of composition skills, and improve their writing competence and personal efficacy beliefs in their second language. The intervention, strategy training plus self-regulatory instruction, was based on theories regarding the development of competence in a subject-matter domain (Alexander *et al.*, 1998; Pintrich & Schunk, 1996). It was delivered in a manner to optimize self-regulated learning, that is, students in this group were concurrently instructed in writing strategies and self-regulatory procedures for carrying out target strategies and to better understand their task. In addition, instructional procedures for fostering personal efficacy were embedded within the intervention. To facilitate cognitive modelling, instruction was delivered through a series of group discussions and independent practice sessions to help students effectively acquire target strategies (Graham & Harris, 2003). Simply put, the foci of the self-regulatory procedures were on

goal setting, application of volitional strategies, acquisition of corresponding skills, and motivational elements (Winne, 2005).

Writing instruction for students in the comparison condition involved the same writing strategies as in the intervention condition. As well, students were expected to plan, draft, and revise their work. Writing instruction was organized mainly according to the instructor's judgments about what students needed to work on next. Importantly, explicit self-regulatory procedures were not embedded in the instruction.

This study addressed two critical questions:

1. Did students who received the self-regulatory intervention produce compositions that differed in writing quality and length from those produced by students in the comparison condition?
2. Did the instructional conditions differentially affect students' self-efficacy beliefs?

I anticipated that self-regulatory instruction coupled with writing strategies would have a stronger impact on improving learners' writing performance and efficacy beliefs than the comparison condition that learned writing strategies only. More specifically, I hypothesized that the self-regulatory instruction provided to students in the intervention group would result in longer as well as qualitatively better essays compared to those written by students in the comparison condition. I also predicted that self-regulatory procedures would more effectively enhance students' efficacy in writing, self-regulated learning, and academic motivation. I predicted that the self-

regulatory intervention would enhance students' self-efficacy beliefs in a broad academic domain based on studies suggesting that students' use of domain-specific learning strategies reflects a common self-regulation factor (Zimmerman & Martinez-Pons, 1990), and that the impact of self-regulatory instruction could extend beyond a single genre (Graham & Harris, 2003).

1.2 Thesis Structure

The literature that led to the formulation of the research questions in this study has mainly been influenced by theories of metacognition, self-regulation, and motivation. The relevant research in these areas is briefly reviewed in Chapter 2. Theories of writing process are discussed to identify cognitive processes that relate to writing strategies. Research on self-regulation and self-regulatory instruction is described. Following is a description of how research and theory in writing strategies and self-regulatory instruction were integrated in the design of this study, and how this application may contribute to personal efficacy beliefs.

The primary purpose of the study was to determine the effectiveness of a strategy-based self-regulatory program of writing to improve both writing competence and personal efficacy in regular ESL education. To fulfil this purpose, an experimental design with two conditions was conducted on 40 Chinese students over an academic semester. Chapter 3 describes the data collected and analysis methods used in the study.

The results are presented in Chapter 4, and discussed in Chapter 5. The application of the self-regulatory intervention resulted in statistically detectable

changes in students' writing quality and writing self-regulatory efficacy. Statistically meaningful changes in students' writing length and efficacy perceptions for self-regulated learning and academic motivation were not observed. Chapter 5 also includes recommendations for future research.

2: LITERATURE REVIEW

2.1 Metacognition and Learning

2.1.1 Role of Metacognition in Learning

Research and theory strongly suggest that effective language learners use a variety of strategies to assist them in improving language proficiency. Language learning strategies refer to a specific type of action or behaviour that improves performance in both using and learning a language (Oxford, 1990). Freeman (1999) emphasized that learning activities “are overt, conscious and intentional, and should be clearly distinguished from the fast mental processes mentioned in the cognitive literature on learning strategies”. Educational psychologists distinguish between cognitive and metacognitive strategies (cf. Victori & Lockhart, 1995). Cognitive strategies allow students to handle different tasks and learning situations effectively and with confidence. Metacognitive strategies help students develop self-regulated learning in which they learn to improve how they set goals, choose materials and resources in accordance with goals, and monitor and evaluate learning progress over time.

Metacognition is regarded as an essential component for effective learning (Sternberg, 1998). It is important to learning because metacognitive knowledge can help students to compensate for low ability and insufficient knowledge (Bruning, Schraw & Ronning, 1995). Metacognition includes management of cognitive processes

through planning, monitoring, and evaluating activities or strategies, or both (O'Malley *et al.*, 1985; Sternberg, 1998). Metacognition depends on general assumptions that students hold about themselves as learners, about factors influencing learning, and about the nature of learning.

Only recently has metacognition begun to receive attention in second language research. A generalized conclusion from the relevant literature is that the way in which learners perceive language learning may have a significant impact on their learning outcomes. Successful learners develop insightful understandings about the use of effective metacognitive strategies that may help them to plan, coordinate, evaluate, and direct their own learning as well as to monitor errors (Goh & Kwah, 1997). These accomplishments, in turn, may facilitate students seeing themselves as initiators of their own learning and relying on their efforts to gain improvements in learning.

2.1.2 Metacognition and Writing

Proficient writers are actively and metacognitively involved in their writing. Proficient writers usually engage in three mental activities: planning, translating, and reviewing (Glaser & Brunstein, 2007). In particular, they: (a) set goals and create cohesive plans; (b) organize their plans to more clearly transform knowledge when writing, whereas poor writers often simply “tell” their knowledge; (c) evaluate text with regard to writing goals and modify language they use. Writers do not necessarily proceed through these mental activities in a linear manner; rather, proficient writers spend more time looping through such procedures recursively (Glaser & Brunstein,

2007; Graham & Harris, 1992, 2000; Hayes & Flower, 1986). Hayes and Flower (1986), for instance, found that skilled writers usually develop an initial set of goals or plans to guide the writing process. As they write, translating ideas into text might lead them to thinking new ideas or to revising the draft to achieve consistency. Students continue to enrich and refine their plans while translating and modify means necessary for reaching their goals. In addition, students' knowledge of writing strategies may affect their metacognitive activities like planning a story (e.g., including a conclusion or not) (Graham, 1997; Greene & Azevedo, 2007). Proficient writers' use of strategies is supported by productive metacognitive knowledge. However, a considerable body of evidence suggests that developing writers show little metacognitive activities when composing (Glaser & Brunstein, 2007).

Proficient writers articulate writing goals, adaptively adjust strategies to overcome obstacles and achieve their goals, and consistently monitor the success of their efforts in writing; namely, they are self-regulating (Butler & Winne, 1995; Glaser & Brunstein, 2007; Harris & Graham, 2006; Zimmerman, 1989, 1994). Proficient writers often have clear goals and a sense of direction that includes planning, monitoring, evaluating, and revising as part of learning routines (Graham & Harris, 2000). However, knowledge of strategies and metacognition is usually not enough to promote learning achievement; students also need to be motivated to use these strategies as well as to regulate their cognition and effort (Pintrich, 1990). Effective writers usually hold positive self-efficacy beliefs about their capability to produce meaningful text (Bandura,

1997). A number of studies point out that self-regulation per se may increase students' motivation (e.g. Sawyer *et al.*, 1992; Zimmerman & Martinez-Pons, 1990).

My review of these studies brings out that writing is a complex process that depends, in large part, on changes that occur in students' metacognitive knowledge and motivation, both of which may be enhanced by self-regulating. Accordingly, one way to promote the learning outcomes of developing writers may be to help them learn to self-regulate their learning behaviours. Several researchers have indeed discussed the use of self-regulatory techniques in writing instruction (e.g. Graham & Harris, 1994; Zimmerman & Risemberg, 1997).

