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Impact of students' self-assessment and creation of personal learning targets on reading  
comprehension and attitudes in elementary schools

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### Abstract

There is a rising concern among educators today related to student success on end-of-year state academic assessments, especially in reading. A quasi-experimental, pre- and post-test design with a comparison group was used to look at the impact of teacher-modeled and -guided students' self-assessment and setting of learning targets on reading comprehension for fourth grade students (N = 54) considered to be "at-risk." The pre- and post-test measures included the Reading Diagnostic Assessment, interviews, and a questionnaire. Analysis of the data was conducted using an independent-sample t-test. The teaching and learning were aligned with Common Core in English Language Arts, also known as the Kentucky Core Academic Standards. The findings suggested that the use of students' self-assessment and creation of individual learning goals positively impacted reading comprehension and attitudes toward reading in the treatment group. Implications for practice are discussed.

*Keywords:* Reading Comprehension; Experimental Groups; Control Groups; Reading Tests; Academic Achievement; Self Evaluation (Individuals); Reading Achievement; Questionnaires; Elementary School Students;

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No Child Left Behind has lit an assessment fire in our nation (Stiggins & Chappuis, 2006). In the pursuit of raising achievement scores in the area of reading, we as teachers, administrators and support staff have been working diligently to plan lessons, reflect on those lessons, and refine them to help our students to achieve at the highest standards. But who are we forgetting in this procedure? As we enter into a new school year with the new Common Core Standards, we must begin taking a closer look at including a very important group of forgotten stake holders in this whole process—the students! It's time to bring the students in on their own learning (Stiggins, 2004). The students should be a vested part of setting their own reading targets, tracking progress and adjusting their targets based on their individual progress. The main question being addressed by this study is the following: Can students' involvement in self-assessing and setting learning targets, affect their reading comprehension and attitudes toward reading? Because reading is such a determining factor that ensures that our students can access more rigorous academic content in all subject areas, can we afford to not ask this question?

Previous research has shown that the role of the teacher and the educational environment are changing. If we value “participation, equality, inclusiveness and social justice” (Fullen & Hargreaves, 1998), then our classrooms and schools need to be places where students share leadership and responsibility for learning. Self-evaluation is a potentially powerful technique because of its impact on student performance through self-efficacy and increased intrinsic motivation (Rolheiser & Ross, 1999). Evidence about the positive effect of self-evaluation on student performance is particularly convincing for difficult tasks (Arter, Spandel, Culham & Pollard, 1994; Maehr & Stallings, 1972) and among high need pupils (Henry, 1994). Research indicates that it plays a key role in fostering an upward cycle of learning (Rolheiser, 1996). When students evaluate their performance positively, self-evaluations encourage students to set higher goals and commit more personal resources or effort (Rolheiser, 1996). Students like

self-evaluation because it increases clarity about expectations, is fairer, and gives [them] feedback that they could use to improve the quality of their work (Rolheiser & Ross, 1998).

Assessment *for* learning rests on the understanding that students, not just adults, are data-driven instructional decision makers (Arter, Chappuis, Chappuis, & Stiggins, 2006). It aims to help students understand what success looks like, see where they are now, and learn to close the gap between the two (Chappuis, 2009). Research has shown consistently applying principles of assessment *for* learning has yielded remarkable, if not unprecedented, gains in student achievement with effect sizes between 0.4 and 0.7, especially for low achievers (Black & Wiliam, 1998; Chappuis & Stiggins, 2004).

We know the power of self-reflection to deepen learning for adults. One of the strongest motivators is the opportunity to look back and see progress. Students are equally important users of formative assessment information, ultimately deciding whether they feel capable of learning and whether they will do the work. Marzano (2005) asserts that students need clear learning targets. Students who can identify what they are learning significantly outscore those who cannot (Marzano, 2005). Students should be able to answer three basic questions: Where am I going? Where am I now? and How can I close the gap? (Atkin, Black & Coffey, 2001; Chappuis, 2005). When students get involved in goal setting for their own learning, they learn more. In addition to being common sense, this conclusion is strongly supported by a line of research (see, for example, Gaa & Schunk, 1981). When students take ownership for goals, their motivation to accomplish them, and their ability to self-evaluate (and self-regulate), increases (Saphier, 2008).

