

Student and teacher self-efficacy and the connection to reading and writing

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Abstract

Self-efficacy or the belief in one's ability (Bandura, 1977) on the part of both teachers and students is thought to be directly related to teacher and student success. Few studies have compared teacher efficacy, student efficacy, and student ability at once. This study examined the relationship between teacher self-efficacy, student self-efficacy, and student ability. Teachers' perceptions of the students' self-efficacy was significantly correlated with students' abilities; however, student literacy self-efficacy was not correlated with their literacy ability. Additionally, there was no correlation between the teachers' perception of the students' literacy self-efficacy and the students' literacy self-efficacy. Finally, the teachers' self-efficacy was significantly correlated with their perception of the students' self-efficacy.

Keywords: self-efficacy, reading, writing, elementary

Résumé

L'auto-efficacité ou la croyance en sa capacité (Bandura, 1977) de la part de l'enseignant autant que de l'élève est considérée comme étant directement liée à la réussite de l'un comme de l'autre. Peu d'études ont comparé en même temps l'auto-efficacité de l'enseignant, celle de l'étudiant et les compétences de ce dernier. La présente étude examine le rapport entre ces trois concepts. On a découvert une forte corrélation entre la perception de l'enseignant de l'auto-efficacité de l'étudiant et les compétences de l'élève. Par contre, en matière de littératie, il n'existait pas de corrélation entre l'auto-efficacité et compétence, pas plus qu'entre la perception de l'enseignant de l'auto-efficacité de l'étudiant et la réalité. Enfin, l'auto-efficacité de l'enseignant est significativement corrélée à sa perception de l'auto-efficacité de ses étudiants.

Mots-clés: auto-efficacité, lecture, écriture, élémentaire

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Literacy instruction has been, and continues to be, the subject of much controversy in education. Supporting the development of basic literacy skills in students is one of a teacher's most important jobs. Research has repeatedly demonstrated that teachers may be the single most important influence on a child's reading and writing development. In addition, schools today are expected to educate larger numbers of children to increasingly higher levels of reading and writing proficiency. In the current educational and political climate where millions of dollars are being spent on early literacy intervention, it is extremely important to investigate teacher and student beliefs with respect to literacy.

Students' literacy is influenced not only by their cognitive ability, but also by non-intellectual variables such as the student's belief that he/she is capable of successfully performing a task (i.e., self-efficacy). The self-efficacy students have in their ability to accomplish a task determines how much effort they initiate and the extent to which they persist when faced with obstacles and adverse situations (Bandura, 1977; Kim & Lorschach, 2005; Tschannen-Moran & Hoy, 2001). If students do not persist in activities that they perceive as threatening, they will maintain their debilitating expectations and fears, which may eventually lead to a state of learned helplessness (Bandura, 1977; Chapman, 1988; Kim & Lorschach, 2005). Teachers may play an important role in the formation of student self-efficacy and achievement. While self-efficacy on the part of both teachers and students is thought to be related directly to teacher and student success, the comparison of teacher efficacy, student efficacy, and student ability within the

confines of a single study has been relatively unexplored. This study examines the relationship between teacher self-efficacy, student self-efficacy, and student ability.

Since self-efficacy may influence academic achievement, teachers' ability to directly address a student's self-efficacy can have as great an impact on student performance as direct skill/knowledge instruction. Recent research findings suggest that a teacher-centred approach to teaching is not conducive to learning, as learning is influenced by personal attributes, such as self-efficacy (Fall & McLeod, 2001; Jinks & Lorschach, 2003; Kim & Lorschach, 2005; Tschannen-Moran & Hoy, 2001). It is important for teachers to focus on student self-efficacy because once positive or negative self-efficacy is established it can be resistant to change (Hoy & Spero, 2005; Tschannen-Moran & Hoy, 2001). It is further hypothesized that teachers' self-efficacy for teaching literacy may also influence student self-efficacy and literacy development.

The way students think, feel, and behave in academic situations is largely influenced by beliefs in their own abilities. It is through the students' interpretation of their performance that their self-efficacy is developed. Thus, self-efficacy is formed through four main constructs: personal accomplishments, vicarious experiences, verbal persuasion, and physiological arousal (Bandura, 1977; Fall & McLeod, 2001; Hoy & Spero, 2005; Schunk, 2003). Students use their personal accomplishments to gauge their ability, resulting in a positive correlation between self-efficacy and achievement. This positive correlation increases in accuracy as students mature because their self-efficacy becomes more highly related to their actual achievement. There is a stronger association between high achievement and high self-efficacy than with low self-efficacy (Shell,

Colvin, & Bruning, 1995). Lackaye, Margalit, Ziv, and Ziman (2006) examined the relationship of self-efficacy, mood, effort, and hope in adolescents with learning difficulties (LD) and peers without LD. They found that the lower academic self-efficacy reported by students with LD likely reflected decreased belief in their academic abilities and in their ability to succeed in school. Research has demonstrated that high self-efficacy does not necessarily equate to high achievement, for it is essential that the student first possess the knowledge and skills required for completing the task.

In addition to forming their self-efficacy through personal experiences, students may also develop their self-efficacy through the vicarious experiences of their peers. That is, a student's ability to succeed or fail at a task is influenced by observing a peer whom he/she believes to possess similar ability when confronted with similar task. The greater the similarity between the student and the comparison group, the more likely the student will believe that she/he can replicate the performance of the comparison group (Schunk, 2003). Children as young as eight years old begin to make social comparisons that are then used to formulate evaluative references (Polychroni, Koukoura, and Anagnostou, 2006). Thus, as early as grade three, teachers need to be aware of the fact that not only are students using their peers as role models, but these role models have the potential to influence the students' self-efficacy.