2.2 Self-regulatory Intervention

2.2.1 Self-regulated Learning

What is self-regulated learning (SRL)? SRL has emerged as an important descriptor for independent, academically effective forms of learning that combine metacognitive, motivational, and strategic factors of learning (Winne & Perry, 2000). It is a deliberate, judgmental, adaptive process (Winne, 2001). SRL theories attempt to model and explain how those metacognitive, motivational, and strategic factors could influence the learning process (Greene & Azevedo, 2007; Winne, 2001; Winne & Hadwin, 1998; Zimmerman, 2000). SRL has been studied in traditional classrooms as an approach to understanding how successful students adapt their metacognition, motivation, and behaviour to improve learning. Various conceptualizations of academic self-regulation have been articulated, such as Winne and Hadwin's (2008) information

processing model and Zimmerman and Schunk's (2001) socio-cognitive model of SRL (cf. Azevedo, 2009). Despite the diversity in theoretical definitions, most models of SRL are characterized by actively managing learning processes through efficiently monitoring and strategically using learning tactics and strategies (Butler & Winne, 1995; Paris & Paris, 2001; Pintrich, 2000; Winne, 2001; Winne & Hadwin, 1998; Winne & Perry, 2000). Pintrich (2000) claims that "learners are assumed to actively construct their own meanings, goals, and strategies...Learners are not just passive recipients of information...but rather active, constructive meaning makers as they go about learning" (p. 452). Moreover, most models of SRL propose a general time-ordered sequence that students follow as they perform a task, but there is no strong assumption that these various phases (e.g., planning, monitoring, control) are linearly structured: i.e., earlier phases typically but not necessarily occur before later phases (Azevedo, 2009; Butler & Winne, 1995; Greene & Azevedo 2007; Winne, 2001; Winne & Hadwin, 1998; Zimmerman, 2000; Zimmerman & Schunk, 2001).

Students are self-regulated to the degree that they become metacognitively, motivationally, and behaviourally active participants in their own learning process. It has become clear that SRL is a proactive process that students use to adapt academic skills and articulate them with motivational beliefs to achieve goals (Pintrich, 2000). Self-monitoring, goal-directed attainment, and systematic reliance on feedback during deliberate practice are core processes of self-regulated learners (Zimmerman, 1989). Azevedo (2009) described self-regulated learners as "goal-driven, motivated, independent, and metacognitively active participants in their own learning". Therefore,

SRL is a multidimensional construct that integrates learning behaviours or strategies, motivation, and metacognition; it enables students to adapt their mental abilities to academic performance (Winne, 1995).

SRL is important to skilled writing in two ways. First, skilled writing is an intentional activity that is self-planned and self-sustained (Zimmerman & Riesemberg, 1997). Proficient writers need to switch their attention recursively between planning, drafting, and reviewing. This process requires extensive self-regulation and control over attention to manage constraints imposed by a specific writing task and the processes involved in composing (Zimmerman & Riesemberg, 1997). Second, use of self-regulatory mechanisms (e.g., planning, monitoring) may contribute to strategic adjustments in writing behaviours. To illustrate, the success of using a planning strategy should increase the likelihood that it will be used again. Continued success in using the strategy may enhance confidence in writing and in turn influence intrinsic motivation and willingness to seek strategic solutions when meeting obstacles in the future. The role of the monitoring has been emphasized as key in directing students' composing process by activating and coordinating the interplay among various elements involved in writing (Glaser & Brunstein, 2007; Hayes & Flower, 1986).

2.2.2 Self-regulatory Instruction

It appears that self-regulation is indeed a vital component of learning. It is not surprising, then, that self-regulated interventions have been suggested for writing. In fact, research studies regarding self-regulatory interventions have touched many

learning subjects (e.g., math and reading), and a review of literature suggests that self-regulation can be modelled directly and indirectly (cf. Paris & Paris, 2001). The purpose of the current study is to investigate embedding self-regulation support in an explicit strategy intervention because explicit domain-specific instruction can facilitate regulation in less proficient writers (Glaser & Brunstein, 2007; Harris & Graham, 1996; Zimmerman & Risemberg, 1997).

Instruction in self-regulatory strategies for academic writing is a recurring recommendation from research (e.g., Glaser & Brunstein, 2007; Graham & Harris, 2000; Zimmerman & Risemberg, 1997). Concern about writing performance and motivation has stimulated many research studies, and encouraged a variety of instructional interventions (e.g., Glaser & Brunstein, 2007; Zimmerman & Bandura, 1994). Many instructional suggestions involve using explicit instruction to teach writing strategies, self-regulation strategies, and various self-regulation procedures used by skilled writers (Glaser & Brunstein, 2007; Graham & Harris, 1997; Graham, Harris, MacArthur & Schwartz, 1995).

Instruction in strategy use is an effective means of setting the stage for self-regulation (Schunk, 1989) because specific strategies could alter students' metacognitive knowledge and motivational beliefs. This, for example, may include changes in students' self-efficacy for writing as well as a shift in their understanding of what constitute a good composition (Graham *et al.*, 1991). Writing strategies are usually genre-specific. The present study used three genre-specific strategies that were repeatedly involved in research to assist students in story writing (cf. Glaser &

Brunstein, 2007). One of the genre-specific strategies was designed to help students better understand the content structure of a good story. The second genre-specific strategy helps students generate possible ideas for a story. It requires students to answer a series of questions prior to writing; each question focuses on a particular element commonly found in stories, such as main characters. The last strategy guides students to brainstorm stylistic elements to embellish their composing.

Students are taught how to use each genre-specific strategy along with some comprehensive self-regulated strategies. Self-regulated strategies involve thinking about the learning process, planning for learning, monitoring comprehension while learning, and self-evaluation of learning after the writing activity is completed. Theorists have identified a variety of self-regulation strategies that writers use to manage their composing process. These strategies include goal setting and planning (e.g., establishing goals and tactics to achieve them), record keeping (e.g., making notes), organizing (e.g., developing a graphic organizer), transforming (e.g., brainstorming for words), self-monitoring (e.g., checking to see if previously set goals are met), reviewing (e.g., editing text produced so far), self-evaluating (e.g., assessing the quality of text), and help seeking (e.g., getting help from instructors) (Glaser & Brunstein, 2007; Graham & Harris, 1994; Graham, MacArthur & Schwartz, 1995; Zimmerman & Riesemberg, 1997).

Instructional models need to describe how to assist students to inconstructing productive metacognitive knowledge regarding writing tasks, writing strategies, and themselves as writers as well as positive motivational beliefs. Fortunately, several

promising attempts have been made to achieve these objectives (Glaser & Brunstein, 2007; Graham & Harris, 2003; Sawyer, Graham, & Harris, 1992). The Self-Regulated Strategy Development (SRSD) model has been integrated in traditional classrooms using a process approach to improve skilled writing. According to Glaser and Brunstein (2007), SRSD is staged (develop background knowledge; discuss it; model it; memorize it; support it; and independent performance) to help students master strategic approaches to skilled writing. Instruction in SRSD includes scaffolding, discussion, and interactive feedback. Students are encouraged to engage in strategic writing processes flexibly, adaptively, and recursively; collaborate throughout instruction; and develop effective strategies for monitoring and managing tasks. Additionally, SRSD is criterion-based rather than time-based. Applications of SRSD have been proven to be effective in teaching students to self-regulate their learning behaviours, resulting in improvements in their quality of writing products (Graham & Harris, 2003). Nevertheless, direct empirical evidence supporting this notion is rather limited (Glaser & Brunstein, 2007), implying the necessity of researching these interventional procedures.

Butler and Winne (1995) proposed that SRL is a constructive problem-solving process “engaging with tasks in which students exercise a suite of powerful skills: setting goals for upgrading knowledge; deliberating about strategies to select those that balance progress toward goals against unwanted costs; and, as steps are taken and the task evolves, monitoring the accumulating effects of their engagement.” Recently, Winne (2005) elaborated that goals, volitional strategies, skills related to SRL, and motivation are essential turning points for modelling SRL. Goals provide standards

against which people compare their present performance. Volition strategies could enhance self-reliance. SRL requires continuous metacognitive monitoring and making adaptive adjustments. And, motivation invites a view that students decide how to develop their own path of SRL. Among these, metacognitive monitoring is the key to SRL and its modelling (Butler & Winne, 1995; Greene & Azevedo, 2007; Winne, 1996, 1997). Metacognitive monitoring involves evaluations of the processes of learning and SRL. It produces information that allows learners to determine if there is a discrepancy between goals and their current level of learning. If monitoring reveals a discrepancy, students may adapt their planning and/or strategies in order to meet the goal. This assumption suggests that adaptation is dependent on metacognitive monitoring.

