The Effects of Self-Questioning on Reading Comprehension

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Abstract

Reading comprehension is a category of literacy that causes many students to struggle. Existing research has demonstrated that for some students who struggle with reading comprehension there is a need for a strategy to use while reading. The goal of this study was determine the effect that a reading comprehension strategy, Self-Questioning, has on students reading comprehension and strategy use. The students who participated in this study received explicit instruction but only had a short amount of time to learn and apply the strategy; therefore, another goal of this study was to determine if a functional relationship exists between the self-questioning strategy and reading comprehension scores when strategy instruction is limited to a short period of time.

Three, fourth-grade students with low reading comprehension skills participated in this study. Results were found using visual analysis procedures such as trend, relative level change, percentage of non-overlapping data, and stability of data. Results indicated no functional relationship between the Self-Questioning strategy and the participants test scores or strategy use for any of the three subjects. Results of this study are of critical importance for teachers because teachers are constantly required to produce high-level scores on tests, implement evidence-based strategies, and make data-based decisions often with limited time for interventions.
Self-Questioning and Its Effect on Reading Comprehension

Reading comprehension skills are vital for success in both school and everyday life. People read for many different reasons, but if they do not possess reading comprehension skills, readers cannot gather and make use of information, and that limits success and enjoyment in life. “Gaining a solid foundation for reading in the early years of development and the early years of school is critical to pave the way for success in reading for the future” (Rouse, 2014, p. 7). In the early years of school, students focus on developing phonemic awareness, learning how to read, increasing reading fluency and on developing strategies to aid reading. (Fuchs & Fuchs, 2007). As students advance in school, the focus turns to learning through reading. If students lack a solid reading foundation, reading comprehension, or gaining understanding through reading, is almost impossible. Thus, reading comprehension is arguably the most important academic skill learned in school (Mastropieri & Scruggs, 1997).

Reading comprehension is an issue for students of all ages and all academic settings. For example, per the National Association of Education Progress (NAEP) 4th grade assessment, 32% of students struggle with reading comprehension as evidenced by scores being below proficiency (NAEP, 2013). Reading comprehension difficulties may be due to a lack of vocabulary, a lack of knowledge of concepts, weak inferential skills, or the inability to apply reading comprehension strategies (Roberts, Torgesen, Boardman, & Scammacca, 2008). Developing engaged readers involves helping students become aware of the strategies they use to read and teaching them new strategies to further comprehension (McCarthy, Hoffman, & Galda, 1999). Students who are not engaged readers due to poor reading comprehension skills may need strategies to help derive meaning from the text and increase active learning.
Various studies have found that comprehension strategies improve students’ reading comprehension (Clark, Deshler, Schumaker, Alley, Warner, 1984; Faggella-Luby, Schumaker, Deshler, 2006; Fuchs & Fuchs, 2007; Wanzek, Vaughn, Scammacca, Metz, Murray, Roberts, & Danielson, 2013). Specifically, students may benefit from improved metacognition skills, including learning to self-monitor understanding while reading. One way to self-monitor understanding is to use the cognitive strategy called self-questioning. Self-questioning teaches students to create a variety of questions about reading to maintain interest and improve recall (Clark, Deshler, Schumaker, Gordon, Alley, & Warner, 1984). The purpose of this study was to research the effect of a self-questioning strategy on students’ reading comprehension scores and strategy use. This review of related literature is focused on reading comprehension, students who suffer reading comprehension issues, the self-questioning strategy, and strategy instruction.

Reading Comprehension

Reading is an important skill to possess in order to succeed in school, work, and other facets of life. Making meaning, learning, and enjoyment are the ultimate goals of reading (Klingner, Vaughn, & Boardman, 2007). Reading comprehension is a decision-making process in which readers use a variety of strategies and metacognitive functions until reaching an understanding of the text (Mahdavi & Tensfeldt, 2013). Reading comprehension is more complicated than simply identifying words. Not only is reading comprehension deriving meaning from text, but it also includes foundational skills of reading, such as phonics, fluency, and vocabulary (Klingner et al., 2007). Often, reading comprehension difficulties are due to struggles with word identification and reading fluency, or due to inefficient application of comprehension strategies and limited word knowledge (Manset-Williamson, Dunn, Hinshaw, & Nelson, 2008).
Students with Reading Deficits

Students who struggle with reading comprehension at a young age may possess great risk for continued hardships down the line. “As students progress through elementary school, the ability to read and comprehend grows more challenging. After third grade, the emphasis on instruction in learning to read often begins to fade from instruction in the general education classroom, meaning students who do not read proficiently by the end of third grade may face serious consequences in their academic achievement” (Wanzek et al., 2013, p. 164-165). The 2013 National Assessment of Educational Progress (NAEP) indicated that 17% of fourth graders performed below the Basic level in reading comprehension which NAEP defines as partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade (Perie, Grigg, & Donahue, 2013). The students who are reading below the Basic level are unable to internalize important concepts and understand new knowledge from grade-level text.

Older students who struggle with reading comprehension may never have been taught basic skills necessary for reading fluently or may never have received instruction on how to deeply process text (Roberts et al., 2008). Other students may have explicitly been taught basic skills and strategies for reading, yet continue to struggle with reading due to a learning disability (LD). According to IDEA (2004), the term 'specific learning disability' “is a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.” (p.1). Often, students with reading-related disabilities experience significant difficulty in reading comprehension. Students who struggle with reading, and students with a learning disability, are a vulnerable population that could benefit from explicit instruction and strategic guidance on how to read and
comprehend text. Instruction in reading comprehension, especially for struggling readers and students who have learning disabilities, has been the focus of research over the last thirty years (Gajria, Jitendra, Sood, & Sacks, 2007).

Self-Questioning

One possible way to improve students’ comprehension skills is through the use of self-monitoring strategies. Self-monitoring strategies help students by providing instructional cues for monitoring work and completing tasks (Zrebiec Uberti, Mastropieri, & Scruggs, 2004). Self-monitoring increases students’ awareness of understanding and metacognitively keeps track of learning. “A reader with well-developed metacognition will monitor their reading processes and evaluate whether the reading strategies applied are effective given the task at hand” (Manset-Williamson et al., 2008, p. 125). For more than two decades, educational researchers have successfully applied and used self-monitoring interventions to increase students’ academic engagement. A majority of the research conducted on self-monitoring and academic engagement occurred in the special education setting, with a limited amount in a mainstream classroom (Rock, 2005).

A type of self-monitoring strategy, self-questioning, has been used effectively to increase students reading comprehension scores. “The self-questioning strategy has been designed to help students deal more effectively with the complex reading demands of elementary, secondary, and post-secondary settings” (Schumaker, Deshler, Nolan, & Alley, 1994, p. 3). Self-questioning teaches students what questions they should ask while reading, and how to determine where to stop reading and ask these specific questions in order to improve comprehension (Mahdavi & Tensfeldt, 2013). Self-questioning prompts students to stop periodically while reading the text and ask and answer questions related to what they were reading (Taylor, Alber, & Walker,
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2002). Self-questioning not only requires students to monitor learning of the reading, but it also increases students’ metacognition (Mahdavi & Tensfeldt, 2013).