Verbal persuasion from parents, teachers, and peers can also increase or decrease self-efficacy. Students who have low self-efficacy in the field of reading and writing often rely on teacher feedback to determine their abilities (Schunk, 2003). While an individual's level of personal accomplishment may have a greater impact on the stability

of her/his self-efficacy than does verbal persuasion, it is possible that students' self-efficacy in reading and writing is being strongly influenced by their teacher. Finally, physiological states are also used as indicators of success. Signs of anxiety, such as sweaty palms and a racing heart rate, may suggest to the individual that he/she does not have the skills and ability needed to accomplish the task, thereby decreasing the individual's level of self-efficacy.

It is important to note that the four main constructs are not hierarchical and that it is possible for all four constructs to be influencing a student's self-efficacy at the same time. Furthermore, the influence of any one of the four constructs may result in an increase or decrease in self-efficacy, which in turn will affect academic performance (Fall & McLeod, 2001). The identification of student self-efficacy in relation to reading and writing can enable teachers to address students' beliefs in their abilities. Such focused attention may result in increased academic performance. Therefore, the implications of the impact that self-efficacy has on student achievement, particularly in relation to reading and writing, should not be overlooked.

A research study by Shell et al. (1995) examined the relationship between grade four, seven and ten students' beliefs and their reading and writing achievement, and found that the students' beliefs about reading and writing follow a similar course of development. Their results suggest that as students age, their beliefs about reading are more predictive of higher order comprehension while their writing beliefs become more predictive of the component skills of writing, such as spelling and the mechanics of writing. Shell et al., thereby concluded that self-efficacy exert motivational influences on

students' reading and writing abilities.

In addition, it is the students' beliefs about others' expectations, their own beliefs about their reading ability, and their past reading experiences that influence their attitudes toward reading. It has been found that high motivation and positive attitudes are strongly related to higher reading achievement and reading frequency (Polychroni, Koukoura, & Anagnostou, 2006). A low motivation to read has been found in students with reading difficulties and they are more likely to attribute their failures to internal and stable causes such as intelligence and personality while successes are attributed to unstable and external causes such as luck or a poorly constructed test (Polychroni et al., 2006). As there is a direct relationship between reading and writing, it may be hypothesized that these internal and external influences will have a similar impact on writing and oral language performance. These are the balanced components of an effective literacy program.

To improve writing performance, it may be hypothesized that students must not only have the required knowledge and skills, but must also have high self-efficacy. Kim and Lorschach (2005) examined whether young students (grades K-1) were able to describe their writing self-efficacy and whether the teachers', researchers', and students' perception of writing self-efficacy were similar. They found that the students with high self-efficacy had a higher level of writing development than those with low self-efficacy. Additionally, those with low self-efficacy demonstrated a lack of writing skills and a knowledge of the rules of convention for writing. While this is an interesting result, it is difficult to ascertain whether low self-efficacy leads to a lack of writing skills, or if it is

simply correlational.

As with other research, Kim and Lorschach found that students with a lower self-efficacy for writing avoided writing tasks more than the students with a high self-efficacy for writing. Both the students with high and low self-efficacy took a long time completing the writing task, but the reason for the length of time differed for both groups. The students with high self-efficacy took a long time to complete the task because they wanted to do it well, while the students with low self-efficacy took a long time because they had difficulty with the task (Kim and Lorschach, 2005). Furthermore, even though the students were in kindergarten, the students' perception of their self-efficacy for writing was similar to that of their teacher's.

A limitation with Kim and Lorschach's (2005) research is that they did not measure the students' current writing abilities using a standardized assessment tool. Therefore, it is not possible to determine whether the students with high and low self-efficacy were also different in writing ability. Instead Kim and Lorschach assessed the students' writing samples based on an assumption that students with high writing self-efficacy would write more structured sentences and would be better able to express their ideas in writing than low self-efficacy students. The problem with this assumption is that it equates performance with self-efficacy, which in turn does not allow for the examination of the impact self-efficacy has on writing performance. It is possible, therefore, that students possess the required knowledge and skills to accomplish a writing task, but their lack of belief in their writing abilities prevents them from successfully accomplishing the task.

While research has demonstrated that the degree to which students believe they can accomplish a task will directly influence their success, it may be hypothesized that teachers also display a similar relationship with respect to their beliefs in their ability to teach reading and writing. Teacher efficacy is a teacher's belief that she/he can influence desired student outcomes even when teaching the most difficult students (Coladarci & Breton, 2001; Hoy & Spero, 2005; Soodak & Podell, 1996; Wheatley, 2005). It is possible that teachers with a high self-efficacy will work harder and persist longer when teaching difficult students, in part because of the teachers' belief in their teaching abilities and because of their belief in the students' abilities (Woolfolk, 1998). Support for this hypothesis may be found in the fact that teachers with low self-efficacy are more critical of students who make errors, work less with students who struggle, and are more likely to refer a difficult student for special education services than teachers with high self-efficacy (Hoy & Spero, 2005; Soodak & Podell, 1996). Furthermore, teachers with high self-efficacy influence student achievement because they are more likely to learn and implement new teaching approaches and strategies, use positive management strategies, provide assistance to low achieving students, increase student academic self-efficacy, set attainable goals for their students and persist when faced with student failure (Hoy & Spero, 2005; Tschannen-Moran & Hoy, 2001). There appears to be a relationship between teacher self-efficacy and student achievement in reading and writing where teachers with high self-efficacy own the responsibility of teaching all children and those with low self-efficacy, attribute problems to the students.