This study incorporated self-regulatory processes into the strategic teaching of story writing by emphasizing four features: goal setting, volitional strategies, metacognitive monitoring, and motivation, accompanied by particular attention to scaffolding metacognitive monitoring.

2.3 Self-efficacy

As described earlier, motivation is essential for successful language learning. Research has consistently emphasized the importance of developing students' motivation in writing (Gardner, 1985; Zimmerman & Bandura, 1994). Gardner (1985) found a positive relationship between degree of motivation and successful language learning. Self-regulation integrates learning strategies, motivation, and metacognition (e.g., Pintrich, 2000; Winne, 1995). Recent research shows that the use of explicit self-

regulatory processes can lead to increases in students' self-efficacy (Zimmerman & Risemberg, 1997). It has often been shown that self-efficacy has positive effects on important self-regulatory parameters such as effort, persistence, and achievement (Schunk & Ertmer, 2000).

Bandura (1986) defined self-efficacy as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). It is a major construct in Bandura's (1986) social cognitive theory that helps explain why students' behaviour may differ markedly even when they have similar knowledge and skills. Self-efficacy is a mechanism of cognitive self-evaluation that mediates skilled performance (Bandura, 1986). It is also a determining factor influencing the likelihood learners will attempt novel tasks. However, personal efficacy is not the only, or even necessarily the primary, source of human motivation. Self-efficacy is important to the present study because it is a key factor governing students' motivation and behaviours in SRL.

Self-efficacy is formed from four sources: past performance, vicarious experience, verbal persuasion, and emotional and physiological arousal (Bandura, 1997). Perceptions of self-efficacy influence students' choices among activities, the effort they expend, the perseverance they exert in the face of challenges and difficulties, and ultimately, the degree of success they achieve (Bandura, 1986, 1997). Students who believed they were capable of performing tasks used more learning strategies and persisted longer at those tasks than those who did not (Zimmerman & Kitsantas, 1999; Zimmerman & Martinez-Pons, 1992). Personal efficacy is a generative mechanism

through which students integrate and apply their existing cognitive and behavioural skills to perform a specific task. In writing tasks, level of self-efficacy is a powerful determinant of academic success (Zimmerman & Bandura, 1994), as well as influencing efforts and intrinsic motivation (Hanmann, 2005). For example, greater perceived self-efficacy in writing is related to higher levels of strategy use and attribution to strategies (Zimmerman & Kitsantas, 1999).

With regard to its content, self-efficacy measures target on performance capabilities rather than on permanent personal qualities (Zimmerman, 2000). Respondents judge their efficacy to accomplish specific tasks, such as writing a story, not how they feel about themselves in general. For example, efficacy beliefs about performance on a writing test may differ from beliefs about a reading examination.

Research studies in SRL and writing have distinguished three efficacy beliefs. The first is writing self-regulatory efficacy that describes students' perceived capability to execute strategic approaches to skilled writing, to realize the creative aspects of writing strategies, and to successfully perform self-regulatory strategies in carrying out the writing process. Moreover, according to Schunk (2005), self-regulated learners have higher self-efficacy for learning than students with less-adaptive SRL profiles. Therefore, the self-regulatory intervention in this study is expected to enhance students' SRL, and to have a positive impact on their efficacy for SRL.

Although the self-regulatory intervention in the present study was developed based on task-specific tasks, it still included general self-regulatory techniques. Therefore, self-efficacy for SRL in general was also considered. It refers to students'

confidence to plan and organize their learning, to concentrate in the face of distractions, to persist in the face of difficulties, and to adequately respond to the demands of teaching (Bandura, 1997).

Since a high sense of self-regulation could enhance belief in one's academic efficacy (Zimmerman & Bandura, 1994; Zimmerman & Martinez-Pons, 1992), the present study reasonably investigated students' academic efficacy. Academic self-efficacy refers to students' judgments of their capabilities to complete their schoolwork successfully (Schunk, 2005).

Writing self-regulatory efficacy, efficacy for SRL, and academic efficacy can be attributed to self-efficacy for learning. Self-efficacy for learning represents students' judgment of perceptions regarding learning process and their perceived skills to accomplish particular tasks (Winne, 2005). In the present study, I distinguish assess all three kinds of efficacy: writing self-regulatory efficacy, efficacy for SRL, and academic efficacy, as they may affect writing, self-regulated learning, and academic motivation.

3: METHOD

3.1 Participants and Design

This study took place in a private boarding high school in central China. Forty students attending three classes in Year 1 and 2 volunteered to participate in the study. The average age of the sample was 16 years ($SD = .55$), and the students ranged in age from 15 to 17 years. There were 21 (52.5%) males and 19 (47.5%) females. All participants were native Chinese speakers. All of the participants had studied English for at least six years before passing the High-school Entrance Examination. Data on socioeconomic status was not collected because parents of the participating students did not grant permission.

The study used a pretest-posttest design with two conditions, intervention and comparison. In the intervention condition, self-regulation was incorporated in writing instruction with writing strategies, whereas in the comparison condition students were only instructed with the same writing strategies. A pretest of story writing was administered to all participants three days before instructional session. A wordless picture served as writing prompt in the study. Participants were randomly assigned to conditions stratified by age and sex after administration of pretest story writing. There were 20 students in each group. Within the first week of instruction, the efficacy test was administered to both conditions. Writing instruction was delivered in two 40-minute lessons per week on two consecutive days for a period of 12 weeks. All lessons

were conducted after regular class time. In both conditions, writing instruction was delivered in standard Chinese. The comparison group was instructed by a native speaker of Chinese with two years of experience teaching English writing at the language school. This instructor was trained in use of the writing strategies investigated in the experiment. The author conducted lessons and provided individual feedback to the intervention group. Posttest story writing and a self-efficacy test were administered three days after the instructional period.

3.2 Measures

3.2.1 Story Quality

Each student wrote two stories that were evaluated using Writing Assessments. All students were exposed to the same pre- and posttest writing prompts. Writing prompts were 2 wordless pictures selected from the English textbook used at the language school. All instructors and story graders in this study judged two pictures to be equivalent in difficulty and interest value. The pretest story prompt featured a running boy, a snowman, and a penguin. The picture presented at the posttest was autumn-themed that involved a girl, a dog, and some pumpkins of different sizes.

Assessing quality of a composition is not an objective task. Attempting to judge the quality of a written work carries with a host of possible biases and interpretations that can make the assessment unreliable. Researchers in the field of composition suggest that although a timed, in-class writing sample is an imperfect reflection of writing competence, it is the most reliable measure available (Ching, 2002). In addition,

given the limitation of personal interpretation and subtle biases, holistic scoring by expert readers provides a reasonable means to assess writing performance. When standardized procedures are administered, holistic scoring provides consistent results. Therefore in the present study, the instrument used to assess story quality consisted of two holistic scales (see Appendix A), and scores for each writing sample were obtained from two trained expert writers.

The first section contained a checklist of 10 items that addressed students' use of specific writing strategies. Presence of a component was worth 1 point, and a score of 0 was assigned if the respective component was absent. Scores for the first section ranged from 0 to 10.

The second section contained five 8-point rating scales addressing compositional quality of ideation, organization, sentence structure, grammar and spelling, and aptness of word choice. A score of 1 represented the lowest quality of writing and 8 represented the highest quality. Scores for each scale were explicitly defined; for instance, a score of 8 on organisation reflected rational arrangement ideas and appropriate expression whereas a score of 4 implied randomly organised sentences and paragraphs. A total score was formed by summing the five scales, producing a scale range from 5 to 40.

Compositions in the form of 30-minute-essay were obtained and evaluated using the Writing Assessment. All compositions were typed prior to scoring; no changes were made to punctuation, spelling, or capitalization. Typing was performed by two university students who were unfamiliar with the design and purpose of the study. In

addition, all identifying information was removed from the typed transcriptions and replaced with a code. The typed transcriptions were used for all subsequent analyses. Two native English speakers, each of whom had taught ESL for two years, independently scored all compositions. Both of the raters were unfamiliar with the design and purpose of the study. They were trained to evaluate story quality using the writing assessment instrument. Pearson correlation coefficients between total scores given by the two raters were .65 ($p < .01$) before instruction, and .82 ($p < .01$) after instruction.

