The Relationship of Reading Motivation and Self-Efficacy to Reading Achievement[1]

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Abstract

Academic motivation and self-efficacy (Bandura 1977, 1986, 1993, 1997) are fast becoming critical areas of literacy instruction and determining factors of overall reading achievement and life-long application (Applegate & Applegate, 2010; Marinak & Gambrell, 2008; McClure, 2008; Melnick, Henk, & Marinak, 2009). This concurrent mixed methods study examined the relationship of reading motivation and self-efficacy with respect to reading achievement for N=487 grade 5-8 suburban middle school level students. All participants completed the Motivation for Reading Questionnaire (MRQ), the Reader Self Perception Scale 2 (RSPS2), and the AIMSWeb curriculum-based measurement instrument. In addition, N=4 content expert interviews were conducted. Quantitative and qualitative findings indicated that the construct of reading self-efficacy *Observation* (Henk & Melnick, 1995), was the most important predictor of reading achievement (p<.001). Implications for further research are included.

Introduction

Early reports by the U.S. Department of Education stated that most elementary students score below grade-level reading proficiency despite four years of public schooling (U.S. Department of Education, 2004). Current information from the National Assessment of Educational Progress (NAEP) reveals that reading performance growth has made very little measurable change from 1992-2011 (nces.ed.gov/programs). Many factors relate to students' ability to learn how to read: socioeconomic status, family support, quality of education received, and the desire to learn, are just a few. Current research findings indicate that student motivation and self-efficacy have become important determining factors of overall literacy achievement and success (Applegate & Applegate, 2010; Marinak & Gambrell, 2008; McClure, 2008; Pitcher et al., 2007; Solheim, 2011).

Motivated readers are defined as "engaged, curious, and anxious to talk about what they are reading. They are able to read from several texts at the same time, look forward to new challenges and value text choice and time to engage with print" (Marinak et al., 2010, p. 503). The relationship between motivation and reading is also crucial (Pitcher et al., 2007), requiring specific instructional attention and consideration (Aarnoutse & Schellings, 2003; Applegate & Applegate, 2010; Becker, McElvany, & Kortenbruck, 2010; Marinak & Gambrell, 2008, 2009).

Self-efficacy, defined as one's perceived ability to complete a task (Bandura, 1997), greatly affects reading growth as well (Cloer & Ross, 1997; Henk & Melnick, 1995; Melnick et al., 2009). Self-perceptions can drastically affect the learning process, both positively and negatively (Henk & Melnick, 1995; Melnick et al., 2009). When applied to literacy, students who identify themselves as skilled readers most likely value the reading process, and practice regularly out of enjoyment. In contrast, students who do not identify themselves as competent readers avoid reading, and any related practice, which can result in low reading achievement or grade-level attainment (Henk & Melnick, 1995).

The relationship between the motivation to read, self-efficacy, and achievement has been documented through numerous research studies (Applegate & Applegate, 2010; Becker et al., 2010; Marinak & Gambrell, 2008). Despite this information, few schools assess these skills or recognize any correlation. Determinately, there are various strategies available to approach the reading motivation and self-efficacy predicament.

The No Child Left Behind Act (NCLB) required that reading be a priority in today's public schools. Educators had to administer a standards-based curriculum focused on student achievement, thus including reading instruction. The goal was for every child to demonstrate reading competency by the end of third grade. Despite these efforts, and a great increase in literacy funding, many students continue to struggle to achieve grade-level reading mastery. Therefore, the independent student motivation to internalize the reading process has been identified as a determining factor in overall literacy achievement (Applegate & Applegate, 2010; Marinak & Gambrell, 2008; McClure, 2008; Pitcher et al., 2007).