Self-Questioning Literature

Several studies have been conducted regarding the effects of self-questioning including the Feldt Ronald, Feldt Rebecca and Kilburg study (2002) and the Taylor et al., (2002) study. Feldt et al. (2002) studied the effect of self-questioning on students’ knowledge of science information. Feldt et al. (2002) worked with eight-second grade students who scored below grade level on a comprehension subtest. Instruction on text structure and question generation occurred over a two week period. During the first week, participants worked in pairs alongside the instructor to identify a passage, select a graphic organizer that matched the structure of the passage, predict what the passage was about, and then read the passage. During the second week of instruction, all steps of the questioning strategy were modeled: survey the passage, ask appropriate questions, read to answer the questions, and attempt to recall the questions and answers. In the third and fourth weeks of the study, students worked independently with teacher feedback. Although the Feldt et al. study (2002) taught the participants to identify text structures before self-questioning, the main intervention was self-questioning.

Feldt et al. (2002) used a comprehension question test to determine the effect that the self-questioning strategy has on the participants’ reading comprehension. The study found increases in both literal and inferential comprehensions; however, there was only a marginal increase in literal comprehension and no increase in inferential comprehension. Overall, students’ reading comprehension scores increased after the intervention, showing a functional relationship.
Taylor et al. (2002) study also examined the effect of self-questioning on reading comprehension. This study was designed to use an alternating treatment design whereby some of the participants received instruction in self-questioning, and others received instruction in story mapping. The participants in the Taylor et al. (2002) study were five third through sixth graders with learning disabilities. In the story mapping phase, students were asked to read the story orally and complete a story map. In the self-questioning phase, students were told to read the story orally and stop at each point marked in the book (2-3 pages). The students recorded their questions and answers into a tape recorder. During both phases, the teacher defined each strategy and modeled the steps of each strategy. Moreover, the teacher led guided practice when applying the strategy and also provided feedback.

The results of this study indicate that through systematic training, elementary students with learning disabilities can produce and answer self-questions and complete story maps with a high level of accuracy. Results showed a functional relationship between students reading comprehension and self-questioning. Students scored slightly higher on tests utilizing self-questioning than story mapping.

**Effective Instruction for Reading**

Good readers actively engage with the text and **often** use a number of strategies as they proceed through the text. Students with poor reading comprehension skills **may benefit** from **need** strategies to help engage in the text and learning (Pressley & Afflerbach, 1995). **Explicit and direct instruction is a way for students to effectively learn strategies to help them when reading. In order for students to effectively learn strategies to help them when reading, instruction must be explicit and direct.** “Learning strategy instruction focuses on both how to
learn and how to effectively use what has been learned” (Schumaker et al., 1994). There are many ways to improve comprehension through a variety of instructional methods.

The National Reading Panel Report (2000) found five critical areas in which reading instruction must focus: phonemic awareness, phonics, fluency, vocabulary, and comprehension. All five areas influence the ability to read, but students need instruction in, and mastery of, the first four areas in order to successfully comprehend text. In order to be successful readers, students must have the ability to process information well and use background knowledge to support what is being read. In addition, students must be aware of their own learning, gain vocabulary knowledge, have sufficient reading fluency, and be active readers (Rouse, 2014). Many studies have focused on the explicit instruction approach to teaching strategies (Feldt et al., 2002; Ortlieb & Norris, 2012; Rouse, Alber-Morgan, Cullen, & Sawyer, 2014; Ortlieb & Norris, 2012). Explicit instruction provides readers with explicit information.

**Effective Instruction Literature**

To better understand explicit instruction, Reutzel, Child, Jones, and Clark (2014) conducted a content analysis on the essential elements of explicit instruction in elementary schools. Forty studies were included in their search; all of which were peer reviewed, conducted between the years 2000 and 2010 in the United States and employed explicit instruction. The forty studies determined that even instructional moves for teaching explicit instruction were used most often and most effectively: (a) direct explanation, (b) modeling, (c) guided practice, (d) independent practice, (e) feedback, (f) discussion, and (g) monitoring.

In the Duffy, Roehler, Meloth, Vavrus, Book, Putnam, and Wesselman (1986), the goal was to determine if classroom teachers who provide more explicit explanations to students on how to strategically use these reading skills are more effective than teachers who
provide less explicit explanation on how to use these skills. Twenty-two fifth grade teachers and
their low-performing reading groups participated in this study. When measuring teacher
explicitness, Duffy et al. (1986) rated the information conveyed and how the teacher conveyed it.
The information the teacher conveyed had five subcategories, and how the teacher conveyed the
information had six subcategories. Each of the eleven subcategories were rated a degree of 0 to
2 on explicitness (0 is absence and 2 exemplary). The findings indicate that when teachers
explicitly teach how to use reading skills as strategies, students become more aware of what was
learned and become more knowledgeable about when and how to use reading strategies.
Although there was no significant difference in scores between the group that received explicit
instruction and the control group, this study indicates that there is a strong correlation between
instructional talk (explicit instruction) and what students understand and remember.

Rosenshine, Meister and Chapman (1996) specifically reviewed the use of self-
questioning strategy interventions. This meta-analysis focused on teaching self-questioning to
increase reading comprehension and included twenty-six studies. Seventeen of the studies
explicitly taught the self-questioning strategy, and nine of the studies taught question generation
using reciprocal teaching. The explicit teaching method utilized in the seventeen studies
consisted of some form of teacher presentation, teacher modeling, and teacher guidance of
student practice. In the nine studies that utilized the reciprocal teaching method, the participants
were taught more than one question generation strategy (i.e. summarization, prediction).
Reciprocal teaching is where the teacher first models the skill of generating questions, and then
provides time for students to try generating questions with the assistance of teacher guidance and
feedback. Once the students begin to master the skill of question-generation, the teacher releases
support and allows the student to work independently. Rosenshine et al. (1996) found that
teaching students to generate questions yielded positive results. However, both explicit instruction and reciprocal teaching led to an increase in student’s reading comprehension. There were no significant differences in results between the two intervention strategies.

**Purpose**

This single subject study aims to determine and evaluate the effectiveness of one specific self-monitoring strategy, the self-questioning strategy, on three students who currently have low reading comprehension. The students who participated in this study received explicit instruction but only had a short amount of time to learn and apply the strategy; therefore, another goal of this study is to determine if a functional relationship exists between the self-questioning strategy and reading comprehension scores when strategy instruction is limited to a short period of time.
Methods

Participants

Three fourth grade students from a local public school district participated in this study. All three participants were ten years old and female. The classroom reading teacher recommended these three students due to weak reading comprehension skills. The participants all ranked between the 6th and 25th percentile in overall reading, as per the participants’ 2014-2015 Istation’s ISIP assessment results. Specifically, the participants ranked between the 13th and 42nd percentile for reading comprehension. The ISIP assessment measures a student’s ability in all critical areas of reading, compared with other students (“Assessments-Istation”, n.d.).

Participant 1 is a Caucasian student. Participant 1 is receiving Tier 3 services from an RTI model. Tier 3 services include intensive individualized instruction. Due to Participant 1’s lack of progress, she will be tested for dyslexia in the near future, as noted by her teacher. Participant 1 is also in the process of getting tested for ADD. Participant 1 has many gaps in her abilities across all subject areas and is recommended for possible retention this year. Participant 1 is respectful to her teachers but has severe issues respecting authority from others such as a substitute teacher or tutor. Participant 1 is reading on a second grade level with the Lexile™ average of 450. Participant 1 scored at the 24th percentile for text fluency, 11th percentile for word analysis, and 6th percentile for vocabulary on the ISIP 2014-2015 assessment.