However, teacher self-efficacy is not stable; it is context-specific and changes

with the subject they are teaching, the students they are teaching, and the environment in which they are teaching (Goddard, Hoy, & Hoy, 2000). In addition, both a teacher's age and years of teaching experience have been associated with changes in teacher self-efficacy (Sartawi & Alghazo, 2006). With this consideration in mind, assessing teacher self-efficacy requires the consideration of the teaching task and its context (Goddard et al., 2000). Research (e.g., Kim & Lorschach, 2005) also indicates that teachers are fairly accurate in their ability to assess the level of student self-efficacy. It is possible, therefore, that a contributing factor that differentiates student academic achievement is teacher self-efficacy.

In summary, the influence self-efficacy has on student academic performance (e.g., Lorschach & Jinks, 1999; Schunk, 2003; Usher & Pajares, 2006) and its influence on teacher performance (e.g., Goddard, Hoy, & Hoy, 2000; Timperley & Phillips, 2003; Tschannen-Moran & Hoy, 2001) has been well documented; however, the connection between teacher self-efficacy and student self-efficacy and their relationship to students' reading and writing abilities have not been thoroughly examined. The current study examines how grade six teachers reported self-efficacy for teaching, their perception of the students' self-efficacy for reading and writing, and their students' reported self-efficacy for reading and writing related to students' abilities as measured by the Woodcock-Johnson Tests of Achievement - III (WJ-III). While past research with similar populations (e.g., Kim & Lorschach, 2005; Polychroni et al., 2006; Shell et al., 1995) have examined student self-efficacy as it relates to academic achievement, the current study expands this research by including teacher self-efficacy for teaching and a standardized

assessment of reading and writing abilities. Specifically, the examination of the following constructs should provide an indication of whether high teacher self-efficacy and high student self-efficacy coincides with high student ability: (a) whether teacher perceptions of their students' self-efficacy and the students' self-efficacy accurately reflect students' actual reading and writing abilities, (b) whether teachers' perceptions of students' self-efficacy is the same as the students' reported self-efficacy, and (c) how teacher self-efficacy for teaching correlates with their perceptions of their students' self-efficacy, the students' reported self-efficacy, and student reading and writing abilities

Methods

Participants

A Catholic school board in central Ontario agreed to participate in the study after receiving an overview of the proposed research and meeting with the researchers. The superintendent then sent out a request to the schools in his jurisdiction for grade six teachers who were interested in participating in the study. Based on the replies he received and in order that a general representation of the school board could be obtained, the superintendent selected six grade six classes, two of each of the highest, average, and lowest performing grade six classes. The researchers were not informed of which classes the superintendent deemed to be the high, average, and low performing classes. The grade six teachers (1 male and 5 female) had an average of 6.2 ($SD = 5.26$) years of teaching experience (Max. = 15, Min. = 1) and all teachers were Caucasian.

The 122 grade six students (60 male and 62 female) who volunteered, with parental/guardian consent, to participate in the study were predominantly Caucasian and

were from a middle social-economic background. All participants reported that English was their first language.

Tasks

To verify the students' current reading and writing ability levels, the Woodcock-Johnson Tests of Achievement - III (WJ-III) (Woodcock, McGrew, & Mather, 2006) was administered to all student participants. The test was administered according to the procedures outlined in the administration manual. The WJ-III was administered to demonstrate reading and writing skills in word recognition (vocabulary), spelling, reading comprehension, responding through writing to visual text, and responding through reading and writing to interpretation and interaction with print text. The Broad Reading Standard Score and the Broad Writing Standard Score were calculated using the WJ-III Compuscore® and Profiles Program. These two scores were used to determine the students' reading and writing ability. A reading and writing composite score was calculated by averaging the students' Broad Reading standard score and Broad Writing standard score.

Student Literacy Self-efficacy Questionnaires

The Student Literacy Self-efficacy Questionnaire (SLSEQ) was developed based on questionnaires by Kim and Lorschach (2005) and Fall and McLeod (2001). The SLSEQ consisted of thirty items; items 1-15 focus on reading and items 16-30 focus on writing. Two parallel versions of the questionnaire were created: a teacher version and a student version.

The teacher version (SLSEQ-TV) was administered to ascertain the teacher's perception of each individual student's self-efficacy for reading and writing. Each of the six teachers who participated in the study was required to complete the SSELQ-TV for each student in their class using a four point Likert-scale, which required the teachers to rate the degree to which the student would believe that he/she was able to accomplish reading and writing tasks: 1: Like the student; 2: Somewhat like the student; 3: Not too much like the student; and, 4: Not at all like the student. The questionnaire was completed by the teachers during March and April and collected by the researchers during on-site visitations in April 2008. Teachers were allocated a half-day paid release time to complete the questionnaires.

The student version (SLSEQ-SV) of the questionnaire was administered as a group to each grade six class. Every item was read aloud to the students to ensure that students who had reading difficulties were able to complete the questionnaire. The researcher waited until all students had responded to an item before reading the next item on the questionnaire. The students were instructed that there were no right or wrong answers to any of the items and were asked to rate their attitude and behaviour toward reading and writing based on a four point Likert-scale: 1: Like me; 2: Somewhat like me; 3: Not too much like me; and, 4: Not at all like me.