Reading Motivation

The link between motivation and reading is critical and has been established through countless studies, concerning all manner of students and learning environments (Becker, McElvany, & Kortenbruck, 2010; Marinak & Gambrell, 2008; McClure, 2008; Pitcher et al., 2007). Literature suggests that unmotivated, struggling readers are already behind their classmates at the start of school, and will remain behind, unless a successful intervention is put into place within the first few years of their education (Morgan et al., 2008). Research also illustrates that the motivation to read decreases over time, confounding this problem further, as students progress through middle and high school, making this a critical area of concern (Baker & Wigfield, 1999; McKenna, Kear, & Ellsworth, 1995; Unrau & Schlackman, 2006). Researchers agree, motivation should be addressed in the classroom and within the curriculum to support reading growth and proficiency (Aarnoutse & Schellings, 2003; Applegate & Applegate, 2010; Becker, McElvany, & Kortenbruck, 2010; Marinak & Gambrell, 2008 & 2009; Melnick, Henk, & Marinak, 2009). Due to its ever changing nature, motivation is a struggle all educators face, yet, there is no definitive approach or solution. Students' needs and personalities continue to influence motivational tactics, and further exploration is required to meet these demands.

Self-Efficacy

Much like motivation, self-efficacy or one's perceptions of his/her ability (Bandura, 1994) is also significant to the educational process. Efficacious beliefs influence the way individuals behave, as determined by their thoughts, feelings, and levels of motivation (Bandura, 1994). "A strong sense of self-efficacy enhances human

accomplishment and personal well-being," while individuals with low efficacy avoid challenging situations and set weak goals" (Bandura, 1994, p. 71). These insights can undoubtedly shape how students learn, and to what level of motivation they put forth.

Combined, reading motivation and self-efficacy present a troubling predicament for educators today. Many learners struggle with these issues at some point in their educational careers and are not supported by current curriculum or classroom practices. Multiple solutions are necessary to ensure all students are able to reach their full potential as learners.

The relationship between reading, the motivation to learn, and reading self-efficacy has been documented in the literature targeting the importance of addressing these skills, attitudes, and beliefs, as a significant aspect of reading instruction (Aarnoutse & Schellings, 2003; Applegate & Applegate, 2010; Becker et al., 2010, Henk & Melnick, 1995; Marinak & Gambrell, 2008; Melnick et al., 2009). In fact, Morgan and Fuchs (2007) suggest that educators should focus their instructional strategies on both reading skills and motivation. Despite this research, few schools assess or confront these issues within a fixed curriculum.

The educational implications for devising approaches to resolve this predicament are considerable. Advances in motivational curriculum and methods for addressing self-efficacy are needed to move struggling students forward. Therefore, further study is necessary to expose the intricacies of these relationships, and how solutions can be developed for struggling readers, as a means for change. Our current educational system is failing students who are struggling with motivational and self-efficacy issues. Without interventions and strategies for addressing these needs, this problem will

continue to deepen, as the current generation becomes more and more difficult to engage in the traditional classroom. It is vital that educators focus on this issue and determine a method for immediate action.

Research Questions

This study investigated the following research questions:

1. To what extent and in what manner can reading self-efficacy and reading motivation explain variation in reading achievement?

2. To what extent and in what manner can reading self-efficacy and reading motivation explain variation in reading achievement for grades 5-6 and grades 7-8?

3. Is there a significant difference in Reading Achievement for grades 5-6 and grades 7-8 students who receive a Personal Literacy Plan (PLP)?

4. What are the perceptions of reading specialists regarding the relationships of their students' reading motivation and reading self-efficacy with reading achievement?

Methodology

Design

The mixed methods design for this research utilized a concurrent approach that involved the simultaneous collection of both quantitative and qualitative data, although the quantitative facts collected held precedence (Creswell, 2009). Statistical information was gathered in the form of the Reader Self Perception Scale 2, the modified version of the Motivation for Reading Questionnaire, and the AIMSWeb reading assessment tool, to address RQ1 and RQ2. Qualitative data, in the form of content expert interviews with current reading specialists, were conducted to satisfy RQ2 (Rubin & Rubin, 2012). The findings from each were combined in the analysis to provide "an expanded

understanding of the research problems" and to "offset the weaknesses inherent within one method with the strengths of the other" (Creswell, 2009, p. 203-213).

