

Practice Makes Perfect: Increasing Reading Proficiency  
through Sustained Silent Reading - A Quantitative Study

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## **Abstract**

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There have only been moderate educational gains for American students in literary ability over the last thirty years. Increasing the time students spend reading is seen by some to be a way to improve their literary skills. To this end, some teachers have implemented programs like Sustained Silent Reading (SSR). Previous research has not been unanimous on whether SSR works. Using a quantitative study, this paper looks at bolstering the argument for SSR and proving that SSR in the classroom improves a student's literary skills more than normally would occur. Using data collected from a sample of six ninth grade World Literature blocks at a Seattle public school, the study analyzes the student's RIT scores from the *Measures of Academic Progress* (MAP) test to find a uniform pattern of growth -- greater for the students whose teacher used SSR in the classroom than those whose teacher did not. The data measured the overall average RIT scores and the average RIT scores in five specific categories to find growth between the testing periods in each of the teacher's class blocks. The results did not reveal any uniform growth patterns or greater progress for SSR students compared to non-SSR students.

However, the data does not disprove SSR's ability to increase literary skills. It only shows that the MAP test scores are not sufficient in accurately gauging SSR's affect on students because they do not isolate enough instructional variables or offer adequate comparisons for satisfactory cause and effect results. More research is needed to definitively prove SSR's capacity.

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## **Introduction**

The United States is no longer the land of unlimited opportunity, at least educationally. According to the National Center for Education Statistics (NCES) -- the primary federal organization used to gather and analyze educational data -- there have been only moderate educational gains for American students in academics over the last thirty years. The NCES has been tracking the academic achievement of elementary and secondary students since the late 1960s and based on their ongoing assessments, student achievement has become stagnant.

In the 2008 Trends in Academic Progress, the NCES revealed that although student scores have improved since the early 1970s, progress in the major subjects -- reading and mathematics -- has only shown slight gains. Primarily, improvements have only been made in the differences between white students and minorities, underperforming students and their peers, and between genders. Progress has also not been reflected across the multiple age groups, mainly just in the early elementary levels. Unfortunately, the average student readers are only moderately better than their parents at the same age. Over the past thirty years, even after all the effort and legislation passed in an attempt to improve literacy, results have been minimal.

Improvements made at the nine year old level (the first year tested) are not continued as the students move into the thirteen and seventeen year old levels. Although there have been slight gains at the thirteen year old level, the difference at the seventeen year old level is negligible (U.S. Department of Education and Institute of Education Sciences, 2009).

While the results of the ongoing Trends study show an improvement in regard to specialty groups, disappointingly, the progress is not being repeated at all levels or for all groups. What does it mean for average student readers as a whole? The short answer is more work is needed. But here is where the true difficulty lies: What can educators do to help increase reading achievement? There is not an unanimous answer.

Some educators and legislators believe that enforcing more scientifically rigorous teaching methods and curriculum would improve the issue. Others believe that increasing independent reading would benefit the students more. While both arguments, and all the others that fall along the spectrum, are legitimate ideas, my hunch is that most students would benefit from the practice of Uninterrupted Sustained Silent Reading (USSR) or what is more commonly called Sustained Silent Reading (SSR).

Although it is debated whether the method actually works based on scientific experimentation, those who have implemented SSR into their teaching have typically found that it increases the time students spend reading.

Still the question remains: Does using SSR in the classroom result in not only students reading more but also a measurable increase in their literary skills? It is hard for anyone to argue that practice does not increase skill. The more students read, so the theory goes, the better readers they become, which results in overall reading growth and an increase in other literary skills. Nevertheless, can that growth be measured in a meaningful way? Research and subsequent dialogues have not been conclusive or unanimous. As the research on the subject of Sustained Silent Reading reveals, opinions are often difficult to substantiate.

### **Literature Review**

Since Lyman Hunt's development of Sustained Silent Reading in the 1960's as an element of Individualized Reading Programs (IRP), its implementation in schools around the United States and the world has been readily accepted by many teachers as a method of not only increasing student's reading ability, but also their enjoyment for reading. However, SSR also has its detractors.



Some believe that it has not been scientifically proven to be successful and is not effective as a solo method; it needs to be implemented with other teaching techniques and learning guidelines. Others argue that common sense alone should prove its effectiveness. Needless to say, opinions run the gamut and most teachers who implement SSR into their curriculum have their own individual techniques and experience differing results. The following research shows that SSR has obvious benefits; it increases student's attitudes toward reading and reading skills, but going further, allows for independent student study and improvements in in-class dialogue. Although some researchers do debate the scientific nature of the research being used and the validity of the results, researchers have successfully argued that the perceived benefits are real. It is especially true when looking at additional studies using a larger research scope.