Teacher Self-efficacy Questionnaire

The Teacher Self-efficacy Questionnaire (TSEQ) examines a teacher's self-efficacy for teaching. The TSEQ was based on the Coladarci and Breton (2001) Teacher Self-efficacy Questionnaire. Each teacher was instructed that there is no right or wrong

response to any of the statements and was asked to rate each item on a Likert-scale 1–5 response scale where: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree. The items were divided into four sections. Section 1 consisted of items 1–7 which were General Statements (TSEQ – General) relating to the teacher’s attitude and behaviour towards teaching

Results

Characteristics of the Participants

As indicated in Table 1, the female students had significantly higher WJ-III Broad Reading Standard Scores than the male students, but no significant difference in their writing abilities. In addition, while there was no significant difference between the female and male students reported self-efficacy for reading and writing, the teachers’ perceived the female students as having significantly higher self-efficacy for reading and writing than the male students.

Table 1

Characteristics of the Female and Male Student Participants

	Gender					<i>t</i>
	Female			Male		
	<i>(n=60)</i>			<i>(n=62)</i>		
	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	
WJ-III BR SS	104.55	10.51		99.97	14.25	-2.02*
WJ-III BW SS	108.43	10.47		106.18	13.52	-1.03
Composite Score	106.49	9.91		103.07	12.61	-1.66
SLSEQ-SV Reading score	39.90	3.28		40.04	3.51	0.23
SLSEQ-SV Writing score	39.76	3.57		38.77	3.96	-1.44

SLSEQ-SV Reading and Writing score	79.66	5.66		78.81	6.23	-0.78
SLSEQ-TV Reading score	40.87	3.11		39.42	3.46	-2.29**
SLSEQ-TV Writing score	39.72	2.99		37.06	3.99	-4.15**
SLSEQ-TV Reading and Writing score	80.50	5.52		76.48	6.94	-3.53**
TSEQ - General	20.57	0.70		20.63	.09	0.490
TSEQ – Reading	55.98	6.26		55.05	6.32	-0.821
TSEQ - Writing	57.17	5.16		57.18	5.05	0.012
TSEQ - Overall	133.72	11.13		132.85	11.17	-0.427

Note: WJ-III BR SS = Woodcock-Johnson Tests of Achievement - III Broad Reading Standard Score; WJ-III BW SS = Woodcock-Johnson Tests of Achievement - III Broad Writing Standard Score; Composite Score = was calculated averaging the combined Broad Reading and Broad Writing scores; SLSEQ-SV-Reading = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Reading; SLSEQ-SV-Writing = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Writing; SLSEQ-SV-Reading and Writing = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Reading and Writing; SLSEQ-TV-Reading = Student Literacy Self-efficacy Questionnaire-Teacher Version- Self-Efficacy for Reading; SLSEQ-TV-Writing = Student Literacy Self-efficacy Questionnaire-Teacher Version-Self-Efficacy for Writing; SLSEQ-TV-Reading and Writing = Student Literacy Self-efficacy Questionnaire-Teacher Version- Self-Efficacy for Reading and Writing; TSEQ - General = Teacher Self-efficacy Questionnaire – General; TSEQ – Reading = Teacher Self-

efficacy Questionnaire – Reading; Teacher Self-efficacy Questionnaire – Writing; TSEQ – Overall = Teacher Self-efficacy Questionnaire – Overall; * $p < .05$, ** $p < .001$

To test for differences between the students in terms of different levels of attainment, their reading and writing composite score, their reading ability, and their writing ability were each divided into three groups (high, average, low). Students in the high ability group had scores over 111. Students in the average ability group had scores between 90 and 110, and students in the low ability group scores below 90. Table 2 displays the mean reading and writing abilities of the high, average and low ability groups.

Table 2

Characters of Ability Groups

	Composite Score			Reading Ability			Writing Ability		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
High	36	117.81	6.11	31	117.26	6.37	62	118.75	6.36
Average	79	101.03	5.63	80	99.59	5.78	66	102.18	4.87
Low	7	79.64	8.43	11	79	14.80	8	80.63	9.40

Characteristics of the Questionnaires

Three scores are derived from the Student Self-efficacy Questionnaire: Self-efficacy for Reading, Self-efficacy for Writing, and Self-efficacy for Reading and Writing. For the purpose of this study, self-efficacy for reading refers to the degree to which individuals believe they can accomplish tasks involving reading. A self-efficacy for reading score was calculated by adding the numeric responses to items 1 -15. A

parallel definition was created by the authors for self-efficacy for writing: self-efficacy for writing is the degree to which individuals believe they can accomplish tasks involving writing. A self-efficacy for writing score was calculated by adding the numeric responses to items 16 -30. Self-efficacy for reading and writing refers to the degree to which individuals believe they can accomplish both tasks. A self-efficacy for reading and writing composite score was calculated by summing the self-efficacy for reading score and the self-efficacy for writing score (See Table 3).

