Title

Evaluating the complexity of the SAT: Observations and students' self-reports of challenges and strategies on the critical reading section of the SAT

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Evaluating the complexity of the SAT: Observations and students' self-reports of challenges and

strategies on the critical reading section of the SAT

A thesis submitted in partial satisfaction

of the requirements for the degree Master of Arts

in Education

by

Karla Rivera-Torres

2017

ABSTRACT OF THE THESIS

Evaluating the complexity of the SAT: Observations and students' self-reports of challenges and

strategies on the critical reading section of the SAT

by

Karla Rivera-Torres

Master of Arts in Education

University of California, Los Angeles 2017

Professor Alison L. Bailey, Chair

Limited research exists on how students qualitatively interact with high-stakes standardized

assessments. Using a think aloud methodology, this study focused on investigating the

challenges Reclassified Fluent English Proficient (RFEP) and English Learner (EL) high school

students report while completing the critical reading section of the SAT, and the challenges the

researcher observed. Another aim of the study was to investigate what types of reading,

vocabulary, and testing strategies the students reported while taking the test and the strategies the

researcher observed. The results yielded a higher percentage of reported challenges in the areas

of reading and vocabulary, than observed challenges. For the strategies, there was a breakdown

of observed and reported metacognitive and cognitive strategies for the areas of reading,

vocabulary, and testing. There was a higher percentage of observed metacognitive strategies of

underlining and rereading. In addition, reading strategies such as summarizing and analyzing

were observed in this study, and a higher percentage of vocabulary and testing strategies were reported by the students during their think alouds. The study also examined the similarities and differences in challenges and strategies by student performance level on the critical reading test that was given to the students to complete. It was observed that the lower performance group experienced more reading challenges and the higher performance group reported more strategies overall. Considering that the vocabulary words in the reading passage played a big role in the challenges reported by the students, it can be said that the study has implications for the area of testing development, in that more appropriate reading passages should be created for RFEP and EL students. The study also has implications for educators in that they could implement a think aloud methodology in their English language arts curriculum and teach their students to be more metacognitive about their own challenges while reading. The results of this study suggest that the students who used a broader range of metacognitive strategies (including, reading, vocabulary, and testing strategies) had a better reading comprehension performance than the other students. Students can also learn what types of strategies to apply to try to overcome their challenges and comprehend the text they are reading.

The master's thesis of Karla Rivera-Torres is approved.

Mark Hansen

Carola Suárez-Orozco

Alison L. Bailey, Committee Chair

University of California, Los Angeles

2017

DEDICATION

I dedicate this arduous work to my parents, Lidia Torres and Carlos Rivera, for motivating me to push forward and to never give up on my dreams.

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Objectives

To understand what linguistic aspects of the reading portion of standardized assessments affect English learner (EL) high school students, the present study attempted to assess the linguistic complexity of the reading portion of the SAT through a qualitative manner by documenting students' thinking processes as they complete the test. In addition to investigating the challenges that affect EL students, the strategies that students implement as they are reading and testing were analyzed to inform the understanding of the linguistic challenges that students experience. Focusing on the strategies that EL students use in reading standardized assessments is of great importance as it steps away from the deficit model of reading underachievement in EL students. The Scholastic Assessment Test (SAT) was specifically investigated in this study as it is an assessment that attempts to measure if a student is ready for college and predicts students' academic success, therefore it is a high-stakes assessment for high school students and a crucial gatekeeper for high school students' attainment of a higher education degree.

EL students are held to same standards as their non-EL peers when it comes to large-scale standardized testing, although exposure of core content (e.g., language arts and mathematics) may be presented differently for both groups of students (Estrada, 2014). Known as the lack of "opportunity to learn" (OTL), EL students tend to be exposed to less rigorous curriculum in language arts and mathematics, in comparison to their other peers not in low-ability classes (Gross, 1993). Because of this practice, EL students consistently lag in achievement in comparison to their non-EL peers.

Validity of such standardized assessments has been called into question for EL students because most standardized assessments are normed using an unrepresentative sample of students (Durán, 2008; Verdugo & Flores, 2007; & Abedi, 2004, 2002). English is not an EL student's

primary language; therefore, it may be possible that these students are experiencing difficulty with the linguistic features that each test item presents (Abedi, 2002). Arguably, these examinations function as a test of students' academic English language proficiency, rather than a student's ability to comprehend texts, which are two different constructs that should be assessed separately. The actual purpose of these high-stakes tests is to assess students' achievement and intellectual abilities in different academic content areas, not their English language proficiency.

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Literature Review

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Background on EL students in the United States

The United States' school age population comprises a large percentage of EL students – "students who are unable to communicate fluently or learn effectively in English, who often come from non-English-speaking homes and backgrounds, and who typically require specialized or modified instruction in both the English language and in their academic courses" (Hidden curriculum, 2014). The National Center for Education Statistics (2016) reported that there are 4.5 million public school students in the United States classified as ELs and participating in services provided to EL students (9.3 percent of all K-12 students). Additionally, five out of the six states with the highest percentage of EL students were in the west coast of the United States, with California having the highest percentage: 22.7%.

To provide context for the student sample that was part of the present study, the California Department of Education (CDE) calculated for the fall 2015 school year, a total of 1.374 million English learners, 22.1 percent of the total enrollment in public schools in the state (CDE, 2016). The CDE also reported a breakdown of the languages the EL students know with Spanish coming first, constituting 83.5% of the total student enrollment and Vietnamese being second, constituting 2.2% (CDE, 2016).

Issues with standardized testing and EL students

In an attempt to set standards-based education reform, the Every Student Succeeds Act (ESSA) mandates that states track student performance and collect school ratings based on annual statewide assessments to ensure that students are meeting the academic state standards that are set for each grade by implementing accountability measures and interventions for school with subgroups of students that are falling behind (U.S. Department of Education, 2016). Although the federal government is making strives to place struggling students as priority, issues still arise because EL students are required to take the same standardized assessments as their non-EL peers and continue to fall behind in performance. EL students are placed at a disadvantage when they are assessed with the same assessments as non-EL students. A "mainstream bias" exists in which a small and unrepresentative sample of EL students are used for norming the test content and procedures that reflect the dominant culture (Abedi, Hofstetter, & Lord, 2004).

A reason why EL students underperform in standardized assessments is the time is takes for EL students to attain full proficiency of the English language. Hakuta (2000) investigated how much time is needed for ELs to attain full proficiency of academic English proficiency (language used in academic contexts such as in school). From an extensive analysis of four different school districts, Hakuta found that oral proficiency alone takes three to five years to develop, while academic English proficiency can take from four to seven years to develop. This argument, however, has been challenged by other researchers in that the attainment of proficiency can take even more time (Menken, 2008).

Considering Hakuta's findings, Abedi (2002) conducted a meta-analysis of a series of studies to examine the psychometric issues regarding standardized testing and EL students. The

compilation of the studies' results revealed that EL students generally perform lower than non-EL students on reading, science, and mathematics due to confounding language background variables. The greatest difference in performance between EL and non-EL students was seen in language-related content areas such as reading, yielding more evidence in reading content areas. These results suggest that the language background variables add a source of measurement error in the assessment of EL students, and consequently, may affect the construct validity of the standardized achievement tests.

An empirical study, examined the linguistic demands of reading comprehension, mathematics, and science question items that might constitute construct irrelevant language (Bailey, 2005) using differential item functioning analysis[1]. By examining where the difficulty was located, the language domain, and the type of linguistic demand, it was determined that the highest level of linguistic demand, including vocabulary, syntax, and discourse level, were found in the reading comprehension items. These results complement with other findings that show a wider performance gap between EL and English proficient students on reading comprehension sections on standardized content tests than on mathematics or science (Butler & Castellon-Wellington, 2000/2005).

The "complexity" in standardized tests

The assessments and accountability mandates of *No Child Left Behind (NCLB)* (2001) left serious repercussions for most states in the United States because EL students were required to take mandated assessments that were not intended for all students. Consequently, schools that

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[1] A differential item functioning analysis focuses on identifying whether examinees responses to test items or sets of test items are linked systematically to personal characteristics (such as ethnicity or language background) of the examinees and are unrelated to the test's construct. (Osterlind & Everson, 2009).

serve a high percentage of EL students have been labeled as failing under the NCLB (Menken, 2010). This has occurred in many school districts of California and New York that serve a large population of EL students. The schools were labeled as failing because they had a low number of EL students pass their state testing, and therefore were at risk that the state take over their schools (Menken, 2008; Gándara & Baca, 2008).

The problem with these high-stakes tests is that they are written in English and administered in English leaving many EL students at a disadvantage. Any assessment of an English language learner's content-area knowledge administered in English is likely to be greatly influenced by the student's English language proficiency. (García & Menken, 2006; Coltrane, 2002; Menken, 2002; 2000).

It can be argued that schools' accountability systems have failed, given that they have not accurately assessed EL students because these systems are not able to capture the complexity of the issues of learning English as a second language (Pappamihiel & Walser, 2009). The assessment practices that are part of NCLB have oversimplified the issues for EL students by not taking into consideration that learning English is a complex, nonlinear, and always evolving process (Pappamihiel & Walser, 2009).

Due to issues in testing EL students, validity and reliability problems exist and sources of measurement error must be addressed to make the proper high-stakes decisions, such as funding at the state, district, and school level. It also affects students at an individual level, student placement, access to core content, eligibility to advanced programs, grade-level promotion, graduation decisions, and college admittance. (Bailey & Carroll, 2015; Abedi et al., 2004; Solano-Flores & Trumball, 2003).

Little research has looked at the specific issues that affect EL students on standardized testing for high-stakes decision making, especially for high-school graduation purposes. However, one factor that contributes to the sources of measurement error in high-stakes testing is that the exams are linguistically complex. NCLB has caused a shift in testing to "performance-based assessments", whereby students are required to engage with multiple literacies and produce language in complex ways that may take EL students longer to acquire (García & Menken, 2006).

Lessons learned from the California High School Exit Exam

California CAHSEE. From 1999 to 2016, in California, students were required to take the CAHSEE to graduate high school and receive a high school diploma. EL students performed particularly poorly in comparison to their monolingual peers on this high-stake test. The CDE (2016) reported that only 43% of the total number of EL students tested (53,015) passed the ELA portion of the CAHSEE in comparison with 89% of the total number of non-EL students tested (254,299) passing. On the mathematics portion of the same assessment, 53% of the total number of EL students tested (52,389) passed this portion, while 87% of the total number of non-EL students tested (253,083) passed this portion of the CAHSEE. While this exam was discontinued in 2016 year, considerable research was undertaken to examine the particular challenges that it presented for EL students.

The exam was composed of three parts: reading, writing, and mathematics, designed to align with the California's academic content standards. It was an arduous multi-day and multi-hour exam and all high school students were required to take the exam, regardless of the time they have been in the U.S. The English Language Arts portion of the CAHSEE posed challenges for EL students because they were tested under six strands: Word Analysis, Reading

Comprehension, Literary Response, Writing Strategies, Writing Conventions, and Writing Applications.

In the writing strands of the ELA CAHSEE, students were asked about the structures of the English language such as: errors in grammar, punctuation, sentence structure and organization. More specifically, students had to read a passage and understand what they had read and expected to have high-level grammar skills and writing skills in English. In addition, they had to answer closed response questions or edit underlined portions of sentences in accordance with writing conventions and grammatical accuracy (Menken, 2008). In addition, students were required to read fictional and non-fictional writing and were tested on components of figures of speech, making it linguistically and culturally unfair for students who recently arrived from another country. Clearly, the linguistic demands put on EL students have placed them at a disadvantage (Solano-Flores, 2008).

How has research accounted for the drastic achievement gap between the EL and non-EL student groups? There are several other potential reasons why EL students are performing below their non-EL peers. One, is that there is no consistency among schools on the curriculum that is put into place for EL students to meet the goals of attaining adequate English language proficiency (ELP) for their grade level and grade-level achievement—referred to as *curricular streams* (Estrada, 2014; Menken, 2008). In addition, EL students spend so much time in English Language Development (ELD) courses and they miss critical time and exposure to the core content requirements that they will later be tested on. The California Department of Education gives the liberty for school districts to make their own decisions about identification, classification, reclassification, and monitoring of EL students, program placement, curriculum, and instruction (Estrada, 2014; Abedi, 2008). Different models of English instruction exist

depending on the administrative decisions that are made (e.g., Structured English Immersion/Sheltered Immersion Classroom or Specially Designed Academic Instruction in English).

The inconsistency of the exposure in the curriculum is problematic because a significant percentage of EL students do not get reclassified for five to six or more years, resulting a in long-term EL classification for students even when they enter secondary school. In the 2015-2016 academic school year, the state of California reported 62.6% (238,576) of students who have been long-term EL students for more than six years (CDE, 2016).

In addition to this issue, the instruction for EL students lacks linguistic and academic rigor, their opportunity to learn diminishes, and students often fall further behind that their other peers (Oakes & Lipton, 1999). The access to core content is very limited or delayed because they are placed in modified or remedial courses or low mainstream tracks at the secondary level (Olsen, 2010; Callahan, 2005). The argumentation for this practice is that students cannot benefit from core content instruction until they reach early advanced or advanced levels of English language proficiency, even though this reasoning has been challenged (Valdés, 2001).

In addition, at the secondary level, EL students may lack cultural familiarity and knowledge with the test items presented on standardized testing, especially on the SAT[2]. Many of the test items may contain references to events or ideas that are part of U.S. culture that EL students may not have been exposed to in their native culture (Solano-Flores, 2006).

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[2] The Scholastic Assessment Test (SAT), a high-stakes assessment for high school students that comprises four section: critical reading, writing, mathematics, and an essay portion. The assessment attempts to measure if students are ready for college and to predict students' academic success. There has been no documentation of EL students' performance on the SAT, a standardized test that high school students who are in their third and fourth year are required to take to gain admittance to many colleges or four-year universities in the United States.

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Due to the diversity to curricular exposure that exists for EL students, it is necessary to explore different approaches that investigate the complexity that exists in reading texts, even within standardized assessments. Researchers in the past have utilized verbal protocol/think aloud protocols (Bailey & Huang, 2010; Johnstone et al., 2006; Droop & Verhoeven, 1998; and Jimenez, Garcia, & Pearson, 1995) to understand the reading processes and strategies that students use on standardized assessments, in addition to the validation of standardized tests.

Theoretical Frameworks

I have approached the present study through the lens of two theoretical perspectives. The first, is a metacognition framework. Metacognition was first defined by Flavell (1979) as "one's knowledge and beliefs about one's own cognitive processes and one's resulting attempts to regulate those cognitive processes to maximize learning and memory." Having the knowledge and the ability to regulate one's thinking processes comes in very handy in communication, reading, comprehension, language acquisition, social cognition, attention, self-control, memory, self-instruction, writing, problem solving, and personality development (Chauhan & Singh, 2014). Metacognition is a higher order of cognition in that a person must plan how to approach a learning task, monitor their comprehension, and evaluate their progress through a task. In the present study, students were given a reading comprehension assessment where students were required to monitor their thinking processes as they read and answered the test questions.

The second lens by which the present study was approached was through Albert Bandura's (1986) social cognitive theory, which posits that learning occurs in a reciprocal manner between a person, their environment, and their behavior. In addition, there is an emphasis on social influence of external and internal social reinforcement. This is true for the

present study, as I asked each student to listen to a model think aloud that depicted behaviors and

certain criteria that each student was expected to remember as they did their think aloud.

Motivation for the Present Study

There exists a lack of qualitative sources that look at EL students' cognitive and

metacognitive processes and interactions with the reading portion on standardized assessments

from a non-deficit model perspective. There is an understanding that EL students tend to fall

behind in reading performance in standardized tests in comparison to their peers (Menken, 2008;

Abedi, 2008; Abedi, 2002), but there is no research that goes into a deep investigation of the

specific challenges students experience as they are taking the exam; not just challenges in

relation to vocabulary, but also challenges in relation to reading and testing. Other studies have

looked at performance differences by ethnicity on the different sections of the SAT, but no other

study has done a thorough investigation of the reading section of the SAT by specific language

group as it was done for the present study. The focal points of past research studies have been

with primary school aged EL students (Bailey & Huang, 2010) and adult students learning

English as a foreign language (Anderson, 1991). The angle of past research has been to point out

the flaws of certain tests and how these flaws affect student performance. The novelty of the

present study was to move away from the deficit model lens that has tackled EL students in the

past and use a qualitative perspective to bring forward a non-deficit perspective by showcasing

the strategies that these students are able to bring to the table as they are testing, and how these

strategies are used to ameliorate the students' challenges on the reading portion of the SAT. With

this information in mind, the following research questions guided the objectives of the present

study:

Research Questions

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1. What language-related challenges and strategies do linguistically diverse high school students report or are observed using on the Critical Reading section of the SAT?

    a. What are the similarities and differences in language-related challenges and strategies that are self-reported versus observed by the researcher?

2. Are there differences in the challenges and strategies (either reported or observed) of higher performing students on the SAT critical reading section compared to lower performing students?

Methods

Participants

The 12 student participants[3] were recruited from a partnership high school between a school district and a university in southern California. The school is mainly composed of Hispanic/Latino students, where 78% of the student population is composed of this ethnic group, 13% Asian, 5% Filipino, 1% American Indian or Alaska Native, 1% African American, 1% White, 0.5% Pacific Islander, and 0.5% two or more races. In addition, 33% are 9th grade students, 20% 10th grade, 29% 11th grade, and 19% 12th grade students.

In the recruitment process, my main goal was to do an equal comparison between EL student and non-ELL students (English only/never EL), however I had to resort to convenience sampling due to the permission I was given by the staff of the students I could recruit for the study. Seven students were 11th grade students and five were 12th grade students. Nine participants were female students and three were male students.

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[3] In the original proposal, 20-30 participants were proposed to be recruited. Due to recruitment difficulties, only 13 participants were recruited. One student was excluded from the sample because she was classified as English Only (EO), therefore could not be compared with the rest of the sample who had RFEP or EL classifications.

In addition, nine students were of Hispanic or Latino descent, one student was Filipino, and two students were of Asian descent. Due to the restrictions in recruitment, I was only able to recruit two EL and ten Reclassified Fluent English Proficient (RFEP)[4] students. In terms of the language background, Spanish was the native language for nine of the students in the sample (including the two EL students), Filipino was the native for one student, Japanese was the native language for one student, and Korean was the native language for another student. Table 1 in Appendix A portrays information of students' CELDT and CASHEE data. The CELDT scores demonstrate whether a student became RFEP or remained EL and the CAHSEE scores demonstrate whether a student earned a high school diploma.

The study was advertised in the 11th and 12th grade students' college preparation period and students who demonstrated interest in participating in the study were given an assent form (students younger than 18 years old) and a consent form for the parents (students were asked in what language [English or Spanish] they preferred the consent form in). Students who were 18 years old were only given a consent form. As for compensation for the students' participation, the 12th grade students received a $5 Starbucks gift card and the 11th grade students received a handout with a detailed explanation of the findings of the study, in addition to tips and strategies for how to prepare for a test. In addition, all the students received a pizza party for their participation in the study.

Materials and Measures

Students' records containing demographic information provided by the school (gender, race/ethnicity, how many years the students have in the EL track, information on what

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[4] Reclassified Fluent English Proficient (RFEP): students with a primary language other than English who were initially classified as English learners, but who have met the criteria for English language proficiency (California Department of Education, 2010).

language other than English do EL students speak, read, and write; information the courses

the students took, especially classes related to ELA, CELDT data, and CAHSEE data)

SAT critical reading section with released items from College Board

Think Aloud Protocol (See Appendix B for a sample protocol).

Think Aloud Testing Booklet

Audio-tape recorder

Data Collection Strategies

The methodology that guided this quality study was a think aloud or a verbal protocol as

other researchers have referred to it. This methodology is the most adequate for this study as it

has been used in the past to delve into students' individual thinking and cognitive processes.

A think aloud protocol involves asking students to orally explain what they are thinking as they

complete a certain task or test item. Ericsson & Simon (1984) furthered the conceptualization of

the verbal protocol by explaining the relationships and interactions of motivation and affect that

students experience by examining their cognitive processes and responses in reading.

Furthermore, the think aloud methodology has been divided into several categories in a way to

understand the different types of cognitive processes presented by different individuals. Ericsson

& Simon (1993) categorized verbal protocols as: *self-report* (retrospective, generalized

statements about strategies), *self-observation* (specific, rather than generalized language

behaviors), and *self-revelation*, ("think-aloud" attempts to capture stream-of-consciousness while

attending to information).

Past research investigations have implemented the think aloud methodology mainly to

point out reading comprehension challenges in elementary school students' second language by

questioning the validity of reading comprehension tests for not using culturally relevant passages

(Droop and Verhoeven, 1998). Other studies have focused on the investigation of vocabulary challenges that affect elementary school bilingual students by assessing their cognitive and metacognitive reading processes and strategies, in addition, to investigating how expertise and bilingualism level affected students' reading comprehension (Jimenez, Garcia, and Pearson, 1995). Another study solely focused questioning the validity of the mathematics portion of a large-scale assessment. By having 4th grade and 8th grade students with learning disabilities and who had an EL status, Johnstone et al., (2006) found various issues with the design of the assessment, including inaccessibility of test items, unclear instructions, and incomprehensible language. Lastly, another researcher decided to focus on the types of strategies adult English as a Second Language (ESL) students use on standardized reading examinations and how the strategies may affect their performance (Anderson, 1991). Anderson found that the students had the knowledge of the types of strategies but were not able to apply them successfully.

One study used the think aloud methodology with elementary school-aged children who were English only speakers and EL students to assess the linguistic complexity on mathematics, science, and social studies texts, by asking students to underline unfamiliar and challenging words/phrases in reading passages (Bailey and Huang, 2010). These challenges affected the students' reading fluency, comprehension, and choosing the correct response to the comprehension questions. Building off from Bailey & Huang (2010), I used the same self-reflection think aloud to not only investigate the vocabulary words that were challenging for students, but to also investigate reading and testing challenges that may affect EL high school students on a high-stakes assessment such as the SAT.

As mentioned previously, some researchers decided to focus on the challenges piece, while another research decided to focus on the strategies piece. In my study, I also looked at

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reading strategies my participants incorporated in their think aloud, in addition to the vocabulary

strategies and testing strategies. The uniqueness of the present study is that it looks at the

challenges (deficit aspect) and the strategies (non-deficit aspect) pieces together under one

investigation to see how both pieces work together at the same time and how they complement

one another. In addition, I approached my study from a more ethnographical perspective by

having field notes[5] inform each of the student's think alouds (Chiseri-Strater & Sustein, 1997).

Lastly, another unique aspect of the present study is that a combination of a think aloud

methodology was used (*self-report* and *self-revelation*), as opposed to other researchers who

have focused on using one type of think aloud methodology.

Procedures for the present study

I recorded individual think aloud sessions in the corridor outside of a classroom on the

school campus, where the student was asked to read an SAT reading passage and answer its test

questions out loud. The students described their thinking processes about the passage,

emphasizing any challenges as they took the test. Before the students did their own think aloud,

there was a modeling phase. In the modeling phase, I provided each student with a testing

booklet that contained three reading passages and test items from the SAT critical reading

section released by the College Board.

The interview protocol consisted of an introduction of what the think aloud process

consisted of and brief instructions of what the student had to do during the interview. I asked

each individual student to try their best in answering the questions that were accompanied by the

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[5] Field notes are used by the researcher to remember and record the behaviors, activities, events
and other features of the setting being observed. Field notes are usually during or right after the
observations and are usually jottings or scratch notes that will help the researcher recall
something they observed, something that someone said, or something that happened (Chiseri-
Strater & Sustein, 1997).

passages. In addition, I informed the students that they were not going to be timed as in a normal SAT administration. Most importantly, I gave the student the option to discontinue participation if they wished so.

Afterwards, I asked each student to complete the second page of the test booklet, which contained questions about the students' language background and the start of their educational experience in the United States. The third page of the booklet contained the model passage accompanied by a question. Then, I asked the student to listen to an audio-recording of a person's think aloud process as they were reading the model passage that each student had in front of them. Instances of code switching between English and Spanish, sounding out difficult words, defining unfamiliar vocabulary words in the middle of sentence, saying thoughts of the passage while reading, paraphrasing when necessary, and making connections between paragraphs were some behaviors that the students heard from the recording. The purpose of the model audio-recording was so that students learn what a think aloud for a reading passage entails. After the model was presented, I had a short debrief with each student about their thoughts on the think aloud process and to answer any questions the student might have had about the process.

Afterwards, each student engaged in a think aloud process with a short practice passage which was accompanied by one question. If after the first paragraph the student did not follow the think aloud protocol of voicing their thinking process out loud, I prompted the student to say out loud what they were thinking as they read through the passage. After the student answered the test question, they proceeded to the next reading passage in the testing booklet. The reading passage was lengthier than the practice passage and it was accompanied by four questions. Since the paragraphs in this passage were longer, I prompted if necessary after each paragraph. After

the passage, the students were required to answer the four questions that asked about vocabulary words and comprehension of the text. If the student took more than 30 seconds to respond to the question, I prompted the student to obtain an answer. If the student was unable to answer the question, the student was asked to guess (if they wished to) or skip and move on to the next question. At the same time, I observed and made note of nonverbal behaviors that could help complement the students' verbalizations[6]. In addition, I kept count of all the instances that prompting occurred throughout the interview[7] (See Appendix C for a sample of the Testing Booklet).

As the student engaged in the think aloud procedure, the researcher paid attention for: a) whether the student identified words that were difficult for them; b) whether the student used any language other than English when thinking aloud; c) whether the student described strategies for answering the testing questions. If there was not much verbalization going on through the interview, a retrospective section was incorporated as part of the think aloud interview. Retrospective questions included: a) Could you identify any terms that were unfamiliar or difficult for you in the passages and the question items; b) Did you understand what the questions were asking; c) Did you use any other language other than English while reading the passages or answering the questions for comprehension or clarification?