*SSR: Benefits in Attitude and Achievement*

Mitchell High School in Colorado Springs implemented a USSR program and after performing a mixed quantitative/qualitative study with multiple sophomore classes, their data showed the program was a success. Not only did USSR students increase their reading speeds, but the average growth rates between the experimental classes

and the control classes were almost quadrupled. Students' attitudes toward reading also changed. Some students who were not fans of reading, even saying they "hated" it, started to make time for reading at home (Kornelly & Smith, 1993, p. 48). The improved attitude and increased speed was reflected in the fact that students started consuming more books. The overall amount of books they read increased and many said they planned to read over the summer as well (Kornelly & Smith, 1993). The suggestions that Kornelly and Smith recommended for a successful USSR program implementation are similar to what other successful programs have used; students should have "free choice" when it comes to choosing reading material, students should not be graded or given assignments based on their reading, and students should be allowed to change books if their interest in a particular book wanes. Although the USSR program was implemented in the English classes only, both Kornelly and Smith felt, based on results, that it could be successful in a number of other venues too. After all, the goal is getting students to "discover an activity that will give them a lifetime of enjoyment" (Kornelly & Smith, 1993, p. 48).

Although Uninterrupted Sustained Silent Reading has primarily been implemented into elementary and secondary

classrooms, Maria Valeri-Gold successfully incorporated it into her under-graduate courses. She found that USSR had the same positive effects on college students as it did on younger students and "USSR appeared to help [my] students develop an interest in reading, change their attitudes toward reading, and alter their reading habits" (Valeri-Gold, 1995, p. 385). Not only did it change her student's attitudes and reading habits, but also helped them develop their own learning processes by allowing them chances for self-evaluation. Valeri-Gold's goals were similar to other teachers who have turned to USSR for help in creating an interest in reading. And while she did not have quantitative data supporting her position, qualitative results based on student feedback did show that the USSR program was a successful way of promoting an interest in reading. Her students found reading to be more enjoyable and developed a desire to read. However, a part of her USSR program was introducing a discussion feature. The students not only read, but shared and discussed what they were reading; a behavior modeled by Valeri-Gold (1995, p. 386). The discussions translated into journals that the students were able to use for self-reflection and Valeri-Gold used as a measurement for gauging their true interest in reading. According to her findings, the students enjoyed

USSR and felt it would be beneficial in other classes as well.

Bonnie Armbruster and Ian Wilkinson did a microanalysis study comparing whether, silent or oral reading, promoted better learning. The results did not provide a definitive answer, but did seem to imply that individual silent reading was more conducive to learning than group oral reading. Students tended to be more attentive during the reading time and were able to contribute more constructively to the class discussions often drawing more material from the text. However, one negative aspect of the study was that with silent reading, the class moved at a slower pace (Armbruster & Wilkinson, 1991, p. 154). Success was not immediate and depended on the activities of both the students and the teacher during and after the silent reading periods. It was important for the teacher to communicate what the goals of the reading were and discussing those goals after reading time was over.

*Going Further: Communication and Teacher Involvement*

According to some researchers, the communication between the student and teacher is important because it sets the learning in an "ecological orientation: a learning climate that attends to the cognitive, personal, and social

needs of the learner" (Akmal, 2002, p. 154); the goal being to motivate students and their teachers to communicate. SSR can be the catalyst for that end. Individual silent reading allows students to focus on their learning and uniqueness. Not only does SSR create learning opportunities for the students beyond the immediate curriculum and a chance for independent learning, but by creating a required dialogue it allows for informal discussions bridging the distance between student and the teacher. Thus, it will allow the teacher opportunities to teach students not only the curriculum, but also to address non-academic learning needs such as personal and social concerns. The independent learning opportunities allow the students to have responsibility for their own learning with teacher support (Akmal, 2002). Sustained Silent Reading provides more benefits than just increased literary skills and enjoyment.

Based on the results of their study concerning whether SSR helped students develop important independence skills through choice, Judy Parr and Colleen Maguiness believe that "sustained silent reading, has a number of recognized pedagogical strengths" (2005, p. 98). The ability of students to choose their own material allowed them to create an identity as a reader. The teacher's job was to help teach students how to select materials that would be

appropriate and enjoyable for them. Teacher/student conversations would be the most effective means of conveying that need, although Parr and Maguiness found that getting the students to communicate proved to be one of the most difficult aspects (2005, p. 102). However, once they were able to facilitate discussions centered on the student's voluntary reading, the students were happy to participate and became more engaged readers. The students "developed a common understanding that voluntary reading (like all literary practices) is socially situated and, therefore, should naturally include talk" (Parr and Maguiness, 2005, p. 106). SSR combined with talking created a reading culture students perceived as beneficial and in which they were able to participate.

#### *Scientific Method and the National Reading Panel*

As many researchers have pointed out, research regarding SSR and its effects on student reading achievement has been equivocal. The debate has been heated and many studies are used to either reinforce or weaken other researcher's arguments. Believing that research in support of SSR was not scientifically backed, Ian Wilkinson, James Wardrop, and Richard Anderson (1988) reinterpreted the data from Leinhardt, Zigmond, and Cooley (1981) -- a study that confirmed that silent reading

resulted in more achievement than oral reading. Believing that the original data had been analyzed incorrectly, resulting in an unsupported conclusion, Wilkinson et al. ran the data from the original study through a different model, incorporating error measurement and other controls. Their results showed that "there is no persuasive evidence that silent reading has an effect on students' reading achievement [...and] under alternative models of the data, there is even the suggestion that oral reading may have had more effect on final reading achievement" (1988, p. 140). The new finding put other silent reading research under scrutiny, since Leinhardt et al. (1981) was used as a support for many other SSR studies. It was considered one of "high methodological quality" (Wilkinson et al., 1988, p. 128). Wilkinson et al.'s results just proved the need for more empirical research since SSR promises so much, yet many believe the data does not support the claims.