Self-assessment is about more than just test scores; it's about self-improvement (Costa & Kallick, 2004). Self-assessment practices in the elementary classroom help students in the early development of becoming critical and reflective thinkers. Research indicates that students who engage in well-designed self-assessing task experiences more often actively participate in activities and have increased attitudes toward the task (Munns & Woodward, 2006). Self-assessment embeds in a social relationship within the classroom. It addresses issues of positive self-perception, motivation and achievement that make such a powerful impact on a child's education (Bingham, Holbrook & Myers, 2010).

Students taking responsibility for their learning is the key. It is the practice of assessment *for* learning that wields the proven power to help a whole new generation of students take responsibility for their own learning, become lifelong learners, and achieve at much higher levels. The effective use of assessment information will result in profound gains in achievement for all students, with the largest gains accruing in areas that need improvement for each individual student (Stiggins & Chappuis, 2008).

The research proposed by the teacher researchers in this report has been found to be worthwhile and of great importance to educators in today's classroom. It is hopeful from the literature that currently exists that the teacher researchers will find a significant gain in student performance so long as the treatment is clear and well executed by the teacher. The new Common Core Standards will be helpful in guiding the teacher to make learning targets clear for all students to make accurate, meaningful and targeted self-assessments and goals that will ultimately lead them to some level of academic and attitudinal success in the area of reading comprehension. The finding of the study will be of interest to most educators since self-evaluation is one of the least practiced principles of learning in education (in the experience of Saphier, Haley-Speca & Gower, 2008). This leads to the question: "What *is* the impact of self-assessment and creation of personal learning targets on reading comprehension and attitudes toward reading?"

## Method

### *Participants*

The groups that participated in the research study were two homogeneous fourth grade classrooms, led by teachers similar in background, education, and teaching philosophies. Both have taught seventeen years, attended a local urban university for their undergraduate work, and hold a master's degree. Both were Comprehensive Literacy Model teachers, therefore students in both classrooms participated in Reading Workshop as their literacy instruction.

Table 1

*Characteristics of Participants (N=54)*

		<u>Treatment Group Descriptive Data</u>				<u>Comparison Group Descriptive Data</u>			
		n	%	M	SD	n	%	M	SD
<b>Pretest</b>		26		62.15	19.70	28		63.68	19.79
<b>Gender</b>	Male	12	46.2			14	50.0		
	Female	14	53.8			14	50.0		
<b>Race</b>	Minority	6	23.1			8	28.6		
	Non-minority	20	76.9			17	61.4		
<b>Lunch Status</b>	Free/Reduced	22	84.6			16	57.1		
	Paid	4	15.4			12	42.9		

According to the data, the initial pretest scores showed no statistically significant differences ( $t(52) = 0.28, p > .05$ ) between the treatment group ( $M = 62.15, SD = 19.70$ ) and the comparison group ( $M = 63.68, SD = 19.79$ ). That is to say, that the treatment and comparison groups appeared to be of similar aptitude prior to the treatment. The two groups were comparable in terms of gender, race and free/reduced lunch status.

*Instrumentation*

The teacher researchers implemented the researched-based method of self-assessment and goal setting to encourage students to become independent learners that would in turn gain better attitudes toward reading and therefore achieve higher in reading comprehension. The dependent variables were a post-test, Developmental Reading Assessment 2 (DRA2) scores, reading interview, and a pre- and post- reading attitude, confidence and frequency questionnaire. A pre-test was given to the treatment group and the comparison group to assess the students'

mastery/level in reading comprehension at the beginning of the second grading period. The pre-test utilized was the Reading Diagnostic Assessment #1(RDA) provided by the public school district. The RDA was comprised of twelve multiple choice questions and one open response question. At the end of the six-week treatment period all were re-administered to determine any statistically significant differences.