Data Analysis

Transcription. The students' responses to the think aloud were transcribed verbatim with the help of two undergraduate research assistants. The transcriptions were

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[6] The nonverbal behaviors would help with the formulation of the codes.
[7] During the data analysis process, the information about the prompting instances was not included.

completed using *Express Scribe* (Sound, 1993), a professional audio player software tool designed to assist the transcriptions of audio recordings.

   Coding Process. The transcriptions went through a three-part analytical process: 1) carefully reading through each student transcript and marking words/sentences/paragraphs that were considered challenges and strategies; 2) going through items that were marked in the first cycle and identifying which challenges and strategies were observed by me (items that students were implicit about them during their think aloud) and which were reported by the students (items that students were explicit about in their think aloud); 3) Putting the observed and reported challenges and strategies into initial themes.

   To place the themes into codes, I used *Dedoose* (Lieber & Weisner, 2013), a program that facilitates the coding and analysis of qualitative data and allows the incorporation of quantitative data. Drawing from Saldaña's (2015) coding manual I used *process coding,* I provided a code to the themes found in the three-part analytical process. There was a mixture of implementation of deductive codes (drawn from previous research) and development of inductive codes. After further examination of the codes, I determined that certain codes required a *subcode* where a secondary code was applied after the primary code. Third and fourth level codes were also created, but were not applicable to all primary codes. The instances that were chosen were analyzed once more and it was determined that certain instances required *simultaneous codes*. For example, a challenge described by a student could be also be coded as a strategy. While the codes were created, and modified, a *code map* was also developed. A *code map* is a network display to organize and assemble codes to bring meaning, structure, and order to the data.

   A rater was trained and asked to code 25% of the transcripts (3 transcripts) to evaluate the reproducibility of the coding protocol that was developed for this study. The rater and I coded

the same three transcripts for observed and reported challenges and strategies. Afterwards, I inputted the rater's responses onto excel to calculate the percent agreement between the codes she applied and the codes I applied to the three transcripts we coded. There was a total of 60 codes (20 codes per transcript) The rater and I reached 94% agreement (i.e., four disagreements out of the 60 opportunities) in our independent coding of the three transcripts. Whenever a disagreement sprung forth, the rater and I met to discuss and reach a consensus.

The following section describes the observed and reported challenges and observed and reported strategies and which were implemented in a deductive manner and which were developed in an inductive manner.

Challenges

Observed Challenges. The observed challenges were implemented through a deductive manner, composed of reading miscues (Goodman & Burke, 1972). A reading miscue analysis is a tool mainly used by teachers to monitor the reading process of their students. A miscue represents a word or phrase that the student reads incorrectly or that is not on printed text. The miscues were considered essential as part of the analysis as it creates an opportunity to learn how the reader interacts with the text and what is going on in his or her mind as he or she reads. The analysis yielded six different types of reading miscues: *a) word substitution, b) word insertion, c) pronunciation, d) skip/omission, e) repetition,* and *f) reversal* (Goodman & Watson, 2005)*.* A) *Word substitution* occurs when the reader substitutes a word not in the text for another word that is not in the text. B) *Word insertion* occurs when the reader inserts a word or more than one word that is not in the text. A c) *Pronunciation* miscue occurs when the reader mispronounces a word in the text. The pronunciation miscue errors were double-checked for pronunciation accuracy using an online pronunciation dictionary (Forvo). D) *Skip/Omission* occurs when the reader

omits a word or an entire in the text. E) *Repetition* occurs when the reader repeats a word or line while reading. The last reading miscue that has been previously found is *reversal.* This error occurs when the reader changes the word order while reading.

In addition, I created four types of *subcodes* for each type of reading miscue to investigate: 1) whether the student self-corrected their reading miscue error, 2) whether the miscue error affected the meaning of the reading passage, 3) whether the meaning of the text was compromised due to the miscue error, and 4) whether the meaning of the text was not compromised due to the miscue error. It was very important to, first, highlight the instances when the meaning of the text was compromised to note if these unique instances compromised the meaning of the entire message of the text and how this affects the understanding for each student. I also considered that counting the times when the student self-corrected their miscue as fundamental as it reveals information that the reader is being implicitly metacognitive about their error, meaning that they have recognized their error, although they do not say it out loud.

Reported Reading Challenges. There was an open inductive coding process for the reading challenges that were reported by the students, in order words, that the students were explicit or self-aware about. It was important to use inductive coding for the reported challenges These instances constituted as *metacognitive experiences* of reading. *Metacognitive experiences* refer to the monitoring of cognition as the person comes across a task and processes the information related to it. Furthermore, *metacognitive experiences* are a branch of *metacognition* (Flavell, 1976). The reported reading challenges were coded whether they occurred during reading or when answering the questions.

Reported Vocabulary Challenges. There was open inductive coding process for the vocabulary challenges that were reported by the students. These instances also constituted as

metacognitive experiences because the students provided narrations of the instances when they did not know a certain vocabulary in the reading text, test questions, or answer choices. In some instances, students would say they were familiar with the vocabulary because they "had heard it before" or had "seen it before in English class", but did not remember the definition of the word.

Strategies

Observed Strategies. There was open inductive coding process for the observed strategies which were also described as instances of *metacognitive experiences*. Observed strategies were both of reading and testing, but I considered them as observed because the students were not explicit about them in their think aloud narrations. In the present study, strategies were viewed as "generally deliberate, planful activities undertaken by active learners, many times to remedy perceived cognitive failure, facilitate reading comprehension and may be teachable (Garner, 1987). Three subcategories came up from the data that consisted as observed strategies: *metacognitive behaviors, reading behaviors,* and *testing metacognition.* In this study, *metacognitive behaviors* consisted of student actions related to their reading. These behaviors included: a) underlining, highlighting, or making notes when reading or when answering questions (marking or writing notes or keywords on the margin of the text) and b) student rereads. For both categories, it was coded whether the strategy occurred when the student was reading or answering a question. Moreover, for the instances when the students reread, it was coded whether the student reread a section of the text, a question, or an answer choice.

The next subcategory, *reading behaviors* were implemented deductive codes which are reading actions that teachers use as part of a checklist to assess their students' reading development. Although the students indeed do these actions during their think alouds, they are observed actions because the students did not give a label to their reading behaviors (Pinnell &

Fountas, 2007). The behaviors included: a) text summary/paraphrase when reading or answering question (student summarizes or paraphrases a section of the text while reading or answering a question. There were a few students who explicitly narrated they were going to summarize or paraphrase, therefore this category was also included under reported strategies; b) making connections (students make connections about the events mentioned in the passage and they may also make connections between the question and answer choice with what happens in the passage); c) inferring (students used prior knowledge and textual information to draw conclusions, make critical judgments, and form interpretations from the text, and they may make conclusions or new ideas); d) analyzing (students made close, careful, or systematic examination of the text); e) prediction (students used information from the text and own personal experience to anticipate what they are about to read or what they are reading.)

The third and last subcategory of observed strategies was the deductive code of *testing metacognition* which describes the type of testing strategy the student used when answering the questions after reading the passage. The most common type of testing strategy was a) *process of elimination to answer question indicated with a written notation* (thus, why it is observed) (student used this testing strategy to answer each question indicating it by crossing out each answer choice.)

Reported Strategies. Similarly, to the observed strategies, there was an open inductive coding process for the reported strategies which were also described as instances of *metacognitive experiences*. The components that comprised this main category were: *metacognitive behaviors, reading strategies, reading behaviors, vocabulary strategies,* and *testing metacognition.*

Metacognitive behaviors constituted as a) *underlining, making notes when reading or when answering the question* (marking or writing notes or keywords on the margin of the text and explicitly narrated they were going to do that behavior); b) *rereading section of text, question, or answer choice* (students reread a section of a text as they were reading or when they were answering a question. Students may also reread a question or answer choice and explicitly narrate they were going to do that behavior). [8]

Reading behaviors referred to instances when the student summarized or paraphrased a section of the text when reading or answering a question and they explicitly narrated they were going to do this behavior. In addition, *reported vocabulary strategies,* constituted instances of a) *comments about knowing vocabulary word(s)* (descriptions or explanations of knowing what a word means; b) *defining vocabulary in English when reading or when answering a question* (although the student used this strategy, it does not necessarily mean that the vocabulary word was defined correctly); c) *defining vocabulary in a Language Other Than English (LOTE)* (this includes translation, use of cognates, and defining the word in some instances not correctly.

The last subcategory of reported strategies was deductive coding of *testing metacognition* which describes the type of testing strategy the student used when answering the questions after reading the passage. The most common type of testing strategy was a) *process of elimination to answer question indicated with a written notation, a verbal notation, or with both a verbal and written notation* by describing why a certain answer choice is not the correct answer and in some instances by crossing out an answer choice, and b) *use of other form of testing strategy indicated with a written notation, a verbal notation, or with both a verbal and written notation*.

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[8] The behavior of *rereading* is different from *repetition* (reading miscue) in that *rereadings* entail phrases or sentences, rather than one word.

For many instances, the codes that were created were not mutually exclusive, meaning that more than one code could be applied to some think aloud instances reliant on each student. In some instances, a challenge and a strategy could be coded together. An excerpt could be coded as observed and reported contingent if it was a challenge or a strategy. For example, as the following student described: "Well, I don't know what *indigent* or *petty petty* means. So, I'll have to cross those out. Cause I don't want to choose something that I don't know." Two codes were applied to this excerpt. A *reported vocabulary challenge* code was applied for describing that they do not know what *indigent* and *petty* means, and the second code, for *reported testing strategy using process of elimination to answer question* by describing that they were going to cross out the two answer choices. The next example depicts how an excerpt could be coded as both observed and reported at the same time. "And also melancholy. I heard of it before, but yeah, I also don't know what it means." The first code that was applied was *observed metacognitive behavior – underlining, making notes while reading*, and the second code for *reported vocabulary challenge.* With compilation of my field notes, it was found for this particular instance, the student underlined the word 'melancholy' while describing that they did not know what the word means. Refer to Appendix D for a list of all the codes with an example that describes each one.

Types of test questions included in the Critical Reading section of the SAT

Before delving into the results of the present study, it is essential to discuss the types of questions that are distributed in the Critical Reading section of the SAT, and then make a comparison with the types of questions that I included as part of the think a loud.

The first types of questions are *big picture/main point of the passage questions.* These questions are about the author's point of view, primary purpose of the passage, and the rhetorical

strategy of the author. The rhetorical questions are usually found with the paired passages on the SAT. These questions are mostly about how two passages relate to one another in argument and the author's viewpoint (Lindsay, 2015).

The second type are *little picture/detail questions*. These questions refer to a specific small detail in the passage, including what a phrase in a passage specifically refers to or it provides a line and asks the student to provide a detail in that part of the passage.

The third type are *inference questions*. These questions ask students to make a logical assumption based on details in the passage. Also, these questions ask students to infer the meaning of a paragraph or line in the passage, determine the implications of a statement in the passage, or make a logical conclusion about opinions stated by the author.

The next category are *analogy questions*. These questions ask students to make a comparison between a condition or relationship described in the passage and a condition or relationship that is not mentioned in the passage. The students must detect the similarity between an event described in the passage and a separate hypothetical situation described in the answer choices. These questions will always be a subset of the *inference questions*.

The fifth type are *function questions*. These questions ask students to figure out what the purpose or effect of a line or paragraph is in the context of the passage, or why the author used a certain phrasing in the passage.

The sixth type is *vocabulary in context questions*. These types of questions ask the student the definition of a word as it is used in the context of the passage. These questions only appear with individual passages, not paired passages. These questions require the student to apply a variation in the meaning of common words rather than a wide range meaning.

The next category are *author technique questions*. These questions ask the students about the author's tone in the passage or the mood the passage conveys to the reader.

Types of Critical Reading SAT test questions that were included in the present study

The reading passage that was used for this think a loud study was taken from an online source containing released test items for students to practice for the SAT.   The three-paragraph reading passage is part of a fictional novel that was written in 1909 and was followed by four questions that were also taken from the website. The types of questions that were asked were *inference, vocabulary in context, analogy,* and *function* type questions.

The *inference* question asked students to make an assumption based on something specific mentioned in line 8 of the passage

> 2. Based on information presented in the passage, which
> best describes what Georgia was "tired of" (line 8)?
>
> (A) Being forced to earn a living
> (B) Being teased about Joseph Tank
> (C) Being considered a hack writer by some
> of her colleagues
> (D) Being betrayed by her supposed friends
> (E) Being the only woman in the newsroom

The *vocabulary in context* question asked students the definition of the word "poor" based on how it was used in line 27 of the passage.

> 3. In line 27, "poor" most nearly means
>
> (A) pitiable
> (B) indigent
> (C) inferior
> (D) humble
> (E) petty

The *analogy* question asked students to find the similarity between the irony that was presented in line 34 with the hypothetical situations described in each of the answer choices, and to pick the best possible choice.

4. Which most resembles the "irony" mentioned
in line 34?

(A) A worker moving to a distant state to take
a job, only to be fired without warning
(B) An executive making an important decision,
only to regret it later
(C) An athlete earning a starting position on
a good team, only to quit in midseason
(D) A student studying for a major exam, only
to learn that it has been postponed
(E) A person purchasing an expensive umbrella,
only to lose it on the first rainy day

The *function* question asked students to figure out what the purpose of the phrase 'this

from her' means in the context of the entire story.

5. In context, the phrase "This from her" (lines 47-48)
helps to suggest that a

(A) specific feeling is quite heartfelt
(B) stated viewpoint is highly personal
(C) certain decision is out of character
(D) particular behavior is extremely upsetting
(E) given attitude is unsurprising

Results

1. **Research Question 1:** What language-related challenges and strategies do linguistically

    diverse high school students report or are observed using on the Critical Reading section

    of the SAT?

    a. What are the similarities and differences in language-related challenges and

        strategies that are self-reported versus observed by the researcher?

There was a vast array of think aloud excerpts (word level or sentence level) that were

coded for each student; the smallest number of instances being 37 and the greatest number of

instances being 154. The average number of coded excerpts was 99.41 ($SD = 37.26$). Figure 1

illustrates the number of excerpts that were coded for each student.
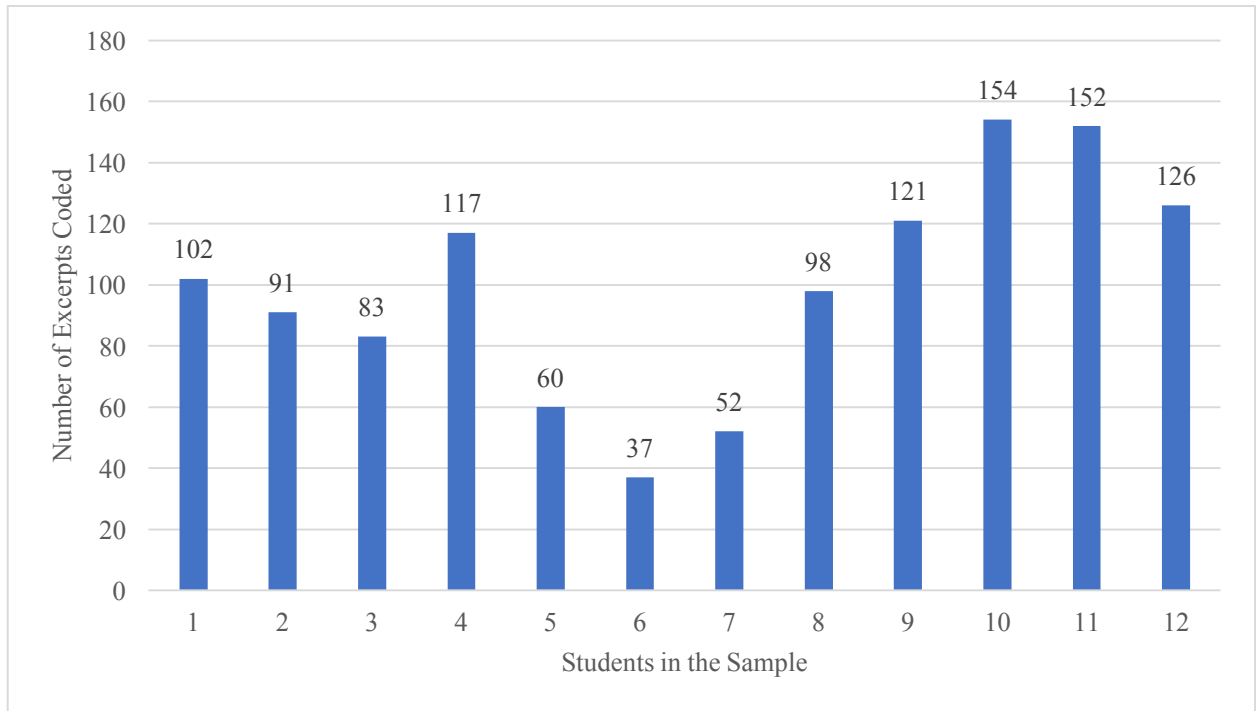
Figure 1. Coded excerpts per student. The figure above illustrates the number of coded excerpts by student, illustrating the differences among the students in the number of challenges and strategies that were observed and self-reported by the students.

Observed Challenges – Reading Miscue Analyses.[9] Using the codes I created

frequencies of occurrence for each code. The first approach was to examine the challenges

portion of the data by independently conducting a miscue analysis of each of the students'

readings passage of the passage. The analysis yielded five main reading miscue categories: *a)*

word substitution, b) word insertion, c) pronunciation, d) skip/omission, and e) repetition. After

careful examination of the student's transcripts, there were a total of 373 excerpts that fell within

the five reading miscue categories. As Table 2 shows, the most common reading miscue that

occurred among the students was *c) pronunciation,* yielding 27.54% (103), followed by *a) word*

substitution yielding 25.13% (94), *e) repetition* yielding 21.66% (81), d) *skip/omission* yielding

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[9] To understand the data that will be discussed from this point on forward, it is necessary to look at the reading passage to follow along some of the example excerpts that are provided so that you have an understanding of what the passage is about and what the questions are about. See Appendix C.

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16.31% (61), and *b) word insertion* yielding 9.09% (34)*,* the least frequent number of occurrences among the total number of observed reading challenges.

      Word Substitution. In addition to the five categories of reading miscues that were discovered, I was interested in investigating whether the students became aware of their reading miscues and could correct them. Moreover, if the students did not correct their reading miscue, I was interested in investigating whether the type of reading miscue compromised the meaning of the passage. Within the *word substitution* miscue, there were 20.2% of instances when the students self-corrected their mistakes. There were 45.7% of instances when the meaning of the text was compromised because of the word substitution miscues incorporated by the students in their think alouds.

    The following excerpt depicts an example of when a student commits a word substitution miscue, but is self-aware about her error and corrects herself as follows: *".... pork packing is not a setting favorable to sentimental <u>regards</u>, I mean <u>regrets</u>"* (Student 3). As the student is reading the passage, she substitutes the word 'regards' for 'regrets', realizes her error, and corrects it. The following excerpt depicts an example of when a student commits a word substitution miscue and the error compromises the meaning of the text because the student does not correct their error. *"The following passage <u>expert</u> <u>expert</u> is from a 1909 novel."* (Student 10). In this example, the student compromises the meaning of the sentence by substituting the word 'excerpt' for the word 'expert'.

      Word Insertion. For the next reading miscue, the results yielded 35.3% of instances when the students self-corrected their *word insertion* miscues. In addition, 20.6% of the total number of *word insertion* miscues compromised the meaning of the text. The following student excerpt portrays an example of when a student incorporates a *word insertion* miscue, but

is self-aware about her error and corrects herself. *"Georgia did considerable <u>philosophy</u> <u>philosophizing</u> about the irony of working for things only to the end of giving them up."* (Student 12). In this instance, the student inserts the word 'philosophy' for the word 'philosophizing'[10]. The following excerpt depicts when the meaning of the text was compromised by the *word insertion* miscue because the student does not correct her error. *"She had told Joe that if they were to be married at all they might <u>not</u> as well get it over with this year."* (Student 9). By inserting the word 'not', the student changed an affirmative sentence to a negative sentence, thereby affecting the author's intentions with the passage.

       Pronunciation. For the *pronunciation* reading miscue, the results yielded 20.4% of instances when the students self-corrected their pronunciation errors (21 instances out of the 103 total *pronunciation* reading miscue instances). Out of the 21 instances of self-correction, 52.38% were successful instances. The following excerpt illustrates an example of when a student commits a pronunciation error, but is self-aware about her error and corrects herself. *"I don't know what <u>pi pitiable</u> pitiable means."* (Student 12). In this instance, the student does a mispronunciation of the vowel sound, long /i/ sound (PIE), not the correct short vowel sound as a in the short /i/ sound (PEA).

       Skip/Omission. The results yielded 16.4% of instances when the students self-corrected their *skip/omission* reading miscues. The results also yielded 11.5% of instances when the meaning of the text was compromised. Additionally, for this reading miscue, I was interested in observing whether the *skip/omission* reading miscue occurred at the word-level or at the line/sentence level. 82.0% instances occurred at the word-level and 18.0% occurred at the line/sentence level. The following excerpt portrays an example of when a student incorporates a

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[10] 'Philosophizing' is the original word in the reading passage.

skip/omission reading miscue, but is self-aware about her error and corrects herself. *"…if they cared to risk another girl and whether <u>the poor the **other** poor</u> girl would slave through…"* (Student 3). As it can be seen, the student skipped the word 'other', but she retraced and she corrected her error. The following excerpt illustrates an instance when the meaning of the text was compromised because of the *skip/omission* miscue due to the lack of self-correction. *"…if she were once officially associated with him, people would flaunt him."* (Student 8) The student omitted the word 'not' before 'flaunt him', changing the original negative sentence to an affirmative one, and changing the meaning intended by the author.

Table 2

Observed Reading Challenges

Code	Total	Percentage
Word Substitution	**94**	**25.1%**
a. Student self-corrects*		
b. Student does not self-correct*		
	19	20.2%
a. Meaning of text is compromised*		
b. Meaning of text is not compromised	75	79.8%
	43	45.7%
	51	54.2%
Word Insertion	**34**	**9.1%**
a. Student self-corrects*		
b. Student does not self-correct*	12	35.3%
a. Meaning of text is compromised*	22	64.7%
b. Meaning of text is not compromised*		
	7	20.6%

	27	79.4%
Pronunciation	**103**	**27.5%**
*a. Student self-corrects**		
*b. Student does not self-correct**	21	20.4%
	82	79.6%
Skip/Omission	**61**	**16.3%**
*a. Student self-corrects**		
*b. Student does not self-correct**	10	16.4%
*a. Meaning of text is compromised**	51	83.6%
*b. Meaning of text is not compromised**		
*a. word-level**		
*b line/sentence level**	7	11.5%
	54	88.5%
	50	82.0%
	11	18.0%
Repetition	**81**	**21.7%**
*a. word-level**	48	59.2%
*b. line/sentence level**		
	33	40.7%

Note. Codes in bold are main codes and codes that are italicized are sub codes. Codes that are marked with an asterisk are codes that emerged in an inductive manner.

Reported Reading and Vocabulary Challenges. The second approach by which

language-related challenges were examined consisted of documenting reading challenges that

students were aware of and could explicitly describe to me. That is, the students were thinking

metacognitively about their challenging experiences with the reading passage.

As table 3 shows, there were a total of 76 instances of *reported reading challenges.* Out

of the 76 instances, 61.8% were *reported challenges* during *reading* and 38.1% were *reported*

challenges during *testing.* Summary of the metacognitive responses about challenges related to reading and testing that students gave are as follow: a) *did not understand what they were reading*, b) *did not know how to pronounce a vocabulary word*, c) *an aspect in the passage was confusing them or didn't make sense*. Additionally, the students acknowledged d) *they were experiencing challenges while answering the test questions*, e) *experienced a hard time articulating what they were thinking*, f) *if they were taking the real SAT they felt like they would fail*, and g) *acknowledged that even if they reread a section of the text to answer a question they still did not know how to answer a particular question*.

The following excerpts portray instances when the students described a challenge while reading. *"'To all of which Joe responded that she certainly had a splendid head to figure it out that way. Joe said that to this mind reasons for doing things weren't very important anyhow; it was doing them that counted.' There's still nothing that I could reference to for sentence three so at this point I don't have any thoughts as to why that sentence was there."* (Student 12). Here, the student described that she was having a hard time understanding a sentence, and why that sentence is part of that particular paragraph.

The next instance shows a reading challenge when answering the question. *"And then, I don't know what this is so it's hard for me to find what's [/][11] what suggests this. So, it's like really, hmm yeah. And even if I reread the sentence I still don't get it because…"* (Student 11). In this instance, the student reported a challenge while answering that particular question by describing that even though she reread the sentence she couldn't answer the question.

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[11] When transcribing, markup symbols were included as part of transcription conventions (VOICE Project, 2007). [/] means that student retraces and begins a new sentence without finishing the last sentence (MacWhinney, 2000).

As table 3 shows, there were a total of 57 instances that the students made comments about vocabulary words in either the reading passage or the test questions. Out of the 57 total instances, 91.2% consisted of students making comments that a) *they did not know the vocabulary word(s) in the passage* or b) *they did not know the vocabulary word(s) in the answer choices.*

It was striking to examine the instances when the students described they were experiencing a vocabulary challenge because these instances usually interacted with a reading miscue or a reported reading challenge. For example, some students who described a vocabulary challenge also described that they did not understand what they were reading. Additionally, when the students reported a vocabulary challenge they were inclined to highlight or circle the word in the text or if it was part of an answer choices. In most instances, when the student highlighted or circled a word, I observed this behavior and jotted it down in the field notes.

There were very few instances when the students were explicit about highlighting or circling a particular vocabulary word, as the following student excerpt describes: *"...she thought if she were one officially associated with him people would not flaunt his <u>idiosyncrasies</u> [I don't know what that means. I'm gonna underline that] at her that way."* (Student 12). In this instance, the student described that she did not know what the vocabulary word, 'idiosyncrasies' means and because of not knowing that vocabulary word, she underlined it.