Seven years later in a separate study, Ian Wilkinson and Richard Anderson examined "the social and cognitive consequences of silent reading, as compared to oral reading, in small group lessons" (1995, p. 710) and determined that the "benefits of silent reading were socially constructed" (1995, p. 736). The increased comprehension of material was not achieved through the

process of silent reading, but by how the teacher was able to use it in class. In-class discussions and the student's attentiveness played a key role in Sustain Silent Reading's success, and contrary to their previous study, the results did show that silent reading was more beneficial than oral reading in student retention and recall. However, these benefits were not dependent on intra-individual factors but were reliant on how the teacher constructed the reading groups and the effects on the inter-individual level. Although there was no direct evidence measuring the effects of silent and oral reading, Wilkinson and Richard's study lends credence to the idea that students benefit because of "richer discussions and greater attention" (1995, p. 735) and they felt "under less constrained conditions in other classrooms [...] the social and cognitive consequences of silent reading might be even more profound" (1995, p. 736). Silent reading has the potential to be more valuable than oral reading, but it is dependent on the teacher's ability to organize and capitalize on the change in student's behavior.

A study by Gregory Bryan, Parker Fawson, and D. Ray Reutzel (2003), found similar results to Wilkinson and Anderson. Allowing free choice in reading was not enough to engage students to participate in silent reading; more



effort was required from the teacher. As previously mentioned in other research, Bryan et al. also commented on the notion that SSR was considered better than other reading methods even though it had not been supported by research -- correlational research supporting passive SSR was not enough to prove the benefits claimed. The National Reading Panel (2000) was correct in its assessment. Bryan et al.'s study found that adult led discussions were necessary to engage the non-engaged reader. It created an environment where passivity was not possible because of class or individual teacher/student discourse. Students need to converse about what they read to help ensure that they continue reading. Conversations between the student and teacher help students to not only choose material that would be interesting and appropriate but also bring up additional topics for thought. They found that "by engaging the child through feedback and discussion in short, personal literature discussions, and taking an interest in what they are saying and reading children derive tremendous and immediate benefit on their engagement in reading" (Bryan, Fawson, and Reutzel, 2003, p. 69). Although those results might be a response to adult intervention, the study found that engagement could be increased by the expectation of a response from another. It creates an

environment where passivity is not acceptable, requiring a more active teaching role than just behavior modeling or observation.

In their article *The Benefits of Sustained Silent Reading*, Elaine Garan and Glenn DeVoogd attempted to combat the misconceptions surrounding SSR primarily brought on by the 2000 report done by the National Reading Panel (NRP) -- heavy supporters of scientifically base reading research (SBRR). Garan and DeVoogd's goal was to help clarify people's misinterpretations regarding SSR and explain that regardless of what people think, it is "not only intuitively appealing but also is supported by research" (2008/2009, p. 336). A lack of reliable research tends to be the most common argument against Sustained Silent Reading's implementation. The problem with trying to test and research the effects of SSR is that it has too many variables and moderators to isolate, thus making it almost impossible to obtain hard statistical and empirical data. Nevertheless, Garan and DeVoogd did point out that the wealth of correlational studies supporting SSR should not be rejected just because they did not meet the strict and limited criteria used by the NRP. Citing research from Stahl (2004) and Wu and Samuels (2004), among others, Garan and DeVoogd provided evidence that SSR does in fact show

that time spent reading in SSR programs increases student achievement and also provides growth, even when "hybridized" (2008, p. 343) by individual teachers -- whether by adding unmonitored reading, teacher intervention, or post reading conversation.

Ironically, Garan and DeVogd point out that the National Reading Panel's report actually does not prove that SSR is ineffective. Their results were inconclusive. In fact, contrary to their findings, some panel members do believe that SSR should play a role in the classroom. The panel's research, however, could not prove SSR's influence; due mainly to the fact that their research model was not derived from a study of the previous research done, but from a randomly selected medical model. The NRP disregarded the experience of teachers and their common sense in favor of experimental research. As Garan and DeVogd pointed out:

If we accept the lack of experimental research as a reason to eliminate SSR from schools, then we should also call a halt to practicing sports, or musical instruments, or phonics worksheets, or math homework, or preparing students to take standardized tests for that matter. Either we believe practice helps or we don't (2008/2009, p. 341).

At the same time, they question the message that it sends to students:

If we don't allow students to read in school at the same time that we tout the wonders of reading, what message are we sending to students about our values? Furthermore, if we really believe that reading is probably not a good idea in school, then why assign it for homework or encourage it at all for that matter? (2008/2009, p. 341).

Even without hard data derived from a scientific model, common sense, the professional judgment of teachers, and the large amount of correlational research support the notion that SSR benefits students.