The reading interview and attitudes questionnaire were first piloted in another comparable fourth grade classroom. A few days later, the same interview and questionnaire were administered again to the same pilot class. This allowed the teacher researchers to test the validity, reliability, and clarity of these components. After checking the validity and reliability of the instrument, the questionnaire was ready to be administered to the treatment and comparison groups.

### *Design and Procedures*

The research was conducted using the quasi-experimental pre-post-test design with a comparison group (Trochim, 2006). The study was a mixed method schema (Mills, 2011), including both qualitative and quantitative data. The pre-test and post-test were both the RDA #1 provided to all fourth grade classrooms by the public school district. In addition, the reading interview and attitude questionnaire were given as a pre- and post-assessment. The DRA2 was administered to students considered to be “at-risk,” or below grade level from the previous school year.

The pre-post-tests were constant variables of the research. The treatment and the comparison classroom participated in the same reading content instruction. The teachers planned

together to ensure parallel reading instruction. The only difference in instruction was the treatment of setting goals and self-assessing that the treatment group received.

Following the analysis of the pre-tests, the implementation teacher began the treatment in her fourth grade classroom. This model of the independent variable (treatment) needed to be scaffolded for the students, building upon knowledge gained, and therein resulting in an independent self-assessor (Saphier, 2008). The treatment began with whole group goal setting instruction to introduce the students to setting goals for themselves, where modeling and “chunking” the goal setting process was explicitly taught. The teacher researcher held individual conferences with each student to discuss where they were, where they wanted to be, and how they would get there (Chappuis, 2009). The students completed a reading goal setting form, along with signature and date; a timeline and steps leading to goal achievement were included. Weekly goals were set to lead towards the three-week and six-week grading period goals. A follow-up meeting date was scheduled at the conclusion of the conference.

Participants in the treatment group maintained a binder for tracking their data/progress and goals. In keeping track of their own progress in the binder, the students took ownership of their learning which was very powerful (Saphier, 2008). The binders included: goal sheets/plans, charts, graphs and work samples. In the binders, students plotted their reading assessments, running records, Developmental Reading Assessment 2 scores, multiple choice scores, open response and short answer assessments to show progress. The DRA 2 is a comprehensive assessment that tests an individual's reading level. It includes accuracy, fluency, and comprehension. The reading assessments, running records (accuracy), and multiple choice assessments were calculated in terms of percentages. The open response and short answer scores were entered in terms of distinguished, proficient, apprentice, and novice. In conjunction with

the charts and graphs of the assessments, the students included notes highlighting their “glows” and their “grows.”

At each check-in conference with the teacher, the student analyzed where they were, where they wanted to be, and how they would get there and then devised “next steps” to reach the goal/s or the new goal therein created. Students are placed into reading Tiers in the district according to their reading abilities in comprehension and fluency. Tier I students are considered on reading grade level or above, Tier II students are considered right below grade level down to one entire grade level behind in reading, and Tier III students are more than one grade level behind. Tier II students had a brief check-in meeting at least once weekly, while tier III students checked-in at least twice a week. These conferences were separate from the reading conferences during reading workshop. In addition, students chose to begin meeting with peers to share goals and plans. Peers offered recommendations to their partner/group members.

Along with setting goals, students were provided opportunities to think deeply through analysis about their learning/progress/needs (Stiggins, 2006). Students were taught how to self-assess their work by asking themselves questions such as: “Have I included all parts?” “Have I made my opinions clear and supported them?” “What could I do to make my response better for the reader?” “Have I showed my character’s feelings or simply told the reader how the character feels?” “Can I prove my answer choice?” They used organizers to walk them through assessing their work: multiple choice questions, open response questions, and short answer questions. They then shifted to using post-it notes to write notes in response to their thinking to help them assess their work. They also used self-assessment rubrics to assess their reading response logs and their performance during Individual Daily Reading (IDR) as well as performance and participation

during Reading Workshop. They used their self-assessments to assist them in becoming independent learners that are excited about progressing forward.