Participant 2 is a Hispanic student. Participant 2 is receiving Tier 3 intensive individualized instruction services from an RTI model. Participant 2 was held back in the third grade and is in the process of getting tested for dyslexia. Participant 2’s father is in prison, which affects her in many ways both socially and academically. Participant 2 has a very positive attitude towards learning, and her success is extremely important to her. Participant 2 is reading
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at a second-grade level with the Lexile™ average of 725. Participant 2 scored at the 18th percentile for text fluency, 13th percentile for word analysis, and 2nd percentile for vocabulary on the ISIP 2014-2015 assessment.

Participant 3 is a Caucasian student. Participant 3 recently enrolled at this school. Participant 3 is one of five children, and her mother recently passed away. Participant 3 is very well behaved and enjoys school. An area of strength is her fluency level in reading. Participant 3 is reading on fourth grade level with the Lexile™ average of 735. Participant 3 scored at the 56th percentile for text fluency, 27th percentile for word analysis, and 15th percentile for vocabulary on the ISIP 2014-2015 assessment.

Setting

All baseline and intervention sessions took place at a local public school that serves grades Pre-K through 5th grade. The school met the standard score on accountability rating this past year. The students attending this school are predominately Hispanic, and over 65% are bilingual. The participant’s fourth grade reading teacher is in her 11th year of teaching and has taught mainly fourth and fifth grade. She received the Teacher of the Year award in 2015. The researcher who delivered the strategy instruction is in her fifth year at Texas Christian University and will be graduating in May 2015 with her Masters in Special Education. All baseline and intervention sessions took place in the school’s library, “sun room” or separate pull-out room, during the students’ sustained silent reading time.

When working on the intervention, the self-questioning strategy, the student and researcher sat next to one another at a rectangular or circular table inside the library or private room. When measuring the dependent variable, reading comprehension, the researcher and
student sat at the same table as before, at a separate table in the same room, or in a separate room within eye distance.

Measures

Correct Answers. One dependent variable for this study was the number of correct answers the participants scored on the reading questions. During each data collection session, the participants were given a total of 10 questions to answer corresponding with the reading passage. Seven of the questions were multiple choices, and three were short answer. In both the baseline and the intervention phases, the number of correct answers was determined and graphed. All 10 questions were worth 1 correct or incorrect answer during both the baseline and intervention phases. The researcher checked each participant’s answers against an answer key and, if the answer did not match, marked it as wrong. To ensure measurement reliability of the data, a colleague of the primary researcher also checked the participant’s answers with the key and then compared the results with the researcher’s results to ensure there were no discrepancies. This reliability check was conducted for 100% of the sessions.

Strategy Use. A second dependent variable in this study was each participant’s use of the self-questioning strategy. The participants’ use of the self-questioning strategy was determined by looking at each participant’s reading “Question, Prediction, Answer” sheet (Appendix B). If the participant asked and wrote down at least five appropriate questions while reading, the strategy was determined to have been used 100% of the time. Appropriate questions consisted of any question that started with Who, What, When, Where, Why, How and Which. Each appropriate question generated by the participant was worth two points. If the participant asked less than five appropriate questions, this result was also graphed (e.g., the participant asked three appropriate questions, therefore six three was graphed).—This number was later converted into a
percentage; i.e., in the previous example, the participant used the strategy only 60% of the time. To ensure measurement reliability of the dependent variable in the use of strategy, the researcher consistently used the same criteria when evaluating the participant’s questions (i.e., must be a Who, What, When, Where, Why, How or Which question).

**Questionnaire.** After all intervention sessions had concluded, the participants answered a questionnaire over self-questioning. The questionnaire was designed to get feedback about the self-questioning strategy from the participants. There were a total of five questions. For each question, the participants could select and write number 1, 2, 3, 4, or 5. Number 1 represented the phrase “strongly disagree,” number 2 represented “disagree,” number 3 represented “neither disagree nor agree,” number 4 represented “agree,” and number 5 represented “strongly agree.” The students used the five phrases to rate each statement on the questionnaire. Results were analyzed qualitatively.

**Research Design**

The design of this study was multiple probes across participants. In a multiple probe design, the participants start the intervention phase at varying times. Multiple probe design differs from multiple baseline design in that probes during the baseline phases do not occur during every session (Gast & Ledford, 2014). A multiple probe design was used in this study so that Participants 2 and 3 did not have to take an excessive amount of tests during the baseline phase. Methodologically, Participant 1 began her intervention phase once a stable baseline was evident (at least three stable data points). Participant 2 continued in the baseline phase until Participant 1 demonstrated stable data for her intervention phase. Once the data for Participant 1 were stable, the intervention phase was introduced to both Participant 1 and Participant 2. Once the data for Participant 2 were stable, Participant 3 was introduced to the intervention
phase. This multiple probe approach was used in order to remove the effect of practice, which helps improve internal validity. A variation to the formula was used due to short amount of time to conduct the study. Participants 2 and 3 began baseline before the previous participant’s intervention data were stable. Participants 2 and 3 also began intervention before baseline data were stable.

**Materials and Procedures**

**Materials**

**Reading passages.** (Appendix A) The reading passages chosen from ReadWorks (2012) were used for all baseline and intervention data collection sessions. ReadWorks (2012) provides researched based passages and questions for free. ReadWorks (2012) is aligned to the Common Core State Standards, and the standards of all 50 states. ReadWorks (2012) has received various awards and recognition and is currently serving over one million educators across states.

Passages were chosen on each participant’s individual reading level. All passages were literary passages with multi skill/strategy questions. Participant 1 and 2 received grade level 2 passages, and participant 3 received grade level 4. Each passage had a matching Lexile™ level. Each participant read passages that were within a 200-Lexile level. The passages came with 10 reading questions, 7 multiple choice and 3 short answer. The multiple-choice questions had 3 choices for second grade (A, B, C) and 4 choices for fourth grade (A, B, C, D). The short answer questions occasionally ask for support from the passage and textual evidence. The questions were both literal and inferential, and there was no order in which they were assigned.

The passages used in strategy instruction day 1 and day 2 (Chocolate Moose & Sophie’s Echo) came from Schumaker, Deshler, Nolan, and Alley (1994). The Little Red Hen passage used on the third strategy instruction day was pulled from an online source.
The passages used on strategy instruction day 4 came from ReadWorks (2012).

**Question Answer Prediction Sheet.** (Appendix B) The Question, Answer, Prediction sheet was used only in the intervention phase. The participants wrote questions on the far left column, predictions in the middle, and answers in the right column.

**Strategy Instruction Script.** (Appendix C) The strategy instruction script was adapted from Schumaker et al. (1994). Stages 1 – 7 from Schumaker et al. (1994) were reviewed and molded into four-days of strategy instruction.

### Duration of Participation

This study was conducted every school day over a period of approximately six weeks, with the exception of spring break and school holidays (Appendix D). The data collection sessions were thirty minutes in duration. The total number of sessions per participant varied depending on when the particular participant started the intervention phase. The total number of sessions per participant ranged between 14 and 22 sessions, with Participant 3 having the fewest sessions and Participant 1, the most. All three participants received four days of strategy instruction and at least three days of baseline and three days of intervention.