Table 3

Reported Reading and Vocabulary Challenges

Reading Challenges		
Code	Total	Percentage
Reading challenge when reading*	47	61.8%

Reading challenge when answering question*	29	38.1%
Comments about vocabulary word(s)*		
Code	Total	Percentage
Vocabulary Challenge*	52	91.2%
Other	5	8.8%

Note. Codes in bold are main codes and codes that are italicized are sub codes. Codes that are marked with an asterisk are codes that emerged in an inductive manner.

Similarities and Differences between Observed and Self-Reported Challenges. The observed and self-reported challenges yielded instances that were similar[12] and instances that were different among the students. The following two sections describe the specific codes that were most similar (most frequent) among the students, and later describe the specific codes that were least similar (less frequent) among the students.

Similarities of Challenges. Within the observed challenges category, the *pronunciation* reading miscue occurred most frequently among the students, resulting in 103 instances. The *pronunciation* miscue was more noticeable for one of the EL students, having 30 instances in total, two RFEP students had 11 and 15 instances, and the least number of *pronunciation* miscues was of two occurrences for another RFEP students. Additionally, more *pronunciation* miscues occurred in the passage, than in the answer choices. The following vocabulary words in the reading passage produced the most amount of *pronunciation* miscues: *philosophizing* (12), *idiosyncrasies* (10), *harrowing* (6), *indigent* (6), *frivolous* (6), *menials* (5), and *exodus* (4). In the answer choices, the words *pitiable* produced 13 instances of *pronunciation* miscues and *indigent* produced 9 instances of *pronunciation* miscues.

The intersection between an observed and reported challenge occurred when a *pronunciation* miscue (observation) was applied, a *repetition* miscue (observation) and a

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[12] For the present study, "similarity" refers to "frequency".

comment about not knowing vocabulary word(s) (self-report) was also applied. The combination of the three codes was applied to six of the students in the sample, specifically for the vocabulary words, *frivolous* and *pitiable.*

The next category of reading miscue that yielded a high number of instances was *word substitution,* yielding 94 total instances. The range of *word substitution* miscues varied among the students. There was an EL student who had 33 total instances, an RFEP student who had 13 total instances, and another RFEP student who just had one instance. One example of *word substitution* miscue that occurred more commonly among the students while reading the instructions of the passage is as follows: *"The following passage is an <u>expert</u> from a 1909 novel. Georgia, the main character, is a reporter in an otherwise all-male newsroom."* (Student 2, 9, 10). The students substituted the word *excerpt* for the word *expert.* Another instance of *word substitution* miscue that emerged was with the words *'considerable philosophizing'.* Two students made the same *word substitution* miscue, *"Georgia did considerably philosophy [considerable philosophizing[13]] about the irony of working for things only to the end of giving them up."* (Students 7 and 8). Interestingly, student 7 incorporated this miscue when he was reading the passage, while student 8 incorporated this miscue while she reread that section of the passage to answer one of the questions, and interestingly, not when she read the passage the first time.

The third reading miscue was for *repetition,* yielding 81 total instances among the students. There was a combination of *repetition* miscues at the *word* and *line/sentence level.* Examples of vocabulary words that were repeated throughout the reading were: *exodus* (3)*, menials* (3)*, philosophizing* (5)*,* and *frivolous* (4)*.* As mentioned above, the *repetition* miscue

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[13] 'Considerable philosophizing' was what appeared in the original text.

code was combined with *pronunciation* and *comments about not knowing the meaning of the word.* The *repetition* miscue also occurred at instances when the student was trying to consolidate the meaning of the vocabulary words. At the line/sentence level, the following two lines/sentences stood out the most among the students, 1) *"Georgia did considerable philosophizing"* (*repetition* may have occurred because the students also described that they did not know what *'philosophizing'* meant.) and 2) *"…but the time for gentle melancholy came later on when she was sorting her things before leaving…"* (repetition may have occurred because the students were trying to define what the word *'melancholy'* means.

Lastly, the fourth category where most similarity was found was for *skip/omission* miscue (61 total instances). The most common occurrence for a *skip/omission* miscue was at the *word-level*, rather than at the *line/sentence level*. For example, words like *"to", "the", "was", "she",* and *"and"* were most commonly omitted in the text. Moreover, after further examination, the omission did not affect the meaning of the text. The following two examples depict this explanation, *"It was just like the newspaper business not even to allow <u>one</u> a little sentimental harrowing",* where the student omitted the word 'one' and did not affect the meaning of that particular sentence. In the second example, *"…she had <u>had</u> front doors – yes, and back doors too – slammed in her face…",* where the student omitted the second "had" in that particular line and the meaning of that line was not necessarily compromised.

Within the reported challenges, the students reported more often on *vocabulary challenges – comments about not knowing vocabulary word(s).* Five students (four RFEP students and one EL student) mentioned that they did not know what a vocabulary word meant, but that they had heard of it before in their English class, such as the case for words: *indigent, pitiable, harrowing, frivolous,* and *petty.* Four RFEP students acknowledged that they did not

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know what *menials, melancholy, exodus,* and *toil* meant and that they had never heard of those words before. Three students (two ELL students and one RFEP student) narrated that they did not know the definitions of *frivolous, pitiable, menials,* and *hirelings,* and in combination had a *pronunciation* miscue with these words. In addition, some students mentioned they did not know the definition of certain answer choices, such as, *indigent* and *petty,* and as a result, crossed those answer choices out (using the *process of elimination* as a form of *testing metacognition*[14]). Lastly, other students underlined or highlighted certain vocabulary words because they did not know what they meant.

The next category for reported challenges where similarities were found was for *reported reading challenges.* Students reported most of the instances while reading the passage than while answering the questions. Students expressed their metacognitive skills of their reading challenges by saying "*not knowing what they were reading*", or "*not understanding what they were reading*", "*losing the focus or understanding of what they were reading because they came across a difficult word*", and overall, "*difficulty in making connections among the paragraphs*". As one student described, "*Okay, so this whole paragraph doesn't really make sense to me because it has a lot of words [/] it contains a lot of words that are sort of confusing. For example, the 'frivolous' one and 'toil'. Like the very last word in the paragraph. Umm, 'harrowing' and um 'queer'.*"

Differences of Challenges. There was a significantly higher number of challenges that were observed than those that were reported by the students. The only noticeable difference that was apparent among the codes was in the *word insertion* reading miscue. There were 34 total

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[14] *Process of elimination* as a form of *testing metacognition* will be explained later in the *strategies* section of the paper.

instances with 22 instances when the students did not correct their *word insertion* miscues. The following examples illustrate instances when the students did correct their *word insertion* behavior while reading the passage. *"'She thought if she were <u>one</u>, <u>once</u> officially associated with him people would not flaunt…'"* and *"'Georgia did <u>not</u> considerable philosophizing…Georgia did considerable philosophizing'"*. As it can be seen in these instances, the students retraced and corrected their *word insertion* reading miscue and the meaning of the text was no longer compromised. However, for the last example, it was alluring to observe that when the student had to reread the same line to answer a particular question, the student made the same error twice, *"Georgia did not considerable philosophizing…"*

At the question level, students were also inclined to correct themselves as the following example shows, *"'This from her' might mean, or might help to suggest that…'"* Additionally, there were instances where the *word insertion* reading miscue did not compromise the meaning of the text, as the following example shows, *"She had been waded through snow-drifts and <u>had</u> been drenched in pouring rains…."* The insertion of the verb 'had' did not compromise the meaning of that sentence, nor changed the verb tense of the paragraph.

Observed Strategies (Metacognitive behaviors). All strategies were labeled as *metacognitive experiences* as all instances were considered as self-monitoring of the students' cognition. The strategies were then divided into various types of *metacognitive experiences*. First, under *metacognitive behaviors,* it was observed as strategies, instances when the students *underlined, highlighted and made notes* throughout their think aloud session. As table 4 shows, there was a total of 69 instances when the students *underlined, highlighted or made notes* and out of those total instances, 47 (68.1%) were observed instances. Moreover, 24 (51.1%) instances

occurred when the students were reading the passage and 23 (48.9%) instances occurred when the students were answering the questions.

The next category of observed strategies were the instances that the students *reread* either a *portion of the text*, a *question*, or *an answer choice*. There was a total of 133 instances when students reread, and 115 (86.5%) instances were coded as observed (Table 4). Delving deeper into this category, it was observed that 23 (20.0%) of the instances occurred when the students were reading the passage and 92 (80.0%) of the instances occurred when the students were answering the test questions. Within the 92 instances, I observed at what point during the students' think alouds the rereadings occurred. I observed that 37 (40.2%) instances were rereadings of a section of a text, 18 (19.6%) instances were rereadings of a question, and 37 (40.2%) instances were rereadings of an answer choice.

Observed Strategies (Reading behaviors). As previously mentioned, the *reading behaviors* were implemented in a deductive manner. Table 4 shows that there was a total of 223 instances that were observed. *Making connections* was the reading behavior that yielded 86 (38.6%) instances, making it the highest out of the four reading behaviors, with 18 (20.9%) instances comprised while reading and 68 (79.1%) happened while answering the test questions. The next subcategory was *analyzing,* comprising 26.4% of the total number of *reading behavior* instances, with 27 (45.8%) instances that happened during reading and 32 (54.2%) that happened while answering the test questions. The third reading behavior was *text summary/paraphrase* where 50 (22.4%) observations were made, with 39 (78)% constituting instances that happened during reading and 11 (22.4%) happened when answering the test questions. Finally, 28 (12.5%) instances were coded as *inferring* reading behaviors, with 21 (75%) were observed while the

students were reading and 7 (25%) were observed when the students were answering the test questions.

Reported Strategies (Reported Metacognitive Behaviors and Reading Strategies). Table 4 shows that there was a total of 22 (31.9%) instances of *underlining, highlighting,* and *making notes* that were reported by the students. Out of the total number of reported instances of *underlining, highlighting, and making notes,* 63.6% were reported while reading and 36.3% were reported while answering the test questions.

The next category of reported strategies were the instances that the students *reread* either a *portion of the text*, a *question*, or *an answer choice.* There was a total of 18 (13.5%) instances that were coded as reported. Additionally, four (22.2%) of the instances occurred when the students were reading the passage and 14 (77.8%) of those instances of rereading of a section of a text occurred when the students when answering the test questions.

Reported Vocabulary Strategies. Students reported their knowledge about vocabulary words they knew by describing the definition of vocabulary words in the passage and the answer choices. Other students even translated words into another language other than English and defined those words. From the 57 instances that were coded as *comments about vocabulary word(s),* only 5 (9.8%) were *comments about knowing vocabulary word* (Table 4). For example, as this student described: *"Humble, I know what humble is."* (Student 11)**.** Other comments that students made fell into a *general category*, where students made comments about having the knowledge or not of a particular vocabulary word. As the following student described, *"Okay, so this whole paragraph doesn't really make sense to me because it has a lot of words [/] it contains a lot of words that are sort of confusing. For example, the frivolous one and toil. Like the very last word in the paragraph. Umm harrowing and um queer."* (Student 9).

Other types of vocabulary strategies included instances when the students resorted to the definition of particular vocabulary words. There were 41(80.4%) instances when students *defined vocabulary in English.* Students resorted to this strategy most when they were answering a question, resulting in 30 (73.2%) instances, and 11 (26.8%) instances when the students were reading. The following example depicts an instance when a vocabulary word was defined while answering a test question: *"Oh humble[15] means like um like lowering yourself down. You're not too um what do you say here, you're not like too conceded, I guess."* (Student 11). The next example depicts an instance when a student defined a vocabulary word while reading the passage: *"I think that based on how it says 'sentimental harrow', it's like from what I read it's like [/] I think it means regrets as well."* (Student 12).

In addition, there were five reports of defining vocabulary in a Language Other Than English (LOTE) (including use of cognates) when answering the test questions. The following examples illustrate this type of *vocabulary strategy: "But the time for gentle melan:::[16]choly. I've heard this word. I think it's also a feeling. Melancolía, or something like that. That's what it is in Spanish."* (Student 1). In this example, the student resorts to the use of a Spanish cognate to translate an English vocabulary word (melancholy-melancolía). This next student described: *"Because in Spanish, pitiable would like, like, in Spanish, that poor would be like 'pobresita'. Feeling like sorry for the person."* (Student 8). The student resorts to translating the answer choice to something that is similar in meaning in Spanish.

Reported Testing Metacognition. Finally, the last category of reported strategies that were found from the think alouds were *testing strategies* the students used when they answered

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[15] 'Humble' was an answer choice for one of the test questions.
[16] When transcribing, markup symbols were included as part of transcription conventions (VOICE Project, (2007). ::: means the elongation of a sound.

the test questions. The most common form of *testing strategy* that was found among the students was the use of *process of elimination to answer test questions,* representing 82.7% of the total number of reported testing metacognition instances (represented in Table 4). An additional examination was conducted to learn whether the students indicated this type of testing strategy *verbally*, *in a written way*, or *both, written and verbally*. The results yielded that students were more likely to note the *process of elimination* with a *verbal notation,* representing 62.5% of the total number of instances, 34.7% of the instances the students noted both with a *written and verbal notation*, and lastly, only 2.8% of the instances were represented with a *written notation*. The following example represents an instance when a student described the use of the *process of elimination* as a testing strategy *with verbal notation: "(A) specific feeling is quite heartfelt. (39:40-39:50) I don't think it was a feeling. I think it was just her thoughts. So, I don't think it's A."* (Student 12). The next example represents an instance when the student indicated their use of *process of elimination with written notation: "I don't know what indigent or petty means, so, I'll have to cross those out."* (Student 11) Finally, the next student excerpt represents an instance when the student indicated their use of *process of elimination with both written and verbal notation: "I don't think it's A either because I feel like she wants to earn a living. Like she wants to be this realistic novel exposing some mighty evil, or like she wanted to live in New York. So, I'd cross that off."* (Student 9).

For the instances of *reported testing metacognition*, the *use of other form of testing strategy* represented 17.2% (other forms that were described were *skip* and *guess*), *with verbal notation* representing 93.3% and *with written notation* representing 6.7% of the total number of instances. There were no instances when the students indicated their use of testing strategy with both *written and verbal notation.* The following student described their individual use of testing

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strategy *with verbal notation:* *"I don't think this is it because you could say, um, certain decision is out of character…hold on. I'm gonna skip that one and come back to it."* (Student 12). *"So I'll go with C. My gut is telling me. I'll go with my gut.";* *"So I'll guess. I will have to like do some guess [/] guess and check."* (Student 11).

Similarities and Differences between Observed and Self-Reported Strategies.

Similarities – Metacognitive behaviors [underlines, highlights, makes notes (including writing notes or keywords on the margin of the text) and rereading]. The similarity that I observed among the students when they implemented the *underlines, makes notes (including writing notes or keywords on the margin of the text* behavior was that students would underline or highlight a vocabulary word that they did not know (not having knowledge about a vocabulary word that was revealed by their verbal indication). Out of the 47 instances of *underlining, highlighting, making notes* that I observed, more than half of the instances occurred because the students described they did not know a vocabulary word, either in the text or out of the answer choices. In the following example, the student underlined a vocabulary word because they did not know what it meant: *"And also melancholy. I heard of it before, but yeah, I also don't know what it means."* (Student 7).

Similarly to *underlines, highlights, makes notes (including writing notes or keywords on the margin of the text),* there was a higher percentage of observed instances of *student rereadings* (86.5%). Within that category, there was a higher percentage of observed rereadings happening when the students were answering the test questions (80%). The percentage of occurrence was the same when the students read a section of a text and the answer choices (40.2%). Although, there was a significantly less number of reported instances of rereadings, like the observed

instances, most the instances occurred when the students were answering the test questions (77.8%).

Similarities – Reading Metacognition (Reading Behaviors). The observed reading behavior that stood out the most among the students was *making connections* (38.6%), followed by *analyzing* (26.4%), and finally followed by *text summary/paraphrase* (22.4%). *Text summary/paraphrase* occurred most frequently when the students were reading the passage, rather than when they were answering the test questions. However, most of the time I had to prompt the students after each paragraph to summarize what they had just read. For that reason, I considered that reading behavior to be observed, instead of a self-report. Additionally, it was interesting to find that there were certain sections of the text that were more frequently summarized among the students.

The students were more likely to summarize the main idea of the first paragraph: the main character getting married to a man and the main character's friend giving her advice, as the following example depicts: *"No Georgia and Joe told Ernestine that they were getting married and I guess they gave her ideas. They gave them ideas, I'm sorry. But he thinks that doing things a certain way isn't really important. It's just the fact that doing them is what matters. That's what I got from sentence five."* (Student 12)**.**

Additionally, the similarity between *making connections* and *analyzing* reading behaviors was that they occurred the most when they were answering the tests questions, 79.1% and 54.2%, respectively (this makes sense as the students were exploring how the answer choices connected with what happened in the story). The following excerpts depict this type of reading behavior: *"I don't think it's this because from what it says I'm comparing it to the passage. Um, she did do a lot and it's not like she was she was doing something to get to a higher position.*

Like she was doing it because she liked doing it. She was happy with what she was doing. It's not

like if all of the sudden they were doing it to give her a promotion and they don't give it to her."

(Student 12). In this example, the student made a connection with the answer choice and with

what happened in the passage with the main character.

In some occasions, the codes for *making connections* and *analyzing* were not mutually

exclusive. The following example depicts when *making connections* and *analyzing* coded

together. *"Because if we think about the whole thing, it's talking about her having what she*

wanted, but having to give it up. And then an athlete usually wants a good starting position on a

tea-, on the team, but the, the, there are things that might make him want to quit mids-, mid-,

midseason, midseason, which means he hasn't have much experience on the team. So, it will be

the same feeling she has, so throughout the story." (Student 8).

Similarities – Reported Strategies (Vocabulary Strategies and Testing Metacognition).
The similarities between the *vocabulary strategies* and *testing metacognition* is that there were

no instances that constituted as observed. Within the *vocabulary strategies, defining a*

vocabulary word in English was a strategy that students resorted to the most in their think alouds

(80.4%) in comparison to the other two types of *vocabulary strategies* (*knowing vocabulary*

word(s) and *defining vocabulary in a language other than English (LOTE),* 9.8% and 9.8%,

respectively. Another similarity found was that the *defining vocabulary in English* vocabulary

strategy was most often done when the students were answering the test questions, just like most

the strategies within the metacognitive and reading behaviors that were mentioned before. The

three vocabulary words most frequently defined by the students were, *humble, inferior,* and

pitiable. The following examples depict this strategy: *"Humble, I think that as a shy person, but*

based on her on her what she's been through, I don't think it has anything to do with that so it's

irrelevant." (Student 12). In this example, the student defined the vocabulary word and described how that word does not fit with what occurred in the passage. *"Inferior, inferior is the opposite of superior so it would probably be somewhere below, or like not worthy, or like not sure."* (Student 9). In this example, the student uses a strategy within a strategy to be able to define the vocabulary word. By resorting to the antonym of the vocabulary word she was able to define the word. Another student described: *"So pitiable I think that has to do with something pity."* (Student 11). It can be implied in this instance that the student was trying to describe how the phonetics of the word *pitiable* sounds like *pity*.

In the last category where similarities were found was for *testing metacognition,* specifically for the use of *process of elimination* (82.7%) to answer the test questions, by indicating it most of the time *with a verbal notation* (62.5%). Most of the time, the students would incorporate this type of testing strategy, in addition to a *reading metacognition* strategy, such as, *analyzing* or *making connections*, as the students were trying to connect an answer choice with what had occurred in the passage. The following examples portray this type of strategy: *"Given attitude is unsurprising. Um, I don't think it's this because she, how do I say it, (41:09-41:18) based on the word 'attitude', it means like, I don't think it means what she's thinking about. Like I said, how do I say it, um (41:34-41:39) I don't think it's based on decision here. It's based on how she feels, or something like that. So, I don't think this is it."* (Student 13). In this example, the student uses the *process of elimination* to answer the question, and at the same time, *makes a connection* with what occurred in the reading passage.

Differences - Metacognitive behaviors [underlines, highlights, makes notes (including writing notes or keywords on the margin of the text) and rereading]. There were a few categories where differences existed, however, it is of importance that they be mentioned as it provides a

deeper examination of the student's train of consciousness while doing the think aloud task. There were far more observed instances than reported instances of *underlines, highlights makes notes (including writing notes or keywords on the margin of the text)* behaviors (68.1% vs. 31.9%). There were also far more observed instances than reported instances of *student rereads* (86.5% vs. 13.5%). Additionally, within the observed instances of rereadings, there was a higher percentage of *rereadings* at the point when students were answering the test questions.

      Differences – Reading Metacognition (Reading Behaviors). As opposed to the metacognitive behaviors [*underlines, highlights, makes notes (including writing notes or keywords on the margin of the text)* and *student rereads]*, there were no reported occurrences of reading behaviors. Delving deeper within the reading behaviors, *inferring* had the least occurrence among the students (12.5%). Another difference is that the *inferring* behavior occurred most frequently when the students were reading, as opposed to the other two reading behaviors (*making connections* and *analyzing)* which occurred most often when the students were answering the questions.

      Differences – Reported Strategies (Vocabulary Strategies and Testing Metacognition). *Comments about knowing vocabulary word* and *defining vocabulary in a language other than English (LOTE)* were the least common reported vocabulary strategies, but were similar in that both types of strategies were reported the same number of times (9.8%). Within the category of *testing metacognition,* the *use of other form of testing strategy* was the least reported testing strategy (17.2%), but like *process of elimination to answer question,* the *use of other form of testing strategy* was reported most often with a *verbal notation* (93.3%). The next student example uses the testing strategy of *guessing, "I don't think it's indigent. I don't think that's one of them. Pitiable (26:09-26:21). I don't know, I guess, um, like I want to choose an answer, but I*

don't even know what it means, so I don't know. <u>*But if I would like take a guess I would just pick*</u>

<u>*A, but if I would take a guess.*</u> (Student 11). In the next example, the student introduced guessing

as her testing strategy, but went further to describe that she was going to do 'guess and check'.

"And then inferior, I sort of know. Indigent, I don't really know. Pity, I don't really know. So, I'll

guess. I will have to like some guess [/] guess and check." (Student 12).

Table 4

Metacognitive and Reading Related Strategies

1) Metacognitive behaviors*

Code	Observed Total	Observed Percentage	Reported Total	Reported Percentage
a. underlines, highlights, makes notes (including writing notes or keywords on the margin of the text)*	**47**	**68.1%**	**22**	**31.9%**
*1. When reading**	24	51.1%	14	63.6%
*2. When answering question**	23	48.9%	8	36.4%
b. Student rereads*	**115**	**86.5%**	**18**	**13.5%**
1. When reading*	**23**	**20.0%**	**4**	**22.2%**
2. When answering question*	**92**	**80.0%**	**14**	**77.8%**
*i. section of text**	37	40.2%	14	100%
*ii. question**	18	19.6%	0	0%
*iii. answer choice**	37	40.2%	0	0%

2) Reading behaviors

Code	Observed Total	Observed Percentage	Reported Total	Reported Percentage
a. Text summary/paraphrase	**50**	**22.4%**	0	0%
*1. when reading**	39	78%		
*2. when answering question**	11	22%		

b. Making connections	**86**	**38.6%**	0	0%
1. when reading	18	20.9%		
2. when answering question	68	79.1%		
c. Inferring	**28**	**12.5%**	0	0%
1. when reading	21	75%		
2. when answering question	7	25%		
d. Analyzing	**59**	**26.4%**	0	0%
1. when reading	27	45.8%		
2. when answering question	32	54.2%		
Total Reading Behaviors	**223**	**100%**		

3) Vocabulary Strategies*

Code	Observed Total	Observed Percentage	Reported Total	Reported Percentage
*a. Comments about vocabulary word(s)**	Not applicable	Not applicable	5	9.8%
1. knowing vocabulary word(s)			5	9.8%
*b. defining vocabulary in English**	Not applicable	Not applicable	41	80.4%
*1. when reading**			11	26.8%
*2. when answering question**			30	73.2%
*c. defining vocabulary in a language other than English (LOTE)**	Not applicable	Not applicable	5	9.8%
*1. when reading**				
*2. when answering question**			5	9.8%

4) Testing Metacognition*

Code	Observed Total	Observed Percentage	Reported Total	Reported Percentage
a. Process of elimination to answer question	Not applicable	Not applicable	72	82.7%
*1. with written notation**			2	2.8%
*2. with verbal notation**			45	62.5%
*3. with verbal and written notation**			25	34.7%
b. Use of other form of testing strategy	Not applicable	Not applicable	15	17.2%
*1. with written notation**			1	6.7%
*2. with verbal notation**			14	93.3%
*3. with verbal and written notation**			0	0%

Note. Codes in bold are main codes and codes that are italicized are sub codes. Codes that are marked with an asterisk are codes that emerged in an inductive manner. Not applicable means that codes were always counted as self-reported instances.

Research Question 2: Are there differences in the challenges and strategies (either reported or observed) of higher performing students on the SAT critical reading section compared to lower performing students?

The next step to this investigation was to understand the individual differences of the frequencies across the students' results that the first research question revealed and to examine what might account for differences between the students. Thus, this part of the study seeks to understand whether student performance (on various aspects of comprehension) plays a role in the differences found in this investigation.

Division of Performance Groups. To understand student performance, each of the student's testing booklet was scored and then placed into either a lower, mid, or higher performance group. The students who scored lower than 50% on the test (scored less than 2 out

of the 4 questions correct) fell in the lower performance group (6 students). Students 1, 3, 5, and 7 were RFEP students and scored 0%, 0%, 25%, and 0% on the comprehension test, respectively. Students 6 and 10 were EL students and scored 25% and 25%, respectively. The students who scored higher than 50% on the test (scored more than 2 out 4 questions correct) fell in the higher performance group (3 students). Furthermore, a mid performance group (50%) was created as I found that there were students who scored exactly at 2 out of the 4 questions correctly (3 students).