The data was entered and analyzed using Microsoft EXCEL (2007). An independent-sample t-test, showing the comparison between the average scores of the two groups' pre- and post-tests, was used to determine statistical significance of the findings. Effect size, a calculation of the size of the difference between two groups, was also calculated in order to show any statistical significance of the treatment.

### Findings

As was hypothesized, the treatment of assessment *for* learning had a positive impact on the student learners within the treatment group based on comparisons of RDA pre-posttests, reading attitude questionnaire responses, and student interviews. According to the data, the initial pretest scores showed no statistically significant differences ( $t = 0.28, p > .05$ ) between the treatment group ( $M = 62.15, SD = 19.70$ ) and the comparison group ( $M = 63.68, SD = 19.79$ ). That is to say, that the treatment and comparison groups appeared to be of similar aptitude prior to the treatment.

Using an independent-sample t-test, significant differences were revealed with the RDA posttest results ( $t(52) = -2.13, p < .05$ ) between the treatment group ( $M = 85.23, SD = 20.29$ ) and the comparison group ( $M = 74.43, SD = 17.68$ ). The gain for the treatment group was 23.08 ( $M = 62.15$  to  $M = 85.23$ ), while the comparison group only had a gain of 10.75 ( $M = 63.68$  to  $M = 74.43$ ). Figure 1 displays a graphical representation of the gains of the comparison group compared to the much higher gains of the treatment group.

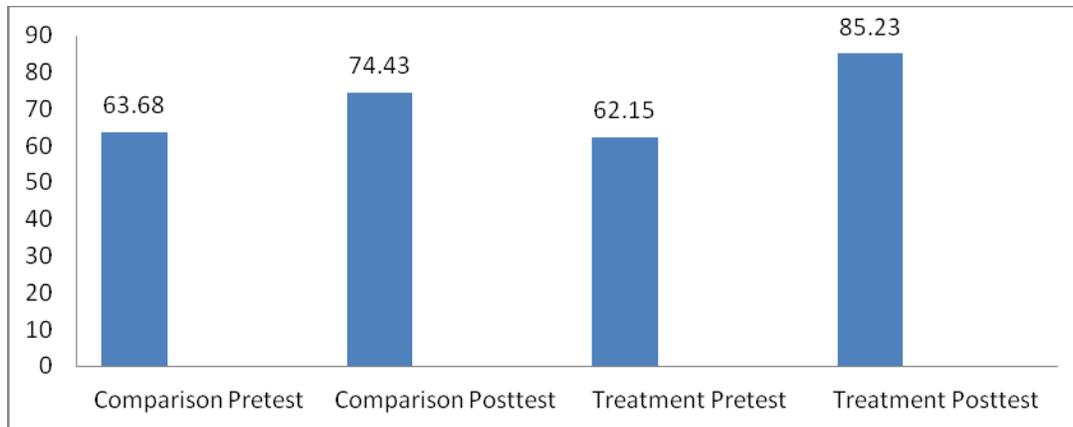


Figure 1. Achievement gains on the RDA from pre- to posttest in the comparison and treatment groups.

A t-test was also used to test the effects of the treatment on a Likert-type 5-point scale rating of (a) reading attitude, (b) confidence, and (c) reading frequency. The independent-samples t-test indicated a significant decrease between the treatment and the comparison groups in (a) reading attitude,  $t(54) = 3.30, p < .05$ ; (b) confidence,  $t(54) = 2.82, p < .05$ ; and, (c) reading frequency,  $t(54) = 2.46, p < .05$ .