3.2.2 Story Length

Story length was scored in terms of the number of written words, regardless of spelling. All stories written by participants were typed and saved in Word (.doc file) and Word was used to obtain the measure of story length. The word count was checked and rechecked by the student assistants and the first author.

3.2.3 Self-efficacy Beliefs

The instrument used to assess students' efficacy beliefs was the self-efficacy assessment. Because recent findings related to the effects of writing instruction on self-efficacy have not been consistent, one primary purpose of this study was to explore students' efficacy beliefs that would clarify theoretical concerns. Specifically, we measured changes in personal beliefs of writing self-regulatory efficacy, efficacy for self-regulated learning, and academic efficacy. Accordingly, the efficacy instrument consisted of three independent scales (see Appendix B).

First, the Writing Self-regulatory Efficacy Scale was developed by Zimmerman and Bandura (1994). This scale contained 18 items that assessed students' perceived capability (a) to execute strategic aspects of the writing process such as planning, organizing, and revising compositions; (b) to realize creative aspects of writing such as generating good topics, writing interesting introductions and overviews; and (c) to exercise behavioural self-management of time, motivation, and competing alternative activities. Students rated the strength of their perceived efficacy for each item on a 7-point scale ranging from belief that they could not perform the designated activities (score 1) to the belief that they could perform them very well (score 7). In prior research, the Cronbach alpha reliability coefficient was .91 (Zimmerman & Bandura, 1994).

Second, the test of Efficacy for SRL was adopted from the scale created by Bandura (1989; cf. Zimmerman, 1992). This scale asked students to evaluate their perceived capability to use a variety of self-regulated learning strategies. The 11 items in this scale included items such as “How well can you finish homework assignments by deadlines?” and “How well can you motivate yourself to do schoolwork?” Students rated each item from 1 (not well) to 7 (very well). This scale was used in various studies (e.g., Zimmerman *et al.*, 1992) and proved to be highly reliable, with a Cronbach alpha of .87 in Zimmerman *et al.* (1992).

Third, the Academic Self-efficacy scale measures students' perceived capability to achieve in a general academic domain. Academic Self-efficacy test was a subscale selected from Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith,

Garcia, & McKeachie, 1993). Winne and Perry (2000) described the MSLQ as an aptitude measure of self-regulation, i.e., describing a relatively enduring attribute of a person that could predict future behaviour. Students respond to 8 questions by using 7-point ratings that range from *not at all true of me* (score 1) to *very true of me* (score 7). Previous research showed that scores on this subscale significantly and positively related to various learning outcomes.

3.3 Pilot Study

To ensure all students could understand the content of the Self-efficacy Assessment, a pilot test was run on three first-year students. The students had no major difficulties in understanding the requirements and items, so no change was made to the original Self-efficacy Assessment. Scores for these three students were included in the follow-up analysis.

3.4 Procedures

Three days before the beginning of classes, all students completed the story writing pretest. A teacher from the language school who was unaware of the study's hypotheses administered the assessment and collected the completed stories from all students. Students were instructed to write a story based on the writing prompt in 30 minutes in class. Along with the answer sheet on which the story was written, students were also given an extra blank sheet and were explicitly instructed to make notes on it. Students were not permitted to use any external aids when composing their stories. During the first week of instruction, personal efficacy was assessed using the Self-

efficacy Assessment. Students were instructed to take as long as they needed to complete the Self-efficacy Assessment in class. The majority finished within 30 minutes. Three days after the instructional period, the posttest story writing and efficacy assessments were administered in class.

In both conditions, students were instructed with the same writing strategies for the same amount of time. However, in the intervention condition, writing strategies were presented in a way that highlighted four turning points of self-regulation: goal setting, volitional strategies, skill acquisition, and motivational elements (cf. Winne, 2005). See table 3.1 for a comparison of the two instructional conditions.

Table 3.1 Characteristics of Instructional Procedures

Instructional Procedures	Intervention Condition	Comparison Condition
Pre-skill development: Explicit instruction and small-group discussion of story paragraphs, story grammar elements, and stylistic features of stories.	+	+
Strategy instruction: Explicit instruction, and small-group discussion of effective writing strategies (model of skilled writing, BBE, and 7-W questions).	+	+
Strategy retrieval: Using mnemonic charts to memorize story grammar elements and stylistic features of stories.	+	+
Practice in strategy use: Group and independent practice in planning, composing, and redrafting stories.	+	+
Self-regulatory procedures that emphasize: 1) Goal setting 2) Volitional strategies 3) Skill acquisition 4) Motivational elements	+	

3.4.1 Writing Strategies

The expert model of writing consisted of three steps: planning, writing and reviewing. Students were explicitly taught three genre-specific writing strategies that are embedded in the expert model of writing, along with information needed to use these writing strategies. The goal was to guide and help students organize writing activities and integrate them into a structured pattern of connected behaviours (Glaser & Brunstein, 2007). To help them better carry out these steps when writing a story, students were taught mnemonics.

First, the instructor demonstrated components of a good story: beginning, body, and ending (BBE). Students were specifically instructed to use mnemonic BBE when planning and composing a story.

Second, to help students organize their writing ideas in a cohesive manner, students were explicitly instructed to ask themselves the following seven questions: Who is the main character? Where does the story take place? When does the story take place? What is the goal or concern of the main character? What does the story aim at? What chain or sequence of actions leads up to this point? What's the ending of the story? The instructor introduced the 7-W strategy with examples and illustrated how each could contribute to developing a good story. Students were taught to recite the 7-W questions to be able to retrieve the associated elements when they start to plan a composition, write a draft, and review their draft.

Third, to improve the quality a composition, students were instructed to brainstorm for active verbs, colourful adjectives, varied sentences, and direct speech to make their compositions more clear and interesting.

3.4.2 Specific Procedures for Strategy plus Self-regulation Instruction

Self-regulatory procedures taught to the students highlighted four turning points: goal setting, application of volitional strategies, acquisition of corresponding skills, and motivational elements (Winne, 2005). With this approach, writing strategies and accompanying self-regulatory procedures were taught to students in the intervention condition along with the aforementioned writing strategies. Thus, in addition to learning the writing strategies, the students learned how to use the self-regulation procedures, including goal setting, self-monitoring, self-reinforcement, and self-instructions, to help them manage the writing strategies and tasks of writing as well as to obtain concrete and visible evidence of their progress.

To begin with, students were taught a general planning strategy to generate writing ideas. The planning strategy included three steps: a) decide what to write about; b) develop possible plans and take notes; c) modify the existing plan while writing. To help students develop cohesive plans for story writing, they were instructed to use the genre-specific 7-W strategy. By asking those seven questions, students may develop a basic understanding of the components of a story. For each strategic component, students were asked to generate notes on possible ideas they might use in their story. Then, the instructor and students, and group of students discussed the need

and importance of each step in the planning strategy. Usually, there were no more than 5 students in a group.

After students mastered the planning strategy and developed a good understanding of the value of each planning step, they were introduced to the characteristics of a good story, including story structure (BBE) and use of colourful and descriptive words. To assess students' acquisition of those strategies, the instructor read a story out loud, and students identified each strategic component and took notes while listening. This continued until all students could successfully identify the components of BBE and 7-W. Then, the instructor and students discussed the content and value of each component of BBE and 7-W.

When students could independently explain and remember all strategic components, the instructor read another sample story and asked students to identify and write down items that answer each of the seven questions. This is not a simple repeat of the previous procedure as this time, students were specifically asked to take notes using a graphic organizer. The instructor illustrated various examples of graphic organizers and explicitly taught students how to use them. When strategic components were graphed into appropriate organizers, students were asked to metacognitively monitor their previous notes relative to the graphed notes and highlight differences where relevant.