Table 3

Mean Student Self-Efficacy Questionnaire Scores

	<i>n</i>	<i>Min.</i>	<i>Max.</i>	<i>M</i>	<i>SD</i>
SLSEQ-SV - Reading	122	31	48	39.97	3.39
SLSEQ-SV - Writing	122	28	49	39.26	3.79
SLSEQ-SV - Reading and Writing	122	60	96	79.23	5.95
SLSEQ-TV - Reading	122	29	46	40.09	3.35
SLSEQ-TV - Writing	122	29	45	38.37	3.76
SLSEQ-TV - Reading and Writing	122	58	90	78.46	6.57

Note: SLSEQ-SV-Reading = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Reading; SLSEQ-SV-Writing = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Writing; SLSEQ-SV-Reading and Writing = Student Literacy Self-efficacy Questionnaire-Student Version-Self-Efficacy for Reading and Writing; SLSEQ-TV-Reading = Student Literacy Self-efficacy Questionnaire-Teacher Version- Self-Efficacy for Reading; SLSEQ-TV-Writing =

Student Literacy Self-efficacy Questionnaire-Teacher Version-Self-Efficacy for Writing;
SLSEQ-TV-Reading and Writing = Student Literacy Self-efficacy Questionnaire-Teacher
Version- Self-Efficacy for Reading and Writing

Using the Teacher Self-efficacy Questionnaire (TSEQ) a self-efficacy for teaching score was calculated by summing the numeric responses to items 1–7 of the TSEQ. Section 2 consisted of items 8–24, which specifically focused on self-efficacy as it related to teaching reading (TSEQ – Reading). A self-efficacy for teaching reading score was calculated by adding the numeric responses to items 8–24. Section 3 consisted of items 25–41 and was specifically focused on self-efficacy as it related to teaching writing (TSEQ – Writing). A self-efficacy for teaching writing score was calculated by adding the numeric responses to items 25–41. Section 4 consisted of questions relating to demographics (i.e., gender; years of teaching experience at the Primary /Junior (P/J) level, at the Junior/Intermediate (J/I) level, and/or the Intermediate/Senior (I/S) level; and specific reading and writing training that they have received). An overall TSEQ score was obtained by summing the TSEQ – General, TSEQ – Reading and TSEQ writing scores. Table 4 displays the descriptive statistics of the Teacher Self-Efficacy Questionnaire.

Table 4

Mean Teacher Self-efficacy Questionnaire Scores

	<i>n</i>	<i>Min.</i>	<i>Max.</i>	<i>M</i>	<i>SD</i>
TSEQ – General	6	20	22	20.67	0.82
TSEQ – Reading	6	45	63	55	6.72
TSEQ – Writing	6	50	63	57.17	5.42
TSEQ – Overall	6	116	145	132.83	11.89

Note: TSEQ - General = Teacher Self-efficacy Questionnaire – General; TSEQ – Reading = Teacher Self-efficacy Questionnaire – Reading; Teacher Self-efficacy Questionnaire – Writing; TSEQ – Overall = Teacher Self-efficacy Questionnaire – Overall

There was no significant correlation between TSEQ - Reading, TSEQ –Writing and TSEQ – General scores. There was, however, a significant positive correlation between TSEQ – Overall and TSEQ - Reading, $r = .938$, $p = .003$. The TSEQ - Reading produced an adjusted R^2 of .850 ($t(4) = 5.42$, $p = 0.006$) for the prediction of the teachers' overall self-efficacy. A significant difference was also found between TSEQ – Overall and TSEQ – Writing, $r = .947$, $p = .002$. The TSEQ – Writing produced an adjusted R^2 of .872 ($t(4) = 5.91$, $p = 0.004$) for the prediction of the teachers' overall self-efficacy.

Teachers' Perceptions of Students' Self-Efficacy and their Composite Reading and Writing Score

Various associations between teachers' perceptions of their students' self-efficacy and students' composite reading and writing score were quantified using bivariate correlational analyses. A significant positive correlation was found between the teachers'

version of the self-efficacy score (SLSEQ-TV) and the students' reading and writing composite score, $r = .528, p < 0.001$ (adjusted $R^2 = .273$). When student gender was considered, significant positive correlations were found for both female and male students between their teacher's perceptions of their reading and writing abilities and their reading and writing composite score ($r = .559, p < 0.001$ (adjusted $R^2 = .301$) and $r = 0.484, p < 0.001$ (adjusted $R^2 = .222$) respectively).

When the composite score was segmented into high, average, and low groups, only the average group displayed a significant positive correlation, $r = .360, p < 0.001$ (adjusted $R^2 = .118$) between teachers' perceptions (SLSEQ-TV) and the students' composite score. Interestingly, while not significant, the teachers' predictions of the low group was negatively correlated with the students' actual ability ($r = -.436$) and their predictions for the high group were essentially uncorrelated ($r = 0.004$).

When the students' reading and writing abilities were examined separately, a significant positive correlation was found between the SLSEQ-TV reading score and the students' Broad Reading Standard Score, $r = .343, p < 0.001$ (adjusted $R^2 = .110$). Once again, a consideration of gender did not show any differences as both female and male students exhibited a significant correlation between these two scores ($r = .415, p < 0.001$ (adjusted $R^2 = .158$) and $r = .257, p < 0.05$ (adjusted R^2 of .051) respectively).

When the students were divided based on their reading ability, the average ability group exhibited a significant positive correlation between SLSEQ-TV and Broad Reading Standard Score ($r = .267, p < 0.05$, adjusted R^2 of .301) for the female students. Other correlations for these divided groups were not significant.

The SLSEQ-TV writing scores and the Broad Writing Standard Scores were also compared separately. An overall significant correlation was observed ($r = .564, p < 0.001$; adjusted $R^2 = .312$) which suggest a broad based ability for teachers to predict writing ability as the prediction held for both genders (females $r = 0.059, p < 0.001$ and males $r = 0.604, p < 0.001$). When the participants were separated based on their writing ability, no significant correlations were observed between the two factors (high $r = .242$, average $r = .235$, and low $r = -.038$). These mixed results suggest that while teachers have some success predicting students reading and writing abilities, they are not accurate in all areas.