In his meta-analytic review of others' Sustained Silent Reading research, Jun-Chae Yoon set out to find "the overall effect of Sustained Silent Reading on attitude toward reading and to identify the moderator variables of SSR on it" (Yoon, 2002, p. 1). His study found empirical evidence supporting the idea that SSR is beneficial to students and increases their interest in reading. Although characteristics of SSR have been debated, there are three that have come forward which Yoon used as his theoretical framework: self-selection, role modeling, and non-accountability. The literature that Yoon reviewed did not show conclusive scientific evidence supporting SSR, but rather formed the basis for his theoretical framework. The first idea, self-selection, was based on the evidence that children's interest and curiosity naturally spurred their

learning. In regards to reading, this translates to the belief that if students are allowed to choose material they are interested in, they are more likely to read, giving the students a hand in their own literary development. They develop a better attitude towards reading and understand the materials more thoroughly. The second idea is based on role-modeling. If behaviors are modeled for students, they are more likely to copy those behaviors. Thus, if teachers participate in reading activities, not only modeling proper behavior but also sharing their love of reading, it will reflect in the students, and they will see reading as positive social behavior. The final framework reference is crucial in SSR implementation. Non-accountability is like self-selection in that it develops a sense of autonomy in students. If they are allowed to relax and are not held accountable (via grading and proof of participation), they experience a greater enjoyment from reading which is more beneficial in developing their interest in reading.

Using self-selection, role modeling, and non-accountability as a theoretical context for his meta-analytic study -- limiting data sources to his necessary statistical comparison sizes and desired criteria -- Yoon narrowed his data sample down to seven previous studies. From these he was left with eleven effect size comparisons

from which to calculate results and perform analysis. He found evidence that SSR does affect students' reading attitude and that results are not dependent on the duration of SSR implementation. However, it does have a greater effect on the younger grades than the older ones. According to Yoon, "one of the most important findings from this study was an affirmative evidence for significant reading attitude gains from a fixed period of time for students to read materials of their own choosing either for pleasure or for information" (Yoon, 2002, p. 4). Although Yoon did recognize his study had its limitations, his research had provided empirical evidence to support the argument in favor of SSR.

In a 2008 study conducted in Malaysia by Dr. Siah Poh Chua, the goal was determining how SSR affected student's reading habits outside of school. Since most previous research had measured results primarily in the classroom, there was a curiosity whether the documented increased attitudes towards reading were carried outside the academic setting and affected student's leisure time. Had SSR modified their lifestyles to where they were reading for pleasure? Initially, Dr. Chua believed that SSR would not only change student attitudes toward reading as other research had shown, but contrary to others findings, also

change their leisure habits and cause them to read more. Still, he wanted to know more than if SSR increased leisure reading outside of the classroom; what were the student reading habits during SSR, what did they think their classmates reading habits were during SSR, and what were their attitudes towards leisure reading?

The method of Dr. Chua's research was to implement an SSR program into a Form One secondary school. The school would have a twenty minute reading time the first period of the day in which all students and teachers would read for pleasure. Each student was allowed to choose the books they wished to read. During the reading period, everyone in the school, including teachers and staff who acted as role models, were required to read without distraction. Following reading time, teachers encouraged the students to journal responses to their reading. After implementing the reading programs, Dr. Chua then conducted three measures, taken in October 2002, February 2003, and October 2003. At each measure, he had the students fill out a questionnaire that asked them to gauge their extent of reading during SSR, what they perceived their classmates' involvement was, the amount of time they read leisurely after school, and their attitudes towards leisure reading (Chua, 2008).

As Garan and DeVoogd discussed in their study, the notion that Sustained Silent Reading increases students reading abilities -- changing their attitudes towards reading making them read more -- just makes sense (2008). By practicing reading and making it habitual, common sense dictates that it should become part of a student's lifestyle. However, Siah Poh Chua's results did not support that notion. Although the results showed that SSR did create a reading habit in students, and they did derive more pleasure from reading, it did not translate to behavior outside of the classroom. In fact, "students spent fewer hours reading books for leisure after school subsequent to the launch of the SSR program. Although the SSR program could cultivate students' affective reactions to reading books for leisure, it did not cause students to spend more time actively reading books for leisure" (Chua, 2008, p. 184). Dr. Chua did state that since his research was not conducted in a laboratory, unaccountable variables might have influenced results and a more "quasi-experimental" study might negate the effects.

#### *Larger Research Analysis Points to Free Reading*

In his book *The Power of Reading*, Stephen Krashen accumulated research on the topics of reading, language acquisition, writing, grammar, and free voluntary reading.



He presented them as evidence for his theory that increasing the amount of time spent reading is the best and most surefire way of improving student's reading ability and consequently, other literary skills. As he states, "reading is the only way, the only way we become good readers, develop a good writing style, an adequate vocabulary, advanced grammatical competence, and the only way we become good spellers" (Krashen, 2004, p. 37). For Krashen, although previous research was not always conclusive -- it sometimes lacked direct evidence and could be diametrically opposed to research results from similar studies, as revealed by Sadowski (1980) and Minton (1980) - - correlations between the research he compiled proved that reading improves literary skills. Thus, increasing reading through free voluntary reading (FVR) programs increases ability.