The composition of the lower performance group was made up of four RFEP students and two EL students. Furthermore, the composition of the mid and high-performance group was made up of three RFEP students in each group.

Comparisons of Observed Challenges – Reading Miscue Analysis

Lower Performance Group. The total number of reading miscues observed in the lower performance group was 210 (56.3%) instances as shown in Table 5. The reading miscue analysis for student 1 yielded 17.0% of the observed miscues in the lower performance group. The reading miscue analysis for student 3 yielded the second largest number of error instances in the lower performance group 26.7%. For student 5 and 7, the analysis yielded 4.3% of the observed miscues for each student. The reading miscue analysis for student 7 generated 5.2%, and for student 10 the analysis produced 42.4%, resulting in the highest frequency of observed reading miscues across all the groups. In addition, the results yielded 38 instances out of the 176 [17]reading miscues of self-corrections among the lower performance group. The breakdown is as

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[17] The 34 *repetition* instances were deducted from the total, as this category was not coded for self-correction.

follows: student 2 (18.4%), student 4 (39.5%), student 6 (2.6%), student 8 (10.5%), student 7 (5.3%), and student 11 (23.7%).

The following are two examples of observed reading miscues for the lower performance group. The first one is an example of a *word insertion* reading miscue by RFEP student 5: *"And then question 5. In the context, the phrase "This from her", helps to suggest that a [so I go back in line and check 47]."* In this example, the student does not correct his *word insertion* error and can observe that this error does not compromise the meaning of the question. In the next example, EL student 10 also incorporates a *word insertion* reading error while the passage. Like the previous student, she does not correct her error. *"It was the week before Christmas, and one of the last day of the year she would become…"* In this instance, the *word insertion* reading error causes the meaning of the text to be compromised.

Mid Performance Group. The total number of reading miscues observed in the mid performance group was of 74 (19.8%) instances as shown in Table 5. The reading miscue analysis for student 2 yielded 33.8% of the observed miscues in the mid performance group. For student 9 the analysis yielded 31.1%, and for student 11 the analysis yielded 35.1% of the observed reading miscues. In terms of the self-corrections, there was a total of 10 instances when the mid performance group self-corrected their reading miscues out of the 51 total instances.[18] The breakdown is as follows: student 2 (60%), student 9 (30%), and student 11 (10%).

The following are two examples of observed reading miscues for the mid performance group. In the first example, student 2 incorporates a *word insertion* reading miscue, self-corrects, but executes the same error twice, therefore, compromising the meaning of the text. *"As she*

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[18] The 23 *repetition* instances were deducted from the total, as this category was not coded for self-correction.

wrote a final letter on her typewriter – she did hate letting the old machine go – Georgia did not

considerable not considerable philosophizing about the irony or working for things only to the

end of giving them up." In the second example, student 9, changes the grammatical tense of the

sentence in the passage by introducing a *word insertion* reading miscue. *"But the time for gentle*

melancholy came later on when she was sorting her things at her desk just before leaving, and

was wondering what girl would've had that old desk." The original text says, "would have", and

the student changes the grammatical tense from conditional perfect to conditional past perfect.

Higher Performance Group. The total number of reading miscues observed in the

higher performance group was 89 (23.9%) instances as shown in Table 5. The reading miscue

analysis for student 4 yielded 23.6% of the observed miscues in the higher performance group.

For student 8, the analysis yielded 55% and for student 12 the analysis yielded 21.3% of the

observed reading miscues.

In addition, there was a total of 14 (16%) instances when the higher performance group

self-corrected their reading miscues out of the 65 total instances.[19] The breakdown is as follows:

student 4 (7.1%), student 8 (57.1%), and student 12 (35.7%).

The following are two examples of observed reading miscues for the higher performance

group. In the first example, student 4, introduces a *word insertion* reading miscue while reading

and does not self-correct, *"Georgia was to be married. It was the week before Christmas, and I*

got on the last day of the year she would become Mrs. Joseph Tank." In the next example,

student 8, introduces a *word insertion* reading miscue, but she catches her error and corrects

herself. *"She had told Jose that if they were to be married at all they might as well get it over*

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[19] The 24 *repetition* instances were deducted from the total, as this category was not coded for
self-correction.

with this year, and they still, and still,…" These two students had the greatest difference in self-

corrections of their reading miscues just within their performance group.

Table 5

Summary of Observed Reading Challenges

Student	Reading Miscues Total (Percentage)	Student Self-Corrections Total (Percentage)
Lower Performance Group		
1	36 (17.0%)	7 (18.4%)
3	56 (26.7%)	15 (39.5%)
5	9 (4.3%)	1 (2.6%)
6	11 (5.2%)	2 (5.3%)
7	9 (4.3%)	4 (10.5%)
10	89 (42.4%)	9 (23.7%)
Total	**210 (100%)**	**38 (100%)**
Mid Performance Group		
2	25 (33.8%)	6 (60.0%)
9	23 (31.1%)	3 (30.0%)
11	26 (35.1%)	1 (10.0%)
Total	**74 (100%)**	**10 (100%)**
Higher Performance Group		
4	21(23.6%)	1 (7.1%)
8	49 (55.0%)	8 (57.1%)
12	19 (21.3%)	5 (35.7%)
Total	**89 (100%)**	**14 (100%)**

Note. The data in the table represents the total number of reading miscues observed for each student, divided by performance groups. In addition, the total number of self-corrections for the reading miscues is given. The number is parenthesis represents the percentage of the total number of observations.

Comparisons in Reported Reading and Vocabulary Challenges

Lower Performance Group. There were a total of 39 instances (51%) out of the 76

instances of reported reading challenges among the entire sample as presented in Table 6.

Furthermore, 25 (64%) instances were reported while reading and 14 (36%) instances were

reported while answering the test questions. Starting with the RFEP group, student 1 reported

eight (32%) instances of challenges when reading, and one (7.1%) instance when answering the

test questions, and only reported four instances (16.7%) of vocabulary challenges. Student 3

reported one (4%) challenge when reading, and two (14%) instances when answering the test questions. Student 5 reported eight (32%) challenges when reading, while only two (14.3%) were when he was answering the test questions. Student 7 reported the least number of reading challenges, only two (14.3%) instances when answering the questions.

Furthermore, for the EL group, student 6 only reported one (4%) instance of challenge while reading the passage and student 10 reported the highest number of challenges in the EL group and in the lower performance group in total. She reported seven (28%) instances of challenges while reading and seven (50%) instances while answering the test questions.

The students in the lower performance had the largest number of reported vocabulary challenges, by explicitly describing that they did not know what a vocabulary word meant. There was a total of 24 (46%) instances out of the total 52 instances. Starting with the RFEP group, student 1 reported four instances, accounting for 16.7%. Students 3 and 5 experienced two (8.3%) and student 7 reported eight instances, accounting for 33.3% and reporting the most of the vocabulary challenges in the lower performance group. Within the EL group, student 6 had the same number of reported vocabulary challenges as student 3, 8.33%, and student 10 had six instances of reported vocabulary challenges, accounting for 25% of the total number of instances for the lower performance group.

Mid Performance Group. There was a total of 27 (35%) instances of reported reading challenges out of the 76 instances of reported reading challenges among the entire sample as presented in Table 6. Furthermore, 16 (59%) instances were reported while reading and 11 (41%) instances were reported while answering the test questions. Student 2 reported three (18.7%) instances of challenges while reading. Student 9 reported seven (43.7%) instances of challenges while reading and one (9.1%) instance while answering the question. Finally, student 11 reported

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six (37.5%) instances of challenges while reading and ten (90.9%) instances while answering the questions.

Within the mid performance group, there was a total of 17 (33%) reported instances of vocabulary challenges out of 52 total instances for the three groups. Student 2 had the least number of reported vocabulary challenges within the mid performance group, one (5.9%) total instance out of the 17 total instances for the mid performance group. Student 9, had four (23.5%) total instances of reported vocabulary challenges. Finally, student 11, had the most number of reported instances of vocabulary challenges, 12 (70.6%) instances in total.

Higher Performance Group. Finally, the reported reading challenges were also calculated for the higher performance group. There was a total of ten (13%) reported reading challenges out of the 76 instances of reported reading challenges among the entire sample as in Table 6. Additionally, only six (60%) instances were reported while reading and four (40%) instances were reported while answering the test questions. Starting with student 4 who scored 100% on the test, she only reported two (33%) instances of challenges while reading, and two (50%) instances while answering the questions. For the next student, student 8, who also scored 100% on the test, only two (50%) instances of reported reading challenges were found, while answering the test questions. Finally, student 12 who scored 75% on the test, reported the highest number of reading challenges while reading in the higher performance group, four (67%) instances out of the six total instances.

Within the higher performance group, there was a total of 11 (21%) reported instances of vocabulary challenges out of 52 total instances among the three groups. Similarly, to students 3 and 5 in the lower performance group, student 4 in the higher performance group demonstrated two instances (18.2%) of reported vocabulary challenges. Student 8 demonstrated three (27.3%)

instances, constituting, and student 2 who had a lower performance in the higher performance

group, had the highest number of reported vocabulary challenges, 54.5%.

Table 6

Summary of Reported Reading and Vocabulary Challenges

Student	Reading Challenges		Vocabulary Challenges Total (Percentage)
	When reading Total (Percentage)	When answering question Total (Percentage)	
Lower Performance Group			
1	8 (32.0%)	1 (7.1%)	4 (16.7%)
3	1 (4.0%)	2 (14.3%)	2 (8.3%)
5	8 (32.0%)	2 (14.3%)	2 (8.3%)
6	1 (4.0%)	0 (0%)	2 (8.3%)
7	0 (0%)	2 (14.3%)	8 (33.3%)
10	7 (28.0%)	7 (50.0%)	6 (25.0%)
Total	**25 (100%)**	**14 (100%)**	**24 (100%)**
Mid Performance Group			
2	3 (18.7%)	0 (0%)	1 (5.9%)
9	7 (43.7%)	1 (9.1%)	4 (23.5%)
11	6 (37.5%)	10 (90.9%)	12 (70.6%)
Total	**16 (100%)**	**11 (100%)**	**17 (100%)**
Higher Performance Group			
4	2 (33.3%)	2 (50.0%)	2 (18.2%)
10	0 (0%)	2 (50.0%)	3 (27.3%)
12	4 (66.7%)	0 (0%)	6 (54.5%)
Total	**6 (100%)**	**4 (100%)**	**11 (100%)**

Note. The data in the table represents the total number of reading miscues observed for each student, divided by performance groups. In addition, the total number of self-corrections for the reading miscues is given. The number is parenthesis represents the percentage of the total number of observations.

Similarities and Differences of Observed and Reported Reading Challenges among

the three performance groups. Within the observed reading challenges, it was found that the

EL students incorporated more *word substitution* reading miscues than the RFEP students. In

addition, the number of reading miscues observed of the students in the mid performance group

was relatively the same (33.8%, 31.1%, and 35.1%). In comparison, there was more variability

within the higher performance group (21.3%, 23.6%, and 55.0%). Similarly, like the other two performance groups, the results for the higher performance group show the low number of occurrences when students realize their own reading errors.

In Appendix F, table 16 depicts excerpted examples of what the lower performance group reported as reading challenges during their think alouds. It is striking how much more elaborated and conscious of the challenges the students who scored a 25% on the test were than the students who did not score at all on test questions. For example, student 5, who had a better score on the test than the other two students in the RFEP group, was more articulate in describing the challenges he was experiencing when reading the passage. He describes in instance 3 that he does not know the connection among the paragraphs because one paragraph was talking about a topic, and then, the second paragraph was talking about another topic. On the other hand, the other two students, just simply described that they had no idea what they were reading or didn't know what a certain thing meant without giving an explanation as to why that was the case. In addition, it is interesting to observe the same pattern within the EL group. For example, student 10, in her first instance of reading challenge, was metacognitve by narrating that she was not sure if she was thinking correctly or was just saying "stuff". Further, she goes on to narrate what she understood, but then, describes that she "doesn't know", demonstrating that she was being metacognitive about her own thinking. For this same student, it is also noteworthy to point out that her last instance of reported reading challenge was double coded with a reported vocabulary challenge. The student described that she wants to choose an answer choice but does not know what the answer choices mean.

In Appendix F, table 17 illustrates certain excerpts of reading challenges that were reported by the students in the mid performance group. In comparison to the lower performance

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group, the mid performance group were more successful in articulating their challenges while reading and answering questions. A common reason why the students experienced a challenge while reading or answering a question was due to difficulties with certain vocabulary words that were in the passage. Student 2 and student 11 described "losing focus" or the reading "not making sense" because they "struggled" with certain words or the reading containing "confusing" vocabulary words. For student 2, it is noteworthy to point out that in her last reported reading challenge, she underlined the word "idiosyncrasies" and was metacognitive about her struggle with the word because she described that she struggled with pronouncing the word. Student 9 was not sure about the interpretation of a phrase in the reading because the phrase was confusing. She also described having difficulty in choosing an answer choice for a particular question because all of the answer choices had a similar meaning for her. Furthermore, student 11, was more articulate than the other two students. She demonstrated a higher level of metacognition by describing the she reread a paragraph because the first time it didn't make sense. She went on to describe that she had difficulty in finding the answer to a question even after rereading the sentence the question was referring to. Furthermore, she described that if she were the real SAT she would fail the assessment, again demonstrating a level of metacognition that the other students were not able to demonstrate in their think alouds. Student 11's first instance was double coded with a *vocabulary challenge* as she described that she didn't understand the paragraph because it contained a lot of words that were confusing to her.

In Appendix F, table 18 demonstrates certain excerpts of reading challenges reported by the students in the higher performance group. In comparison to the mid performance group, the students in the higher performance group demonstrated a similar level of metacognition in terms of their reported reading challenges. Student 4 gave a well-rounded description acknowledging

that she tends to think about things that are unrelated to the reading passages, not just on this test, but on other tests as well. Furthermore, she acknowledged that if she used that time to think about the test she could have higher grades. She also acknowledged that she couldn't read certain words, and acknowledged that a particular question was tricky for her. Student 12 was different in that she described that she did not understand the connection between the information presented in the reading passage and she described that she reread a sentence because she got lost from where a sentence started and where it ended. In addition, she described a strategy of boxing the sentence so that she doesn't get lost. A common reading challenge described while answering the questions among students 4, student 8, and student 9 (from the mid performance group) was an acknowledgement that the answer choices to a particular question all sounded the same or that the meaning was the same thing.

In Appendix F, table 19 illustrates different examples of vocabulary challenges that were reported by the students in the lower performance group. For student 1, it is interesting to expose that her descriptions of vocabulary challenges were accompanied by a pronunciation miscue (as in, *'pitiable', 'indigent',* and *'frivolous'*), and, the student was inclined to underline the vocabulary words that she did not know; a similar behavior that student 5 demonstrated in his think a loud. A common theme that I found in student 7's analysis of vocabulary challenges was that he heard of certain vocabulary words before, but did not know the definition of those same vocabulary words. With student 3, there was an intersectionality of a reported vocabulary challenge and reported reading challenge. In the excerpts provided, she describes that she does not know what *'melancholy'* and what *'idiosyncrasies'* mean, but also, that she was not sure of the pronunciation of those two same vocabulary words. Student 3 and student 6 were similar in that they identified 'idiosyncrasies' as a challenging vocabulary word, but the difference was that

student 6 highlighted the vocabulary words he described as challenging. Similarly, to the other students in the lower performance group, student 10 described the vocabulary words that were challenging for her and at the same time experienced difficulty with the pronunciation of the same vocabulary words (indigent, petty, and queer).

In Appendix F, table 20 highlights example excerpts of reported vocabulary challenge described by the students in the mid performance group. The students in the mid performance group described vocabulary words that were challenging for them as they were for the students in the lower performance group. Starting with student 2, the student narrated that *'idiosyncrasies'* was a challenging word for her and exhibited a higher level of metacognition by describing that she struggled in pronouncing the word. Similarly, to student 7 in the lower performance group, student 9 described that she had heard of the vocabulary words that she found as challenging before, but did not know the definition for those words, such as *'frivolous'*, *'exodus'*, and *'petty'*. Student 11 also expressed that she had heard of a vocabulary word before but did not know the meaning of it, as in *'petty'* and *'inferiority'* which she stated she had heard in her English class. She also went on to describe that because she did not know the meaning of certain answer choices, she was going to cross those out as in *'indigent'* and *'petty'*. In these two instances, the student demonstrated that she was being cognizant of her lack of knowledge of these two words, and because of this lack of knowledge, this prompted her to cross out those words as possible answer choices.

In Appendix F, table 21 also demonstrates example excerpts of reported vocabulary challenges within the higher performance group. Similarly, to student 1 in the lower performance group, student 4 had trouble pronouncing the vocabulary words that she described as challenging (*'indigent'* and *'idiosyncrasies'*). Additionally, student 8 and student 12 demonstrated similar

behavior as student 1 and student 5 in that they underlined the vocabulary words that they found

challenging, as student 8 did with the word *'queer'* and student 12 does with the word

'idiosyncrasies'. And like student 7 and student 9, student 12 described that she had heard of the

word *'harrowing'* before, but did not know the definition of the word.

The two tables below summarize the reading challenges that were observed and the

reading and vocabulary challenges that were reported by means and standard deviations

according to the performance groups.

Table 7

Summary of Observed Reading Challenges (mean and standard deviation)

Subgroup	N	LP Status		Reading Miscues		Self-Corrections	
		EL	RFEP	M	SD	M	SD
Low	6	2	4	35	32.5	6.3	5.2
Mid	3	0	3	24.7	1.5	3.3	2.5
High	3	0	3	29.7	16.8	4.7	3.5
Overall	12	2	10	29.8	16.9	4.8	3.7

Note. The data above demonstrates the mean and standard deviations of the reading miscues by performance groups.

Table 8

Summary of Reported Reading and Vocabulary Challenges (mean and standard deviation)

Subgroup	N	LP Status		Reading Challenges		Vocabulary Challenges (SD)
		EL	RFEP	When reading (SD)	When answering question (SD)	
Low	6	2	4	4.2 (3.9)	2.3 (2.4)	4 (2.5)
Mid	3	0	3	5.3 (2.1)	3.7 (5.5)	5.7 (5.7)
High	3	0	3	2 (2)	1.3 (1.1)	3.7 (2.1)
Overall	12	2	10	3.8 (2.7)	2.4 (3)	4.5 (3.4)

Note. The data above demonstrates the mean and standard deviations of the reported reading and vocabulary challenges by performance groups.

Vocabulary Challenges Analysis

After examining the vocabulary words that were challenging, I decided to closely examine the parts of speech (i.e., noun, verb, adjective, etc.) that each reported vocabulary word belongs to observe if 'part of speech', per se, influenced the lack of knowledge about a particular vocabulary word. The following table demonstrates this information.

To explore why the above vocabulary words were reported as challenging, I decided to examine the likelihood of these words being marked as academic vocabulary words and the frequency of these words to appear in school texts. I used the *Academic Word List* compiled by Averil Coxhead (2000) for her master's thesis. After a close examination, I found that none of the words that were reported as challenging appeared in the *Academic Word List.* A speculation for the words not appearing the *Academic Word List* could be the time period when the novel was written – 1909 – and because the passage was taken from a literary fiction novel.

After not finding any results, I consulted the *Educator's Word Frequency Guide* by Zeno et al., (1995) which provides the frequency of various words used in school text by grade level corpora. The standard frequency index (SFI) signifies the percentage of each word in text per one million words according to grade level. The lower the percentage the less frequently it appears. Table 9 provides the SFIs for the vocabulary words that were reported most often as challenging among the students. Not surprisingly, the word, 'idiosyncrasies', which had the lowest SFI, had a high percentage of reported challenge among the students.

Table 9

Standard Frequency Index according to Zeno et al., (1995)

Reported vocabulary challenge	Part of speech that vocabulary belongs to	SFI (Standard Frequency Index)
Melancholy	Noun	46.5
Idiosyncrasies	Noun	9.3

Menials	Noun	37.9
Hirelings	Noun	20.8
Toil	Noun	43.6
Pitiable	Adjective	31.6
indigent	Adjective	34.1
Frivolous	Adjective	41.6
petty	Adjective	45.6
Prostrated	Verb	33.9
Philosophizing	Verb	33.7
Harrowing	Verb	33.0

Comparison of Observed and Reported Strategies

Observed and Reported Metacognitive Behaviors

Lower performance group. The RFEP and the EL groups had a total of 17 (36%) observed instances of the coded of *underlined, highlighted, and made notes* out of the 47 instances among the three groups. The students in the RFEP group had a total of 12 (70%) observed instances of *underlined, highlighted, or made notes* out of the 17 instances that were observed in total in the lower performance group. In the same group, the student with the major number of observations was student 1 with six (35%) instances of the *underlined, highlighted, and made notes* code. While, the EL group only had a total of five (29%) observed instances. Student 6 had the major number of observations, 60%. These percentages are presented in Table 10. As it was described in the section above in the reported vocabulary challenges, many times, the students who narrated that they did not know what a vocabulary word meant, they would highlight or underline that word, as it the case for the following students.

Within the lower performance group, seven (32%) instances were reported out of the total 22 instances of the three performance groups. Five (71%) of those seven instances were reported by student 7 in the RFEP group and two (28%) instances were reported by student 10 from the

EL group. Additionally, there were six reported instances of rereadings (33%) out of the 18 total reported rereading instances from the three performance groups.

For student 7, these instances of reported usually intersected with a reported vocabulary challenge, as the following excerpt shows: *"...menials and hirelings. I'm will highlight menials, and hireling. I never heard of those words before, either."* For student 10, her reported instances of underlining occurred when a certain test question asked about a particular line in the reading passage, as the following excerpt illustrates: *"Okay, so I'm gonna underline 'she assumed she [/] no [/] she assumed him that she married him simply because she was tired of having paper bags waved before her eyes everywhere everywhere she went and she though if she were once officially associated with him people would not flaunt flaunt his disternal at her that way. So I guess all that sentence."*

Mid Performance Group. I observed in the mid performance group a total of 11 (23%) instances when the students *underlined, highlighted, and made notes* out of the 47 instances among the three groups, with student 9 having the major number of observed instances, seven (65%) in total as presented in Table 10. In addition, the mid performance group had the major number of rereading instances observed, 60 (52%) out of the 115 total instances among the three groups. The student that had the major number of observed rereading instances was student 9, with 28 (47%) in total in her performance group.

The students in the mid performance group reported the most instances of *underlining, highlighting, and making notes,* 11 (50%) instances out of the 22 total instances across the three groups. Student 2 only had one (9%) instance of the 11 reported for this group. Student 9 had four (36%) reported instances, and student 11 had the most reported instances, six (54%)

instances out of the total instances. Additionally, there were 11 reported instances of rereadings (61%) out of the 18 total reported rereading instances from the three performance groups.

Student 2 only reported instance of underlining something occurred for the same reason as student 10 in the lower performance group, to refer back to a particular line when a test question asked about it, as the excerpt shows: *"Okay, so I'll go back to line 8. Umm… 'She assured him that she married him simply because she was tired of having paper bags waved before her eyes every-where she went and she thought if she were one officially associated with him people would not flaunt his idiosyncrasies at her that way.' So I'll underline it just so that I go back to it."* The reported instances given by student 9 were similar to those of student 2 and student 11 in that she reported she was going to underline something when a test question asked to refer to a particular question, as the following example shows: *"'Based on the information presented in the passage, which best describes what Georgia was "tired of" in line 8?'So, I would go back to line 8 and highlight the eighth part and I would read back."* Student 11 was a special case because many of the instances that she reported of *underlining* or *making notes* dealt with a strategy to better comprehend what she was reading, as this next example illustrates, *"Okay, so I'll have to reread. 'She assured him that she married him simply because she was tired of having paper bags waved, she was [/] she was tired of' [Imma just underline that part] 'she was tired of having paper bags waved before her eyes, before her eyes, everywhere.' Hm. She [/] [so] 'she was tired of having paper bags waved,' [Imma break that sentence.] And then, 'before her eyes everywhere,' [/] before her eyes everywhere she went. [Then, Imma break it again,] and [then] and she thought that if she were once officially associated with him, [/] she thought if she were once officially associated [which means when she get married with him,] people would not his idiosyncrasies at her that way."*

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Higher Performance Group. I observed in the higher performance group a total of 19 (40%) instances when the students *underlined, highlighted, and made notes* out of the 47 instances among the three groups as presented in Table 10. Furthermore, student 8 had the most frequent number of observations in this group, 10 (53%) instances in total. In addition, the students in the higher performance group had a total of 30 (26%) observations of rereadings out of the 115 total instances among the three performance groups and coming after the mid performance group. In this group, student 4 had the major number of observations of rereadings, 12 (40%) instances in total.

Only student 12 within the higher performance group had four (18%) reported instances of *underlining, highlighting, and making notes* out of the 22 total instances across the three groups. Additionally, there was only one reported instances of rereadings (5%) out of the 18 total reported rereading instances from the three performance groups. The next example illustrates this instance of reported underlining because the student had found a connection with information she had read earlier in the passage, *"Imma underline that. INT: Which part? Student 12: Um, where it says, 'And now she was to wind it all up by marrying Joseph Tank, who had made a great deal of money out of the manufacture of paper bags. This from her – who had always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!' Interviewer: "Why did you underline that sentence, that starts with 'And now…'?" Student 12: "This gave me reference to where I boxed this sentence right here."*

Tables 22, 25, and 28 in Appendix F depict certain examples of underlining and highlighting behaviors for the three performance groups.