At this point, self-monitoring was introduced. Students were assigned to groups to discuss reasons that led to the differences they had marked in their notes. The instructor also stressed that even if a BBE or 7-W component was included, the

composition could still be improved. Therefore, students were then instructed to write down ideas regarding each component of BBE and 7-W while planning a story. Students were explicitly asked to write down their ideas when they make a plan and use means like a story chart or graphic organizer to represent the plan. Then, instructors and students further discussed how to plan and make changes based on BBE and 7-W strategies.

Students were further instructed to set specific goals. Guiding students to establish precise and attainable goals can enhance metacognitive monitoring (Winne & Stockley, 1998). Students were explicitly instructed a) that the goal of the class was to improve their writing competence; and b) to use available learning resources and support including help from instructors. The instructor first demonstrated how to set attainable goals. For example, goals for story writing could include all seven basic parts (referring 7-W questions), and ensuring that each part was well done and the story made sense, or/and making the story fun to read. The instructor demonstrated strategies that could help students achieve these goals. Specifically, students were taught to consistently monitor progress at appropriate stopping points, keep track of effective and ineffective learning strategies and habits, and seek help (instrumental and interpersonal) when needed. To ensure that their goals were achievable based on the curriculum and accessible learning resources, students were not only instructed to write down their goals but also to describe, discuss, and take notes about how they planned to achieve their goals. Notes can be viewed as external memory that could help

students to keep track of and facilitate monitoring activities. The instructor provided feedback on all students' notes about their planning.

To assist students' skill acquisition, the instructor asked students to plan a story of their choosing with clear goals set for writing activities. That is, students were asked to compose a story with all BBE and 7-W components, and use strategies in which they had been instructed. While students were planning, the instructor used self-statements to assist them consistently with self-monitoring (e.g., Is this well connected to my topic?), self-assessment (e.g., Does my chart make sense?), and self-reinforcement (e.g., This part is well done.). When students were composing, the instructor assisted them by reminding them to use colourful words and encouraged them to make modifications based on the initial ideas. Once a story was completed, students were asked to discuss "How can I make my story better?" At this point, the importance of self-assessment was introduced. Next, the instructor checked students' notes and helped them to identify whether their story included all required components.

Lastly, rewards such as verbal encouragement were provided during and after class to foster motivation. To promote mastery learning, students were consistently asked to record improvement in their work, and encouraged to attribute their success to these efforts.

3.4.3 Specific Procedures for Strategy Only Instruction

Except for the absence of instruction about self-regulation components, strategy only instruction mirrored the strategy plus self-regulation instruction. Direct

instruction and group discussion were delivered regarding background knowledge and skills of story writing. Cognitive modelling was applied to the general planning strategy, BBE, 7-W questions, and use of stylistic features. Students were explicitly instructed to use mnemonics to memorize and retrieve steps of a strategy. The same amount of practice in- and after-class was assigned to students. The instructor provided process feedback throughout the teaching period. As shown in Table 3.1, students in both conditions were taught structural, content-related, and stylistic characteristics of a good story.

3.5 Analyses

The data were analyzed in three steps. First, the reliability of the efficacy test for the sample was examined using Cronbach's alpha statistic, a measure of internal consistency. Second, because grouping of participants was based on gender, a chi-square test was conducted to explore the association between gender and instructional condition. Third, to confirm that the two groups were initially equivalent, multivariate analyses of variance (MANOVA) for independent means was performed comparing the two groups on pretest variables of age, story length, story quality, and efficacy beliefs.

Then, for all the dependent variables, a MANOVA was performed with the two groups as the between-group variable and pre-post measurement as the repeated measurement factor (time) with two levels (pre- and post-measurement). The main interest in these analyses was interaction effects between the group and the repeated measurement factor (time). Prior to submitting all data to the MANOVA, items of

internal consistency, means, standard deviation, and range of data sets were reviewed. MANOVA assumptions of normal distribution and homogeneous regression slope were also reviewed, and missing data and outliers were identified. An alpha of .05 was set as the comparison-wise error rate.

4: RESULTS

4.1 Sample Description

Among all 40 participants, there were 21 (52.5%) boys and 19 (47.5%) girls; the mean age was 16 years (SD = .55). There were 20 participants in each experimental group. More boys were assigned to the comparison group (n = 13) than to the intervention group (n = 8), which means fewer girls participated the comparison group (n = 7) than the intervention group (n = 12). Participants in the intervention group ($M_{\text{age}} = 15.9$; SD = .55) were slightly younger than those in the comparison group ($M_{\text{age}} = 16.1$; SD = .55). According to a MANOVA for individual means ($p > .05$; see Table 4.1), there were no statistically detectable differences between groups at pretest regarding age, story length, story quality, and self-efficacy beliefs before instructional period. Similarly, gender of participants did not qualify any of the inferential analyses reported below (chi-square = 2.5, $p > .1$). Therefore, gender of the participants is not examined further.

Table 4.1 *MANOVA Test of Between-Subject Effects for Age, Story Length, Story Quality, Writing Self-regulatory Efficacy (WSRE), Efficacy for Self-regulated Learning (ESRL), and Academic Efficacy (AE) by Instructional Conditions*

MANOVA Test of Between Subjects Effects											
Age		Story Length		Story Quality		WSRE		ESRL		AE	
F	p	F	p	F	p	F	p	F	p	F	p
1.31	.26	.63	.43	.01	.94	.00	.99	.93	.34	.01	.90

4.2 The Reliability of Self-efficacy Beliefs

Cronbach's alpha for the three efficacy beliefs was calculated to determine the internal consistency of those scales (see Table 4.2). All three scales used in the study to assess personal efficacy had a good internal consistency, with a Cronbach alpha coefficient above .70.

Table 4.2 Reliability of Efficacy Test

	N of Items	Cronbach's Alpha
Writing Self-regulatory Efficacy	18	.79
Efficacy for Self-regulated Learning	11	.78
Academic Efficacy	8	.70

4.3 Preliminary Analyses and Results

Assumptions about normality, linearity, univariate and multivariate outliers, and multicollinearity were tested. Distributions for all variables were approximately normal. Scatterplots did not show any obvious evidence of non-linearity. Variables were moderately correlated before and after the intervention. One outlier was identified in the comparison group who generated unexpectedly low scores on the posttest Writing Self-regulatory Efficacy and pretest Academic Efficacy. This participant was generally low in efficacy, but changes in efficacy beliefs paralleled other participants. Because this participant's other scores were within usually accepted ranges relative to other participants, this participant was retained in all analyses.

Table 4.3 Means, Standard Deviation, and Confidence Interval for Story Length, Story Quality, Writing Self-regulatory Efficacy (WSRE), Efficacy for Self-regulated Learning (ESRL), and Academic Efficacy (AE) by Instructional Conditions

		Intervention				Comparison			
		Mean	SD	Mean ^a		Mean	SD	Mean ^a	
				Lower	Upper			Lower	Upper
Story Length	Pretest	148.25	30.34	134.05	162.45	156.90	38.00	139.117	174.68
	Posttest	186.35	44.45	165.55	207.15	179.65	21.41	169.63	189.67
Story Quality	Pretest	33.28	5.56	30.67	35.88	33.15	5.55	30.55	35.75
	Posttest	40.20	6.35	37.23	43.17	35.25	6.04	32.42	38.08
WSRE	Pretest	77.80	11.47	72.43	83.17	77.85	11.24	72.59	83.11
	Posttest	87.85	10.74	82.83	92.88	82.20	10.78	77.16	87.24
ESRL	Pretest	52.95	6.11	50.09	55.81	50.65	8.74	46.56	54.74
	Posttest	57.25	9.04	53.02	61.48	54.25	7.67	50.67	57.83
AE	Pretest	42.60	6.44	39.59	45.16	42.90	8.48	38.93	46.87
	Posttest	44.05	7.04	40.75	47.35	43.20	6.33	40.24	46.16

^a 95% Confidence Interval.