### Procedures

**Pre Baseline.** During the pre-baseline phase, the participants were asked if they knew what self-questioning was and/or how to use the strategy. All of the participants’ responded “no” and the researcher moved to the baseline phase.

**Baseline.** During baseline phase (A), the participants were given a reading passage based on individual ability level and 10 comprehension questions to answer at the end. The resulting data were analyzed and graphed. Participants were again asked if they knew what self-
questioning was and/or how to use the strategy and since all participants answered “no”, the researcher moved to the intervention phase.

**Intervention.**

After the fourth and final strategy instruction session, independent practice of the strategy occurred during every remaining session throughout phase C of intervention. Participant 1 was in intervention for 16 days, Participant 2 for 11 days, and Participant 3 for 7 days. During these independent practice sessions, the participant completed assigned reading and then answered 10 comprehension questions (7 multiple choice and 3 short answers) about the passage. All participants were given 30 minutes to complete the reading and questions. Passages and questions were based on the particular participant’s ability level and were taken from ReadWorks (2012). Correct answers to the questions were totaled and graphed, and the participant’s use of the strategy during the reading of the passage was evaluated and also graphed. The intervention phase varied in length depending on the participant and when they started baseline phase. Participant 1 was in intervention for 9 days and in phase change for 10 days. Participant 2 was in intervention for 11 days. Participant 3 was in intervention for 8 days. Four days of every participant’s intervention sessions was strategy instruction (Phase B). A colleague observed 25% of these sessions to determine level of treatment integrity (or procedural fidelity). The colleague observed baseline, strategy instruction, and assessment sessions. The colleague was briefed before each session of the study in regards to the schedule and outline of procedures.

**Phase Change**

During phase change, Participant 1 was re-taught the self-questioning strategy and the strategies’ steps during phase D. The strategy instruction lasted over three days. The
participant and researcher reviewed the strategy and steps the first day. The second day the researcher worked on creating questions with the participant. Question generating was found to be an area of focus for Participant 1 after the researcher reviewed the participants test from intervention. The last day the researcher and participant applied the strategy and created appropriate questions together while reading a passage. After Participant 1 was re-trained on self-questioning, she returned back to phase C (intervention data collection), where she answered individual reading comprehension questions and applied the self-questioning strategy.

Qualitative Post-test

At the end of the intervention phase, each of the participants were asked to take a questionnaire on the self-questioning they each experienced. The questionnaire was used to determine social validity.

Data Analysis

The researcher introduced the strategy in a time delay fashion to assess the effect that a self-questioning strategy had on the participants’ reading comprehension scores. Time delay fashion means Participant 1 was introduced to the strategy before Participant 2, and Participant 2 before Participant 3 (Gast & Ledford, 2014). The participants use of the strategy was also calculated. The data collected on the participants’ comprehension scores and use of the strategy were graphed on three separate line graphs, one for each participant. The researcher collected the students reading passages and answers to determine correct responses. The researcher collected the students question, prediction, and answer sheet for strategy use data. The researcher made anecdotal notes throughout all sessions and collected the student questionnaire at the end of the intervention phase for qualitative data. The researcher used visual analysis procedures to examine the increase or decrease of scores and strategy use across baseline and
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intervention phases. The following items were calculated: trend (using a split middle method),
relative level change, percentage of non-overlapping data, and stability of the data (using
stability envelope). Gast & Ledford (2012) explained that using visual analysis procedures to
analyze data within and across conditions is effective for small-group individual data, data that is
graphed frequently, data-based decision making, analysis of individual data patterns, and for
discovery of findings. Calculating trend (using the split middle method) told the researcher if the
data was improving or deteriorating because of the intervention. If the trend moved downward,
the scores were decreasing (the data was deteriorating). If the trend moved upward, scores were
increasing (the data was improving).

The researcher also calculated relative level change for all three participants. Relative
level change was used during the baseline and intervention phases to determine the average
amount of change in level across within the phases. The percentage of non-overlapping data was
calculated to determine how many data points did not overlap between the baseline and
intervention condition. This was important to the researcher because it determined the effect the
intervention had on the baseline data. Finally, the stability of the data (using stability envelope—
two parallel lines drawn, one above and one below 20% of the median line) was important for
the researcher to help determine when the data was stable enough to move from baseline to
intervention. For a functional relationship to exist between the participants’ scores and self-
questioning there must be an increase in scores and strategy use from baseline to intervention
with all other variables controlled.

**Inter-rater agreement.** Inter-rater agreement was calculated to determine the extent of
agreement between the researcher and inter-observer over the dependent variables during both
phases. The observer independently scored 100 percent of the comprehension quizzes to
determine IOA. All agreements and disagreements were checked with the attached answer
document. IOA was calculated by dividing the number of agreements by the number of
agreements plus disagreements and multiplying by 100. IOA was 100%.

Procedural validity was determined using an inter-observer during 25% of the sessions (n
= 6) to assess the validity of the data. The colleague observed baseline, strategy instruction, and
assessment sessions. The colleague was briefed before each session of the study in regards to the
schedule and outline of the procedures. The inter-rater agreement was calculated to be 100%.

Figure 1
Participant 1 Correct comprehension responses & questions self-generated
Figure 2
Participant 2 Correct comprehension responses & questions self-generated
Figure 3
Participant 3 Correct comprehension responses & questions self-generated

Table 1

<table>
<thead>
<tr>
<th>Student Questionnaire</th>
<th>Student Questionnaire</th>
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<tbody>
<tr>
<td><strong>KEY:</strong></td>
<td>Participant 1</td>
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</table>
1. I understand the self-questioning strategy
2. The self-questioning strategy was easy
3. The self-questioning strategy helped me to understand what I was reading
4. I will continue to use the self-questioning strategy during reading
5. I will use the self-questioning strategy during other subjects like math, science, and social studies

Participant 1

Correct Responses. In the baseline phase, for Participant 1 correct responses data were 100% stable as all three data points fell within the stability envelope (Figure 1). Since the data were stable in baseline phase, it was appropriate for the researcher to move to the intervention phase. In the intervention phase, the data were stable, with 100% of the data falling within the stability envelope. Between the baseline and intervention phases, the percentage of non-overlapping data for correct responses was 80%. Whereas, between the intervention and phase change, the percentage of non-overlapping data for correct responses was 71% (note: only 14% of non-overlapping data in desired direction). The relative change between the baseline and intervention phases was 1 correct response in the desired direction. The relative change between intervention and phase change was 1 correct response in the wrong direction (one incorrect response). Using the split-middle method, the researcher found the trend neither accelerated nor decelerated during the intervention phase for correct responses.
Use of Strategy. Use of strategy data for Participant 1 in baseline were 100% stable, three data points fell within the stability envelope (Figure 1). The data were stable; therefore it was appropriate for the researcher to move to the intervention phase. In the intervention phase, the data were variable, with only 40% of the data falling within the stability envelope. Due to the variability of the data for strategy use in the intervention phase, the researcher decided on a phase change. Between the baseline and intervention phases, the percentage of non-overlapping data for strategy use was 100%. Whereas, between the intervention and phase change, the percentage of non-overlapping data for strategy use was 0%. The relative change between the baseline and intervention phase for strategy use was 2.5 questions asked in the desired direction. The relative change between intervention and phase change was 1 question asked, in the wrong direction (one fewer question asked). Using the split-middle method, the researcher found the trend accelerated during the intervention phase and decelerated during the phase change for strategy use.