On average, the treatment group participants indicated higher ratings than did the participants in the comparison group in reading attitude ( $M = 3.22, SD = .65$  and  $M = 2.61, SD = .72$ , respectively, with an effect size of .89), confidence ( $M = 3.07, SD = .75$  and  $M = 2.55, SD = .59$ , respectively, with an effect size of .78), and reading frequency ( $M = 2.95, SD = .72$  and  $M = 2.46, SD = .72$ , respectively, with an effect size of .68). Figure 2 displays the responses of the comparison group related to the treatment group on the reading attitudes post-questionnaire.

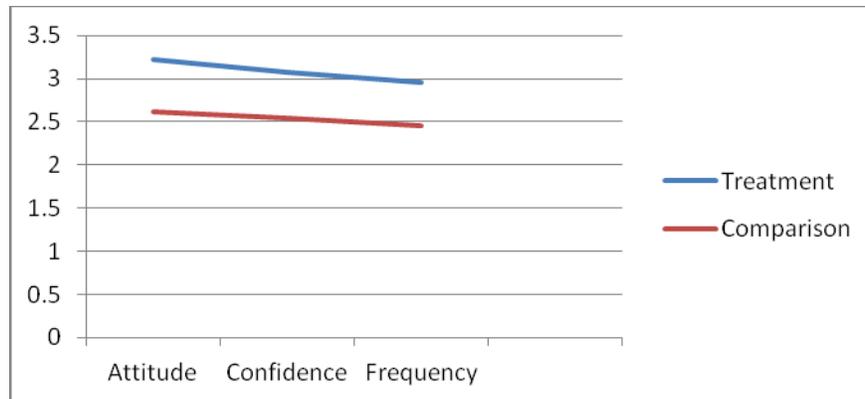


Figure 2. Comparison and treatment participant response to the reading attitudes post-questionnaire.

At the end of the six-week treatment period, participants from the treatment group were interviewed. The responses further indicated a significant positive increase in attitude and confidence with regard to reading. When asked why participants thought they scored higher on the posttest they responded with the following:

Student	Response
7	We had a goal and it motivated me.
9	We knew that if we didn't use our strategies, we wouldn't get that higher score to reach our goal.
24	We wanted to get a higher score...we wanted to reach our goal.

Specific strategies taught and reflected on during self-assessment activities in relation to reading goals also showed significance in student success. The following quotes show participant reflection attributing to their self-assessment and goal setting to meet specific learning targets:

Student	Response
1	I read the questions first.
2	I went back into the passage.
7	I read the story and then went back to find the answers.
8	I didn't rush through it.
9	I focused really hard.
11	I focused on the test and not on other things around me.

### Discussion

As stated in the *findings* section, there was no significant difference in the aptitudes between the comparison and treatment groups upon administering of the RDA initial pretest. However, upon administering the posttest for the RDA, the gain for the treatment group was 23.08 ( $M = 62.15$  to  $M = 85.23$ ), while the comparison group only had a gain of 10.75 ( $M = 63.68$  to  $M = 74.43$ ). This data point suggests to the teacher researchers, that the use of goal setting, clear learning targets, and self-assessment throughout the six-week treatment period, had a significant positive impact upon the treatment group.

This study was an excellent example of Marzano's work with clear leaning goals. Marzano (2005) asserts that students need clear learning targets. Students who can identify what they are learning significantly outscore those who cannot. While the comparison group did show some gains between their pre- and posttests, their gains were not as great as those of the treatment group. The students in the treatment group were continually exposed to the practice of assessment for learning over the treatment period. Stiggins and Chappuis' work shows that the effective use of assessment information will result in profound gains in achievement for all

students, with the largest gains accruing in areas that need improvement for each individual student (Stiggins & Chappuis, 2008).

The teacher researchers also collected qualitative data from students through a pre- and post-questionnaire. The questionnaire focused on the three constructs of: reading attitude, reading confidence, and reading frequency. All three constructs showed practical significance with medium to large effect sizes. Attitude showed a .89 effect size which would increase percentile scores for the students from 50 to 79, confidence showed a .78 effect size increasing student percentile scores from 50 to 76, and frequency had a .68 effect size suggesting a 50 to 73 increase in student percentile scores (Hopkins, n.d.).