Data Collection

The study involved the administration of the Reader Self Perception Scale 2 (RSPS2), the modified Motivation to Read Questionnaire (MRQ) to participants (grades 5-8). A single packet of instruments was administered over two isolated time periods. AIMSWeb Curriculum-Based Measurement reading scores were also obtained for analysis, as the students had previously completed this assessment as part of their traditional curriculum. Content expert interviews were also conducted with highly qualified reading specialists throughout the student data collection phase. The superintendent of schools granted permission to conduct this research.

Participants

For the quantitative component participants were $N=498$ suburban middle school level students, grades 5-8, residing in New England. Approximately, 32% of students were eligible for free or reduced lunch, and 20% received special education services (infoworks.ride.ri.gov). The highly qualified teacher-student ratio was 1:10 (numbers have been changed to protect the confidentiality of the participants).

For the qualitative element in this study, participants were identified as $N=4$ current reading specialists. All specialists were identified as highly-qualified in the state which they hold their certification. Participants had both reading specialist and traditional classroom teaching experience.

Instrumentation

Participants were assessed utilizing three instruments: the Reader Self Perception Scale 2 (RSPS2), a modified version of the Motivation for Reading Questionnaire (MRQ), and the AIMSWeb Curriculum-Based Measurement tool. Additionally, expert interviews were conducted with reading specialists.

The Reader Self-Perception Scale 2

The Reader Self-Perception Scale2 (RSPS2) instrument is a middle-high school level measure to determine how students perceive themselves as readers (Melnick, Henk, & Marinak, 2009). This 46-item survey addressed students' internal beliefs regarding overall reading ability, word recognition, word analysis, fluency, and comprehension. The RSPS2 utilized a 5-point Likert scale, with responses ranging from *Strongly Disagree* to *Strongly Agree* (Melnick et al., 2009). Four scales, and the number of items per scale, were identified for analysis: Progress (PR=9), Observational Comparison (OC=6), Social Feedback (SF=9), and Physiological States (PS=8).

Validity. Content validity is supported, as the measure is based upon Bandura's (1977, 1982) self-efficacy theory. In addition, "student response data (*N*=3031) from the pilot instrument provides evidence of construct validity though a principal components analysis of the factor structure" (Melnick, Henk, & Marinak, 2009, p. 2).

Reliability. The alpha reliabilities for the data from each dimension, for a sample of *N*=3,031 middle school students ranged from .88 to .95 (Melnick, Henk, & Marinak,

2009). For the data in this study the alpha reliabilities are listed in Table 1 and ranged from .84 to .92 for grades 5-8 and .85 to .94 and .84 to .90 for grades 5-6 and grades 7-8, respectively.

Insert Table 1

The Motivation for Reading Questionnaire

The Motivation for Reading Questionnaire (MRQ) was also employed to gather student data (Wigfield & Guthrie, 1995). The MRQ is a student-rated assessment, which measured a student's level of motivation, taking approximately 15-20 minutes to complete. A modified version of the MRQ was developed by Baker and Wigfield (1999), reducing the original 82 item measure to 53 items. Of these, 31 items were selected for the present study, assessing the following dimensions: Challenge, or the eagerness to attempt difficult reading material (5 items), Curiosity, or the inquisitive need to read about a given subject (6 items), Importance, or the value of reading (2 items), Recognition, or the satisfaction in receiving praise for reading growth (5 items), Competition, or the drive to exceed others in reading performance (6 items), and Social, or the practice of experiencing the reading process with others (7 items). The MRQ employed a 4-point Likert scale, with responses ranging from v*ery different from me* to a *lot like me* (Baker & Wigfield, 1999).

Validity. Content validity was supported through the literature (Baker & Wigfield, 1999; McKenna, Kear, & Ellsworth, 1995; Oldfather & Wigfield, 1996; Wigfield & Guthrie, 1997), in addition to the judgment of a panel of reading experts. Support for the item structure, or construct validity, was developed using a confirmatory factor analysis (McCoach, Gable, & Madura, 2013).