He also asserted that due to the complexity argument traditional instruction is inadequate. The complexity argument states "language is too complex to be deliberately and consciously learned one rule or item at a time" (Krashen, 2004, p. 18). Therefore, traditional instruction is insufficient in providing students with a literary foundation from which to improve their skill. It also lacks the ability to benefit all students. Free reading on the

other hand has shown enough benefits that it should be the goal of language education, because "those who read more, read better" (Krashen, 2004, p. 120). Not only do students find free reading enjoyable, but it hooks them on reading, which increases the amount of time they spend reading and subsequently, they unconsciously improve in their language skills. And although Krashen was quick to point out that free reading is not adequate in-and-of itself to make every student a scholar, it increases student's language ability. Students will become "adequate readers, acquire a large vocabulary, develop the ability to understand and use complex grammatical constructions, develop a good writing style, and become good (but not necessarily perfect) spellers" (Krashen, 2004, p. 149). It is imperative that students be given the opportunity to read more through free reading programs, have increased access to larger libraries and more reading materials, and a decreased focus on traditional instruction, or students will continue to fail in meeting societies literary demands (Krashen, 2004).

The preceding research has revealed that SSR can improve student's reading speeds, attitudes, and book consumption. SSR also allows for increased independent learning and dialogue between students and teachers. Some researchers do make the argument that not all SSR research

has been scientifically proven and that data has sometimes been incorrectly analyzed, escalating its perceived benefits. But, a large amount of research has shown that SSR is valuable in increasing literary skills. In fact, looking at reading and language acquisition research as a whole, increasing the time spent reading might be the only truly gainful way to improve students' literary abilities.

### **Research Question**

The goal of my research was to better understand the impact of Sustained Silent Reading and its effect on students' literary skills. Many teachers strongly believe that SSR improves a student's abilities in the same way that practicing a musical instrument or an athletic activity improves proficiency in those fields; the notion that practice makes perfect. There is already a plethora of previous research regarding this topic and yet there has still not been conclusive proof one way or the other. The question remains: Does using SSR in the classroom improve a student's literary skills more than would normally occur? Additionally, if increased improvement occurs, will a definitive uniform growth pattern emerge? To prove the validity of SSR in the classroom, one must first produce data that shows uniform growth patterns for those who use it. Once that uniformity has been shown, the data must

expose a trend that confirms SSR's capability to increase a student's proficiency more substantially than what would normally occur otherwise.

## **Methodology**

### *Methodology/Rationale*

My research project employed a quantitative methodology. The study was strictly concerned with the numerical data collected, not an interpretation or conceptual argument regarding that data. The quantitative methodology was appropriate for this study because the research sought to isolate a phenomenon unobtrusively, understand the correlational differences between variables, and was dependent on the measurement and charting of numerical data. The research consisted of analyzing the scores of a standardized test and examining if they provided sufficient support for whether SSR increased students' literary skills.

The study did not require teachers or students to change their behavior, but for teachers to stick to their previously chosen curriculum, and for students to participate in class normally and take the school sanctioned assessments. The data was wholly dependent on the students' normal progress over the course of the academic year and their performance on the standardized

tests. The students and the teachers had no prior knowledge that the data would be used in a research study which eliminated any outside interference or causation to perform differently than normal. The studies unobtrusiveness, along with its focus on the numerical data and the analysis and measurement of that data, were the reasons a quantitative study was the best method of research.

### *Sample*

My data sample included twelve ninth grade World Literature periods, taught by five different teachers at a Seattle public school. A feature of this public school is that the ninth grade students have blocked English and History periods, which means that the each teacher teaches two different class periods back-to-back, alternating classes with a World History teacher. The students stay with the same peer group as they move from English to History or History to English. In essence, this creates larger classes without teaching all the students at the same time. Each teacher is only required to do one prep for two classes and each class is instructed relatively the same way, at least content wise. So although the sample included twelve periods, there were in essence six classes since each teacher taught one block and one teacher taught two blocks.

The study focused on these secondary students primarily because they were the classes that I had access to during my research, but also because the ninth graders at this public school were the only secondary grade that met the following criteria: they took a standardized reading skills assessment at the beginning and end of the academic year to chart their progress; they all were required to take the same course; the students were placed in the classes unsystematically -- because the period fit in with their schedule not because of their skill or interest; and a few, but not all, of the teachers used SSR in the classroom. The 2008 Trends in Academic Progress showed that reading was most stagnant at the thirteen and seventeen year old test ages. Although younger student reading achievement is increasing, the secondary age group is not, meaning the ninth grade students provided a quality sample because they were the most at risk for deficiencies in reading skill.

#### *Instrumentation*

The actual instrumentation of the data collection did not require any action on my part as a researcher. The Seattle school from which I drew my data sample requires all of their ninth graders to take the *Measures of Academic Progress* (MAP) test three times during the academic year.

The MAP test is an assessment developed by Northwest Evaluation Associations. As the researcher, this meant that I was not responsible in implementing a testing procedure. The testing procedure was already in place; I was responsible for analyzing the numerical data it produced in correlation to the criteria of my study. The MAP test provided me with accurate and reliable results, but more importantly, results that were measurable. These measurable results provided data from which to chart changes in both individual and class growth over the year.