4.4 Result of Writing Performance and Self-efficacy Beliefs

Using instructional conditions as a between-subjects factor, I computed a repeated-measure MANOVA on story length, story quality, writing self-regulatory efficacy, efficacy for self-regulated learning, and academic efficacy. I analyzed between- and within-subject factors in multivariate tests (see Table 4.4). Because cell sizes were equal (each N=20), this analysis is robust to concerns of heterogeneity of the variance-covariance matrix. The omnibus main effect of instructional condition was not statistically detectable, Wilks $\Lambda = .81, p = .19$. There was a statistically detectable omnibus effect for time, Wilks $\Lambda = .21, p < .001$. According to Cohen (1988 p.284-287), the main effect for time was large with a partial $\eta^2 = .79$. The within-subject portion of the analysis identified a large statistically detectable omnibus interaction involving time

and instructional condition, Wilks $\Lambda = .55, p \leq .001$. This was associated with a large effect size, partial $\eta^2 = .45$.

Table 4.4 *Multivariate Tests on Between- and Within-Subject Factors*

			Value	df	F	p	Partial η^2
Between-subject	Instructional Condition	Wilks' Λ	.81	5.00	1.61	.19	.19
	Time	Wilks' Λ	.21	5.00	25.10	<.001	.79
Within-subject	Time \times Instructional Condition	Wilks' Λ	.55	5.00	5.49	.001	.45

4.4.1 Writing Performance

To further analyse the time factor, follow-up univariate analyses were conducted on the writing measures. Results indicated significant main effects of time for story length ($F = 14.88, p < .001$, partial $\eta^2 = .28$) and story quality ($F = 70.19, p < .001$, partial $\eta^2 = .65$) (see Table 4.5). With reference to Table 4.3, posttest scores of story length and story quality were higher than pretest scores, and the scores of the intervention group were higher than those of the comparison group. The interaction between time and instructional condition on the measure of story length was not statistically significant ($F = .95, p = .34$), and it's not surprising that the main effect was rather small (partial $\eta^2 = .02$). Finally, there was a statistically significant interaction between time and instructional condition on the measure of story quality ($F = 20.06, p < .001$). The effect size associated with story quality was large (partial $\eta^2 = .35$). This finding indicated that story quality among intervention students statistically differed from that of students in the comparison condition. The intervention group showed greater gains in story quality over time than the comparison group.

Table 4.5 Univariate Tests for Story Length and Story Quality

		Type III Sum of Squares	df	Mean Square	M _{Error} of Time	F	p	Partial η^2
Time	Story Length	18513.61	1	18513.61	1244.18	14.88	<.001	.28
	Story Quality	407.25	1	407.25	5.80	70.19	<.001	.65
Time×Instructional Condition	Story Length	1178.11	1	1178.11		.95	.34	.02
	Story Quality	116.40	1	116.40		20.06	<.001	.35

4.4.2 Self-efficacy Beliefs

As shown in Table 4.6, results indicated significant main effects of time for writing self-regulatory efficacy ($F = 26.55, p < .001, \text{partial } \eta^2 = .41$) and efficacy for self-regulated learning ($F = 13.51, p < .001, \text{partial } \eta^2 = .26$). Scores observed on the posttest were higher than pretest scores, and the scores of the intervention students were higher than the scores of comparison students. There was a significant interaction ($F = 4.16, p \leq .05$) between time and instructional condition on writing self-regulatory efficacy but with a corresponding small effect size ($\text{partial } \eta^2 = .10$). The intervention group showed greater gains in writing self-regulatory efficacy over time than the comparison group. Although the effect of time on efficacy for self-regulated learning was significant, the interaction effect of time and instructional condition was not statistically detectable ($F = .11, p = .75, \text{partial } \eta^2 = .003$). It was noted that the effect of time on academic efficacy was not statistically significant. Scores on academic efficacy remained almost unchanged from pretest to posttest, especially for the comparison group.

Table 4.6 Univariate for Self-efficacy Beliefs

		Type III SS	df	Mean Square	M _{Error} of Time	F	p	Partial η^2
Time	WSRE	1036.80	1	1036.80	39.05	26.55	<.001	.41
	ESRL	312.05	1	312.05	23.09	13.51	.001	.26
	AE	15.31	1	15.31	23.07	.66	.42	.02
Time×Instructional Condition	WSRE	162.45	1	162.45		4.16	.048	.10
	ESRL	2.45	1	2.45		.11	.75	.003
	AE	6.12	1	6.12		.29	.60	.007

4.5 Summary

Before instruction, there were no statistically detectable differences in the length and quality of stories written by students in the intervention and comparison conditions. Likewise, there were no significant differences in efficacy beliefs for self-regulated writing, self-regulated learning, and general academic learning between the intervention and comparison group. Examination of students' pretest and posttest writing performance and efficacy beliefs revealed a significant main effect of time (pretest vs. posttest) in story length, story quality, writing self-regulatory efficacy, and efficacy for self-regulated learning. At posttest, all of the students received higher score on these variables. Further analysis investigating the interaction effect of time and instructional condition indicated that students in the intervention condition outperformed students in the comparison condition in developing better quality of compositions and higher levels of writing self-regulatory efficacy, reflecting the effectiveness of self-regulatory instruction in teaching writing strategies. In contrast, the self-regulatory intervention did not result in writing length and efficacy for self-regulated learning and academic learning superior to that of the comparison condition.

5: DISCUSSION

This study examined the contribution of a self-regulatory intervention coupled with writing strategies on students' development in writing proficiency and perceptions of efficacy. The instructional intervention was delivered using a routine that ensured writing strategies and self-regulation strategies were coordinated in a systematic way. The intervention was designed to model students' SRL in writing, and its effectiveness was addressed by two criteria: writing proficiency and efficacy beliefs. The results in each area are discussed next.

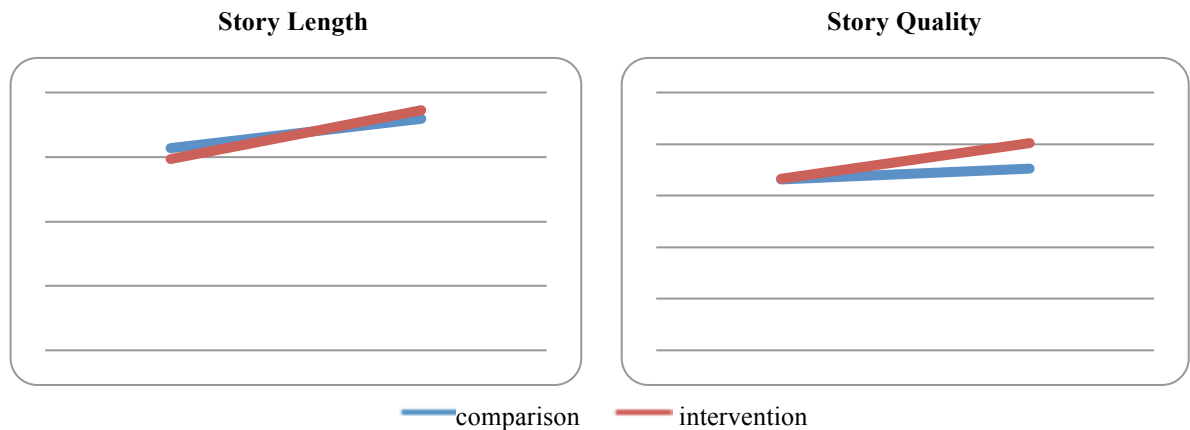
5.1 Writing Proficiency

At posttest, all students developed longer as well as qualitatively better essays. The inclusion of explicit instruction in self-regulation as part of teaching strategies did not detectably augment students' proficiency in writing longer essays. It is obvious from the Figure 5.1 that developing trends of both groups almost overlapped. However, students who received self-regulatory intervention developed compositions of higher quality. Figure 5.1 clearly illustrates the effectiveness of strategy plus self-regulatory instruction in improving students' writing quality.

Compared to story length, quality of writing is a more reliable measure for writing proficiency. Among students taught with strategies alone, the quality of compositions remained almost unchanged from pretest to posttest, but the length of

writing improved just like students received the intervention. Those “extra words” included at posttest might be considered “padding”. Therefore, based on quality of writing, I interpret that providing a strategy plus self-regulatory intervention accelerated students’ development toward skilled writing.