Reliability. Reported reliabilities for the data ranged from .69 to .76 for the selected items (Baker & Wigfield, 1999). For the present study the alpha reliabilities ranged from .68 to .83 for grades 5-8 and .61 to .78 and .65 to .83 for grades 5-6 and grades 7-8, respectively. Due to the low reliabilities of the data for the 2 item MRQ *Importance* dimension, it was deleted from the analyses that follow.

Insert Table 2

The AIMSWeb Reading Curriculum-Based Measurement

The final instrument administered was the AIMSWeb Reading Curriculum-Based Measurement (R-CBM); a standardized general outcome tool that calculates a student's oral reading ability (grades 1-12). AIMSWeb can be used for universal screening and progress monitoring, providing normative data to rate students' reading abilities (http://www.aimsweb.com).

Validity. Criterion-validity for R-CBM screening scores was supported through the research (Andren, 2010; Keller-Margulis, Shapiro, & Hintze, 2008; Merino & Beckman, 2010; Shapiro, Keller, Lutz, & Hintze, 2006; Silberglitt & Hintze, 2005). In addition, correlations for R-CBM screening scores were calculated with the North Carolina and Illinois reading test administered in the 2009-2010 school year. "The correlations were adjusted for range restriction, using the national norm sample as the reference group. These analyses indicate the R-CBM scores correlate approximately .70 with the state reading tests grades 3-5 and in the mid to low .60s in grades 6 through 8" (AIMSWeb Technical Manual, 2012, p. 11).

Reliability. Test-retest reliability was conducted over the course of three years (*N*=8,000) to confirm that the multiple R-CBM probes assess at the same rate, and

produce comparable results (Christ & Silberg, 2007). Correlations between R-CBM

benchmark scores, obtained over three school years, indicated stability reliabilities from

.88-.95. In addition, to ensure probes accurately reflected specific grade-level ability,

another study was conducted by Howe and Shinn (2002), resulting in alternate-form

reliabilities ranging from .79-.92 (grades 1-8) for a single R-CBM probe administration.

A Lexile test was also administered to align with the R-CBM measure (*N=5,444).* The

internal consistency (alpha) reliability of the Lexile data at each grade ranged from .90-

.92. Correlations of R-CBM with the Lexile test data ranged from .59-.73 (median=.66).

For the present study no stability reliabilities were calculated.

Reading Specialist Interviews

   Lastly, four interviews with contemporary reading specialists were conducted using a

semi-structured interview protocol, organized as series of predetermined questions, and

further probing for information (Creswell, 2009; Gall, Gall, & Borg, 2007; Rubin & Rubin,

2012). A conversational guide of the following seven predetermined questions was

employed, to ensure all topics were addressed, and consistency was maintained

throughout all individual interviews (Rubin & Rubin, 2012): (1) How long have you been

a reading specialist? (2) What is your personal definition of reading motivation? (3)

What changes have you seen in reading motivation and reading self-efficacy throughout

your career working with struggling readers? (4) What link, if any, do you see between

reading motivation, reading self-efficacy, and reading achievement? (5) How do you

feel self-efficacy, or the overall belief in one's ability, plays a role in educating struggling

readers? (6) What is the biggest obstacle you face when working with struggling

readers? (7) Is there anything else you would like to share about reading motivation, self-efficacy, and/or reading achievement?

Participants signed a consent form prior to the interview. Transcripts of individual interviews were coded and analyzed to determine common themes, as they apply to reading motivation, self-efficacy, and reading achievement (Gall et al., 2007; Cresswell, 2009). Credibility and trustworthiness were established through member checking. Following the interviews, participants had the opportunity to review and validate the accuracy of the researchers' findings gathered during the interview process (Gall et al., 2007; Lincoln & Guba, 1985).

Findings

Research Question 1

Research Question 1 specifically addressed the relationship between Reading Achievement and the sub-scores from the predictor variables, Reading Motivation (RM) and Reading Self-Efficacy (RSE). Examination of the data established that the RSE *Observation* dimension explained a significant amount of variation (r^2= .181, p<.001) in Reading Achievement. Once RM *Challenge* was introduced, the amount of variance was increased by .022. After RSE *Social Feedback*, RSE *Physiological*, and RM *Curiosity* scores were entered into the model, the total amount of variance explained in Reading Achievement was R^2=.241 (large effect size).