The *Measures of Academic Progress* (MAP) test is a computerized adaptive test designed to not just assess a student's abilities, in relation to what they should know in a typical grade level or age, but their overall learning level. The student's overall score is reported in Rausch units (RIT), which is an equal-interval scale, and means that scores are grade independent and growth can be measured each time the student takes the test. The ability to view specific results and scores historically allows educators to chart an individual's progress, a specific class' progress, a grade's progress, and even the school's progress over successive years.

The MAP test is computerized and adaptive. Each question in the goal performance areas is given a specific

numerical value, or RIT score, depending on its difficulty. The reading test tests a student's knowledge across five goal performance areas: word recognition and vocabulary; reading comprehension - literal; reading comprehension - inferential/interpretive; reading comprehension - evaluation; and literary response and analysis. When taking the test, the student is given an initial question, based on their grade or achievement level, and depending on their response is given subsequent questions of increasing or decreasing RIT. The process is repeated as the computer cycles through the goal strands, until the student reaches the end of the test. After each question response, the computer scores the student's responses cumulatively before presenting the next question. At the end of the test, the student is given their overall RIT score and score range for each performance area. Since the test is untimed and designed to be challenging, with the expectation that the students will not know every question, the scores are accurate, reliable and mean the same no matter what the age or grade of the student ([www.nwea.org](http://www.nwea.org)).

#### *Analysis/Validity*

My research used the student's individual RIT scores at each test period -- Fall, Winter, and Spring -- to chart the average growth of each teacher's block periods over the



course of the year. Using that data, I was able to observe which class periods had the largest average growth, whether teachers' class blocks had the same relative growth, and whether teachers that used SSR had considerably more growth compared to those who did not use silent reading. In addition, since the test tests a student in five goal performance areas, I had Fall and Spring (an academic year) RIT scores in five categories; Word Recognition, Reading Comprehension, Know Text Components, Think Critical & Analyze, and Read: Variety of Purpose. Using the average of the student's individual scores in each category, I could see the teacher's block's growth over the year in each category; again, noticing how teachers who taught SSR matched up against those who did not and whether they outperformed each other in specific categories.

The benefit of using the RIT scores from the MAP test was that they limited my influence, as the researcher, on the students and the teachers. Also, I was able to have access to data that I would not have been able to collect in person, which gave me a larger data sample. On the other hand, it makes the research difficult to replicate exactly, since the same teachers would not be able to teach the same students in the same way. And although the MAP test is designed to supply a more exact portrayal of a student's

knowledge, it cannot make a student put forth maximum effort during the testing process, which could mean the results were not entirely precise. There are no guarantees that the results truly reveal the students overall knowledge each time they took the test. This issue means the errors could be disadvantageous in providing accurate measurements of students' progress.

Influences that I did have on the data results were due to data compiling and analysis. To achieve more even and precise results, I only included students' RIT scores if they took all three of the tests during the year. I made the choice because it would uniformly reflect growth between each testing stage and also over the academic year. The students I used for overall average scores were the same students that I used when measuring the average of each result category. So although the data does not take into account every student in the classroom, the data does stay uniform throughout the research process, not adding scores that are not accounted for in other averages. When analyzing the data, I decided to use the average scores of class blocks. I chose to compile the students in their teachers' blocks instead of their individual class periods because teachers often moved their students to different periods within their block. This made it near impossible to

sort the data by class. I used averages since I was looking for overall uniform growth patterns and averages made noticing trends more simple.

### **Data**

The data was compiled from two sources: 1) an excel spreadsheet sent to me from the high school and 2) individual spreadsheets downloaded from the NWEA website that listed the student's overall RIT scores for each test period -- Fall, Winter, and Spring -- broken down by teacher and then class. Using these two sources, I created multiple excel worksheets to analyze the data. Due to the sheer amount of worksheets and the data they contain, I was unable to include them in this paper. However, the following tables were assembled using the worksheets and are what I used to analyze the data. In both tables, the teachers' names have been replaced with military call signs. Alpha 1, Alpha 2, Bravo, and Delta were the four blocks that the teacher used SSR; Charlie and Echo were the two that did not. Both Alpha 1 and Alpha 2 were taught by the same teacher.

The first table shows the overall average student RIT scores for each test in a teacher's particular block, the growth between the test periods -- Fall to Winter (period

1) and Winter to Spring (period 2) -- and the overall growth over the academic year (Fall to Spring).

Table 1

*Average RIT Scores and Period Growth by Teacher*

	RIT Scores			Growth		
	Fall	Winter	Spring	Per. 1	Per. 2	Academic Year
Alpha 1	232.58	231.89	234.51	-0.69	2.62	1.93
Alpha 2	232.76	234.76	235.98	2	1.22	3.22
Bravo	228.15	230.39	230.72	2.24	0.33	2.57
Charlie	231.26	232.98	233.76	1.72	0.78	2.5
Delta	232.94	233.86	235.98	0.92	2.12	3.04
Echo	234.93	235.43	238.7	0.5	3.27	3.77

The second table shows the students' average RIT scores during the Fall and Spring -- an academic year -- and overall growth for each teacher in the five categories which are used to compile the overall RIT scores; Word Recognition, Reading Comprehension, Know Text Components, Think Critical & Analyze, and Read: Variety of Purpose.