Qualitative Data. Regarding the student questionnaire that was given after all intervention sessions concluded (Table 1), Participant 1 scored herself a 5 (strongly agree) on question 1. This indicates that she believed she understood the self-questioning strategy very well. For question 2, Participant 1 agreed that the self-questioning strategy was easy. For questions 3 and 4, Participant 1 indicated with a score of 5 that the self-questioning strategy helped her understand what she was reading, and she will continue to use the self-questioning strategy during reading. Lastly, Participant 1 scored a 3 (neither disagree nor agree) when asked if she will use the self-questioning strategy during other subjects like math, science, and social studies.

Participant 2
Correct Responses. In the baseline phase for Participant 2, the data for correct responses were 50% stable as two of the four data points fell within the stability envelope (Figure 2). The data were 50% stable for correct responses in baseline phase, the researcher moved to the intervention phase. The percentage of non-overlapping data between phases for correct responses was 0%. The relative change between phases was ½ a response in the wrong direction. Using the split-middle method, the researcher found the trend for correct responses decreased within the intervention phase.

Strategy Use. The use of strategy data in baseline for Participant 2 were 100% stable as all four data points fell within the stability envelope. The data were 100% stable, therefore the researcher moved to the intervention phase. The percentage of non-overlapping data between phases for strategy use was 100%. The relative change between phases was 4 questions asked, in the desired direction. Using the split-middle method, the researcher found the trend for use of strategy during the intervention phase accelerated.

Qualitative Data. Regarding the student questionnaire that was given after all intervention sessions concluded (Table 1), Participant 2 scored herself a 5 (strongly agree) on questions 1-5. This indicates that she strongly believed that she understood the self-questioning strategy and it was easy to use. This also indicates that Participant 2 believed that the self-questioning strategy helper her while reading, and that she will continue to use it during reading and other subjects like math, science, and social studies.

Participant 3

Correct Responses. In the baseline phase for Participant 3, the data for correct responses were 67% stable because four of the six data points fell within the stability envelope (Figure 3). Since the data were stable in baseline phase, it was appropriate for the researcher
to move to the intervention phase. The percentage of non-overlapping data for correct responses between phases was 25%. The one non-overlapping data point in the intervention phase was lower than the lowest point in the baseline phase. The relative change between phases was 2 responses, in the wrong direction (2 incorrect responses). Using the split-middle method, the researcher found that during the intervention phase, the trend for correct responses accelerated.

**Strategy Use.** The use of strategy data was 100% stable in baseline for Participant 3 because all six data points fell within the stability envelope. The data were stable in baseline phase, therefore the researcher moved on to the intervention phase. The percentage of non-overlapping data between phases for strategy use was 100%. The relative change between phases for strategy use was 3 ½ questions asked, in the desired direction. Using the split-middle method, the researcher found that during the intervention phase, the trend for strategy use decelerated.

**Qualitative Data.** Regarding the student questionnaire that was given after all intervention sessions concluded (Table 1), Participant 3 scored herself a 5 (strongly agree) on questions 1 and 3 indicating that she understood the self-questioning strategy and it helped her understand what she was reading. She scored herself a 4 (agree) on questions 2 and 4 when asked if the self-questioning strategy was easy and if she would continue to use it during reading. Participant 3 scored herself a 5 on question 5, when asked if she will use the strategy in other subjects besides reading.

**Discussion**

The results of this study show that there was no significant change between all three participants’ reading comprehension scores before and after the teaching of the self-questioning strategy. Teaching the self-questioning strategy, which included descriptions, modeling, think
aloud, guided practice with feedback, and independent practice, over such a short period of time proved of little value in increasing the participants’ reading comprehension scores. This is not entirely surprising as the strategy instruction for this study was adapted from the 8-stage instructional procedures in Schumaker et al. (1994), which was proven to be effective in previous research but over six to eight weeks of intensive explicit instruction (Ellis, Deshler, Lenz, Shumaker, & Clark, 1991).

As one would expect, the participants’ use of the strategy increased after the strategy was taught since they were starting from a baseline of 0; i.e., they were not familiar with the strategy at all. However, each participant’s use of the strategy was not consistent or effective. Not one of the three participants used the strategy 100% of the time throughout this study. A factor, which may have had a significant impact on the effectiveness of the strategy, was the amount of time spent the researcher spent teaching the self-questioning strategy. Each student spent only 120 minutes in total learning the strategy and applying it before being tested. The researcher noted that all participants could list the steps of the strategy aloud and explain what to do during each step before they were tested. This outcome lends support to the possibility that the participants understood the strategy on surface level, but did not understand, and have enough practice with, the strategy in order to apply it to the individual reading passages. Failure to develop automaticity with the strategy over such a short period of time to practice may explain these results.

Another factor that may have led to the ineffectiveness of the self-questioning strategy on reading comprehension is the researcher’s late knowledge over the participants’ phonemic awareness, phonics, fluency, and vocabulary. As noted by the National Reading Panel Report, (2000) and Rouse (2014), phonemic awareness, phonics, fluency, and vocabulary significantly
affect student’s ability to comprehend text. For some students, poor reading comprehension is a result of poor word identification and reading fluency. For others, it is a result of inefficient application of a strategy, a deficient lexicon, or condensed word knowledge (Manset-Williamson et al., 2008). Unfortunately, the researcher received information on the participants’ text fluency, word analysis and vocabulary well after the intervention was introduced. Participant 1 scored between the 6th and 24th percentile on the ISIP categories of text fluency, word analysis, and vocabulary. Participant 1 scored well below grade-level average on all three categories, and is in need of intense intervention. Participant 2 scored between the 2nd and 18th percentile on the ISIP assessment, on text fluency, word analysis and vocabulary. Participant 2 is in urgent need of intensive intervention that addresses all three sections of reading. Participant 3 scored between the 15th and 56th percentile of text fluency, word analysis, and vocabulary on the ISIP assessment. These results indicate that Participant 3’s reading weaknesses vary, and are all below grade-level. After observing the participants results on appropriate grade-level and lexicon passages, and reviewing the data from the ISIP assessment, it can be hypothesized that each of the participants struggle with phonemic awareness, phonics, fluency, and/or vocabulary affected the results of this study. This lends itself to the possibility that the self-questioning strategy, which focuses on reading comprehension, was not an appropriate strategy for the participants reading needs.

Participant 1 had significantly low, stable scores during baseline. During intervention she appeared to learn the strategy and its steps quickly, with little trouble. Her assessment scores were all higher than her baseline scores, but a functional relationship could not be determined. The researcher implemented and a phase change because of her low strategy use. During intervention the participant never fully applied the self-questioning strategy to her reading
passages. When the researcher reviewed the questions written down by the participant, the researcher noted the questions were not significant to the passage and lacked structure. Phase change instruction was conducted over a period of three days (90 minutes) whereby the participant was re-taught on how to formulate questions using “Who, What, When, Where, Why, How, and Which.” Participant 1’s reading comprehension assessment after the phase change did not show any increase in correct responses, but her strategy use did increase slightly. No relationship can be derived between phase change instruction and increase in strategy use. Another factor that may have influenced this participant’s study results was the environment. The room where the study was conducted was loud at times, and the student said she could not concentrate as a result. In fact, the student did not appear to focus throughout many of her sessions. It cannot be determined if this had an impact on her scores or not.