Students' Self-Efficacy for Reading and Writing and their Composite Score

In a similar process, bivariate correlations were calculated to determine whether the students' reported self-efficacy (SLSEQ-SV) accurately reflected their reading and writing abilities as measured by the WJ-III. Overall, the correlation between the students' SLSEQ-SV for reading and writing and the students' composite score was not significant ($r = 0.07$). When gender was taken into account, male students produced a non-significant negative correlation ($r = -.046$) between these two factors. Dividing the composite score into high, average, and low groups also failed to reveal any significant correlations (high $r = .045$, average $r = .049$, and low $r = -.436$).

When just the students' reading ability was examined, the students' self-efficacy for reading (SLSEQ-SV) and their Broad Reading Standard Score produced a non-significant positive correlation ($r = 0.073$). Once again, male students displayed a non-significant negative correlation ($r = -0.12$), while female students displayed a non-

significant positive correlation between these two factors ($r = .214$). When divided into ability groups, non-significant positive correlations resulted (high $r = .133$, average $r = .150$, and low $r = -.292$).

The students' writing ability, when considered separately, yielded similar results when correlated with SLSEQ-SV (overall $r = 0.058$). Gender results were also similar (males $r = -.042$ and female students $r = .179$). Finally, dividing students based on writing ability also yielded non-significant positive correlations (high $r = .065$, average $r = .410$, and low $r = -.144$). This analysis suggests that students are not effective at accurately predicting their own reading and writing ability which may simply be a result of their age.

Teachers' Perception of Students' Self-Efficacy and Students Reported Self-Efficacy

It is also important to determine whether teachers' perceptions of their students' self-efficacy is similar to the students' reported self-efficacy for reading and writing. SLSEQ-TV reading and writing scores and the students' SLSEQ-SV reading and writing score were compared. Interestingly, the overall correlation between these two factors was not significant ($r = .050$). This result held up when gender was taken into account with male ($r = -.054$) and female students ($r = .150$) showing a non-significant correlation between these two factors. When the participants were grouped based on their composite score, non-significant correlations were observed (high $r = -.056$, average $r = .002$ and low $r = .423$).

Similarly, a non-significant correlation was observed between the teachers' SLSEQ-TV Reading score and the students' SLSEQ-SV Reading score ($r = .092$).

Further gender (female $r=.045$ and male $r=.166$) and group (high $r = .03$, average $r = .03$, and low $r = .395$) correlations were also not significant. The teachers' SLSEQ-TV Writing score and the students' SLSEQ-SV Writing score displayed a similar pattern.

The overall correlation and subsequent comparisons failed to reach significant levels (overall $r = .009$; female $r = .016$ and male $r = -.078$; high $r = .103$, average $r = -.190$, and low $r = -.551$). These results suggest that teachers are not overly effective at predicting how students feel about their own reading and writing ability, which implies that teachers may be unaware of the students' self-efficacy for reading and writing may be influencing the students' academic performance.

Teachers' Self-Efficacy for Teaching and their Perception of the Students' Self-Efficacy for Reading and Writing

An examination of whether the teachers' self-efficacy for teaching (TSEQ) influenced the teachers' perception of the students' self-efficacy as measured by the SLSEQ-TV revealed a significant positive correlation between the TSEQ overall score and the SLSEQ-TV reading and writing score, $r = .183$, $p < 0.05$ (adjusted $R^2 = .025$). When gender was considered, teachers' (male = 1 and female = 5) perceptions of male students significantly and positively correlated with TSEQ ($r = .323$, $p < 0.05$, adjusted $R^2 = .273$) while the perception of female students was not significantly correlated ($r = -0.005$). When composite scores were grouped according to ability, the high ability group ($r = .350$, $p < 0.05$, adjusted $R^2 = .097$) and the low ability group ($r = .773$, $p < 0.05$, adjusted $R^2 = .273$) both displayed a significant positive correlation between TSEQ and SLSEQ-TV while the correlation for the average group was not significant ($r = 0.129$).

When the TSEQ and the SLSEQ-TV were divided based on reading and writing, the TSEQ Reading score and the SLSEQ-TV Reading score were significantly correlated ($r = .168, p < 0.05, \text{adjusted } R^2 = .020$) When divided by gender, the male students displayed a significant positive correlation between the TSEQ Reading score and the SLSEQ-TV Reading Score, $r = .317, p < 0.05, \text{adjusted } R^2 = .086$). Once again, the female students displayed a non-significant negative correlation ($r = -0.031$). When the students were divided by reading ability, for the low ability group the TSEQ Reading score and the SLSEQ-TV Reading score were significantly correlated ($r = .654, p < 0.05, \text{adjusted } R^2 = .365$). The other groups were not significant (high $r = .171$ and average $r = 0.185$).