Insert Table 3

The implications of these findings, consistent with the literature (Bandura, 1977, 1986, 1993, 1997; Henk & Melnick, 1995; McCoach et al.; Schunk, 1991), suggest that self-efficacy is critical to achievement. In this case, Reading Achievement is

significantly related to RSE *Observation* or, how "a child perceives her or his reading performance to compare with the performance of classmates" (Henk & Melnick, 1995, p. 472). Although, it is "important to understand that the four sources of information used in making reader self-perception judgments do not operate in isolation from one another," student's emphasis on *observation* can have significant implications both in and out of the classroom (Henk & Melnick, 1995, p. 472). The next dimension to enter the model was RM *Challenge,* defined by Wigfield, Guthrie, and McGough (1996) as a "reading efficacy dimension" that focuses on student's "satisfaction of mastering or assimilating complex ideas in the text" (p. 2). Again, these data support the importance of reading self-efficacy and reveal that it is essential to the pursuit of reading achievement.

The remaining dimensions that explain the total variance in Reading Achievement are defined as follows: RSE *Social Feedback*, or the "direct or indirect input about reading from teachers, classmates, and people in the child's family" (Henk & Melnick, 1995, p. 472); RSE *Physiological*, or the "internal feelings a child experiences during reading" (Henk & Melnick, 1995, p. 472) and RM *Curiosity*, or the "desire to learn about a particular topic of interest to the child" (Wigfield et al., 1996, p. 2). Each dimension further confirms the significance of the social aspect of reading and learning, as supported by the literature (Bandura, 1977, 1986, 1993, 1997; Henk & Melnick, 1995).

Research Question 2

The stepwise multiple regression analysis employed in Research Question 2 examined the relationship of RM and RSE with respect to Reading Achievement for

grades 5-6 (N=244) and grades 7-8 (N=241). Inspection of the data indicated, that in grades 5-6, the dimension RSE *Observation*, explained a significant amount of the variation (R^2=.112), in reading achievement scores. Once RM *Challenge* was introduced, the amount of variance was increased to .140. After RSE *Social Feedback*, and RSE *Progress* scores were entered into the model, the total amount of variance explained in Reading Achievement was R^2=.170 (medium/large effect size). Consistent with the findings for Research Questions 1 and 2 RSE *Observation* continues to explain the most variation in Reading Achievement in both grades 5-6 and 7-8.

<div align="center">**Insert Table 4**</div>

Research Question 3

For Research Question 3, a *t*-test was calculated to determine if there is a significant difference in Reading Achievement for grades 5-6 and grades 7-8 students who receive a Personal Literacy Plan (PLP). A PLP is "a plan of action used to accelerate a student's learning in order to move toward grade level reading proficiency. A problem solving approach is used to develop this plan in order to determine specific needs, establish short-term student goals, and set the course of action" (http://www.ride.ri.gov). No significant differences between the two grade level clusters with respect to Reading Motivation and Reading Self-Efficacy were found.

<div align="center">**Insert Table 5**</div>

Research Question 4

Research Question 4 explored the reading specialist's perspective through individual content expert interviews. As confirmed by the specialists, the relationship among reading motivation, reading self-efficacy, and reading achievement is significant and

ever present in the classroom today. The specialists felt that we are "building a nation of non-readers," and that reading motivation and self-efficacy issues must be addressed if we are to produce competent adult readers.

Overall, the specialist felt that being an educator in today's world is daunting with all of the assessments, ever-changing curriculum, and expectations. Although, reading is a critical element within standardized testing practices, and we know how important it is in the real world, yet many children still fall through the cracks. These interviews highlighted that it is time to address motivational and self-efficacy issues within the school day, regardless of their testing implications.