Participant 2 did not have stable baseline. Regardless of intervention scores, a functional relationship cannot be determined due to the variability during baseline. Unfortunately due to her school absences, she had a numerous gaps in her data. Her first assessment in intervention was her lowest score, and then she scored between 7 and 8 correct answers throughout the remainder of the study. Her use of strategy score was extremely high with 100% use of the strategy on most (all except two) of her assessment days. Her questions typically contained “Who, What, When, Where, Why, Which, and How” question words. Her questions were also in-depth and strayed away from surface level information. However, due to a lack of data (due to participant’s absences) and variability in the data, no relationship could be derived between strategy use and reading comprehension.

Participant 3 did not have stable baseline data. Regardless of intervention scores, a functional relationship cannot be determined due to the variability during baseline. Her first
intervention score was the lowest (same as participant 2), her next two scores rose slightly, and then her last score decreased to her lowest score on baseline. Her highest score in intervention matched her highest score in baseline. Due to the fluctuation in scores, there is no evidence the self-questioning strategy had an impact on the number of questions Participant 3 answered correctly. Her use of strategy ranged between 40% and 80% during the intervention phase. She repeatedly said that the passages were not long enough for her to formulate and ask five questions. It can be hypothesized that she needed more instruction and practice on creating and generating coming up with questions.

All three participants answered the questions on the post-test student questionnaire with either 4’s or 5’s (see Table. 1). Participants answered that they liked the self-questioning strategy, would use the self-questioning strategy in the future, and participant 3 said the self-questioning strategy was easy to learn. These results indicate that the self-questioning strategy is appealing and liked by all three participants. These results, however, do not match how the participants did on the reading passages and questions, indicating the possibility that the participants thought they understood the strategy completely, when in fact they did not.

**Limitations**

Several limitations apply to this study. First, the reading passages chosen for this study were inconsistent with the amount of literal and inferential questions per passage. The reading passages were organized by grade level and Lexile level, but there were few passages on specific Lexile for each participant (forcing the researcher to pull passages below or above Lexile level for each participant). Secondly, participant 1 and 2 used grade level 2 passages, which only had three choices per multiple-choice question. This is not consistent with the STAAR exam and other benchmarks. Another limitation is the variable data in baseline for participant 2 and 3.
before moving to the intervention phase. Methodologically, it is incorrect to start baseline without having at least three stable data points. Due to the lack of time to conduct the study, the researcher had to move on to intervention so that some level of instruction could begin.

The percentage of non-overlapping data for all three participants in correct responses is a limitation in this study. Participant 1 had 71% of non-overlapping data between intervention and phase change, however the non-overlapping data was in the un-desired direction (incorrect responses). This indicates that the data in the intervention phase was lower than the data in baseline. Participant 2 and 3 had 0% of non-overlapping data, indicating that scores in intervention after the self-questioning strategy was taught did not increase from baseline.

Another limitation from this study is strategy instruction day 3. Due to time being constrained to 30-minute strategy instruction sessions, some students got further along on the reading passages and questions than others because they worked faster. Participant one did not get to finish reading the passage or answer the reading comprehension questions. Participant 2 finished the story, but did not start on the questions. Participant 3 read the entire passage and finished all corresponding questions.

Participant 2 did not have consecutive data points during baseline before moving to intervention. Methodologically, there should be at least 3 stable data points before moving to intervention. Participant 2 also had an accelerating trend in baseline; therefore, introduction to the intervention should not have happened. Participant 3 did not have stable baseline data (67% within stability envelope), therefore baseline should have continued until stable data. Another limitation to this study is Participant 2’s intervention schedule. Participant 2 combined a strategy instruction session (Phase B), and a data collection session (Phase C) into one day due to time.
Additionally, a limitation for this study is the variability in the location where the study was held. Students received instruction and took the test in the library, attached sunroom, or pull out room depending on availability of the library as well as noise level in the library. The students seemed distracted on at least half of data collection days making it possible for the variability in location and noise level to contribute to low scores. Another final and important limitation related to this study was the short amount of instruction time. As mentioned earlier, each student spent only 120 minutes in total learning the strategy and applying it before being tested. Length of instruction time and practice time would seem to have an impact on the results.

Another limitation was the Question, Answer, and Prediction sheet. The participants were asked to generate five questions in intervention, and the sheet has eight rows for possible questions. This could lead to confusing demands and possible excess of questions. A final limitation for this study is the length of the reading passages during baseline and intervention sessions. Shorter passages may have inadvertently led to the asking of fewer questions, therefore resulting in lower strategy use scores.

Future Research

Future research should be conducted on impact of the length of instruction and practice time on the successful use of reading comprehension strategies. Much research has been conducted on the impact of multiple reading comprehension strategies, including the self-questioning strategy, on reading comprehension (Clark et al., 2001, Faggella-Luby et al., 2007, Feldt et al., 2002, Clark et al., 2001, Taylor et al., 2002, Feldt et al., 2002), but the instruction and research in these studies was conducted over a longer period of time and sessions. Conducting a study utilizing these same strategies but with a short time period for instruction and practice, could help determine how long instruction and practice needs to take place before true
learning and successful use of reading strategies occurs. Another possibility for future research is teaching a different single reading comprehension strategy (e.g., Inferencing or Visual Imagery) in the same short amount of time, to analyze results and compare to this study’s results. Much research has been conducted on the self-questioning strategy (independently, and paired alongside another strategy), and the results of these studies prove this strategy can be effective in increasing reading comprehension. However, more research needs to be conducted utilizing shorter or longer teaching durations to see if the results replicate those of this study. Another possibility for future research includes a BC (intervention and guided practice phase) to graph and see if the self-questioning strategy is really being learned. A final possibility for future research is having students orally share questions, predictions, and answers from the reading passages to limit the potential impact of writing on the process of question generating.

**Implications for Practice**

The results of this study are of critical importance for teachers because teachers are constantly required to produce high-level scores on tests, benchmarks, and state tests (i.e. STAAR exam). Since many adolescents with LD are taught in general education settings (IDEA, 2004), teachers need evidence-based methods of delivering direct comprehension instruction that provides necessary skill development for both students with LD and higher-achieving students in the same classroom (Faggella-Luby, Schumaker, & Deshler, 2006). However, teachers presented with little time to produce such high scores, tend to implement “booster” lessons or workshops in the hopes of raising students’ scores. Booster lessons or workshops include: weeklong strategy instruction, day or week workshops over specific content or strategies, and sometimes even as little as hour-long strategy introductions and practice. Unfortunately, in most instances the students cannot produce the results the teacher would like
because of the short amount of time the students had to learn, practice, and apply the strategy independently. In order to effectively teach students the strategies they need to produce high-level scores, sufficient time must be set aside to teach the strategy, to practice and apply the strategy together (teacher and student), and to have the student independently practice the strategy with teacher feedback. The results of this study (i.e., no functional relationship between instruction of the self-questioning strategy and reading comprehension scores for all three participants) are evidence of the need to increase strategy instruction time in the classroom.