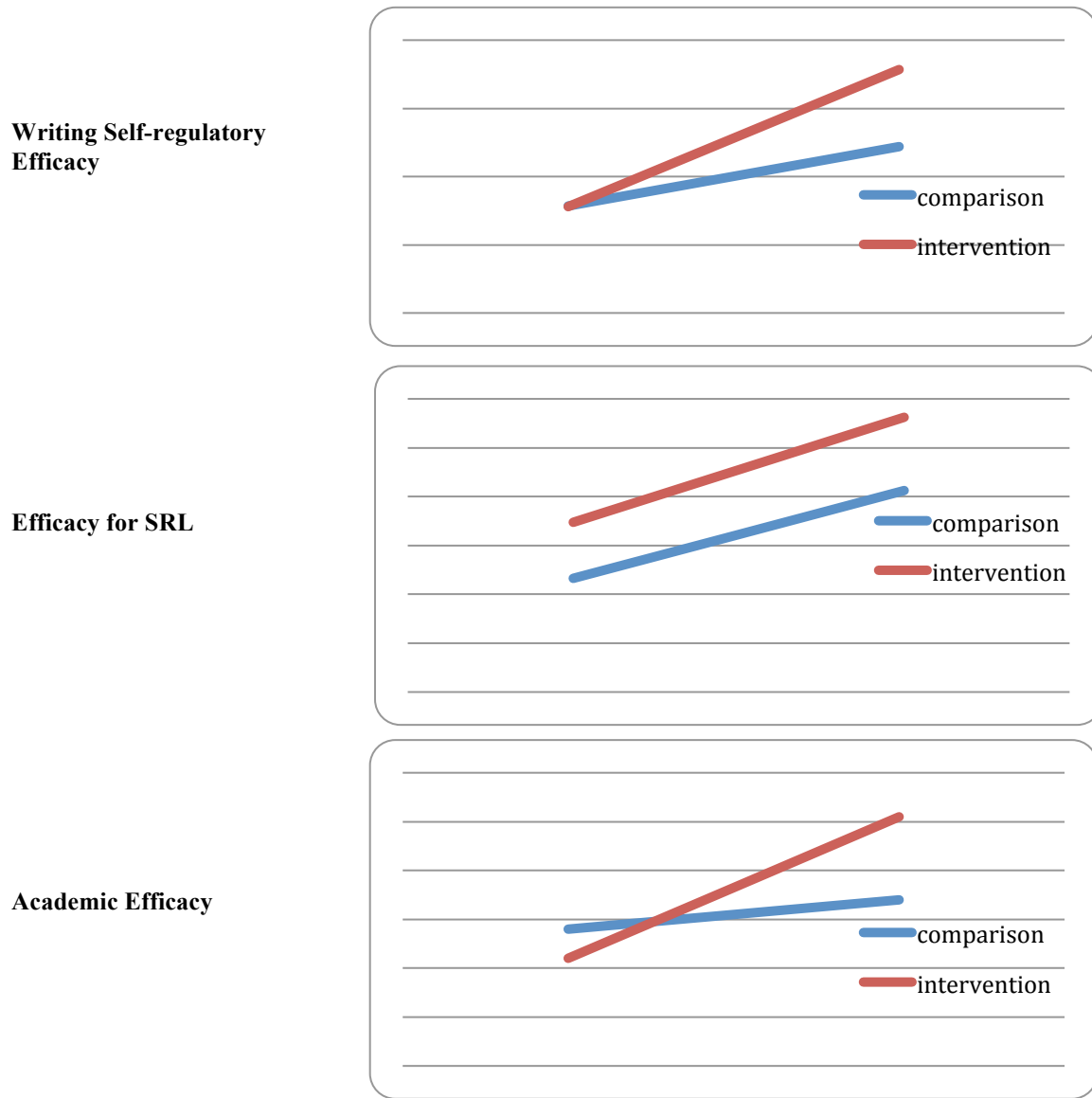
Figure 5.1 Pre- and Posttest Comparisons regarding Writing Proficiency



5.2 Efficacy Beliefs

In the present regulatory intervention, the instructor assisted students in building effective strategies, experiencing positive outcomes, and observing the effects of their efforts. These supports were effective. Not only did students who received self-regulatory intervention express greater confidence in self-regulated writing at posttest, they also outperformed their counterparts regarding this efficacy (see Figure 5.2). The self-regulatory intervention fostered personal efficacy. Efficacy for SRL and academic efficacy both increased from pretest to posttest but those increases were not greater for students who received explicit self-regulatory instruction. This is sensible – efficacy in one domain is not generalizable to others.

Figure 5.2 Pre- and Posttest Comparisons regarding Efficacy Beliefs



5.3 General Conclusion and Future Directions

Taken together, results of the present study provided evidence that explicit self-regulatory instruction in strategy use is an effective means of promoting students' task-specific learning and corresponding efficacy. These findings are discussed in terms of the two research questions addressed in this study.

First, results of this study added to our understanding of how cognitive and metacognitive strategies interplay with specific writing tasks. Findings of this study were consistent with the results for posttest story quality in previous studies (Glaser & Brunstein, 2007; Harris & Graham, 2006). In previous studies, researchers drew on an instructional approach of SRSD and established self-regulatory procedures that mediate students' skill development in writing. Monitoring has consistently been emphasized as the key in modelling SRL (cf. Glaser & Brunstein, 2007), but the challenge is to develop effective monitoring processes that result in progress in learning. This study extended the foci of SRSD by highlighting four features in determining metacognitive monitoring over writing process. The self-regulatory routine in this study consisted of goal setting, application of volitional strategies, acquisition of corresponding skills, and motivational elements. This routine was combined with genre-specific story writing strategies to enhance students' writing proficiency. These efforts made self-regulated writing process more visible and concrete. Statistical differences were found between the presence and absence of such routine. Instruction, when taught through self-regulatory procedures, produced a stronger impact on students' development in writing quality.

Nevertheless, contrary to my expectations, there was no statistical difference between the comparison and intervention groups in length of posttest stories. Butler and Winne (2005) presumed that students are not "self-regulating blank slates" when they enter instruction. This suggests that teaching includes assisting students to construct better strategies and routines than what they already have. Harris and Graham (2005) also failed to generate improvement in students' writing length after

self-regulatory instruction, and they argued that one possible explanation was that students are not cognitively ready to take full advantage of the new sophisticated writing and learning strategies.

Second, the self-regulatory intervention in the present study not only specified key processes of self-regulation, but also included sources of learning motivation. Students were explicitly guided and demonstrated to monitor their efforts and performance accomplishments. Efforts in the present study were to establish a clear relationship between learning process and self-efficacy. Confirmation of task-specific efficacy was obtained after instruction. This finding was consistent with theories that suggest efficacy is task-specific in nature (Bandura & Schunk, 1981), and research studies have shown increases in self-efficacy and persistence after SRSD instruction with students in special education (Graham & Harris, 2003; Graham et al., 2005). Future studies with more complex analyses and causal implications could be undertaken.

This study did not provide evidence to support the claim that self-regulatory instruction could enhance students' efficacy for SRL and academic efficacy. One possible reason concerns students' ability to accurately transfer the self-regulatory techniques to a broader range of learning subjects in such a short time period. It is important to note that the self-regulatory routine established in this study did include general self-regulatory techniques, including: making the purpose and value of the target strategies clear; organizing notes that facilitates the use of target strategies; providing feedback to facilitate monitoring; encouraging students to maintain and generalize strategy use; and discussing when, where, and how to use the learned strategies. Therefore, there is a

need to examine the generalization of the present results. Further research may address these potential positive effects in efficacy for SRL and academic efficacy by exploring long-term effects of self-regulatory intervention in teaching.