Discussion

The results from this research clearly demonstrate the link between reading motivation, reading self-efficacy, and reading achievement. Both the quantitative and qualitative data collected support the significance of these challenges. In agreement with the literature (Aarnoutse & Schellings, 2003; Applegate & Applegate, 2010; Marinak & Gambrell, 2008; Melnick, Henk, & Marinak, 2009), motivation and self-efficacy issues must be addressed within the classroom to achieve optimal reading success. It is also clear that the most influential factor, assessed within this study was the dimension *Observation* of reading self-efficacy, or how "a child perceives her or his reading performance to compare with the performance of classmates" (Henk & Melnick, 1995, p. 472). In agreement, the content specialists consider this a critical area of concern that they struggle with on a daily basis with their students.

Recommendations for Policy and Practice

It is recommended by numerous researchers (Aarnoutse & Schellings, 2003; Applegate & Applegate, 2010; Marinak & Gambrell, 2008; Melnick, Henk, & Marinak, 2009), and the results from this study, that reading motivation and reading self-efficacy be taken into consideration when addressing reading achievement. Both the motivation and efficacy surveys used within this study (the Motivation for Reading Questionnaire - MRQ, and the Reader Self-Perception Scale 2 - RSPS2) are valuable tools, which can be employed to assess existing levels of reading motivation and efficacy in middle-level students. These probes would easily provide baseline data and ongoing progress monitoring as schools evaluate and implement remediation for struggling learners.

Presently, there is a considerable lack of options available to resolve the challenges which accompany low reading motivation and self-efficacy. Although educators acknowledge this need, little is being done to satisfy this issue on a larger scale. While many teachers offer incentives, they may actually be doing more harm by lowering intrinsic motivation.

It is recommended by the researcher that schools identify specific areas of need, within reading motivation and reading self-efficacy, by evaluating students (i.e., survey, observation, or interview). Once critical dimensions are identified, programs, tools, and strategies can be employed to target these challenges. Schools can determine the effectiveness of their remediation plan by re-evaluating students with the same measures. Changes can be made based upon the data collected in an effort to enhance reading achievement. If, for example a school finds their students place more value on the dimension of self-efficacy *Observation*, they could alter their instruction to include meaningful peer experiences to enhance and develop efficacious behavior.

Based upon this research the following recommendations can be made: (a) middle school principals should administer the MRQ and the RSPS2 to determine reading motivation and self-efficacy levels to inform instruction, (b) educational leaders should take into consideration reading motivation and self-efficacy levels of their students to determine appropriate interventions and curriculum changes, and (c) middle schools should provide staff with professional development regarding reading motivation and self-efficacy based upon student survey outcomes.

Recommendations for Further Areas of Study

This research explored the predictive validity of reading motivation and reading self-efficacy scores for explaining variation in reading achievement for middle school level students. This research also explored reading specialists' perspectives regarding these concerns. Based upon the results identified in this research, there is a clear and identifiable relationship between reading motivation, reading self-efficacy, and reading achievement that can be measured and addressed. As established in the present study, the dimension of self-efficacy O*bservation* (i.e., how a student perceives their reading performance to compare with the performance of classmates) was the most significant predictor of reading achievement, and should be further explored for implications within the classroom for middle school students. The reading specialist content expert interviews supported this finding and indicated that motivation and self-efficacy were of critical concern on a daily basis. Based upon these outcomes, the following are recommendations for further areas of study: (a) examine how reading specialists currently address reading motivation and self-efficacy in the classroom and/or small group instruction to identify gaps that may be addressed, (b) evaluate and

determine the implications of how present-day curriculum addresses reading motivation and self-efficacy, (c) further explore the relationship between reading specialist's perceptions of student self-efficacy and reading achievement, (d) investigate the decrease in reading motivation over time and its relationship to overall academic achievement, (e) determine, implement, and measure the effectiveness of tools and strategies to address the dimension of reading self-efficacy *Observation*, and (f) *e*xplore students' perceptions of peer learning and their influence on reading motivation and self-efficacy.