Observed Reading Behaviors

Lower Performance Group. In terms of the reading behaviors, 76 (32%) instances were observed within the lower performance group out of the 236 total instances from the three performance groups, positioning themselves in second place. As mentioned previously, there were five reading behaviors that were identified from the close examination of the students' think alouds, *a) text summary/paraphrase; b) making connections; c) inferring; d) analyzing,* and *e) prediction.* The students in this group showed the largest number of instances of *text summary/paraphrase,* 29 (58%) instances out of 50 total in the three groups; 30 (35%) instances were observed when the students in this group *made connections* among information in the reading passage or between the questions and events in the reading passage, out of the 86 total instances. For the *inferring* category, only five (18%) instances were observed out of the 28 total instances among the three groups, ten (17%) instances were observed that fell under the *analyzing* category out of the 59 total instances. These percentages are presented in Table 11.

    Mid Performance Group. Relevant to the observed reading behaviors that were observed by the researcher within the mid performance group, there were total of 65 (29%) instances that were observed by the researcher, being in third position for the reading behaviors. This performance group had the lowest number of instances of *text summary/paraphrase,* nine (8%) out of the 49 total instances. For instances when the students in the mid performance group *made connections* among information, there were 24 (28%) instances that were observed out of the 86 total instances. For the next category of *inferring,* only nine (32%) instances were observed out of the 28 total instances among the groups. Furthermore, for the last category, *analyzing,* 23 (39%) instances were observed out of the 59 total instances. These percentages are presented in Table 11.

Higher Performance Group. Respecting the observed reading behaviors that were observed by the researchers within the high-performance group, there were a total of 90 (40.36%) observations, resulting in the most observed reading behavior for the three performance groups. Starting with the first category, *text summary/paraphrase,* the students in this group had 12 (24%) observations out of the 49 total observations among the three performance groups. In the next category, the students had 32 (37%) instances of *making connections* out of the 86 total observations, resulting in the most observed instances of *making connections* among the three performance groups. For the third category, *inferring,* the students had a total of 14 (50%) instances out of the 28 total instances among the groups, also yielding the most observations of inferences among the three groups. For the fourth category, *analyzing,* the researcher observed 26 instances when the students were analyzing parts of the passage or when they were answering the test questions, also winding up with the most number of observations among the three groups. Finally, one student in this performance group was the only person that made a *prediction* about what would happen in the passage that was observed by the researcher. These percentages are displayed in Table 11.

Tables 24, 27, and 30 in Appendix F depict certain examples of reading behaviors for the three performance groups.

Reported Vocabulary Strategies

Lower Performance Group. Within the lower performance group, there were eight (57%) instances of a) *comments about vocabulary word(s)*. Starting with the RFEP group, student 1 and student 5 had zero instances, while student 7 had four (28%) instances. Within the EL group, student 3 had zero instances, student 6 had one (7%) instance and student 10 had three (21%) instances. In terms of the instances of b) *knowing vocabulary word(s),* only two

occurrences were found, one done by student 1 in the RFEP group and the other done by student 6 in the EL group. For the instances of c) *defines vocabulary word in English,* student 1 showed four (33%) instances, student 5 showed two (17%) instances and student 7 (8.33%), student 3 did not show any instances, student 6 showed five (42%) instances, and student 10 showed no instances. For the instances of d) *defines vocabulary in a Language Other Than English (LOTE),* student 1, student 3, and student 10 all showed only one instance. These results are summarized in Table 12.

Student 7 described that he was going to highlight a particular vocabulary word because he had never heard it before as he describes here: *"Imma highlight the word exodus. And also, harrowing. I never heard of it before."* Student 1 first acknowledges she knows the word, but is metacognitive that she is not pronouncing it correctly as the following example shows: *"But the time for gentle **melancholy:::** [Okay, I don't know. I think I know this word, but I'm not pronouncing it right.]"* The following example is very interesting because student 10 translates a word incorrectly into Spanish, because she confuses the phonetics of the word with another word in English, as the following example shows: *"Oh, **irony** I do, never mind. Isn't it like, I don't know **"planchar"**? INT: Oh okay. You think it sounds like that? Student 10: Yeah, irony, but um…but obviously, they're not talking anything about them. It probably means something like a machine or something.*

Mid performance Group. Within the mid performance group, there were a total of four (28%) instances of a) *comments about vocabulary word(s).* Student 2 and student 9 both had two (25%) instances each, and student 11 did not have instances. In terms of the narrations of b) *knowing vocabulary word(s),* only student 11 demonstrated two reported instances. For the reported instances of c) *defines vocabulary in English,* student 9 had seven (47%) instances, the

highest number of these instances in her performance group. Student 11 had the second highest, five (33%) instances, and student 2 had three instances (20%). Finally, this performance did not report any instances of d) *defines vocabulary in LOTE.* These results are summarized in Table 12.

Student 9 attempted to define certain vocabulary words in the reading passage and the answer choices but in these instances, she was not sure if she was defining them correctly, as the following two examples show: *"Frivolous, like maybe like time consuming. I'm not sure so, I'd probably put time consuming with a question mark."; "I don't know if queer means like weird or feels different, I'm not sure."*

Higher performance group. Within the higher performance group, there was only a total of two (14%) instances of a) *comments about vocabulary words.* Student 4 had two (14%) reported instances in total, while Students 8 and 12 did not have any reported instances. In terms of the instances of b) *knowing vocabulary word(s),* there was only once instance reported by STU12. For the next category, c) *defines vocabulary in English,* Student 12 had the most reported instances, eight (57%) in total. Students 4 and 8 both had three (21%) reported instances each. For the last category, d) *defines vocabulary in LOTE,* only STU19 had two reported instances. These results are summarized in Table 12.

In her example, student 12, defines a vocabulary word from the answer choices, but is also metacognitive about whether her pronunciation is correct or not, as the following example shows: *"I think pitiable, if it is how I am pronouncing it, I think of it as pity."* In the next example, student 8 resorts to her native language (Spanish) to define a vocabulary from one of the answer choice, *"Because in Spanish, pitiable would be like, like, in Spanish, that poor would be like 'pobresita'. Feeling like sorry for the person."*

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Reported Testing Metacognition

Lower Performance Group. Within the lower performance group, there were 22 (44%) instances of *process of elimination to answer a question* out of the 50 total instances among the three performance groups. Starting with the RFEP group, student 1 had ten (45%) instances. Five of those instances were noted verbally and the other five instances were noted verbally and in written form. Students 5 and 7 did not have any instances of this type of testing strategy. Within the EL group, student 5 had one report of using the *process of elimination to answer question* which she noted in verbal form. Similar to students 5 and 7, student 6 did not have any occurrences of this type of testing strategy. Student 10 had eleven (50%) instances, and all the instances were noted verbally. In terms of the narrations of *use of other form of testing strategy,* student 1 had one occurrence and noted it verbally. Students 3, 7, and 10 each had two occurrences and all were noted verbally. These results are summarized in Table 12.

The following is an excerpt by student 1 of using the *process of elimination to answer a question* indicated both with a written and verbal notation: *"But it doesn't say anything about teasing, so I'm guessing I could take that out."* Student 10 employs a guessing testing strategy when trying to answer a particular question: *"Yeah, but I'm not sure. I guess just like her behavior like she thought she would end up in New York and I guess that's just like her behavior, I don't know. And then it does say her 'particular behavior is extremely upsetting', cause I don't know why I feel like she's upsetting like, oh about like you know. Oh, I don't know. I guess I'll go with D."*

Mid Performance Group. Within the mid performance group, there were a total of 23 (46%) instances of *process of elimination* out of the 50 total instances among the three performance groups. Student 2 had the most number of these instances, ten (43%) instances in

total. Five of those instances were noted both verbally and in written form, four instances were noted verbally, and one instance was noted in written form. Student 9 had four (17%) occurrences in total. Three of those instances were noted both in verbal and written form and once it was noted verbally. Student 11 had nine (39%) instances. Six of the instances were noted in verbal form, two instances were noted in written and verbal form, and once it was noted in written form. In terms of the narrations of *use of other form of testing strategy,* students 9 and 11 demonstrated this type of testing metacognition. Student 9 noted it once with verbal notation and Student 11 noted it once with written notation and four times in verbal form. These results are summarized in Table 12.

Student 9 demonstrated an instance of testing metacognition of using the *process of elimination to answer a question* in addition to incorporating a *reading behavior* of *making connections* between an answer choice and what happens in the reading passage as indicated with the following example: *"I don't think it's A either because I feel like she wants to earn a living. Like she wants to be this realistic novel exposing some mighty evil, or like she wanted to live in New York. So, I'd cross that off."* Student 11 *used another form of testing strategy* by describing she's "relying on her gut" to choose an answer, as follows: *"So I'll go with C. My gut is telling me. I'll go with my gut."*

Higher performance group. Within the higher performance group, there was only a total of 27 (54%) instances, out of the 50 total instances among the three performance groups. Student 4 had thirteen (48%) occurrences in total. Four of those instances were noted in a verbal way and nine instances were noted in both written and verbal ways. Student 8 had one (3%) occurrence that was noted both in written and verbal forms. Like student 4, student 12 had thirteen (48%) occurrences in total, all of which were noted in a verbal way. In terms of the

narrations of *use of other form of testing strategy,* there were only two occurrences, one done by student 8 and the other by student 12. Both of occurrences of a different testing strategy were noted verbally. These results are summarized in Table 12.

In the next example, student 12 uses the *process of elimination* to answer a particular question, and as she uses this testing strategy, she incorporates a *reading behavior* of *making connections* between the reading passage and the question, as the next example excerpt shows: *"I don't think it's this because from what it says I'm comparing it to the passage. Um, she did did do a lot and it's not like she was she was doing something to get to a higher position. Like she was doing it because she liked doing it. She was happy with what she was doing. It's not like if all of the sudden they were going to give her a promotion and they don't give it to her. It's just that she's she's going to live a new life with a man that she's going to marry so that's not it."* The same student *used another form of testing strategy* by "skipping" the question and describing that she would come back to it later, as the following example shows: *"I don't think this is it because you could say, um, certain decision is out of character, hold on. I'm gonna skip that one and come back to it."* Tables 11 displays a summary of frequencies, percentages, means, and standard deviations of observed and reported metacognitive behaviors. It is interesting to note that students in higher performance group were more inclined to underline or highlight the text without explicitly reporting that behavior during their think aloud, while the mid performance group were more inclined to report it. Informatively, the mid performance group were more inclined to reread portions of the text without explicitly reporting the behavior in comparison to the other two performance groups. Table 11 displays a summary of the frequencies, percentages, means, and standard deviations of observed reading behaviors. It is interesting to note that the students in the higher performance group incorporated more instances

of *making connections, inferring,* and *analyzing* in comparison to the other two groups. Table 12 displays a summary of frequencies, percentages, means, and standard deviations of reported vocabulary and testing strategies. As it can be seen from the data in table, there was not much variability in the vocabulary and testing strategies that were reported by the students in the three performance groups, however, the *defining vocabulary in English* and using the *process of elimination* were the strategies that were reported the most among the students.

Table 10

Summary of Observed and Reported Metacognitive Behaviors

Student	Underlines, highlights, makes notes (Observed/Reported)	Rereading (Observed/Reported)
Lower Performance Group		
1	6 (35.3%)/0 (0%)	10 (40%)/2 (33.3%)
3	2 (11.8%)/0 (0%)	5 (20%)/0 (0%)
5	2 (11.8%)/0 (0%)	8 (32%)/0 (0%)
6	3 (17.6%)/0 (0%)	1 (4%)/0 (0%)
7	4 (23.5%)/5 (71.4%)	1 (4%)/2 (33.3%)
10	0 (0%)/2 (28.6%)	0 (0%)/2 (33.3%)
Total	**17 (100%)/7 (100%)**	**25 (100%)/6 (100%)**
M (SD)	**3.4 (1.67)/3.5 (2.52)**	**5 (4.06)/2 (0)**
Mid Performance Group		
2	2 (18.2%)/1 (9.1%)	12 (20%)/5 (45.4%)
9	7 (63.6%)/4 (36.4%)	28 (46.7%)/1 (9.1%)
11	2 (18.2%)/6 (54.5%)	20 (33.3%)/5 (45.4%)
Total	**11 (100%)/11 (100%)**	**60 (100%)/11 (100%)**
M (SD)	**3.67 (2.89)/3.67 (2.52)**	**20 (8)/3.67 (2.31)**
Higher Performance Group		
4	7 (%)/0 (0%)	12 (%)/1 (%)
8	10 (%)/0 (0%)	8 (%)/0 (%)
12	2 (%)/4 (%)	10 (%)/1 (%)
Total	**19 (100%)/4 (100%)**	**30 (100%)/1 (100%)**
M (SD)	**6.33 (4.04)/4 (0)**	**10 (2)/1 (0)**

Note. The data above depicts the frequencies, percentages, means, and standard deviations of observed and reported metacognitive behaviors by performance groups.

Table 11

Summary of Observed Reading Behaviors

Student	Reading Behaviors				
	Summarizing/ Paraphrasing	Making Connections	Inferring	Analyzing	Prediction
Lower Performance Group					
1	5 (17.2%)	8 (26.7%)	0 (0%)	1 (10%)	0 (0%)
3	5 (17.2%)	3 (10%)	1 (20%)	0 (0%)	0 (0%)
5	7 (24.1%)	5 (16.7%)	1 (20%)	2 (20%)	0 (0%)
6	4 (13.8%)	4 (13.3%)	3 (60%)	2 (20%)	0 (0%)
7	3 (10.3%)	3 (10%)	0 (0%)	0 (0%)	0 (0%)
10	5 (17.2%)	7 (23.3%)	0 (0%)	5 (50%)	0 (0%)
Total	29 (100%)	30 (100%)	5 (100%)	10 (100%)	0 (0%)
M (SD)	4.83 (1.33)	5 (2.10)	1.67 (1.15)	2.5 (1.73)	0 (0)
Mid Performance Group					
2	4 (44.4%)	5 (20.8%)	2 (22.2%)	5 (21.7%)	0 (0%)
9	0 (0%)	11 (45.8%)	3 (33.3%)	8 (34.8%)	0 (0%)
11	5 (55.5%)	8 (33.3%)	4 (44.4%)	10 (43.5%)	0 (0%)
Total	9 (100%)	24 (100%)	9 (100%)	23 (100%)	0 (0%)
M (SD)	4.5 (0.71)	8 (3)	3 (1)	7.67 (2.52)	0 (0)
High Performance Group					
4	5	9 (28.1%)	8 (57.1%)	8 (30.8%)	1 (100%)
8	3	6 (18.7%)	1 (7.1%)	6 (23.1%)	0 (0%)
12	4	17 (53.1%)	5 (35.7%)	12 (46.1%)	0 (0%)
Total	12 (100%)	32 (100%)	14 (100%)	26 (100%)	1 (100%)
M (SD)	4 (1)	10.67 (5.68)	4.67 (3.51)	8.67 (3.05)	1 (0)

Table 12

Summary of Reported Vocabulary and Testing Strategies

Student	Vocabulary Strategies			Testing Strategies	
	Knowing vocab.	Defining vocab. in English	Defining vocab. in LOTE	Process of elimination	Other form of testing strategy
Lower Performance Group					
1	1 (50%)	4 (33.3%)	1 (33.3%)	10 (45.4%)	1 (14.3%)
3	0 (0%)	0 (0%)	1 (33.3%)	1 (4.5%)	2 (28.6%)
5	0 (0%)	2 (16.7%)	0 (0%)	0 (0%)	0 (0%)
6	1 (50%)	5 (41.7%)	0 (0%)	0 (0%)	0 (0%)
7	0 (0%)	1 (8.3%)	0 (0%)	0 (0%)	2 (28.6%)
10	0 (0%)	0 (0%)	1 (33.3%)	11 (50%)	2 (28.6%)
Total	2 (100%)	12 (100%)	3 (100%)	22 (100%)	7 (100%)

M (SD)	1 (0)	3 (1.82)	1 (0)	7.33 (5.50)	1.75 (0.5)
Mid Performance Group					
2	0 (0%)	3 (20%)	0 (0%)	10 (43.5%)	0 (0%)
9	0 (0%)	7 (46.7%)	0 (0%)	4 (17.4%)	1 (16.7%)
11	2 (100%)	5 (41.7%)	0 (0%)	9 (39.1%)	5 (83.3%)
Total	2 (100%)	15 (100%)	0 (0%)	23 (100%)	6 (100%)
M (SD)	2 (0)	5 (2)	0 (0)	7.67 (3.21)	3 (2.83)
Higher Performance Group					
4	0 (0%)	3 (21.4%)	0 (0%)	13 (48.2%)	0 (0%)
8	0 (0%)	3 (21.4%)	2 (100%)	1 (3.7%)	1 (50%)
12	1 (100%)	8 (57.1%)	0 (0%)	13 (48.2%)	1 (50%)
Total	1 (100%)	14 (100%)	2 (100%)	27 (100%)	2 (100%)
M (SD)	1 (0)	4.67 (2.89)	2 (0)	9 (6.92)	1 (0)

Note. The data above depicts the frequencies, percentages, means, and standard deviations of reported vocabulary and testing strategies by performance groups.

Discussion

The present study aimed to assess the linguistic complexity of the reading section of the SAT through the exploration of the linguistic and reading challenges that ELL and RFEP students experience as they take the test. These challenges were revealed by my observations and students' self-reports in a think aloud protocol that I designed for the study. In addition to the challenges, reading, vocabulary, and testing strategies were observed and noted by students' self-reports.

Observed Challenges. The results from the first research question revealed exploratory findings consistent with previous literature and novel from this study. Beginning with the reading miscue analysis, whereby observed reading challenges were discovered. I found that the reading miscues that were used among the students were *pronunciation, word substitution, repetition, skip/omission,* and *word insertion.* The *Reading Miscue Inventory* (Goodman & Burke, 1972) tool helps teachers build individual and personal models of reading for their students. Teachers reserve this tool for their struggling readers, using it as a diagnostic to figure out with specificity what areas of reading their students are struggling with. From my experience of implementing

the *Reading Miscue Inventory* with the data I collected, I suggest that instead of viewing these reading miscues as challenges, students and teachers can view them as opportunities for supporting growth in reading. If more teachers implement this type of reading tool in their ELA classrooms, it can potentially help students be more metacognitively aware of their reading behaviors. Moreover, if this tool is used in student pairs, a more successful reader can help a struggling reader with their reading miscue, which consecutively, can help with their reading processes and comprehension.

One of the categories within the reading miscue analysis that I would like to highlight is the *skip/omission* reading miscue. The most common occurrence for a *skip/omission* miscue was at the *word-level*, rather than at the *line/sentence level*. For example, words like *"to", "the", "was", "she",* and *"and"* were most commonly omitted in the text. In many instances, the students disregarded reading the second part of the question. The students that were part of the sample were 11th and 12th grade students, suggesting that they would have already taken the SAT and/or received test preparation for the SAT. One of the strategies that students are taught when they take the reading section of the SAT is not read passages line-by-line as there is a time constriction (PrepScholar, 2015). It can be speculated that the students in the present study omitted reading words such as, *"to", "the", "was", "she",* and *"and"* as these do not add meaning to the text and could therefore save them a couple of seconds in reading the passage.

Another important aspect of reading miscues in the data that I would like to highlight is of a particular student who made a very interesting *word insertion* reading miscue while answering a particular question that was referring back to a line in the text. *"Georgia did <u>not</u> considerable philosophizing…".* By inserting the word *not,* it clearly compromised the meaning

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of the text, but by having done this reading miscue, it did not prevent her from answering that particular question correctly.

Summarizing the data by performance level, it was interesting to observe that the EL students in the lower performance group incorporated more *word substitution* reading miscues than the RFEP students in the same group. For example, *"The following passage <u>expert</u> expert is from a 1909 novel."* (Student 10). This type of *word substitution* (*expert vs. excerpt)* was a common reading miscue made by the EL students. Another instance of *word substitution* that is noteworthy to highlight is: *"Georgia did <u>considerably philosophy</u> [considerable philosophizing[20]] about the irony of working for things only to the end of giving them up."* This type of *word substitution* reading miscue was done by one of the EL students in the lower performance group and one of the RFEP students in the higher performance group. A speculation as to why these specific instances occurred may be due to the similarity in sound of the words in the original text versus the words that the students substituted in. Although there were few instances, it is a reading miscue that should be explored in future research, as it can help readers become metacognitive about *word substitution* reading miscues they are incorporating and potentially increase their reading accuracy.

Staying in the same category, it is also noteworthy to mention that Student 3 (RFEP student) and the EL students had the highest percentages of reading miscue self-corrections among the lower performance group, suggesting that the students were potentially metacognitive about their reading miscues, but just not reported that they had made such errors to me during the think alouds. This detailed observation of self-corrections is something novel that I did not find in the reading miscue analysis research (Goodman & Watson, 2005; Goodman & Burke, 1972).

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[20] From original reading text.

In addition, the higher performance group had a higher number of reading miscues in comparison to the mid performance group.

Reported Challenges. The students' self-reports of their reading and vocabulary challenges revealed their metacognitive awareness about their own challenges while testing, with statements such as, a) *not understanding what they are reading,* b) *not knowing how to pronounce a vocabulary word,* c) *experiencing challenges while answering the test questions,* or even d) *acknowledging that even if they reread a section of the text to answer a question they still did not know how to answer a particular question.* It is noteworthy that the majority of the reading challenges were reported while reading the passage, than while testing, giving evidence that with a think aloud methodology, students can be metacognitively aware by narrating their own challenges.

In a like manner, students reported their challenges about vocabulary words they encountered, most of the time occurring while the students were answering the test questions. A speculation as to why the vocabulary challenges were reported mostly while testing may be due to the type of questions (*inference, vocabulary in context, analogy,* and *function*) asked, inquiring students to refer to a particular section in text to answer the questions. With half of the sample scoring in the low range of performance, there is evidence that the vocabulary challenges interfered with the students' reading comprehension and fluency (as *pronunciation* and *word substitution* were the most prominent reading miscues as mentioned above). In addition, it was interesting to observe that in connection to reporting a reading challenge, students would *underline, highlight, or make notes* (occurring most of the time while reading), and would *reread a portion of the text, a question, or an answer choice* (occurring most of the time with a section of the text and while answering the test questions).

An important category to discuss is that of the vocabulary words that were found in the reading passage and in the answer choices. In many instances when a *pronunciation* miscue was applied, a *repetition* miscue and *comment about not knowing vocabulary word(s)* was also applied, demonstrating how an observed challenge and a reported challenge could be combined. This combination occurred for the vocabulary words, *frivolous* and *pitiable,* where students had trouble pronouncing the words and repeated these words over three and four times, in addition to, describing that they did not know what those particular vocabulary words meant. An assumption as to why these behaviors were combined for certain types of vocabulary words may be due to the frequency when the words appear in non-academic/academic texts. As mentioned previously, there is an SFI for vocabulary developed in the Zeno et al.'s (2015) word frequency guide. The word *frivolous* has an SFI of 41.6, meaning that it has an approximate frequency of 1.00 per million words encountered, giving evidence that students rarely encounter this word in their non-academic/academic texts. The next word, *pitiable,* has an even lower SFI: 31.6, meaning that the frequency with which it occurs per million words is .10. If these kinds of words appear so infrequently in texts, then it gives evidence to the unfamiliarity expressed in the students' narrations in their think alouds.

These findings are consistent with previous literature, such as, Jimenez, Garcia, and Pearson (1995) who implemented a think aloud to assess an English-Spanish proficient bilingual student's cognitive and metacognitive knowledge on her reading processes and strategies. A major finding from that study was that unknown vocabulary played a huge obstacle to reading comprehension and the cultural and linguistic familiarity of the reading passages also was a factor in the students' performance. The present study expanded on behaviors such as *underlining of unfamiliar words or phrase* and the *verbalization of thoughts while answering the*

test questions as were part of Bailey and Huang's (2010) study of assessing the linguistic complexity on certain subject area texts for elementary school-aged children, by exploring these behaviors as challenges and strategies. In addition, Jimenez, Garcia, and Pearson (1995), Johnstone et al., (2006), and Bailey and Huang (2010) found that words that students marked as difficult interfered with students' reading fluency and comprehension, consistent with the present study.

Observed and Reported Strategies. As it was mentioned previously in the paper, before collecting the data, the initial intent of the study was to examine the types of challenges students experience as they complete the critical reading portion of the SAT. However, after careful examination of each of the student's transcripts, I discovered that there were strategies that students were utilizing as they read and answered the test questions that they were not explicitly labeling in their think aloud narrations. Adapting from Pinnell and Fountas's *Reading Assessment Checklist* which outlines the reading behaviors that students should be implementing in their reading from grades K-12, I observed five different reading behaviors: *text summary/paraphrase, making connections, inferring, analyzing,* and *prediction. Making connections* was the reading behavior that was most commonly implemented while the students were answering the test questions. It can be speculated that *making connections* occurred most often when the students were answering the test questions as the nature of the questions asked the students to make connections to the reading passage.

Consistent with the findings in Anderson (1991) who found from his think aloud study that the quality of the strategy that the students used does not depend on whether the reader knows what they read or not, but rather, that the reader must know how to apply a strategy in a successful manner and understand the meaning of the strategy. In the present study, although the

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reading behaviors were observed, it cannot be assumed that these behaviors aided or hindered the students' reading processes or reading comprehension as the students did not report about them as in the Anderson (1991) study.

In addition to the observed reading behaviors, it is notable to discuss the differences between the observed and reported metacognitive behaviors. There were far more observed instances, rather than reported instances of *underlining, highlighting, and making notes* and of *rereadings*. The higher performance group had the highest number of *underlining, highlighting, and making notes* observations and the mid performance group had the highest number of *rereadings* observations. This portion of the data provides insight to the strategies that are most commonly used among students who take the SAT and gives evidence of the types of strategies that students could receive more instruction on and could become more knowledgeable about. Furthermore, if students are instructed to be more metacognitively aware about these types of behaviors (meaning to describe the reason why they are doing these behaviors), then they can become more cognizant of whether they are experiencing a challenge or if they are employing this behavior because they are using it as a strategy.