There was a significant correlation between the TSEQ Writing score and the SLSEQ-TV Writing score ($r = .166, p < 0.05$); however, the TSEQ writing score produced an adjusted $R^2 = .020$ ($t(121) = 1.85, p > 0.05$) for the prediction of the teacher's perception of the students' self-efficacy for writing. When divided by gender, the male students displayed a positive correlation between the TSEQ Writing score and the SLSEQ-TV Writing Score ($r = .263, p < 0.05, \text{adjusted } R^2 = .054$). The female students were not significantly correlated ($r = .068$). When the students were grouped based on their writing ability, the average ability group ($r = .211, p < 0.05$) and the low ability group ($r = 0.185, p < 0.05$) were significantly correlated based on TSEQ and SLSEQ-TV. This correlation was not significant for the high writing ability group ($r = 0.359$). Overall these results suggest that teachers who view their own abilities to be higher also predict higher ability in their students.

Teachers' Self-Efficacy for Teaching and the Students' Self-Efficacy for Reading and Writing

An examination of whether the teachers' self-efficacy for teaching reading and writing (TSEQ) correlates with the students' self-efficacy for reading and writing revealed no significant correlation between the TSEQ overall score and the SLSEQ-SV reading and writing score, $r = .010$. The gender and group results were also not significant (male $r = -.004$ and female $r = .019$; high $r = .098$, average $r = -.007$ and low $r = -.058$).

When the TSEQ and the SLSEQ-SV data was divided into reading and writing scores, the reading data revealed the following non-significant correlations: overall $r = .050$; male $r = 0.094$ and female $r = .483$; high $r = -.314$, average $r = 0.056$ and low $r = 0.251$. Overall, the writing scores followed a similar pattern (overall $r = -.051$; male $r = -.009$ and female $r = -.098$). However, when the students' were divided based on writing ability, the TSEQ and the SLSEQ-SV were found to be negatively correlated for the low ability group ($r = -.847$, $p < 0.05$, adjusted R^2 of .671). These results suggest that teachers who have higher self-efficacy for their own teaching ability had an inflated and inaccurate perception of how low writing ability students felt about their own writing skills. This was not the case for the average ($r = -0.079$) or high ability group ($r = 0.115$).

Teachers' Self-Efficacy for Teaching Reading and Writing and the Students' Actual Abilities

Finally, correlational analyses were conducted to determine the relationship between the teachers' self-efficacy for teaching reading and writing (TSEQ) and students' reading and writing abilities as measured by the WJ-III. Non-significant correlations were found for the combined WJ-III scores (overall $r = -.061$; male $r = -.147$ and female $r = 0.036$; high $r = -.196$, average $r = .049$ and low $r = -0.543$).

An examination of the students' reading ability revealed a significant positive correlation between the TSEQ reading score and the students' Broad Reading Standard Score ($r = -.178$, $p < 0.05$, adjusted $R^2 = .023$). This result held for male students ($r = -.298$, $p < 0.05$, adjusted $R^2 = .074$), but not for female students ($r = -.053$). When the participants were divided based on reading ability, the high ($r = -.200$), average, ($r = -.038$) and low ability ($r = -.339$) groups all exhibited a non-significant negative correlation. Writing scores had the following non-significant pattern (overall $r = .034$; male $r = .000$ and female $r = .079$; high $r = -.165$, average $r = .191$, low $r = -0.292$). These results suggest that teachers' beliefs about their teaching abilities have little to do with the actual reading and writing abilities of their students.

Discussion

The current study examines the connection between teacher self-efficacy for teaching reading and writing and student self-efficacy for reading and writing as they pertain to student ability. Unlike the findings of Kim and Lorschach (2005), the teachers and students in the current study did not share similar perceptions of the students' self-

efficacy. A possible explanation for the differences in perception may be attributed to the relationship between the students' self-efficacy and their actual reading and writing abilities. The teachers' perceptions of the students' self-efficacy for reading and writing correlated with the students' reading and writing abilities. However, no correlation was found between the students' reported self-efficacy for reading and writing and their actual abilities. While teachers may have been able to accurately perceive how students' self-efficacy for reading and writing reflects their actual ability, it appears as though the grade six students in the current study have not yet developed their self-efficacy based on their actual reading and writing abilities.

A possible explanation for this result may lie in Shell et al.'s (1995) research, which found students' self-efficacy increased in accuracy as they age. It is possible, therefore, that the participants in the current study were basing self-efficacy on their perceived reading and writing abilities, rather than on their actual abilities suggesting that younger students may not establish their self-efficacy for reading and writing based on their actual performance. If students' self-efficacy for reading and writing is based on their actual abilities, this would coincide with Schunk's (2003) argument that students have low self-efficacy because they rely on the feedback of their teachers rather than on their actual abilities. However, if the students in the current study were relying on their teachers' feedback (verbal persuasion) in the formulation of their self-efficacy for reading and writing, then the students and teachers should have had similar views of the students' abilities. While the results of this study indicate that student self-efficacy for reading and writing is being formulated based on actual performance, further research is warranted to

determine the effects of other variables such as vicarious experiences, verbal persuasion, and physical arousal.

Past research (Coladarci & Breton, 2001; Schunk & Rice, 1992; Shell, Colvin, & Bruning, 1995; Soodak & Podell, 1996; Woolfolk, 1998) has also indicated that teacher self-efficacy correlates with student achievement. The results of the current study suggest that a teacher's self-efficacy for teaching reading and writing does not correlate with the students' composite score or their writing ability. Interestingly, there was a positive correlation between the teachers' self-efficacy for teaching reading and the students' reading ability; however, this positive correlation was only significant for the male students. A possible explanation for this difference may lie in the gender difference between the teachers (1 male teacher and 5 female teachers) and the male students. These results suggest that high teacher self-efficacy for teaching reading does not transfer to the teaching of writing. This may be attributed to the belief that if an individual can read well, he/she will be able to write with a similar degree of ability. Furthermore, the mechanics of writing are often not given as much attention and/or assessed to the same degree as the mechanics of reading.