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Table 1

Internal Consistency Reliability for the RSPS2 Data by Grade Levels

Dimension	Number of Items	Alpha Grades 5-8	Alpha Grades 5-6	Alpha Grades 7-8
Progress	*16*	.91	.90	.90
Observational Comparison	*9*	.89	.88	.90
Social Feedback	*9*	.84	.85	.84
Physiological States	*12*	.92	.94	.90

Table 2

Internal Consistency Reliability for the MRQ Data by Grade Levels

Dimension	Number of Items	Alpha Grades 5-8	Alpha Grades 5-6	Alpha Grades 7-8
Challenge	**5**	**.74**	**.68**	**.77**
Curiosity	**6**	**.73**	**.71**	**.71**
Importance	**2**	**.68**	**.61**	**.65**
Recognition	**5**	**.83**	**.75**	**.83**
Competition	**6**	**.77**	**.73**	**.78**
Social	**7**	**.81**	**.78**	**.80**

Table 3

Stepwise Multiple Regression of Reading Motivation and Reading Self-Efficacy on Reading Achievement (*N*=487)

Variables	R	R²	R² Change	F Change	p	B
RSE Observation	.425	.181	.181	107.220	<.001	.390
RM Challenge	.450	.203	.022	13.101	.001	.190
RSE Social Feedback	.464	.215	.012	7.587	.001	-0.191
RSE Physiological	.479	.229	.014	8.925	<.001	.205
RM Curiosity	.490	.241	.011	7.172	.008	-.141

Note. RM = Reading Motivation and RSE = Reading Self-Efficacy. The dependent variable is *Reading Achievement.*
RM Recognition, RM Competition, RM Social, and RSE Progress did not enter the stepwise regression equation as they did not significantly increment the amount of variance explained in Reading Achievement beyond RSE *Observation*, RM *Challenge*, RSE *Social Feedback*, RSE *Physiological*, and RM *Curiosity*. Effect size guidelines (*R²*) indicate .02 = small; .13 = medium; .26 = large.

Table 4

Stepwise Multiple Regression of Reading Motivation and Reading Self-Efficacy, on Reading Achievement for Grades 5-6 (N=244) vs. Grades 7-8 (N=241)

	Grades 5-6				
Variables	*R*	*R²*	*F Change*	*p*	*B*
RSE Observation	.335	.112	30.539	<.001	.292
RM Challenge	.374	.140	7.717	.030	.153
RSE Social Feedback	.395	.156	4.683	.007	-.206
RSE Progress	.412	.170	4.029	.046	.172

	Grades 7-8				
Variables	*R*	*R²*	*F Change*	*p*	*B*
RSE Observation	.520	.271	88.744	<.001	.444
RM Challenge	.538	.289	6.210	.013	.156

Note. RM = Reading Motivation and RSE = Reading Self-Efficacy. The dependent variable is Reading Achievement.
Effect size guidelines indicate .02 = small; .13 = medium; .26 = large. RM *Curiosity*, RM *Recognition*, RM *Competition*, RM *Social*, and RSE *Physiological* did not enter the stepwise regression equation as they did not significantly increment the amount of variance explained in Reading Achievement beyond RSE *Observation*, RM *Challenge*, RSE *Social Feedback*, and RSE *Progress* for the Grades 5-6 data and beyond the RSE *Observation* and RM *Challenge* data

Table 5

T-test of Reading Motivation and Reading Self-Efficacy Scores for Personal Literacy Plan (PLP) students for Grades 5-6 (N=25) and Grades 7-8 (N=21) Students

Dimension	Grades 5-6		Grades 7-8			
	M	*SD*	*M*	*SD*	*t*	*p*
Reading Motivation						
Challenge	2.68	.69	2.46	.55	1.193	.162
Curiosity	3.04	.55	2.56	.52	2.963	.621
Recognition	2.92	.56	2.42	.66	2.712	.251
Completion	2.76	.59	2.21	.75	2.759	.172
Social	2.22	.64	1.66	.48	3.264	.193
Reading Self-Efficacy						
Progress	3.83	.53	3.71	.80	.607	.416
Observation	3.10	.79	3.25	1.00	-.554	.550
Social Feedback	3.44	.71	3.25	.80	.833	.642
Physiological	3.61	.75	3.14	.89	1.923	.786