Another type of metacognitive behavior that I would like to point out is that of one student in the higher performance group. Student 8, who scored a 100% on the test was the only student who *read the questions before reading the passage.* In her description, the student was metacognitive in terms of the what she had look for when reading or the intention of the questions. The following two excerpts depict this information: Instance 1:*"So then this is a very brief question. So then it's based on information presented in the passage, which best describes describes what Georgia was "tired of" in line 8? So::: line 8 will be this one, tired of having paper bags. I just remember to pay extra attention to that sentence."* Instance 2: *"And then um,*

in context, so then this is, I will have to infer what I think it is. So, it says, 'the phrase "This from

her", lines 47 to 48 helps to suggest that a…" In future research, it would be interesting to

examine if doing this type of behavior before reading, assists in the students' reading

comprehension performance as it did with this student in the present study.

Vocabulary Strategies. As it was mentioned previously in the paper, students reported

on the vocabulary words that they had challenges with. In other instances, the students translated

certain vocabulary words they felt necessary to translate into a LOTE (in this case, Spanish).[21]

Other times, the students narrated they knew certain vocabulary words in the passage or in the

answer choices without providing definitions for the words. From the previous literature found,

the researchers have not focused on the aspect of vocabulary as a strategy, but more of a

challenge for students, therefore focusing on vocabulary as a strategy became something novel in

the present study. And although only five instances of defining a vocabulary in a LOTE were

reported, it is noteworthy to mention as it was a strategy for one student (in the higher

performance group) and a possible hindrance for another student (in the lower performance

group).

For student 8's instance: *"Because in Spanish, pitiable would be like, like, in Spanish,*

that poor would be like 'pobresita'. Feeling like sorry for the person." By resorting to her native

language, student 8, was able to correctly define the word *pitiable* which was one of the answer

choices of one of the test questions. This instance is interesting as the student resorts to a

synonym (*poor)* of the word *pitiable* and defines the synonym into Spanish. By using this type of

vocabulary strategy, the student was able to correctly answer that particular question and this

possibly helped her understand a particular portion of the passage. For student 10's instance:

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[21] Definitions were not counted for correctness.

*"Oh, **irony** I do, never mind. Isn't it like, I don't know **"planchar"**? Interviewer: Oh okay. You think it sounds like that? Student 10: Yeah, irony, but um…but obviously, they're not talking anything about them. It probably means something like a machine or something. Planchar* means *to iron* in Spanish, so by incorrectly translating *irony* into Spanish because of the confusion of phonetics, this created an opportunity of hindrance as it impeded her from correctly answering the question, which asked the student to determine how the word *irony* was being used in the referred sentence in the passage.

Another interesting category of reported strategies that was found from the data was the testing strategies, whereby it was observed and there were students who reported using the *process of elimination to answer test questions.* Additionally, it was noted the instances when *other form of testing strategy* was used. For both testing behaviors, it was coded whether the behavior was noted in a written form, verbal form, or both at the same time. This type of testing metacognition was also something that is novel to this field of work and did not encounter in previous literature.

Summarizing the testing metacognition by performance level, it was noticeable that the students in the higher performance group used the *process of elimination* more frequently than the students in the mid and lower performance group. This type of testing strategy occurred concurrently with the reading behavior of *making connections* or *analyzing,* signifying that as students made connections between a particular answer choice and the events that happened in the passage, they were being metacognitive, at the same time, determining the fit of an answer choice by eliminating it or considering it as a possible correct answer. It is also worth noting that students noted their use of testing strategy in a verbal way more frequently than in a written manner. This was true for the three performance groups.

Limitations

One of the limitations that I found after conducting the study was the small sample and limited number of test questions. Another limitation was the composition of the sample because it would have been more desirable to have current EL students as that was the initial goal of the study.

A potential enhancement for the study is to include a self-reflection phase right after the termination of each of the students' think alouds, or, after a certain period had passed. In this phase, I would have had each student listen to their think alouds individually and have them self-reflect about what they listened to, revealing instances of their behaviors and areas where there could have been improvement. In my opinion, it would have been an informative asset to include in the present study, as it would have potentially revealed the reasons why students used certain reading, vocabulary, or testing strategies. It could have also created room for explanation for the instances when students were explicit about certain reading behaviors (such as *text summary, making connections,* or *analyzing*). I could also have had the opportunity to probe the students as to any missed instances of explicitness of strategies or challenges in their think aloud narrations.

Another area of limitation that I found after careful observation of the data was that I did not code for correctness when certain vocabulary words were translated into Spanish, or when a definition was provided in English, or when a definition was provided in Spanish. In my opinion, it would have been of great utility to know if the translations or the definitions that were provided were correct or know and how this behavior may have assisted or hindered the students' performance on the test.

Another area of limitations that I found subsequently of analyzing each of the students' think a louds was that I did not use any type of measure to determine the complexity of the

reading passage I used for the study. According to the Common Core State Standards (CCSS), there is a three-factor approach to determine the difficulty of a text: quantitative, qualitative, and reader-task components[22] (Common Core State Standards Initiative, 2016).

By approaching the reading texts through quantitative lens, I could have used readability formulas and tools to determine word frequency, sentence length of paragraphs, the complexity of the sentences, and the complexity of the vocabulary in the text (Frantz, Starr, & Bailey, 2015; Hiebert, 2012). A problem with these types of readability formulas is that sentence length can influence the readability level, and syntactic complexity itself may not be captured well by readability formulas (Frantz et al., 2015). This is true for narratives, which oftentimes have dialogue and are short, but it does not necessarily mean that these short sentences are easy to read (Nelson, et al., 2012). One additional problem with having sentence length as proxy of sentence or syntactic complexity is that this component of the readability formulas does not account for the lexical and grammatical rules that makes a sentence stand alone and make sense, which may impact comprehension. In addition, grammar should not be excluded from text complexity evaluations because grammar in fact does contribute to meaning making of the text and reading comprehension. Grammar may vary by the subject area and it reflects a developmental trajectory (Zwiers, 2014).

By approaching the reading texts through a qualitative lens. To determine the linguistic complexity of reading texts, qualitative rubrics usually focus on the purpose of the text, levels of meaning, organizational structure, graphic supports, language conventionality and clarity, and

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[22] Reader-task components: acknowledges reader variables (such as motivation, knowledge, and experiences) and task variables (such as purpose and the complexity generated by the task assigned and the questions posed) that influences the comprehension of the text.

knowledge demands. A qualitative dimension is useful to provide examples to tell a fuller picture

of text and linguistic complexity of a text (Frantz, Starr, & Bailey, 2015).

Additionally, I could have triangulated the information from the quantitative and

qualitative linguistic complexity with the information I gathered from the observations and

reports in each of the students' think alouds. Furthermore, the information from the quantitative

and qualitative rubrics could have served as additional support for the argumentation of this

study.

Significance

As it was initially stated in the paper, one of main purposes for conducting this study was

to investigate how to parse the construct of language proficiency apart from the construct of

reading comprehension in standardized assessments such as in the SAT. From this study, I found

that it still can be quite difficult to parse out the conceptual differences between English

language development from English language arts. More research needs to be done to understand

how to better modify reading assessments for students who have learned English as a second

language, even though they have been reclassified from their EL status.

In connection to the last point, it was interesting to observe in my data that there were

still RFEP students who fell within the lower performance group with the EL students. A

speculation as to why these RFEP students perhaps underperformed may be because these

students may be reversing or failing to maintain their reading performance over time. This

finding is interesting because previous research has found that RFEP students tend to improve in

their reading comprehension and academic vocabulary over time and score comparably with

their English only speaking peers, as Hwang, Lawrence, Mo and Snow found in their 2015 study.

Ardasheva, Tretter, and Kinny (2012) found comparable results as Hwang et al. (2015), yielding

the same results in the mathematics area as well. In the other hand, Slama's study (2014) found results that could be translated into this study, where a large proportion of redesignated students had a hard time with academic performance, with one quarter of the sample having to repeat a grade level at least once after their reclassification. The difference in findings in these studies could be explained by the reclassification criteria across the U.S, therefore creating more time for missed opportunities of access to core content areas like language arts and mathematics.

In addition to the amount of time it takes to be reclassified for an ELL student, another reason as to why the four RFEP students fell within the lower performance group has to do with the concept of *curricular streams* introduced by Estrada in 2014 which says that there is no consistency of what should be done with EL students in terms of helping them attain English language proficiency and grade-level achievement. A lot of the decisions as being left at the local level instead of relying at the state policy level, but overall it seems that EL students are being left out from the mainstream classroom experience and are not able to access the same academic materials as their EO peers.

Thus, it is important to inform the area of test validity that a modification of reading texts in standardized reading assessments is necessary to assess students from minority language backgrounds, such as incorporating material that are more accessible for these students (meaning text they are familiar with and is culturally relevant), since they are not exposed to the same materials as the students in the mainstream classroom. The use of accessible reading texts in relation to reading performance was a significant finding in Droop & Verhoeven (1998) study. By using a self-revelation verbal protocol (like a think aloud) to assess reading comprehension using three completely different texts, they discovered that culture and familiarity played a

significant role in reading comprehension and reading efficiency. Students who read culturally familiar text had a higher reading fluency and greater text comprehension.

Similarly, Johnstone et al., (2006) also implemented a think aloud in their study to detect issues in large-scale assessments. Various problems with the test design and development revealed that students' performance does not accurately depict what students know, specifically for mathematics, since that is the subject area that this study focused on. The researchers found issues with unclearly defined constructs, inaccessibility of test items, unclear instructions, incomprehensible language, and illegible text and graphics.

Implications

The behavior of narrating *descriptions of what to do next* can be difficult for a reader doing a think aloud to explicitly describe their train of thoughts as they are reading a passage, in addition to, describing steps and strategies to answer a test question. However, the students in this study were able to convey this information. This type of behavior gives evidence to the success of the think a loud methodology used in this study and also has implications for future work in different areas. This type of finding also gives evidence that if students are metacognitive about the steps they have to take to complete an assessment, then it can help organize their thoughts. It cannot be said whether students' performance may increase by narrating their testing steps as there was no variability in the percentages of *descriptions of what student will do next,* but it does provide an understanding of the significant amount of time it takes for a reader to be metacognitively aware about their own challenges and strategies as well.

An area for future research is for educators to use a think aloud methodology to teach their students to be more metacognitively aware about their own thinking during reading assessments. Perhaps, it could help students be more understanding of their own linguistic and

reading challenges during reading and could better help them to decipher what strategies they could use and what are the strategies they need to use to overcome their challenges during these assessments. Even starting this type of teaching tool in the earlier grades can potentially help EL students with their own linguistic and reading challenges as they progress to the higher grades. There are even implications for teachers who oversee the English language development, to teach students to resort to their native language when they encounter a word in English. Perhaps, if EL students or RFEP students resort to their native language they can have a better understanding of their reading and help them answer reading comprehension questions as did for certain students in the present study, and thus make the testing experience less stressful for these students.

Another area for future research is in test preparation. Using a think aloud procedure could be a diagnostic technique for students to use in pairs to help each other out in their reading assessments. Teachers could pair students who are higher performers in reading with students who are lower, and they can each discover what are their strengths and what are their weaknesses in the area of reading, and at the same time, build on their metacognition of each other's challenges and strategies in reading and testing.

Appendix A

Table 1
RFEP and EL students' CELDT and CAHSEE Data

Student	Special Ed. Classification	Language Classification	# Years EL	Most recent CELDT						CAHSEE ELA		
				Year	Overall	L	S	R	W	Grade	Year	Score
1	No	RFEP	4	2007	4	4	4	3	3	10	2013	362
2	No	RFEP	4	2007	4	5	3	3	4	10	2013	374
3	OHI	RFEP	11	2012	4	5	5	4	3	10	2013	324^
4	No	RFEP	2	2007	5	5	3	5	3	10	2013	431
5	No	RFEP	11	2013	4	3	5	4	4	11	2013	367
6	SLD	LEP	11*	2014	3	2	3	2	3	11	2015	339^
7	No	RFEP	5	2008	4	3	4	4	4	10	2014	382
8	No	RFEP	3	2006	4	5	3	3	3	10	2014	397
9	No	RFEP	3	2006	4	3	5	3	3	10	2013	425
10	SLD	LEP	11*	2014	3	2	3	3	4	11	2015	335^
11	No	RFEP	2	2010	5	4	5	5	3	10	2014	428
12	No	RFEP	9	2012	4	5	4	3	4	10	2014	371

Note. For Special Ed. Classification, OHI=Other Health Impairment and SLD=Specific Learning Disability; for Language Classification, LEP=Limited English Proficient (i.e., English Learner) and RFEP=Reclassified Fluent English Proficient (i.e., formerly English Learner); for CELDT, L=Listening, S=Speaking, R=Reading, and W=Writing. Students with asterisk (*) for # Years EL did not meet the reclassification criteria based on most recent CELDT. Students with caret (^) for CAHSEE Score did not meet minimum threshold for diploma eligibility based on most recent test record.

Appendix B

Think Aloud/Verbal Protocol Administration

Introduction

[*Before starting the interview, interviewer introduces him/herself to respondent. Make the student feel comfortable*].

[*Initial Instructions*]
I: Hello. Today is *[date]* and I am here with *[ID]* First of all, I would like to thank you for volunteering to be part of this think aloud. I am interested in knowing at how students at your school answer SAT-related questions. I will not be timing you, but please try the best that you can. Think as if you were taking the real SAT. Nobody will know how you answered these questions today. If you see me writing during this session it is just to jot down notes as we go along. I am going to audio-record what we talk about just so that I can remember what we talked about today. Is that okay with you? *[Wait for respondent to respond]*. Do you have any questions?

R: [*student responds or nods*]

I: Please turn to page 2 of the booklet in front of you. These are some questions about yourself that I would like for you to complete.

[*Wait for student to finish and answer and questions student may have while completing page 2*]

Practice Think-Aloud: Model Passage
I: Thank you. Now, let's transition to the task for today. We will be focusing on the critical reading section of the SAT. In this task I am going to have you say everything out loud. I am going to have you read a couple of passages from an old version of the critical reading section of the SAT. Afterwards, I am going to have you read the questions and answers. I would like for you to do all the reading out loud. I also would like for you to say out loud everything that you are thinking about when you read the passages. This may include your thoughts about the topic of the passage, identifying any words that seem difficult or unfamiliar to you using this highlighter, using another language other than English to understand a word or phrase, identifying any test-taking strategies you use, and any other thoughts that come to mind when you read the passages). I will first do an example of what a think aloud is like. Turn to page 3. Here you see a short text followed by a question. I will read the passage, the question, and the answers out loud and I will say out loud everything that comes to my mind.

[*Interviewer models for interviewee what think-aloud is*]

I: [incorporate from audio]

[*Interviewer finishes the model for think-aloud*]

I: So now you have a sense of what I would like for you to do when you do the think aloud. Do you have any questions?
[*Wait for interviewee to respond*]

Practice Think-Aloud: Passage 1
Now, what you have in front of you is a passage of the reading section of an old SAT exam. Remember, it is really important that you say out loud everything that you are thinking about while you complete the test. Do you have any questions? [*Wait for respondent to respond*]. You can begin.

[*Interviewer turns on audio-recorder*]

R: *Student begins.* [*make note of the time that they take*]

[*I: If student does not think aloud during passage 1. Interviewer should prompt:*
You did no say very much. I'll like you tell me out loud what you are thinking about. Remember, I want to hear you talking while you are thinking]

Thinking-Aloud Administration: Passage 2

I: Nice work. Now we will continue doing the same thing with a different passage. Remember read the passage, the questions, and answers out loud while you complete the test. Say out loud everything that comes to mind while you decide how to answer the questions. You may begin.

[*If student takes more than 30 seconds to respond the question, interviewer prompt:*
Think about any test-taking strategies you may use to help you answer the question

If student is unable to get an answer after the 30 seconds, interviewer prompt:
How about if we move on to the next question*]

R: *Student begins.* [*make note of the time that they take*]

When Think-Aloud is done

[*In the students' verbalizations, do they mention and do the following:* **a) student identified words that were difficult for them; b) student paraphrased the questions and answers in their own words; c) student described strategies; c) did the student use any other language other than English.*]**

[*If yes to all four, say the following*]:

I: That is all I have for today. I want to thank you again for volunteering to take part of this think aloud today. I really appreciate your time and efforts. We are all done for today.

Additional questions and things that do not appear during think a loud (*Ask these questions, only if the specific things you are looking for in the interview do not come up during the verbalization of the students' thought processes*)

[*If student does not identify any of the following during verbalization*]
   a) **Student identified words that were difficult for them**
   b) **Student paraphrased the questions and answers in their own words**
   c) **Student described strategies**
   d) **Did the student use any other language other than English**

[*a) Student identified words that were difficult for them*. *Have the student identify difficult words by highlighting or marking words in the passage, questions, and answers that seem difficult to them*]

1. I: Nice work you did there. Now, I would like for you to go through the exam once more and identify any words in the passage, the questions, and the answers that you may have thought of as unfamiliar.

   [*Student might say that none were unfamiliar. If that is the case and that was the only criteria missing, then say the following*]

   I: That is all I have for today. I want to thank you again for volunteering to take part of this think aloud today. I really appreciate your time and efforts. We are all done for today.

[*b) Student paraphrased the questions and answers in their own words*. *If student does not paraphrase the questions or the answers, ask the student to tell you in their own words what the questions asked them and what answers meant to them.*]

1. I: Nice work you did there. Now, what I would like for you to do is to tell me in your own words what each question asked you and also what each answer means to you. Let's begin with question number 1.
   a. *Ask this question, subsequently for each question in the exam [interviewer may not have to do it for each question--depends on each individual student]*.

   [*Wait for student to finish. If this was the only criteria missing, then say the following*]

   I: That is all I have for today. I want to thank you again for volunteering to take part of this think aloud today. I really appreciate your time and efforts. We are all done for today.

[*c) Student described strategies.* *This will depend on each individual student and question on the exam*].

1. I: Nice work you did there. Now, what I would like for you to do is described me any strategies you used for question (s) (insert question number here) [depends on each of the student's responses]. Let's begin with question number (insert question number here).

   > [*Wait for student to finish. If this was the only criteria missing, then say the following*]

I: That is all I have for today. I want to thank you again for volunteering to take part of this think aloud today. I really appreciate your time and efforts. We are all done for today.

[***d) Did the student use any other language other than English.*** *Ask this question if this does not come up under criteria c (student described strategies). Question is directed for the ELL students.*]

1. I: Nice work you did there. I have one last question to ask you. Did you use any other language other than English to read and comprehend the passage?

   > [*Wait for student to respond. Follow-up if necessary*].

   a) I: Did you use any other language other than English to help you understand the questions and the answers?

      > [*Wait for student to respond. Follow-up if necessary*].

      > [*Wait for student to finish. If this was the only criteria missing, then say the following*]

I: That is all I have for today. I want to thank you again for volunteering to take part of this think aloud today. I really appreciate your time and efforts. We are all done for today.

Appendix C

Reading Passage and Questions

Questions 2-5 are based on the following passage.

The following passage is an excerpt from a 1909 novel.
Georgia, the main character, is a reporter in an otherwise
all-male newsroom.

Georgia was to be married. It was the week before
Christmas, and on the last day of the year she would
become Mrs. Joseph Tank. She had told Joe that if
they were to be married at all they might as well get it
5   over with this year, and still there was no need of being
married any earlier in the year than was necessary. She
assured him that she married him simply because she was
tired of having paper bags waved before her eyes every-
where she went and she thought if she were once officially
10   associated with him people would not flaunt his idiosyn-
crasies at her that way. And then Ernestine, her best friend,
approved of getting married, and Ernestine's ideas were
usually good. To all of which Joe responded that she
certainly had a splendid head to figure it out that way.
15   Joe said that to his mind reasons for doing things weren't
very important anyhow; it was doing them that counted.

Yesterday had been her last day on the paper. She had
felt queer about that thing of taking her last assignment,
though it was hard to reach just the proper state, for the
20   last story related to pork-packers, and pork-packing is
not a setting favorable to sentimental regrets. It was just
like the newspaper business not even to allow one a little
sentimental harrowing over one's exodus from it. But the
time for gentle melancholy came later on when she was
25   sorting her things at her desk just before leaving, and
was wondering what girl would have that old desk—if
they cared to risk another girl, and whether the other poor
girl would slave through the years she should have been
frivolous, only to have some man step in at the end and
30   induce her to surrender the things she had gained through
sacrifice and toil.

As she wrote a final letter on her typewriter—she did
hate letting the old machine go—Georgia did considerable
philosophizing about the irony of working for things only
35   to the end of giving them up. She had waded through snow-
drifts and been drenched in pouring rains, she had been
frozen with the cold and prostrated with the heat, she had
been blown about by Chicago wind until it was strange

there was any of her left in one piece, she had had front
40   doors—yes, and back doors too—slammed in her face,
she had been the butt of the alleged wit of menials and
hirelings, she had been patronized by vapid women as
the poor girl who must make her living some way, she
had been roasted by—but never mind—she had had
45   a beat* or two! And now she was to wind it all up by
marrying Joseph Tank, who had made a great deal of
money out of the manufacture of paper bags. This from
her—who had always believed she would end her days
in New York, or perhaps write a realistic novel exposing
50   some mighty evil!

*the area regularly covered by a reporter

2. Based on information presented in the passage, which
best describes what Georgia was "tired of " (line 8) ?

(A) Being forced to earn a living
(B[23]) Being teased about Joseph Tank
(C) Being considered a hack writer by some
of her colleagues
(D) Being betrayed by her supposed friends
(E) Being the only woman in the newsroom

3. In line 27, "poor" most nearly means

(A) pitiable
(B) indigent
(C) inferior
(D) humble
(E) petty

4. Which most resembles the "irony" mentioned
in line 34?

(A) A worker moving to a distant state to take
a job, only to be fired without warning
(B) An executive making an important decision,
only to regret it later
(C) An athlete earning a starting position on
a good team, only to quit in midseason
(D) A student studying for a major exam, only
to learn that it has been postponed
(E) A person purchasing an expensive umbrella,
only to lose it on the first rainy day

5. In context, the phrase "This from her" (lines 47-48)
helps to suggest that a

---

[23] Answer choices that are in highlighted in yellow are the correct answer for each question.

(A) specific feeling is quite heartfelt
(B) stated viewpoint is highly personal
(C) certain decision is out of character
(D) particular behavior is extremely upsetting
(E) given attitude is unsurprising

Codebook

Table 13

Reading and Vocabulary Challenges

Reading Miscues

Code	Definition	Observed	Student Self-Reported
Word Substitution **a. *Student self-corrects**** **b. Student does not self-correct*** ***a. Meaning of text is compromised**** **b. Meaning of text is not compromised***	Student substitutes a word not in the text for another word that is in the text.	Student 1: "Yesterday had been her last day on the paper. She had felt queer about that thing of taking her last exa ass **assessment through** it was hard to reach just to the proper state for the last story related to…" (**Student substitutes**: 'assignment though' for 'assessment through') b. Student does not self-correct b. Meaning of text is not compromised	No occurrence
Word Insertion ***a. Student self-corrects**** **b. Student does not self-correct*** ***a. Meaning of text is compromised**** **b. Meaning of text is not compromised***	Student inserts a word that is not in the text.	Student 2: "Georgia did **not** considerable philoso arrghh! Georgia did considerable philosophizing about the irony of working for things only to the end of giving them up." (**Student inserts:** 'not' which is not in the text) a. Student self-corrects b. Meaning of text is compromised	No occurrence
Pronunciation ***a. Student self-corrects**** **b. Student does not self-correct***	Pronunciation of a word is incorrect. Pronunciation has been checked for accuracy. Student may self-correct and they may be successful or not.	Student 8: "And it says in line 27, poor most likey means, pitable, **indigent [indigent, indi-gent]** inferior, humble, or petty. I will	No occurrence

		say piti-pitable." **indigent,…** (**Student mispronounces:** 'indigent') a. Student self-corrects	
Skip/Omission *a. Student self-corrects** *b. Student does not self-correct** *a. Meaning of text is compromised** *b. Meaning of text is not compromised** *a. word-level** *b. line/sentence level**	Student skips/omits a word or line from the passage. This miscue could compromise the meaning of the passage.	Student 1: "…Joseph Tank, who had made a great deal of money **out** of the manufacture of paper bags." (**Student omits:** 'out' in the text) a. Student does not self-correct a. Meaning of text is compromised a. word-level	No occurrence
Repetition *a. word-level** *b. line/sentence level**	Student repeats a word or line may be to consolidate the meaning of the text. If repetition is too frequent it may mean that the text is too hard and flow may be interrupted at expense of comprehension.	Student 11: "She assured him that she married him simply because she was tired of having paper bags waved before her eyes everywhere [/] **having paper bags waved before her eyes everywhere** she went…" (**Student repeats** b. line/sentence level	No occurrence
Reading Challenges*			
Code	Definition	Observed	Student Self-Reported
Reading challenge when reading*	Student self-aware descriptions, narrations, or explanations dealt with reading challenges. May involve planning,	No occurrence	**Example 1:** Student 1: "But the time for gently melancholy…[Okay, I don't know. I think I know

	monitoring, evaluating, and comprehending.		this word, but **I'm not pronouncing right.**]" (Student acknowledges that they are not pronouncing a word correctly). **Example 2:** Student 1: "So she wants to get married, but she's already married. She wants to marry to this Joe, but she's married to Joseph Tank or something? **I don't know what I'm reading.**" (Student acknowledges that they don't know what they are reading).
Reading challenge when answering question*	Student self-aware descriptions, narrations, or explanations dealt with reading challenges. May involve planning, monitoring, evaluating, and comprehending.	No occurrence	**Example 1:** Student 11: "And then, I don't know what **this is so hard for me to find what's what suggests this**. So, it's like really hm yeah. And then even if I reread the sentence I still don't get it because…" (Student acknowledges that it is hard for her to find the answer). **Example 2:** Student 5: And then, I guess that means like um, I don't know. I mean, **it does not really tell me the answers here.**" (Student acknowledges that the answer choices given are not the answer that he has in mind).
Comments about vocabulary word(s)*			

Code	Definition	Observed	Student Self-Reported
Vocabulary Challenge*	Descriptions or explanations of challenges with vocabulary words in the text, in the questions, or the answer choices. The student may describe that they do not know what a word means.	No Occurrence	**Example 1:** Student 11: Okay, **so this whole paragraph doesn't really make sense to me because it has a lot of words [/] it contains a lot of word that are sort of confusing.** For example, the *frivolous* one and *toil*. Like the very last word in the paragraph. Umm *harrowing* and um *queer*. Um yeah." (Student describes that they do not understand a particular section in the text because of vocabulary words that are confusing). **Example 2:** Student 1: "She should have been frivolous, frivolous. **I don't know what *frivolous* means.** I don't know." (Student acknowledges that they do not know what a word means). **Example 3:** Student 11: **Well, I don't know what *indigent* or petty petty means.** So, I'll have to cross those out. Cause I don't want to choose something that I don't know." (Student acknowledges that they don't know what two vocabulary words mean). **Example 4:** Student 11: "…-if they cared to risk another girl, and whether the other poor girl

would slave through the years she should have been *frivolous,* **[I don't know what that means. I'll underline that]** only to have some man step in in at the end and induce her to surrender the things she had gained through sacrifice and toil."