Table 2

*Average Fall and Spring Category RIT Scores and Growth by Teacher*

Alpha 1	Alpha 2	Bravo	Charlie	Delta	Echo
Word Recognition					

Fall	232.07	233.76	229.51	231.68	232.67	236.61
Spring	235.2	235.29	232.36	232.98	235.1	238.67
Growth	3.13	1.53	2.84	1.3	2.43	2.07
Reading Comprehension						
Fall	233.51	233.47	227.18	231.28	234.25	235.52
Spring	233.76	235	229.47	233.84	234.22	238.63
Growth	0.24	1.53	2.29	2.56	-0.04	3.11
Know Text Components						
Fall	231.8	231.2	228.29	230.74	230.02	234.17
Spring	233.69	235.56	228.78	235.36	237.43	238.8
Growth	1.89	4.36	0.49	4.62	7.41	4.63
Think Critical & Analyze						
Fall	234.93	230.42	228.13	231.8	233.63	234.07
Spring	234.84	237.53	230.09	234.66	235.49	239.24
Growth	-0.09	7.11	1.96	2.86	1.86	5.17
Read: Variety of Purpose						
Fall	230.93	235.22	226.22	231.24	234.47	234.7
Spring	234.69	236.24	231.53	232.42	237.49	237.96
Growth	3.76	1.02	5.31	1.18	3.02	3.26

## Analysis

Using the data compiled from the two sources, I had each student's overall RIT scores for each test period along with his or her growth between each subsequent period and their Fall and Spring RIT scores for each of the five

categories; Word Recognition, Reading Comprehension, Know Text Components, Think Critical & Analyze, and Read: Variety of Purpose. As seen in Table 1, I averaged each block's overall RIT scores for each test period. This allowed me to see the average growth for each block between the test periods and the full academic year. For Table 2, I compared each block's Fall and Spring RIT scores and growth in each of the five categories. I was able to see how blocks performed in each category and whether there was a uniform growth or if certain blocks did better in different categories compared to others. It gave a particularly clear view of how non-SSR teachers measured against the SSR teachers, even more than the overall RIT score growth. What I was hoping the tables would show was that there was a consistent growth for the four teachers that used SSR in their blocks and their growth was more prominent than the two blocks whose teachers did not use SSR -- there were no such results.

What the data ended up conveying was no perceivable, even growth between any of the similar blocks. All blocks did have measurable growth over the academic year, but it was not consistent with regards to other blocks. Echo ended up having the most overall growth over the academic year, but Charlie grew the second to least. Since Alpha 1 and

Alpha 2 were taught by the same teacher, I was expecting there to be similarities between the two in terms of progress. Yet, Alpha 1 produced the lowest amount of growth over the academic year while Alpha 2 produced the second highest. Further analysis of Table 1 and Table 2, showed that Alpha 1 and Alpha 2 were entirely dissimilar in how they performed between each test period, their overall growth, and particularly within each category. The two instances where this dissimilarity was most blatant was the growth during period 1 (Fall to Winter) and the growth in the Think Critical & Analyze category.

During period 1, Alpha 1 actually dropped  $-0.69$  in score while Alpha 2 raised its average score by 2. In the subsequent period, Alpha 1 did raise its average by 2.62, while Alpha 2 rose by an additional 1.22. But, because of the disparate growth patterns, the two blocks overall progress ended up being 1.29 points apart; larger than the difference between any other block besides Alpha 1 and Echo (the highest and the lowest). Even more than that disparity, the difference between Alpha 1 and Alpha 2 in the Think Critical & Analyze category was tremendous. In that category, Alpha 1 again regressed; this time by only  $-0.09$ . In contrast, Alpha 2 improved by 7.11. The inequality between the two scores was higher than any other block, in

any other category. It was the highest disparity between scores, which is even more shocking considering the blocks were taught by the same teacher.

At first, I thought Alpha 1's lack of growth in comparison to Alpha 2 might have been that the Alpha 1's block was the first and second periods of the day, but so was Echo's block and it put up the highest overall growth. Looking at blocks in comparison to time of the day did not show any significant tendencies one way or the other. Charlie's block, which was non-SSR, was period five and six and ended with the second lowest overall growth, but Delta was also during the fifth and sixth periods and its growth was in the top three. The third and fourth period blocks, although both SSR, also do not reveal a pattern.

The data goes further in showing no evident trends in the results of SSR and non-SSR blocks. Review of Table 2 reveals that no block produced the highest growth results in two categories. The same holds true for the lowest growth results. In each of the five categories, a different block had the highest or lowest growth. It is worth pointing out that of the two non-SSR blocks, one never had the highest growth in a category while the other never had the lowest, and neither block ever regressed. However, that



might just be due to the fact that SSR blocks outnumbered non-SSR blocks two to one.

Another interesting revelation was in the Reading Comprehension category. The two non-SSR blocks, Charlie and Echo, ended up making the most progress over the year, while one SSR block, Delta, actually declined. In fact, Charlie and Echo also put up strong growth in the Know Text Components and Think Critical & Analyze categories, but did produce relatively low growth in Word Recognition and Read: Variety of Purpose. Yet, their results were still not significantly higher than their counterparts, unlike Delta, Alpha 2, and Bravo's growth in Know Text Components, Think Critical & Analyze, and Read: Variety of Purpose, respectively.