Kim and Lorschach (2005) found that high self-efficacy equated to high writing ability while Polycroni et al. (2006) found a similar relationship in reading. In the current study, however, no significant correlations were found between the students' reported self-efficacy for reading and writing and their actual abilities. While there were no significant differences between the male students' and the female students' self-efficacies, the male students' self-efficacy for reading and writing was insignificantly negatively

correlated with their actual abilities while the female students' self-efficacy for reading and writing was insignificantly positively correlated with their abilities. These results suggest that the male students may be constructing their self-efficacy for reading and writing using different constructs (e.g., vicarious experiences) than the female students. Early literacy practices have historically been associated with mothers who read to and engaged their preschool children in drawing and pre-writing activities at home (Gambell & Hunter, 1999). This has led to the stereotypical notion of reading as a feminine activity and this attitude often becomes ingrained in children before they begin their formal education. Many theorists believe that boys are raised to believe that being smart and reading are not desirable masculine attributes (Froese-Germain, 2004; Gibb, Fergusson, & Horwood, 2008). This notion may foster a difference in educational values, attitudes, and behaviours of both males and females (Gibb et al., 2008).

The findings of the current study have a number of educational implications. Given that students with reading and writing difficulties often have low self-efficacy (e.g., Chapman, 1988; Polychroni et al., 2006), it would seem important for elementary, secondary, and postsecondary school systems alike to be fully aware of this aspect of students' reading and writing experiences and to provide appropriate resources for identifying and addressing it, such as special education or other services that directly target the issue of self-efficacy for reading and writing. Second, it is important for teachers to be aware that their perceptions of students' self-efficacy may be influencing students' abilities in the areas of reading and writing. That is, while teachers may be able to accurately perceive their students' self-efficacy for reading, their ability to accurately

perceive students' self-efficacy for writing and overall reading and writing abilities may be influenced by the students' gender and ability. Third, while teachers' perceptions of students' self-efficacy may correlate with the students' actual reading and writing ability, young students may not have an accurate correlation between their self-efficacy and their ability. Therefore, teachers will need to draw students' attention to their successes rather than assume that the students are making this connection on their own.

Finally, it is important for teachers to realize that their perceptions of the male students' self-efficacy for reading and writing may be different than their perception of their female students' self-efficacy for reading and writing. By developing this understanding, it may affect how teachers evaluate their students in terms of the quality of work students are producing, the students' willingness to participate in activities that involve reading and writing and the inconsistencies between what the teacher perceives a student is capable of producing and what he/she actually does produce. In addition, it is important that pre-service teachers examine their pre-conceived notions of self-efficacy, as this research has demonstrated that these perceptions could influence the development of their future students' self-efficacy in reading and writing abilities.

The findings also have a number of implications for further research. Further research is needed to understand the influences that may be affecting the development of self-efficacy for reading and writing, such as gender and age. To determine whether the age and gender of the students may have influenced the results, a similar study should be conducted at the grade three, six, and ten level. These grades should be targeted as they coincide with Education Quality and Accountability Office (EQAO) and Ontario

Secondary School Literacy Test (OSSLT) tests. These external assessments consistently reveal that male students do not perform as well as female students in reading and writing (Ontario Ministry of Education, 2004). As a result, further research is needed to determine the intrinsic motivators influencing this gender gap.

A longitudinal study should also be conducted to determine changes in student self-efficacy for reading and writing and how these changes occur. Such a study would provide an opportunity to examine how different teachers' self-efficacy for teaching reading and writing and their varying perceptions of students may affect students' self-efficacy. Finally, further research is warranted to determine how instructional methodologies used by practicing and pre-service teachers with varying levels of self-efficacy for teaching reading and writing may impact student ability and self-efficacy.

Several limitations of the present study need to be addressed. First, our sample consisted almost entirely of Caucasian participants and our findings may therefore not be transferable to individuals from other ethnic or racial groups. Second, as previously stated, there was an underlying difference in the size of the ability groups, which may have contributed to the poor predictive ability of the teachers. Third, there were more male students in the low ability groups than female students. While this is an accurate representation of the makeup of the schools, it does not allow for understanding the difference between low reading and writing ability female students and low reading and writing ability males. Finally, while self-efficacy is a context-dependent variable, the current study only examined self-efficacy in a classroom setting. Further research is warranted to determine the influence of other variables such as the influence of parents,

peers, and socio-economic status.

Conclusions

Examining the relationship of self-efficacy for reading and writing and actual ability has revealed that the teachers' perceptions of the students' self-efficacy for reading and writing was significantly correlated with the students' actual abilities. However, the students' self-efficacy for reading and writing was not correlated with their actual ability. The examination of whether teachers' belief in students' reading and writing ability was the same as the students' belief in their abilities revealed no significant correlation between the two variables. Finally, teachers' self-efficacy for teaching reading and writing was not significantly correlated with students' self-efficacy or their reading and writing abilities. A significant correlation was found between the teachers' self-efficacy for teaching reading and writing and the teacher's perception of the students' self-efficacy; however this relationship was weak for both reading and writing. In summary, sensitivity to the role played by self-efficacy in reading and writing development, as well as incorporating it into intervention programs, may well be a key step in further helping students to develop strong reading and writing abilities. The importance of self-efficacy highlights the need for additional research to examine further its impact on reading and writing development.

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