(Student describes that they do not know what a vocabulary word means and underlines that word).

Note. Codes in bold are main codes and codes that are italicized are sub codes. Codes that are marked with an asterisk are codes that emerged in an inductive manner.

Table 14

Metacognitive and Reading Related Strategies

1) Metacognitive behaviors*

Code	Definition	Observed	Student Self-Reported
*a. underlines, highlights, makes notes (including writing notes or keywords on the margin of the text) *** *1. When reading** *2. When answering question**	Student may underline or highlight words or lines in the passage while they are reading or answering questions. They may also write notes or keywords on the side of the margin of the passage.	Student 7: "And also **melancholy**. I heard of it before, but yeah, I also don't know what it means." (Student underlines 'melancholy' while he says this statement when reading)	Student 7: "…-slammed in her face, she had been, she had been the butt of the alleged wit of menials and hirelings. **[I'm will highlight menials, and hireling.** I never heard of those words before, neither.]" (Student explicitly describes that they are going to highlight two vocabulary words when reading).
*b. Student rereads**	Student may reread a section of the text as they are reading or	Student 12: "And now she was to wind it all up by marrying	Student 11: "Okay, **so I'll have to reread that sentence again.**

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| 1. *when reading**
2. *when answering question**
   i. *section of text**
   ii. *question**
   iii. *answer choice** | answering a question. Student may also reread a question or answer choice. | Joseph Tank, who had made a great deal of money out of the manufacture of paper bags. This from her–who had always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!"

(Student rereads section of the text when testing) | So as she wrote a final letter on her typewriter, she did hate letting the old machine go."

(Student explicitly describes that they have to reread a particular section of the text and this happened when they were testing or answering the question.) |

2) Reading behaviors

Code	Definition	Observed	Student Self-Reported
a. Text summary/paraphrase 1. *when reading** 2. *when answering question**	Student summarizes or paraphrases a section of the text while reading or answering a question. The student may maintain the meaning or not of the text.	Student 2: "So I guess right here she's just talking about leaving her job as she's gonna get married. So I guess she's gonna have to leave her job and she's just talking about how, just thinking of I guess the next person who's gonna be taking her place and how she's leaving everything for her husband; I suppose." (Student summarizes section of the text when reading)	No occurrence
b. Making connections 1. *when reading** 2. *when answering question**	Student makes connections about the events that are mentioned in the passage. Student may also make	Student 12: "I don't think it's this because from what it says I'm comparing it to the passage. Um, she did did do a lot and it's	No occurrence

	connections between the question/answer with what happens in the passage.	not like she was she was doing something to get a higher position. Like she was doing it because she liked doing it. She was happy with what she was doing." (Student makes connections between what happens in the text with answer choice)	
c. Inferring 1. when reading* 2. when answering question*	Student uses prior knowledge and textual information to draw conclusions, make critical judgements, and form interpretations from the text. Student may also make predictions, or new ideas (Anderson & Pearson, 1984).	Student 12: "…what it's talking about is that um she worked hard to do something just for a girl to…It talks about a girl and a man (21:34-21:40) and then she's talking about her life, actually. That she that she did sacrifices for that job and she's leaving because she met a guy, a man in which I think it's Joe to take all her effort and everything away. **I mean, I guess from right now for nothing**." (Student uses textual information to form her interpretations from the text when answering the question)	No occurrence

d. Analyzing 1. when reading* 2. when answering question*	Student makes close, careful, or systematic examination of the text	Student 5: "Okay, yeah, yesterday had been the last day on the paper. Is she literally talking about the paper or she's talking about a metaphor she's using?" (Student is analyzing this portion of the text by making careful examination of the text).	No occurrence

3) Vocabulary Strategies*

Code	Definition	Observed	Student Self-Reported
a. Comments about vocabulary word(s)* 1. knowing vocabulary word(s)	Student narrations about knowing a particular vocabulary word in the text.	Not applicable	Student 11: "…well, there are no hard words. I get it. Yeah. I get all the choices." (Student describes that they know the vocabulary words in the answer choices)
b. defining vocabulary in English* 1. when reading* 2. when answering question*	Student defines a vocabulary word from the passage or from the question or answer choices. The definition may be correct or incorrect.	Not applicable	Student 9: "Um, inferior inferior is the opposite of superior so it would probably be somewhere below, or like not worthy, or like not sure." (Student defines vocabulary word in English, and interestingly, uses a strategy to help her define the vocabulary word.)
c. defining vocabulary in a language other than English (LOTE)*	Student translates a vocabulary word to another language. Student correctly or	Not applicable	Student 8: Because in Spanish, pitiable would be like, like, in Spanish, that poor

| | incorrectly defines a vocabulary word in another language other than English. | | would be like 'pobresita'. Feeling like sorry for the person."

(Student translates word into Spanish and provides a definition) |
| *1. when reading** *2. when answering question** | | | |

4) Testing Metacognition

Code	Definition	Observed	Student Self-Reported
a. Process of elimination to answer question *1. with written notation** *2. with verbal notation** *3. with verbal & written notation**	Student eliminates answer choice after discussing why an answer choice is not the correct one. In addition, they also cross out the answer choice.	Not applicable	Student 1: Like, I don't think it's B cause she's not regretting it. She doesn't sound like she's regretful, like, so I think it's A." (Student describes how an answer choice is not the correct one, only noting it verbally.)
b. Use of other form of testing strategy* *1. with written notation** *2. with verbal notation** *3. with verbal and written notation**	Student uses some other type of testing strategy to answer questions. Such as, guessing.	Not applicable	Student 1: So, I'm guessing it's pity cause I don't know what "inferior" means." (Student guesses on answer choice because they explain that they do not know what the other answer choice means).

Note. Codes in bold are main codes and codes that are italicized are sub codes. Codes that are marked with an asterisk are codes that emerged in an inductive manner.

Table 15

Questions on the SAT critical reading section that students answered correctly or incorrectly

Student	Grade	Gender	LP Status	Sp Ed Status	SAT critical reading comprehension test questions				
					1	2	3	4	Total
Lower Performance Group									
1	12	F	RFEP	N	0 (A)	0 (E)	0 (A)	0 (B)	0
3	12	F	RFEP	OHI	0 (E)	0 (D)	0 (B)	0 (B)	0
5	12	M	RFEP	N	1	0 (D)	0 (A)	0 (D)	1
6	11	M	LEP	SLD	0 (D)	1	0 (B)	0 (E)	1
7	11	M	RFEP	N	0 (A)	0 (B)	0 (D)	0 (B)	0
10	11	F	LEP	SLD	0 (A)	1	0 (B)	0 (D)	1
Mid Performance Group									
2	12	F	RFEP	N	0 (E)	1	1	0 (B)	2
9	12	F	RFEP	N	0 (E)	1	1	0 (D)	2
11	11	F	RFEP	N	1	0 (C)	0 (A)	1	2
Higher Performance Group									
4	12	F	RFEP	N	1	1	1	1	4
8	11	F	RFEP	N	1	1	1	1	4
12	11	F	RFEP	N	1	0 (C)	1	1	3

Note. M means male and F means female. OHI mean other hearing impairment and SLD means specific learning disability. Letters in parenthesis represent the students' answer choice.

Appendix F – Student sample quotes for each category of observed and reported challenges and strategies by performance group

Table 16
Example excerpts from the lower performance group of reported reading challenges

RFEP Group	Instances of reported reading challenge
Student 1 (0% on the test)	**Instance 1 (while reading):** "I have no idea what I'm reading" **Instance 2 (while reading):** I'm not pronouncing it right."
Student 3 (0% on the test)	**Instance 1 (while reading):** INT: "Can we can we go back to the first paragraph? Sorry, and I see that you highlighted there this word. Can you tell me why did you highlight it? STU3: Um, **pronunciation.**
Student 5 (25% on the test)	**Instance 1 (while reading):** "Hmm, so I guess um in line 15, I kind of don't understand what he's saying." **Instance 2 (while reading):** "So I guess when you read like a word it throws me off. So if I don't read a word and I don't understand what it's saying, it officially like it starts throwing me off." **Instance 3 (while reading):** "Because at first, here it was talking about marriage and then right here on the second one it was talking about something else. So, I don't know what's the connection between the first and the first and number two."
Student 7 (0% on the test)	**Instance 1 (while answering a question):** "Yeah, I don't know what this means certain decision is out of character like, **I don't know how to explain it.**" **Instance 2 (while answering a question): "**Well, all the answers look like similar and like…"
EL Group	**Instances of reported reading challenge**
Student 6 (25%)	**Instance 1 (while reading):** INT: "So after you've now finished reading what um do you understand out of the passage? STU6: **I got lost in forty.**

| Student 10 (25%) | **Instance 1 (while reading):** "Okay, **I don't know if I'm thinking right, or if I'm just saying stuff.** The girl, I don't know, she's marrying the guy for like stuff. I don't know if she loves him stuff, **but I don't know**, but uhh."
 Instance 2 (while reading): STU10: "I don't know. I don't know what it means about this passage."
 Instance 3 (while answering a question): STU11: "Like, um. I'm gonna try reading it again. (35:59-36:35) I don't know, maybe then. **I read it, but I'm not sure.** (36:42-36:50)
 INT: What makes you feel unsure after you have read that part?
 STU10: **I don't know, I guess their marriage, the money, how the last one says evil."**
 Instance 4 (while answering a question): STU10: "I don't think it's indigent. I don't think that's one of them. Pitiable (26:09-26:21). I don't know, I guess, um, like **I want to choose an answer, but I don't even know what it means, so I don't know.** |

Table 17

Example excerpts from the mid performance group of reported reading challenges

RFEP Group	**Instances of reported reading challenge**
Student 2 (50% on the test)	**Instance 1 (while reading):** STU2: "Um, so **I struggled with this word**: philosophizing." **Instance 2 (while reading):** STU2: "And then, **I guess this word threw me off a little bit** [%com: Student is referring to "idiosyncrasies"], cause I guess I was really, I guess can say focused sort of going on with the flow, but once like this word came it kind of just like distrac-[/] INT (8:27): That flow got distracted." **Instance 3 (while reading):** STU2: "'…once officially associated with him people would not flaunt his idio:::syn:::crasies idiosyncrasies at her that way.' **So, that word I'm not quite sure what it means. I obviously struggled with saying it."**

Student 9 (50% on the test)	**Instance 1 (while reading):** STU9: "I don't really understand the mighty evil part. **I don't know if that's a good thing or a bad thing.** Hmm, (3 second pause). Not sure…" **Instance 2 (while reading):** STU9: "Hmm, who had made a great deal of money out of paper bags. **It's kind of confusing** because [/] paper bags…Maybe I'll continue reading." **Instance 3 (while answering a question):** STU9: "Which most resembles the 'irony' mentioned in line 34? About the irony of working for things only to the end of giving them up. So, I'd probably try to find something that related to the choices that are given here. A worker moving to a distant state to take a job, only to be fired without warning, hmm. An executive making an important decision, only to regret it later. An athlete earning a starting position on a good team, only to quit in midseason. **This is hard because it's talking about something that's like something good, and then they sort of back out last minute, and I think all of these have that content.**"
Student 11 (50% on the test)	**Instance 1 (while reading):** STU11 (11:28): "Okay, **so this whole paragraph doesn't really make sense to me because it has a lot of words [/] it contains a lot of words that are sort of confusing.** For example, the frivolous one and toil. Like the very last word in the paragraph. Umm harrowing and um queer. Um yeah. INT (11:57): So you think because you don't know these words, you're kind of like losing…? STU11 (12:01): Yeah sort of. The meaning of that paragraph. **Instance 2 (while reading):** INT (9:18): "Can I ask why you're rereading that last portion of the paragraph? STU11 (9:22): Oh yes, **cause the first time I read it didn't really make sense to me,…**" **Instance 3 (while answering a question):** STU11: "I [/] I think the phrase is is unclear. This from her. And then, well specifically saying the phrase this from her and then they're asking me to to find the answer choice that helps suggest [/] that helps suggest this. **And then, I don't know what this is so it's hard for me to find what's [/] what suggests this.** So, it's like real hm yeah. **And then even if I reread the sentence I still don't get it because…**" **Instance 4 (while answering a question):** STU11: "**If this was the actual SAT exam I would fail like hard.**"

Table 18

Example excerpts from the higher performance group of reported reading challenges

RFEP Group	Instances of reported reading challenge
Student 4 (100% on the test)	**Instance 1 (while reading):** STU4: "See that's what happens to me when I'm reading sometimes like I know it's like such an important test then I also like to read important things and I get so into it and I can't let it go. Like I'm always like, 'this is such a nice passage.' What would my friend think about this instead of just get it done? That's why I remember a lot of things that I read like I've used them in some of my classes like the passages I've read like oh but I've read somewhere it's actually like in SATs or AP Lit or something. INT: That can be good. STU4: "**Yeah, but then it's like I wasted time thinking about them when I could be getting higher scores or something**." **Instance 2 (while reading):** STU4: "Georgia did considerable 'phisophizing'. **God, I can't read sometimes or understand these words,…**" **Instance 3 (while answering a question):** STU4: "Which most resembles the "irony" mentioned in line 34? A worker moving to a distant state to take a job, only to be fired without warning. Perhaps, but not really. An executive making an important decision, only to regret it later. Nope, she has no regrets yet. Who knows it might be good of her. An athlete earning a starting position on a good team, only to quit in midseason. Nope. Wait. A student studying for a major exam, only to learn that it has been postponed. Not really. INT: There's um answer choice E on the next side. STU4: A person purchasing an expensive umbrella, only to lose it on the first rainy day. No, oh gosh. **These mean the same to me. There's no solid example.**" **Instance 4 (while answering a question):** STU4: "So the beginning of four XX like she worked so hard in the end she's giving it up. That's [/] petty is not the word. **That one's a trick one, though.**"

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Student 8 (100% on the test)	**Instance 2 (while answering a question):** STU8: "It says which most resembles the irony mentioned in line 34. So then, line 34 was: Georgia did considerably philosophy about the irony of working for things only to the end of giving them up. So then it says (A) A worker moving to a distant state to take a job, only to be fired without warning; (B) an executive making an important decision, only to regret it later; (C) an athlete earning a starting position on a good team, only to quit in midseason; or (D) A student studying for a major exam, only to learn that it has been postponed; and (E) a person purchasing an expensive [um-] umbrella, only to lost it on on the first rainy day. So then (13:40-13:47), the irony of working for things only to the end of, (13:50-13:52) I would say::: [/] so then, I know resembles, most resembles INT: What does, what does that work mean to you? STU8: Like, wha-, like what situation of that can be associated with the other situation. Okay, hm. (14:08-14:14) **But then when I think of it they all sound alike.**"
Student 12 (75% on the test)	**Instance 1 (while reading):** STU12 (14:37): "I'm gonna move on to see if I have more information on sentence three. 'To all of which Joe responded that she certainly had a splendid head to figure it out that way. Joe said that to his mind reasons for doing things weren't very important anyhow; it was doing them that counted.' **There's still nothing that I could reference to for sentence three so at this point I don't have any thoughts as to why that sentence was there.**" **Instance 2 (while reading):** STU12: "'She assured him that she that she married him simply because she was tired of having paper bags waved before her eyes everywhere she went and she thought if she were once officially associated with him people would not flaunt his idiosyncrasies [I don't know what that means. I'm gonna underline that] at her that way. **Um, because I'm close like getting lost from where I started and where I ended. Imma box it**."

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Table 19

Example excerpts from the lower performance group of reported vocabulary challenges

RFEP Group	Instances of reported vocabulary challenge
Student 1 (0% on the test)	**Instance 1 (while reading):** "I don't know what **menials** are and **hirelings**." **Instance 2 (while answering a question):** "I don't know what **pi ti able** means or **in di gent."** **Instance 3 (while answering a question):** "…fr[i]volous, fr[i]volous. I don't know what **fr[i]volous** means."
Student 3 (0% on the test)	**Instance 1 (while reading):** "**Melancholy melancholy**. I don't know. INT (17:26): "You don't know what it means? STU3: And pronunciation." **Instance 2 (while reading):** INT (16:52): Can we can we go back to the first paragraph? Sorry, and I see that you highlighted there this word [researcher is referring to the word '**idiosyncrasies**']. Can you tell me why did you highlight it? STU3 (17:06): Um, pronunciation. INT (17:07): **Okay, but do you know what it means?** STU3 (17:10): **No.**
Student 5 (25% on the test)	**Instance 1 (while reading):** "…she had been the butt of the alleged wit of menials and **hirelings** [Yes, I don't know what that means]…" **Instance 2 (while reading):** "…'would not flaunt his **idiosyncrasies'** [Yeah, I don't know what that word means] at her that way."

Student 7 (0% on the test)	**Instance 1 (while reading):** "I heard the word **toil** before, but I don't know what it means." **Instance 2 (while reading):** "And also **melancholy**. I heard of it before, but yeah, I also don't know what it means." **Instance 3 (while answering a question):** "So I heard the word "**irony**" before. And::: (17:52-17:56): Pause. INT (17:57): And you, do you know what it, the, what it means, like the definition of irony? STU7: (18:03): I have some teacher say it, but I forgot the definition, so. But like, I think it means like (18:12-18:18) like, I forgot." **Instance 4 (while answering a question):** "Hmm, I heard of the word **indigent** before, but I don't know the definition of it. And then, **pitiable** I never heard of before."
EL Group	**Instances of reported vocabulary challenge**
Student 6 (25%)	**Instance 1 (while reading): "**The new word is **toil**." **Instance 2 (while reading):** INT (17:06): "And then you were going to highlight a word there [researcher is referring to the word **'idiosyncrasies'**]. STU6 (7:09): Yeah the new word. INT (7:11): So, you don't know what that means? STU6 (7:13): **No. It's pretty new.**"
Student 10 (25%)	**Instance 1 (while answering a question):** "And **indigent** uh it doesn't sound like it would be something like poor, but **I don't know what it means."** **Instance 2 (while answering a question):** "Pretty [/] petty. **Petty, I'm not sure what it means** for E." **Instance 3 (while answering a question):** "'Yesterday has been her last day on the paper. She had felt **quitter quitter**' (In the original passage it is 'queer') [**I'm not really sure. I heard it, but I'm not exactly sure of what it means.**]

Table 20

Example excerpts from the mid performance group of reported vocabulary challenges

Student	
RFEP Group	**Instances of reported vocabulary challenge**
Student 2 (50%)	**Instance 1 (while reading):** " '…and she thought if she were one once officially associated with him people would not flaunt this **idio:::syn:::crasies idiosyncrasises** at her that way.' So that word **I'm not quite sure what it means**. I obviously struggled with saying it."
Student 9 (50%)	**Instance 1 (while reading):** "'If they cared to risk another girl, and whether the other poor girl would slave through the years she should have been frivolous [/] she would have been frivolous.' [**Frivolous – I've heard of this word before too, but I'm not sure what this means.]** **Instance 2 (while reading):** "'It was just like the newspaper business not even to allow one a little sentimental harrowing over one's exodus from it. [**Exodus, like I've heard of this word because I'm not exactly sure what it means.]** **Instance 3 (while answering a question):** "Um, and petty, I don't know if **petty** and **pity** is the same thing, or it's probably different. **So, don't really know what that means.**"
Student 11 (50%)	**Instance 1 (while answering a question):** "Inferior has to do [/] has to do with inferiority. Um **inferiority** I heard of [/] I heard of inferiority. **I learned it in English class, but I forgot the definition.**" **Instance 2 (while answering a question):** "**I don't know what indigent or petty petty means.** So, I'll have to cross those out cause I don't want to choose something that I don't know." **Instance 3 (while answering a question):** "**Indigent. I don't know what that means.** Um **inferiority** I heard of [/] I heard of inferiority. I learned it in English class, but **I forgot the definition.** So um let's skip that. Petty petty:::**I'm not sure what petty means, but I heard of it before.**"

Table 21

Example excerpts from the higher performance group of reported vocabulary challenges

RFEP Group	Instances of reported vocabulary challenge
Student 4 (100%)	**Instance 1 (while reading):** INT: "And why, is that the answer for you and not the others? What do the other words mean for you? STU4: This just doesn't [/] **I don't know the word. I feel like it's not the answer. Indigent.**" **Instance 2 (while reading):** "'She assured him that she married him simply because she was tired of having paper bags waved before her eyes everywhere she went and she thought if she were once officially associated with him people would not flaunt his **idiosyncrasies** as her that way. [**Whatever that means.]"**
Student 8 (100%)	**Instance 1 (while answering a question):** "I don't know what B is referring to [student is referring to '**indigent**'] **Instance 2 (while reading):** "Oh and **queer**, but that was like defining…." [Student is trying to describe that she underlined that word 'queer' because she does not know the definition of the word.]
Student 12 (75%)	**Instance 1 (while reading):** "…if she were once officially associated with him people would not flaunt his **idiosyncrasies** [**I don't know what that means.** I'm gonna underline that.]" **Instance 2 (while reading):** " 'It was just like the newspaper business not even to allow one a little sentimental harrowing harrow **harrowing** [**I don't know what that means**] over one's exodus from it (19:12-19:19). I've heard of the word '**harrow**', but the word this doesn't ring a bell right now." **Instance 3 (while reading):** "…me me **menials** [I don't know what that means]."