### **Implications/Recommendations**

My research set out to answer two questions: 1) Does SSR increase a student's literary skills more significantly than normally would occur and 2) if increased improvement occurs, will a definitive uniform growth pattern emerge? Based on the data collected, I was unable to provide an affirmative answer to either question. Although the MAP data was precise and accurate, in relation to the test's design, I could not find definitive growth patterns. Since there was no uniform growth pattern, it did not reveal a

trend which meant that the data did not show that SSR significantly increases literary skills more than normally would occur.

The problem was that my research could not overcome the "human factor" -- the effort of the students during the test taking. This was evident when compiling the worksheets. Some students made significant gains while others had significant loses. According to the NWEA website, the average gain between the start of each year should be about three to four points. There were instances of student results fluctuating over twenty points between tests. The test is designed to show the student's overall learning level and it is grade independent. That means for a student to swing twenty points, they would be testing anywhere between the fortieth and ninety-fifth percentile at the ninth grade level; in other words, a ninety-fifth percentile grade swing of five grades. That does not accurately reflect a student's true knowledge and can throw off a teacher's overall class average. Are those students actually becoming less intelligent as the data portrays? Most likely not, so there had to be a reason for the inconclusive data.

A problem was there were too many variables in the classroom to isolate. Using adaptive standardized

assessment does not isolate variables, which makes it difficult to gauge what exactly causes the students to progress. Is it SSR, the lack of SSR, a combination of other teaching methods and curriculum, other teachers, or peer influence? Schools are a dynamic environment and it is difficult to isolate each teaching component to test if that is what makes a teacher more effective. My research methodology was unable to isolate those components, yet I still believe that the MAP data provided some helpful answers.

The data did not allow me to answer my primary research question, but it did not disprove SSR's ability to increase literary skills? This was primarily because the instrumentation was insufficient in measuring the student's knowledge, thus unable to track their growth. This means standardized testing was not a satisfactory measuring device to mark growth since it did not factor student effort. The MAP test scores also did not allow for a comparison of how the student would have performed in another class block in a separate scenario. There were some instances where students changed blocks (going from Alpha 1 to Alpha 2) and one instance where a student changed teachers (Alpha 1 to Echo), and although there was improvement when they left Alpha 1, it is just conjecture

that they would not have made the same gains if they had stayed in the block.

However, the lack of ability to compare the same students in different scenarios exposed the benefit of my research. The MAP test was not an acceptable method of measurement for the quantitative study I was pursuing. It did not provide a meaningful cause and effect (i.e. SSR caused growth while non-SSR did not cause growth). It allowed for a comparison between the teachers, but did not provide a comparison between how the students would have performed under different circumstances. Thus, the students' growth or regression by being in their class block did not reflect that the SSR was the cause.

My recommendation, based on my findings, is that more research is needed. Subsequent research could be done using the same data in conjunction with additional data samples taken from the same teachers over a longer period of time to see if a trend emerges. But this would not address the lack of inadequate comparison. Additional research should be conducted isolating SSR as the cause for any changes in the student's achievement. The MAP test does not allow for isolating variables. Researchers need to conduct a study using a quantitative methodology where the only variation between the samples is Sustained Silent Reading. Those

results would produce data that would more accurately reveal SSR's ability to increase students' literary skills more than would normally occur. However, that would take more time and resources than are at my disposal.

### **Conclusion**

The United States still faces the problem of primary and secondary students not improving in their reading and writing abilities as much as they should. Gains over the last thirty years have not increased significantly. Literary skills are one of the most important educational needs, because they are used in every subject. Although research results have not been unanimous, there is evidence that increasing the time spent reading not only improves a student's reading ability, but other literary skills as well. Practice makes perfect. I had hoped to provide further evidence for this argument, yet my results did not offer the authoritative proof I was after.

The problem is that teaching is a dynamic activity which rarely creates the same classroom environment period to period, class to class, year to year. Many different variables play a significant role in shaping a teacher's success and marking student achievement. Isolating one teaching component as being more successful is difficult. Using average class growth over the academic year, based on

results of the *Measures of Academic Progress* test, I was hoping that SSR would be a significant enough component to outweigh others and supply growth results that were considerably greater than those of teachers who did not use it. However, after analyzing the data, there were not specific growth patterns or uniform results, even when comparing one teacher's class block to one of their other blocks. My results revealed two things to me; either 1) SSR does not improve a student's literary skills more than what would normally occur in a classroom or 2) my methodology was not adequate in isolating SSR as the means to success. I believe that it is the latter. My research results did not disprove that increasing the time spent reading increases literary skills, it just was not able to prove that it does. It comes down to the methodology and instrumentation used. The test results compared teachers, but did not isolate enough variables in their instruction to gauge what was contributing to their success or limitations. More research needs to happen. Just looking at MAP test scores, with no control over instruction, cannot provide the desired results. A better methodology needs to be found. Yet, until research disproves the theory that practice makes perfect, students need to read regularly.

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