Another implication for practice is focused around the self-questioning strategy itself. The results of this study are reason to believe that the participants needed a different strategy over another area of reading or more time for practice. The self-questioning strategy did not serve the participants actual reading needs, therefore before implementing the self-questioning strategy (or other strategies); teachers should assess what part of reading is affecting the student (e.g., fluency, vocabulary). Once the critical component of reading is discovered, selection of a strategy can begin. Further, it is essential that teachers consider that even when appropriate intervention has been selected, it is necessary to provide sufficient time for instruction and practice for students to reach mastery.
References


SELF-QUESTIONING STRATEGY AND READING COMPREHENSION


Appendix A – Sample Reading Passage

A Camping Trip
By Rachelle Kreisman

Credit: Noa Holz, CC BY 2.0

Ryan and his family went camping. They set up a tent and sleeping bags. Ryan’s mom started to make a fire in the fire pit. Ryan and his sister, Lily, searched for sticks. The sticks had to be long with a point at the end. The family was going to roast marshmallows!

Ryan and Lily found the perfect sticks. Their mom opened a bag of marshmallows. Ryan put one marshmallow at the end of his stick. Lily did, too. Then they carefully held their marshmallows over the fire and waited.

The marshmallows started to heat up. Ryan observed as the white treat turned brown. He knew that his marshmallow could not change back to white. He made sure not to burn it. Then Ryan removed the brown marshmallow from the fire. He waited a minute for it to cool. Then he took a bite. It was warm, gooey, and delicious!
1. What did Ryan do with his family?
   A) He went camping.
   B) He learned to cook.
   C) He took a walk.

2. Ryan and Lily had to do some things before they could eat their roasted marshmallows. Which is the correct sequence of Ryan and Lily’s actions?
   A) held the marshmallows over the fire, found the perfect sticks, put marshmallows on the sticks
   B) put marshmallows on the sticks, found the perfect sticks, held the marshmallows over the fire
   C) found the perfect sticks, put marshmallows on the sticks, held the marshmallows over the fire

3. Read these sentences from the text.
   "Ryan put one marshmallow at the end of his stick. Lily did, too. Then they carefully held their marshmallows over the fire and waited.

   "The marshmallows started to heat up. Ryan observed as the white treat turned brown."

   What conclusion can you draw based on this evidence?
   A) Marshmallows will turn brown if they are outside for too long.
   B) The heat from the fire caused the marshmallow to change colors.
   C) Ryan’s stick caused the marshmallow to change colors.

4. Roasting the marshmallow caused it to change in a way that could not be undone.
   What information from the text best supports this statement?
   A) "Ryan removed the brown marshmallow from the fire."
   B) "Ryan observed as the white treat turned brown."
   C) "He knew that his marshmallow could not change back to white."
5. What is the main idea of this story?
   A) Ryan and his family make a fire in a fire pit.
   B) Ryan and his family roast marshmallows on their camping trip.
   C) Ryan and his family learn about nature during their camping trip.

6. Read these sentences from the text.
   "The marshmallows started to heat up. Ryan observed as the white treat turned brown. He knew that his marshmallow could not change back to white."
   What does the word “observed” mean in these sentences?
   A) heard
   B) tasted
   C) watched

7. Choose the answer that best completes this sentence.
   The marshmallow turned brown _____ Ryan held it over the fire.
   A) so
   B) because
   C) but

8. What did Ryan do with his marshmallow after putting it at the end of his stick?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

9. How did the heat from the fire affect the marshmallow?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

10. Could Ryan make his marshmallow turn brown and gooey without using a fire? Explain your answer using evidence from the text.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Appendix B – Condensed Question, Answer, Prediction Sheet

<table>
<thead>
<tr>
<th>#1</th>
<th>Question</th>
<th>Prediction</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>#2</td>
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Passage Title

________________________________________________________________________________________
SELF-QUESTIONING STRATEGY AND READING COMPREHENSION

Appendix C – Day 1 Strategy Instruction Script

**Self-Questioning Day 1 Strategy Instruction:**
*By Sarah Huff*

**Date:**

**Script:**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Visual</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Segment 1: Advance Organizer</strong></td>
<td>Making Commitment</td>
<td>“The past ___ days you have been reading passages and taking a short comprehension quiz afterwards. Your scores were (score 1) (score 2) &amp; (score 3). Do you think with a reading strategy we can increase these scores?”</td>
</tr>
<tr>
<td>Student Commitment</td>
<td>Student: Yes</td>
<td></td>
</tr>
<tr>
<td>Making Commitment</td>
<td></td>
<td>“I believe I know something that can help you achieve great success on your reading scores. It’s called the Self-Questioning Strategy.” The Self-Questioning Strategy = Success. This strategy will only work if you put forth the effort. I have made a commitment to teach you this strategy and help you with your scores. Can you commit to putting forth your effort to learn and apply the self-questioning strategy in your reading?”</td>
</tr>
<tr>
<td>Student Commitment</td>
<td>Student: Yes</td>
<td></td>
</tr>
<tr>
<td>Strategy Description</td>
<td></td>
<td>“Great. Let’s begin by learning what the Self-Questioning strategy is. Starting with “self”. What does “self” mean?”</td>
</tr>
<tr>
<td>Student Response</td>
<td>Student: “Self” means something to do with me</td>
<td></td>
</tr>
<tr>
<td>Strategy Description</td>
<td></td>
<td>“Great, “self” means something to do with yourself or by yourself. What does “questioning” mean?”</td>
</tr>
<tr>
<td><strong>Student Response</strong></td>
<td><strong>Student:</strong> “Questioning” means asking questions or looking up questions.</td>
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<tr>
<td><strong>Strategy Description</strong></td>
<td>“Good. “Questioning” is the act of asking questions. When we put these two words together we know that the strategy we’re going to lean involves asking ourselves questions while we read.”</td>
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<tr>
<td></td>
<td>“After you ask yourself a question while reading, you are going to make a prediction of what the answer might be. As you may already know, a prediction is a guess using your best knowledge and what you have already learned. You will then look for the answer to your question to check whether your prediction was correct or not.”</td>
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<tr>
<td><strong>Strategy Description with Analogy</strong></td>
<td>“Using this strategy is like playing the board game “Clue”. You ask yourself several questions (like in the game “Clue”: Who killed Mr. Body, in what room, and with what weapon?) You then make a guess or prediction for each question. Your opponents check their cards to see if your predictions are right. Except when you use the self-questioning strategy, you check your predictions against the information in the reading passage.”</td>
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<tr>
<td></td>
<td>“Before I teach you the steps of the strategy, how and why do you think this strategy could help you?”</td>
<td></td>
</tr>
<tr>
<td><strong>Student Response</strong></td>
<td><strong>Student:</strong> It will help us become better readers.</td>
<td></td>
</tr>
<tr>
<td><strong>Rationale</strong></td>
<td>“Yes, this strategy will help you become a better reader. When you learn to ask yourself questions, make predictions, and find the answers to your question, you will find that you are actively reading and paying attention to what you are reading. As a result, you will be able to remember more about what you read. In return, you will be able to answer more of the comprehension questions correctly. You can use this strategy in various subjects in school, on the STAAR exam, and also outside of school when...”</td>
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</table>
**Strategy Steps**

<table>
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<tr>
<th>Description</th>
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</table>
| **Step 1:** Attend to Clues as you read → As you may know, a clue helps you or guides you when you’re trying to solve something. The mystery you’re trying to solve when you’re reading is what the passage is all about and why you should be interested. The clues help you come up with good questions to ask yourself.  
- For this step, when you begin the passage, you want to look for anything that makes you wonder or makes you curious. These are the clues. You might read the titles, or see a picture and want to ask yourself a question. The clues will be throughout the passage.”  