Overall, the findings clearly demonstrated that using self-regulatory instruction can benefit developing writers, including those whose first language is not English, in improvements in writing quality as well as a greater sense of task-specific self-efficacy. This has important implications for both students and educators, that is, effective SRL needs domain-specific knowledge, strategies, and motivational beliefs. Although results are generally consistent with my predictions, there are issues in the present experiment. First, a major issue in this study was to interpret the effects of the self-regulatory intervention on students' self-efficacy. Because the self-regulatory intervention consisted of a set of interrelated activities, it is not clear from the results of this study that whether the entire self-regulatory routine or individual components of the intervention delivered positive impact to the increase of personal efficacy. For example, explicit goal-setting procedures have been effective in increasing students' self-efficacy (Bandura & Schunk, 1981). The same issue is also relevant to our understanding of the effects of self-regulatory intervention in improving writing proficiency. Additionally, a control group, receiving instruction without even genre-specific writing strategies, was not included in this study. Obtaining increasing effects in efficacy beliefs might be suggested as due to a solo explanation of either writing strategies or self-regulation strategies. Thus, future research including a control group may be important in understanding how students are motivated. Finally, the sample size was small and not

socio-economically diverse. The school was an expensive private school and the assumption is students involved in this study are from middle-income households or above. More research is needed to solve all those issues.

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APPENDICES

Appendix A:

Writing Assessment

Instruction:

This assessment includes two sections. Each component is worth 1 score, and the highest score is 10 and lowest is 0. The aim of the second section is to evaluate a whole text, and the highest score is 6 and lowest is 1. When score the second section, compositions will be rated on each dimension using an 8-point scale on which 1 represents the lowest quality of writing and 8 represents the highest quality.

Scored by: _____

Date: _____

Section 1: Acquisition of Writing Strategies

	Score 1: tick if the item is true.	Score 0: tick if the item is untrue.
1. The story answers "who is the main character?"		
2. The story answers "where does the story take place?"		
3. The story answers "when does the story take place?"		
4. The story answers "what is the goal or concern of the main character?"		
5. The story answers "what culminating point		

<p>does the story take place”</p> <p>6. The story answers “what chain or sequence of action leads up to this point?”</p> <p>7. The story answers “what is the ending of the story?”</p> <p>8. There is a clear beginning of story.</p> <p>9. There is a clear body.</p> <p>10. There is a clear ending.</p>		
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Section 2: Story Quality

Ideation:

- 8: The story well reflects the given picture.
- 7
- 6: The story is fairly relevant to the given picture.
- 5
- 4: The story is relevant to the give picture, but is underdeveloped.
- 3
- 2: The story is barely or not at all relevant to the give picture.
- 1

Organization:

- 8: The story is completely organized and the ideas are expressed in appropriate language.
- 7
- 6: The story presents a discernible pattern or organization, even if there are occasional digressions.

5

4: The pattern of the essay is somewhat random and relationships between sentences and paragraphs are rarely signalled.

3

2: The story suffers from general incoherence and has no discernible pattern of organization.

1

Sentence structure:

8: A sense of pattern or development is present from beginning to end.

7

6: The writer demonstrates through punctuation an understanding of the boundaries of the sentence.

5:

4: The writer frequently commits errors of punctuation which obscure sentence boundaries.

3

2: Lapses in punctuation often frustrate the reader.

1

Grammar and Spelling

8: Grammar and spelling are generally correct.

7

6: The writer shows the ability to use regularly, but not necessarily faultlessly, the common forms of agreement and of grammatical inflection in standard written English.

The writer spells the common words of the language with a reasonable degree of accuracy. Exceptions can be made for the so-called spelling demons which frequently trouble even an advanced writer.

5

4: The writer spells the common words of the language with only intermittent accuracy.

The story reveals recurrent grammatical problems; if there are only occasional problems, this may be due to the extremely narrow range of syntactical choices the writer has used.

3

2: It displays a high frequency of error in the regular features of standard written English. Lapses in grammar and spelling often frustrate the reader.

1

Aptness of word choice

8: Sentences reflect a command of syntax within the ordinary range of standard written English.

7

6: The story demonstrates sufficient command of vocabulary to convey, without serious distortion or excessive simplification.

5

4: The story is restricted to a very narrow range of language, so that the vocabulary chosen frequently does not serve the needs of the writer.

3

2: The syntax of the essay is not sufficiently stable to ensure reasonable clarity of expression. The syntax is rudimentary or tangled.

1

Appendix B:

Self-efficacy Assessment

Instruction:

Thank you for all the participants in this assessment, the aim of which is to investigate the your personal efficacy in writing, self-regulated learning, and genera academic domain. There are no 'right' or 'wrong' answers as this is NOT a test. Please take a few moments to complete this assessment.

About Yourself:

Please fill out this part before taking the assessment.

Name: _____

Gender: _____

Age: _____

Year of Study: _____

Section 1: Writing Self-regulatory Efficacy Scale (adapted from Zimmerman & Bandura, 1994).

Please note: Score 1: could not perform the designated activities. Score 7: could perform very well.

1. When given a specific writing assignment, I can come up with a suitable topic in a short time.

1 2 3 4 5 6 7

2. I can start writing with no difficulty.

1 2 3 4 5 6 7

3. I can construct a good opening sentence quickly.

1 2 3 4 5 6 7

4. I can come up with an unusual opening paragraph to capture readers' interest.

1 2 3 4 5 6 7

5. I can write a brief but informative overview that will prepare readers well for the main thesis of my paper.

1 2 3 4 5 6 7

6. I can find a way to concentrate on my writing even when there are many distractions around me.

1 2 3 4 5 6 7

7. When I have a pressing deadline on a paper, I can manage my time efficiently.

1 2 3 4 5 6 7

8. I can meet the writing standards of an evaluator who is very demanding.

1 2 3 4 5 6 7

9. I can come up with memorable examples quickly to illustrate an important point.

1 2 3 4 5 6 7

10. I can rewrite my wordy or confusing sentences clearly.

1 2 3 4 5 6 7

11. I can refocus my concentration on writing when I find myself thinking about other things.

1 2 3 4 5 6 7

12. When I get stuck writing a paper, I can find ways to overcome the problem.

1 2 3 4 5 6 7

13. I can find ways to motivate myself to write a paper even when the topic holds little interest for me.

1 2 3 4 5 6 7

14. When I have written a long or complex paper, I can find and correct all my grammatical errors.

1 2 3 4 5 6 7

15. I can revise a first draft of any paper so that it is shorter and better organized.

1 2 3 4 5 6 7

16. When I edit a complex paper, I can find and correct all my grammatical errors.

1 2 3 4 5 6 7

17. I can find other people who will give critical feedback on early drafts of my paper.

1 2 3 4 5 6 7

18. When my paper is written on a complicated topic, I can come up with a short informative title.

1 2 3 4 5 6 7

Section 2: Self-efficacy for Self-regulated Learning (Bandura, 1989)

Note: 1=not well; 3= not too well; 5=pretty well; 7=very well.

1. How well can you finish homework assignments by deadlines?

1 2 3 4 5 6 7

2. How well can you study when there are other interesting things to do?

1 2 3 4 5 6 7

3. How well can you concentrate on school subjects?

1 2 3 4 5 6 7

4. How well can you take class notes of class instruction?

1 2 3 4 5 6 7

5. How well can you use the library to get information for class assignments?

1 2 3 4 5 6 7

6. How well can you plan your schoolwork?

1 2 3 4 5 6 7

7. How well can you organize your schoolwork?

1 2 3 4 5 6 7

8. How well can you remember information presented in class and textbooks?

1 2 3 4 5 6 7

9. How well can you arrange a place to study without distractions?

1 2 3 4 5 6 7

10. How well can you motivate yourself to do schoolwork?

1 2 3 4 5 6 7

11. How well can you participate in class discussions?

1 2 3 4 5 6 7

Section 3: Academic Self-efficacy Belief (MSLQ; Pintrich et al., 1991)

Please rate the following items based on your behaviour in this class. Your rating should be on a 7-point scale where 1= not at all true of me to 7=very true of me.

1. I believe I will receive an excellent grade in this class.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

2. I'm certain I can understand the most difficult material presented in the readings for this course.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

3. I'm confident I can learn the basic concepts taught in this course.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

4. I'm confident I can understand the most complex material presented by the instructor in this course.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

5. I'm confident I can do an excellent job on the assignments and tests in this course.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

6. I expect to do well in this class.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

7. I'm certain I can master the skills being taught in this class.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True

8. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.

Not True 1 / 2 / 3 / 4 / 5 / 6 / 7 True