#### *Implication for Teacher Practice*

Munns and Woodward's research indicates that students who engage in well-designed self-assessing task experiences more often actively participate in activities and have increased attitudes toward the task (Munns & Woodward, 2006). The teacher researchers attribute the higher scores on the questionnaires for the treatment group on their exposure to assessment *for* learning strategies, especially the use of self-assessment and goal setting. The researchers noted many positive comments from the treatment group after the study on the student survey. The students in the treatment group seemed much more confident, eager and willing to learn than at the beginning of the study. Self-assessment embeds in a social relationship within the classroom. It addresses issues of positive self-perception, motivation and achievement that make such a powerful impact on a child's education (Bingham, Holbrook & Myers, 2010).

*Limitations of the Study*

It is noteworthy that the means on reading attitudes and confidence were already significantly higher at pretest (i.e., before the intervention) when assessed against the comparison group. Only reading frequency was similar at pretest for both groups and later significantly higher for the treatment group only. The teacher researchers can attribute the increase in reading frequency to the treatment, but caution over-generalizing this finding.

The researchers would also like to note that the two classes were comparable in the areas of gender and race, but they were not as similar in lunch status. The comparison group had 50% free, while the treatment group had 73.1%. Since lunch status is a determining factor on school achievement, the researchers feel this limited the study somewhat since it would have been advantageous if the two groups had been more homogeneous in this area.

Lastly, the researchers would like to note that the study was only conducted over a six-week period. A longer period of time and further research is needed to continue to collect data on both the treatment and comparisons groups. The researchers believe, that with more time, the impact on the treatment group would have been even more significant. The researchers plan to continue their study for another six weeks to strengthen the exposure of the treatment with the experimental group.

*Conclusion*

The data presented by this study showed a statistically significant gain in student scores in reading achievement and reading frequency. The effect sizes of the questionnaire data show practical significance in all three construct areas. These data points suggest to the teacher researchers that the study had a positive impact with their treatment group. While this was just a

first attempt, the teachers see it as worthwhile and will continue to conduct further research for another six-week period with the treatment group and then begin exposing the comparison group to the methods afterward. The teacher researchers are eager to see what impact their continued research will have on both the treatment and control groups down the road.

The teacher researchers do value “participation, equality, inclusiveness and social justice,” (Fullen & Hargreaves, 1998), and our classrooms will continue to be places where students share a larger role in leadership and responsibility for learning. Exposing students to the higher effective teaching strategies of student self-assessment and creation of personal learning targets shows great promise in impacting student comprehension and attitudes toward reading.

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Appendix

*Reading Attitude*

4 = very happy, 3 = happy, 2 = a little happy, 1 = very happy

1. How do you feel about the books you read in class?	4	3	2	1
2. How do you feel about reading for fun at home?	4	3	2	1
3. How do you feel about getting a book as a present?	4	3	2	1
4. How do you feel about visiting a bookstore?	4	3	2	1
5. How do you feel about reading overall?	4	3	2	1

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*Reading Confidence*

4 = very confident, 3 = confident, 2 = a little unconfident, 1 = very unconfident

6. How confident do you feel when you read out loud in class?	4	3	2	1
7. How comfortable do you feel when your teacher asks you to read to her?				
	4	3	2	1
8. How comfortable do you feel using your reading strategies?	4	3	2	1
9. How comfortable do you feel starting a new book?	4	3	2	1
10. How do you feel about reading different kinds of books than the one you are used to?				
	4	3	2	1

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*Reading Frequency*

4 = very often, 3 = often, 2 = sometimes, 1 = not often / never

11. How often do you spend time reading at home?	4	3	2	1
12. How often can you stay focused during silent reading time?	4	3	2	1
13. How often do you want to keep reading when time is up?	4	3	2	1
14. How often do you think about your book when it is not reading time?	4	3	2	1
15. How often do you talk about your book to others?	4	3	2	1