**Step 2:** Ask some Questions → Once you’ve found some clues, you’re ready for step 2, ask some questions. This means that after you find a clue and start wondering about it, you ask yourself a question. When you ask a question, make sure to ask about something that you haven’t learned already.  
- There are seven types of questions that you can ask yourself: Who, What, When, Where, Why, Which and How. (Hand them the sheet with the seven types of questions).  
- The “Who” question might be used when you wonder about a person.  
- The “What” question might be used when you wonder about a thing or object.  
- The “Where” question is about a place.  
- The “When” question is used when you wonder about time.  
- The “Why” question is used when you wonder about the reason for something or the cause of something. |
- The “Which” question is used when there are two choices, and you wonder which one will happen.”

“Step 3: Keep predictions in mind → Who remembers what a prediction is?”

Student: A guess about what is going to happen.

“Exactly. For this step, you are going to guess what the answers to your questions might be. Sometimes you won’t be able to guess, because you won’t have any idea as to what the answer is. At other times, you will be able to guess something based on what you already know from your life experiences and from what the author has given you.”

“Step 4: Identify the answer → For this step, you have to do more reading, always keeping your question and prediction in mind. As you read, you look and find the answer to your question.”

“Step 5: Talk or think about the answer → For this step, you think about the answer and compare it to your prediction. You need to decide whether your prediction was wrong or right. Then, you put the answer in your own words. Thinking about the answer to your questions helps you store it in your brain.”

“You should apply these five steps to your reading throughout the passage. These five steps should only take you a few seconds because your mind can do them very quickly.

“If you cannot find the answer to your question in the next few sentences you read, you need to start looking for new clues and asking new questions. It’s ok if you cannot answer all of your questions. Just continue finding clues and asking questions which you can answer.”

“Now I am going to model using the five steps of the Self-Questing Strategy (ASK IT) while I read Chocolate Moose. (Give the students a copy of the ASK IT steps, and the seven types of questions).
Teacher Model

| Step 1 | “I’ll be using the Self-Questioning strategy by remembering the words ‘ASK IT’, the mnemonic device that helps me remember the five steps of the strategy.”
|        | “Hmmm…. A stands for attend to clues as you read. I’ll read the title first and look for a clue. ‘Chocolate Moose’ is the title. This is strange to me because I already know that chocolate mousse is a delicious desert, but I also know that mousse in chocolate mousse is spelled m-o-o-s-e. This is a clue that makes me wonder. This kind of moose, spelled m-o-o-s-e, is a big animal.”

Step 2 | “I found a clue that made me wonder, so I’m ready to do the ‘S’ Step- Say a question. I’m going to ask, what is this about –the chocolate mousse dessert or the animal that is a moose?”

Step 3 | “Now I’m ready for the K step. I need to keep a prediction in mind as I read on. Let’s see… I predict this is going to be about the chocolate mousse dessert, and that the author just spelled it wrong. (Write question down)”

Step 4 | “I’m ready for the “T” step now. I need to identify the answer to my question. That means I need to read some more to see if I can find the answer to my question.”

|        | (Read the first two sentences of the passage aloud)

Step 5 | “I think I know the answer now. I’m ready for the T step: Talk about the answer. This passage is about the animal called a moose. I’ve learned that moose are dark brown and live where the weather is cold.”

Teacher Model Continued.

| Step 1 | “Now that I’ve answered my question, I’m ready to start over again with the A step- Attend to clues as you read. The passage says moose live where the weather is cold. That makes me wonder.”

<p>| |
|        |</p>
<table>
<thead>
<tr>
<th>Step 2</th>
<th>“I found a clue that made me wonder, so I’m ready for the S step- Say a question. Where exactly do moose live?”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 3</td>
<td>“Now I’m ready for the K step – Keep prediction in my mind as I read on. I predict that the moose live in Alaska. The weather is very cold there.”</td>
</tr>
</tbody>
</table>
| Step 4 | “I’m ready for the “I” step now- Identify the answer. That means I need to read some more to see if I can find the answer.”  
(Read the next two sentences) |
| Step 5 | “I think I know the answer. I’m ready for T step- Think and talk about the answer.  Moose live in the mountains. They live in western Canada and in the northwestern United States. Maybe they live in Alaska because that’s in the northwestern United States. I can’t be sure my prediction was right or wrong because the sentence doesn’t mention a particular state.” |
| Wrap up | “My demonstration is over now. Remember, your overall goal is to keep your mind active while you are reading. Many of these steps can be done at the same time. That is, you can be reading, looking for clues, and looking for new answers at the same time. I separated these steps in my demonstration so that you could easily see how to do each step. You will first have to start with separate steps too, but after a while, they will become very automatic and several steps can be done at once.”  
“This is the end of our first lesson over the Self-Questioning Strategy. Remember, if you are having trouble remembering the steps or how to do them, they will come with practice. I’ll see you _______ for the next lesson.” |
Appendix D - Duration of Participation (Calendar)

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>Feb 2nd</td>
<td>No Data Collection</td>
<td>First Day of Data Collection</td>
<td>Data Collection</td>
<td>Feb 6th</td>
</tr>
<tr>
<td>No Data Collection Meet the Participants</td>
<td>Feb 3rd</td>
<td>Feb 4th</td>
<td>Feb 5th</td>
<td>No Data Collection Student Holiday</td>
</tr>
<tr>
<td>Feb 9th</td>
<td>Data Collection</td>
<td>Feb 10th</td>
<td>Feb 11th</td>
<td>Feb 13th</td>
</tr>
<tr>
<td>Feb 16th</td>
<td>No Data Collection</td>
<td>Feb 17th</td>
<td>Feb 18th</td>
<td>Feb 20th</td>
</tr>
<tr>
<td>Part.1 Absent</td>
<td>Data Collection</td>
<td>(Part. 2 Absent)</td>
<td>Data Collection (Part. 2 Absent)</td>
<td></td>
</tr>
<tr>
<td>Feb 23rd</td>
<td>No Data Collection</td>
<td>Feb 24th</td>
<td>Feb 25th</td>
<td>Feb 27th</td>
</tr>
<tr>
<td>Snow Day</td>
<td>No Data Collection</td>
<td>(Part. 1 Absent)</td>
<td>Data Collection (Part. 2 Absent)</td>
<td>Snow Day</td>
</tr>
<tr>
<td>March 2nd</td>
<td>Data Collection</td>
<td>March 3rd</td>
<td>March 4th</td>
<td>March 6th</td>
</tr>
<tr>
<td>Snow Day</td>
<td></td>
<td>(Part. 2 Absent)</td>
<td>No Data Collection</td>
<td></td>
</tr>
<tr>
<td>March 9th</td>
<td>March 10th</td>
<td>March 11th</td>
<td>March 12th</td>
<td>March 13th</td>
</tr>
<tr>
<td>No Data Collection – Spring Break</td>
<td>March 17th</td>
<td>March 18th</td>
<td>No Data Collection (Part. 2 Absent)</td>
<td>Last Day of Data Collection</td>
</tr>
</tbody>
</table>