Table 22
Example excerpts from the lower performance group of observed metacognitive behaviors (underlining, highlighting, and making notes)

RFEP Group	Instances of underlining, highlighting, and making notes	Other code(s) that applied

Student 1 (0%)	**Instance 1 (while reading):** "…if she were once officially associated with him people would not flaunt his **idiosyncrasies** [whatever that thing is syncrasies] at her that way." **Instance 2 (while answering a question):** "I don't know what **pi ti able** means…	**Instance 1:** a) Observed pronunciation miscue **Instance 2:** a) Observed pronunciation miscue, b) Reported vocabulary challenge
Student 3 (0%)	**Instance 1 (while reading):** "…if she were once officially associated with him people would not flaunt his **in in crisis** at her that way." [**in in crisis** means 'idiosyncrasies' in the text] **Instance 2 (while answering a question):** "I'm thinking between B, D, and E." [marks answer choices with a dash]	**Instance 1:** a) Observed pronunciation miscue
Student 5 (25%)	**Instance 1 (while reading):** "…would not flaunt his **idiosyncrasies** [Yeah, I don't know what that word means] at her that way." **Instance 2 (while answering a question):** "Not literally poor, but mostly like humble, I would say."	**Instance 1:** a) Observed pronunciation miscue, b) Reported vocabulary challenge
Student 7 (0%)	**Instance 1 (while reading):** "And also **melancholy**. I heard of it before, but yeah, I also don't know what it means." **Instance 2 (while answering a question):** "Well, I think it was talking like something personal for her, so and then (B) mentions highly personal."	**Instance 1:** a) Reported vocabulary challenge **Instance 2:** a) Reading behavior– making connections
EL Group	**Instances of underlining, highlighting, and making notes**	**Other code(s) that applied**
Student 6 (25%)	**Instance 1 (while reading):** INT: "And then you were going to highlight a word there? STU6: **Yeah the new word** [refers to word '**idiosyncrasies**'] INT: So you don't know what that means? STU6: No, it's pretty new." **Instance 2 (while answering a question)** "Um based on information presented in the passage which best described what Georgia was "tired of" (line 8)? I think being betrayed by her supposed friends."	**Instance 2:** Reported vocabulary challenge

| Student 11 (25%) | **No instances were observed for this student** | |

Table 23

Example excerpts from the lower performance group of observed metacognitive behaviors (observed rereading)

RFEP Group	Instances of observed rereading – passage excerpts, questions, or answer choices	Other code(s) that applied
Student 1 (0%)	**Instance 1 (while reading):** "She's a student or she works in something about newspaper and then she's about to leave because the other girl [/] Oh and it says "She was sorting her things at her desk just before leaving, and was wondering what girl would have that old desk." So, she's basically leaving from that job. **Instance 2 (while answering a question):** " 'Who had made a great deal of money out of the manufacture of paper bags. This from her who had believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil.'"	**Instance 1:** Observed Reading Behavior – Text summary/paraphrase
Student 3 (0%)	**Instance 1 (while reading):** "'Yesterday had been my last day on the paper." She's um, she has let go of the…I guess she works at a newspaper company and as she goes um [/] she had felt queer about that thing of taking her last assignment though it was hard to reach just the proper state for the last story related to pork packers and pork packeting is not a set favorable to set regards regrets,'" **Instance 2 (while answering a question):** " 'Specific feel is quite heartfelt; stated viewpoint is highly personal; certain decision is out of character; particular behavior is extremely upsetting; given attitude is uprising.'"[Student rereads the answer choices to a particular question]	

Student 5 (25%)	**Instance 1 (while reading):** " 'She had a beat or two! And now she as to wind it all up by marrying Joseph Tank, who had made a great deal of money out of the manufacture of paper bags.'" **Instance 2 (while answering a question):** "She was tired of having paper bags before her eyes everywhere she went and she thought if she was once officially associated with him people would not flaunt his idiosyncrasies at her that way."	
Student 7 (0%)	**Instance 1 (while reading):** "I think getting married has a::: makes you have freedom or something, cause it says right here, **'whether the other poor girl would have, would slave through the years, she should have been frivolous,'** so they, well I don't know, getting married will make you a slave or::: or make you have freedom. And yeah that's it."	**Instance 1:** a) Reading behaviors – Text summary/paraphrase
EL Group	**Instances of observed rereading – passage excerpts, questions, or answer choices**	**Other code(s) that applied**
Student 6 (25%)	**Instance 1 (while reading):** " '…if they cared if they cared to risk another girl, whether the other poor girl would slave through the years.'"	
Student 10 (25%)	No instances were observed for this student	

Table 24

Example excerpts from the lower performance group of observed reading metacognition (reading behaviors)

RFEP Group	Instances of observed reading behaviors	Other code(s) that applied
Student 1 (0%)	**a) Text summary/paraphrase:** "So she wants to get married, but she's already married. She wants to marry to this Joe, but she's married to Joseph Tank or something? I don't know what I'm reading." **[while reading]** **b) Making connections:** "Because she's tired of (pauses for 2 seconds) cause she's leaving the newsroom, so she's gonna take that out of her mind so... I don't think the whole story is about her leaving. I think it's because she doesn't want to be like working and she has a better guy to give her the money. So I think it's A." **[while answering a question]** **c) Inferring: No excerpts were observed.** **d) Analyzing:** "It sounds like A, but I don't I don't think I caught when she was fired. Maybe, it's like in a secret little text." **[while answering a question]**	**a)** Reported reading challenge

Student 3 (0%)	**a) Text summary/paraphrase:** "I'm getting the sense that she's kind of like wanting a Prince Charming to come sweep her off her feet. INT (16:38): Okay. (16:40): Instead of her working in a newspaper company." **[while reading]** **b) Making connections:** "I guess she's making an important decision between what's good for her and what's bad like uh marriage." **[while answering a question]** **c) Inferring:** "…she's um talking about how Joe or Joseph umm made uh made a great deal of money" out of the manufacture of paper bags. So I guess she's in it for the money." **[while answering a question]** **d) Analyzing: No excerpts were observed**	c) Reading behavior – Text summary/paraphrase
Student 5 (25%)	**a) Text summary/paraphrase: "**[So she said [/] basically stating that there was no point of being married early in the year than was necessary. So they basically want to get married already.]" **[while reading]** **b) Making connections:** "I guess cause of his [/] how do you say, his defects, she was tired of basically people teasing about him, teasing her about him." **[while answering a question]** **c) Inferring:** "…so basically she has a reason not to marry him. She married simply because she was assured,…" **[while answering a question]** **d) Analyzing:** "Is she literally talking about the paper or she's talking about a metaphor she's using?" **[while reading]**	

Student 7 (0%)	**a) Text summary/paraphrase:** "Georgia wanted to get married with Joseph. She want like… (06:56-7:00): Pause. (7:01): She want like, hmm, have to like, have paper bags with her, or… Also that, Joe could do things for her too. Then, that's it**. [while reading]** **b) Making connections:** "Well I think it was talking like something personal for her, so and then (B) mentions highly personal." **[while answering a question]** **c) Inferring: No excerpts were observed** **d) Analyzing: No excerpts were observed**	**b)** Observed – underlines, highlights, makes notes
EL Group	**Instances of observed reading behaviors**	**Other code(s) that applied**
Student 6 (25%)	**a)** "I'm sure like I mean over here [/] like when they used to live in Chicago like people were mean to her or him, like people used to like slam doors in their face and the back doors too. People like him [/] they getting rejected by them, and like respect, like disrespect from them." **[while reading]** **b)** "Because B is saying, an executive making an important decision, only to regret it later. And C is, an athlete earning a starting position on a good team, only to quit in midseason. Hmmm, I'll go with B. *INT (19:38): Okay and why? Basically, irony could mean making a decision and then you regret it later in the future." **[while answering a question]** **c)** "And then umm probably like what this passage is telling me is um like…like talk about pork packers and pork packing people like who carried pigs to like make, you know, like pork chop, pork ribs." **[while reading]** **d)** "I'm sure like I mean over here [/] like when they used to live in Chicago like people were mean to her or him, like people used to like slam doors in their face and the back doors too. People like him [/] they getting rejected by them, and like respect, like disrespect from them." **[while reading]**	**c)** Reading behaviors – Text summary/paraphrase **d)** Reading behavior – Text summary/paraphrase

| Student 10 (25%) | **a) Text summary/paraphrase:** "I guess her best friend approved of her getting married so that's what I understood from that." **[while reading]**
 b) Making connections: "Oh I think I got it! I think it actually does go with this sentence, cause like the last oe saying, it says um, "working for things only to the end of giving them up. It kinda in a way means, it kinda means regretting it later. I guess she was working and then later she didn't want to finish it. So I think that's the answer…" [student is referring to answer choice B] **[while answering a question]**
 c) Inferring: No excerpts were observed
 d) Analyzing: "Okay, I don't know I don't know if I'm thinking right, or if I'm just saying stuff/ The girl, I don't know, she's marrying the guy for like stuff. I don't know if she loves him stuff, but I don't know, but uhh (18:37-18:42)
 INT: "What do you mean by stuff?
 STU10: **Like, since it says like money, like, so I don't know. I don't know if I would actually taking a test, I probably would go back to it. But like that's what I got from it. I don't know if she's marrying him for love or stuff. Especially, in the first passage it was saying that they guy was telling her if you're gonna get married we must get married right now.**" [while reading] | **c)** Reported reading challenge while reading |

Table 25
Example excerpts from the mid performance group of observed metacognitive behaviors (underlining, highlighting, and making notes)

RFEP Group	**Instances of underlining, highlighting, and making notes**	**Other code(s) that applied**

Student 2 (50%)	**Instance 1 (while reading):** "So I don't know what that word means. INT: Which one? STU2: **Exodus exodus exodus**." **Instance 2 (while reading):** "…'if she were once officially associated with him people would not flaunt this **iod…syn…crasies idiosyncrasies** at her that way.' So that word I'm not quite sure what it means. I obviously struggled with saying it."	**Instance 1:** a) Observed pronunciation miscue, b) Observed repetition miscue at the word-level. **Instance 2:** a) Reported reading challenge, b) Reported vocabulary challenge
Student 9 (50%)	**Instance 1 (while reading):** "…'if she were once officially associated with him would people would not flaunt his **idiosyncrasies** at her that way. [I think this word has a negative connotation to it.] **Instance 2 (while answering a question):** "I don't know if **petty** and pity is the same thing, or it's probably different. So don't really know what that means." **[Next to each answer choice student writes, a) bad for someone, b) determined, c) below, d) humble, e) [leaves blank]**	**Instance 1:** a) Observed pronunciation miscue **Instance 2:** a) Reported vocabulary challenge, Reading behavior – Analyzing when answering question
Student 11 (50%)	**Instance 1 (while answering a question):** "**Inferior** has to do [/] has to do with inferiority." **Instance 2 (while answering a question):** "So **pitiable**, I think that has to do with something pity."	**Instance 1:** a) Reported vocabulary strategy – defines vocabulary word [when answering question] **Instance 2:** a) Reported vocabulary strategy – defines vocabulary word [when answering question]

Table 26

Example excerpts from the mid performance group of observed metacognitive behaviors (observed rereading)

RFEP Group	**Instances of rereading**	**Other code(s) that applied**

Student 2 (50%)	**Instance 1 (while reading):** "So::: line 27 um::: if they cared to risk another girl, and whether the other girl would have would slave through the years she would have been frivolous." **Instance 2 (while answering a question):** "In context, the phrase "This from her" helps to suggest that a (A) specific feelings is quite heartfelt; (B) stated viewpoint is highly personal; (C) certain decision is out of character; (D) particular behavior is extremely upsetting; (E) given attitude is unsurprising."	
Student 9 (50%)	**Instance 1 (while reading):** "Hmm, the last part's a little bit confusing because um::: INT: From what line? STU9: This part: would make, wait, '**made a great of money out of the manufacture of paper bags. This from her–who had always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!**'" **Instance 2 (while answering a question):** "This from her–who had always believed she would end her days [/] this from her." **[student rereads this excerpt four times throughout her think aloud]**	

| Student 11 (50%) | **Instance 1 (while answering a question):** "Okay, anyway, where was I? Okay**, 'who had made a great deal of money out of the manufacture of paper bags. This from her this from her–who had always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!'" [student reread this excerpt four times throughout her think aloud].** **Instance 2 (while answering a question):** "…but the time for gentle melancholy came later on when she was sorting her things at her desk just before leaving and was wondering what girl would have that old desk–if they cared to risk another girl and whether that other poor girl would slave through the years she should have been frivolous only to have some man step in at end and induce her surrender the things she had gained through sacrifice and toil.'" | |

Table 27

Example excerpts from the mid performance group of observed metacognitive behaviors (reading behaviors)

RFEP Group	Instances of Reading Behaviors	Other code(s) that applied

| Student 2 (50%) | **a) Text summary/paraphrase:** "So, I guess right here she's just talking about leaving her job as she's gonna get married. So, I guess she's gonna have to leave her job and she's just talking about how, just thinking of I guess the next person who's gonna be taking her place and how she's leaving everything for her husband, I suppose." [while reading]
b) Making connections: "Well, A) A worker moving to a distant state to take a job, only to be fired without warning. But (2 second pause) **here she's saying, you know, she worked hard for what she wanted and she's letting it go at the end so she's giving it up. So it's a decision she made.**" [while answering a question]
c) Inferring: "Oh as I read it. Well, I think she was just tired of people not appreciating her work. I feel that people would underestimate her." [while answering a question]
d) Analyzing: "So I would probably cross out A: being forced to earn a living.
INT: Why does that answer not fit? Why do you think?
I feel that it was unnecessarily talked about her being forced to earn a living because actually that was what she liked. She wasn't forced to doing it." [while answering a question] | |

| Student 9 (50%) | **a) Text summary/paraphrase:** No instances of text summary/paraphrase were observed for this student
b) Making connections: "…'if she were once officially associated with him would not flaunt his idiosyncrasies at her that way.' [I think this would has a negative connotation to it.]
INT: Okay, and why do you think that?
STU9: Um, hold on. **Idiosyncrasies. Um, because because of the work that's before [/] that comes before it, 'would not flaunt', so she doesn't want it. So I'm guessing it's:::something negative."** [while reading]
c) Inferring: INT: "Why do you think it's a sentimental thing?
STU9: Um:::I would say that because she's sort of thinking back and she's sort of [/] it says 'wondering what girl would have that old desk' **so she's sort of like she's not ready to move on but she's kind of has to."** [while reading]
d) Analyzing: "So, maybe these strange weathers that she's like going through it's sort of like her struggles or her obstacles and even though she's gone through all of that, she still has pieces of her left. And sort of like slammed in her face. I think that's like, you know, when you're rejected or, you know, whatever circumstance." [while reading] | b) 1) Pronunciation miscue for 'idiosyncrasies'
2) Vocabulary Strategies – comments about vocabulary word |

| Student 11 (50%) | a) **Text summary/paraphrase:** "So I mean I [/] I think I get it overall, what's happening. Like she was typing on a [/] writing the letter on the typewriter. And then [/] then she was thinking about like getting married with the guy, Joseph Tank. And then, yeah." [while reading]
 b) **Making connections:** "Oh oh::: I get it. Okay so. Wow. Okay, so you know how [/] okay let me go back. **Okay, so on the first paragraph she says she's tired of having paper bags waved before her eyes everywhere she went. And then, you know how Joseph Tank is the manufacture of the paper bags, right? Okay so, I guess she was tired of um seeing the paper bags everywhere.** I think that's what she [/] what the author meant, so." [while answering a question]
 c) **Inferring:** "I guess from [/] based on the passage I read so far, I guess um the [/] **the person that she's trying to marry is in like a high class, but then I don't think she's in like a [/] in like a lower class.**" [while reading]
 d) **Analyzing:** "I guess she is using sort of **analogy** on that one. Like, I don't think people were actually waving paper bags yeah, before her eyes everywhere…" [while answering a question] | |

Table 28

Example excerpts from the higher performance group of observed metacognitive behaviors (underlining, highlighting, and making notes)

RFEP Group	**Instances of underlining, highlighting, and making notes**	**Other code(s) that applied**

Student 4 (100%)	**Instance 1 (while reading):** " 'And now she was to wind it all up by marrying Joseph Tank, who had made a great deal of money out of the manufacture of paper bags.' Oh, that's why she mentioned the **paper bag** earlier. I was wondering was that meant." **Instance 2 (while answering a question):** "She wasn't [/] I don't think it meant she did not have money at all. She was not humble. **Inferior**, petty…"	**Instance 1:** a) Reading behaviors – making connections [when reading]
Student 8 (100%)	**Instance 1 (while reading):** "…'in her face, she had been the butt of the alleged wit of **menials** and hirelings,…" **Instance 2 (while answering a question):** "Yeah, because I know that petty would be like, um, like saying a petty thing. Humble will be like 'humilde'. Inferior would be, um, feeling less. I don't know what (B) is. But then pitable sounds more like what I want to say." **[Student writes an arrow next to answer choices B, C, D, and E].**	**Instance 1:** a) No other code was applied to this excerpt. **Instance 2:** a) Vocabulary Strategies – defines vocabulary word in English, in another Language other than English, and makes comments about a vocabulary word, b) Pronunciation miscue
Student 12 (75%)	**Instance 1 (while reading):** "…'and whether the other poor girl would slave through the years she she should have been **frivolous**' [I don't know what that means],…" **Instance 2 (while reading):** " 'It was just like the newspaper business not even to allow one a little sentimental harrowing harrow **harrowing** [I don't know what that means]…"	**Instance 1:** a) Pronunciation miscue, b) Vocabulary challenge **Instance 2:** a) Pronunciation miscue, b) Vocabulary challenge

Table 29

Example excerpts from the higher performance group of observed metacognitive behaviors (observed rereadings)

RFEP Group	**Instances of rereadings**	**Other code(s) that applied**

Student 4 (100%)	**Instance 1 (while answering a question):** "'If they cared to risk another girl, and whether the other poor girl would slave through the years she would have been frivolous…'" **[student rereads this excerpt three times throughout her think aloud].** **Instance 2 (while answering a question):** " 'In context, the phrase "This from her" (lines 47-48) helps to suggest that a…" **[student rereads whi excerpt two times throughout her think aloud].**	
Student 8 (100%)	**Instance 1 (while reading):** "…this from her who always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!'" **[student rereads this excerpt two times throughout her think aloud]** **Instance 2 (while answering a question):** "In context, the phrase "This from her" line 47, 48 helps to suggest that a…" **[student rereads this excerpt two times throughout her think aloud]**	
Student 12 (75%)	**Instance 1 (while reading):** "Um, I have like, I sometimes get confused in where where words end and where words start. Um, 'she assured him that she married him simply because she was tired of having paper bags waved before her eyes everywhere she went and she thought if she were once officially associated with him people would not flaunt this idiosyncrasies at her that way.'" **[student rereads this excerpt two times throughout her think aloud].** **Instance 2 (while reading):** "'And now she was to wind it all up by marrying Joseph Tank, who had made a great deal of money out of the manufacture of paper bags. This from her – who had always believed she would end her days in New York, or perhaps write a realistic novel exposing some mighty evil!'" **[student rereads this excerpt two times throughout her think aloud].**	

Table 30

Example excerpts from the higher performance group of observed metacognitive behaviors (reading behaviors)

RFEP Group	Instances of Reading Behaviors	Other code(s) that applied

| Student 4 (100%) | a) **Text summary/paraphrase:** "I know that what irony meant was that she was working so hard in whatever she was doing, newspaper, and she wanted to make something of herself. Make a name of herself and it's ironic cause at the end she's just like, 'Oh, let me go marry someone rich.'" **[while answering a question]**
 b) **Making connections:** INT: "Okay. What makes you think it's C?
 STU4: She was in a pretty decent position. I mean she was in a room filled with men. You must be a really good person [/] like woman in very [/] um competent enough to be accepted into that kind of community, cause it was 1909. And then, now she's quitting midseason when she worked so hard to get to that place. Which is the same thing as this athlete like there's no reason to it, you got what you wanted and now you're quitting. It's super frustrating." **[while answering a question]**
 c) **Inferring:** "Okay, so she's tired [/] they were waving paper bags at her like I guess they were waving him at her like oh you're marrying this guy blah blah blah. So she was tired of people telling her to marry someone rich." **[while answering a question]**
 d) **Analyzing:** 'It was just like the newspaper business'…I guess she's comparing marriage to this newspaper business.
 INT: Why do you think she's comparing it to, to the newspaper business?
 STU4: **Because uh the sentence was randomly just put there. She was talking about the work she was doing and then it was placed there. People just usually do that when they want to say things and they just say it.**
 INT: Like out of the blue?
 STU4: Like out of the blue. **It's like you can be talking about something like, 'what am I gonna do this weekend and this and this, and you're like, 'ohh, I hate that guy, and then, because he's gonna be in one of the events you're going to or something."** [while reading]
 e) **Prediction:** "They might ask about mood. I don't know yet." **[while reading]** | a) Reading behavior – Making connections <br> b) Reading behavior - Analyzing <br> c) No other code was applied to this excerpt <br> d) Reading behaviors – Making connections
 - Reading behaviors – Inferring |

| Student 8 (100%) | **a) Text summary/paraphrase:** "…the main think of the whole story, of the working for things and then at the end giving them up. Like giving up dreams, aspirations, and everything." **[while answering a question]**
b) Making connections: INT: "Okay, and why do you think that's the best answer, the best answer? STU8: Because if we think about the whole thing, **it's talking about her having what she wanted, but having to give it up. And then, an athlete wants a good starting position on a tea-, on the team, but the, the, there are things that might make him want to quit mids-, mid-, midseason, midseason, which means he hasn't have much experience on the team. So it will be the same feeling she has, so throughout the story.**"
c) Inferring: STU8: "So then it says, 'the following passage is an excerpt from a 1909 novel. Georgia, the main character, is a reporter in an otherwise all-male newsroom.' So then, Georgia seems like a female perspective, and then, it's in all-male perspective, so she might talk about her experience contra contrary to the male experience." **[while reading]**
d) Analyzing: "So the this from her, she's now talking like, (16:22-16:25) they're like trying to show that, that it's unexpected, cause she had realistic goals and had, she had a plan, and then the plan didn't turn out as it was, so this was from her would would show um I would say that certain decision is out of character, cause they're the same." **[while answering a question]** | d) Reading behaviors – Making connections |

| Student 12 (75%) | **a) Text summary/paraphrase:** "It talks about a girl and a man (21:34-21:40) and then she's talking about her life, actually. That she that she did sacrifices for that job and she's leaving because she met a guy, a man in which I think it's Joe to take all her effort and everything away. I mean, I guess from right now for nothing." **[while reading]**
b) Making connection: "Um, a student studying for a major exam, only to learn that it has been postponed. I don't think it's this because from what it says, I'm comparing it to the passage. Um, she did did do a lot and it's not like she was she was doing something to get a higher position. Like she was doing it because she liked doing it. She was happy with what she was doing. It's not like if all of the sudden they were going to give her a promotion and they don't give it to her." **[while answering a question]**
c) Inferring: " 'And then Ernestine and then Ernestine, her best friend, approved of getting married, and Ernestine's ideas were usually good.' Um, it still doesn't give me details on on why that was happening to her. But a new character came along named Ernestine. But I wouldn't know why she would need her opinions or her ideas in my my thinking. I think it makes it seem like she doesn't have like a family or something that she could reference to for help. So she's going to her best friend. **[while reading]**
d) Analyzing: "Based on how she's saying, 'it's not a setting favorable to sentimental regrets", I think that based on what other people what other people know is that in my know-…from what I know I've seen a lot of documentaries and all of that that they like where they work in factories. And I guess she's trying to prove a point that not everyone thinks that. And yeah." **[while reading]** | a) Reading behaviors - Inferring
b) Testing metacognition – Process of elimination
c) Reading behaviors – Analyzing
d) Reading behaviors – Making connections |

References

Abedi, J. (2008). Classification system for English language learners: Issues and recommendations. *National Council on Measurement in Education, Fall,* pp. 17-31.

Abedi, J., Hofstetter, C., & Lord, C. (2004). Assessment accommodations for English language learners: Implications for policy-based empirical research. *Review of Educational Research, 74*(1), 1-28.

Abedi, J. (2004). The No Child Left Behind Act and English language learners: Assessment and accountability issues. *Educational Researcher, 33*, 4-14.

Abedi, J. (2002). Standardized achievement tests and English language learners: Psychometric issues. *Educational Assessment, 8*, 231-257.

Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing. *The modern language journal*, *75*(4), 460-472.

Ardasheva, Y., Tretter, T. R., & Kinny, M. (2012). English language learners and academic achievement: Revisiting the threshold hypothesis. *Language Learning*, *62*(3), 769-812.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. *NY.: Prentice-Hall*.

Bailey, A. L., & Carroll, P. E. (2015). Assessment of English language learners in the era of new academic content standards. *Review of Research in Education*, *39*(1), 253-294.

Bailey, A. & Huang, B. (2010). Using verbal protocol with 4-6 graders to identify challenging vocabulary in academic texts. *AERA Conference.*

Bailey, A. (2005). Language analysis of standardized achievement tests: Considerations in the

assessment of English language learners. *The validity of administering large-scale content assessments to English language learners: An investigation from three perspectives*, 79-100. (CRESST Report).

Butler, F. & Castellon-Wellington, M. (2000/2005). Students' concurrent performance on tests of English language proficiency and academic achievement. In *The validity of administering large-scale content assessments to English language learners: An investigation from three perspectives* (CSE Rep. No. 663, pp. 47-77). Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing (CRESST).

California Department of Education. (2016). Facts about English Learners in California – *CalEdFacts. Retrieved from* http://www.cde.ca.gov/ds/sd/cb/cefelfacts.asp.

California Department of Education. (2016). 2015-2016 Enrollment by English Language Acquisition Status (ELAS) and Grade. *Retrieved from* http://dq.cde.ca.gov/dataquest/longtermel/ELAS.aspx?cds=00&agglevel=State&year=2015-16.

California Department of Education (2016). 2015-2016 Long-term English Learners (LTEL) by Grade. *Retrieved from* http://dq.cde.ca.gov/dataquest/longtermel/LongTerm.aspx?cds=00&agglevel=State&year=2015-16.

California Department of Education. (2016). California High School Exit Exam (CAHSEE) results for mathematics and English Language Arts (ELA) by program (combined 2015) for (Grade 10) state report. *Retrieved from* http://dq.cde.ca.gov/dataquest/cahsee/ExitProg1.asp?cLevel=State&cYear=2014-

15&cChoice=ExitProg1&cAdmin=C&tDate=000000&TestType=E&cGrade=10&Pagen
o=1.

California Department of Education. (2016). California High School Exit Exam (CAHSEE) State
Demographic Summary Report: English-Language Arts (Combined 2015) for (Grade 10).
Retrieved from http://cahsee.cde.ca.gov/ExitProf1.asp?cLevel=State&cYear=2014-
15&cChoice=ExitProf1&cAdmin=C&tDate=000000&TestType=E&cGrade=10&Pageno
=1.

California Department of Education. (2016). California High School Exit Exam (CAHSEE) State
Demographic Summary Report: Mathematics (Combined 2015) for (Grade 10).
http://cahsee.cde.ca.gov/ExitProf1.asp?cLevel=State&cYear=2014-
15&cChoice=ExitProf1&cAdmin=C&tDate=000000&TestType=M&cGrade=10&Pagen
o=1.

California Department of Education. (2010). California English Language Development Test:
Glossary of Terms and Acronyms. *Retrieved from*
http://www.cde.ca.gov/ta/tg/el/documents/celdtglossary.pdf.

Chauhan, A. & Singh, N. (2014). Metacognition: A conceptual framework. *International Journal
of Education and Psychological Research, 3,* 21-22.

Chiseri-Strater, E., & Sunstein, B. S. (1997). FieldWorking: Reading and WritingResearch.
Bedford: St. *Martin's: New York.*

Callahan, R. (2005). Tracking and high school English learners: Limiting opportunity to learn.
American Educational Research Journal, 42(2), 305-328.

Coltrane, B. (2002). English Language Learners and High-Stakes Tests: An Overview of the
Issues. ERIC Digest.

Common Core State Standards Initiative (2016). About the standards. *Retrieved from*

    http://www.corestandards.org/about-the-standards/.

Coxhead, A. (2000). A new academic word list. *TESOL quarterly*, *34*(2), 213-238.

Droop, M. & Verhoeven, L. (1998). Background knowledge, linguistic complexity, and second-

    language reading comprehension. *Journal of Literary Research, 30*, 253-271.

Durán, R. (2008). Assessing English-language learners' achievement. *Review of Research in*

    Education, 32, 292-337.

Ericsson, K. A., & Simon, H. A. (1993). *Protocol analysis*. Cambridge, MA: MIT press.

Ericsson, K. A. & Simon, H. A. (1984). Protocol Analysis: Verbal reports as data. A Bradford

    book. The MIT Press: Cambridge, Massachusetts.

Estrada, P. (2014). English learner curricular streams in four middle schools: Triage in the

    trenches. *The Urban Review*, *46*(4), 535-573.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–

    developmental inquiry. *American psychologist*, *34*(10), 906.

Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. R.

Frantz, R. S., Starr, L. E., & Bailey, A. L. (2015). Syntactic complexity as an aspect of text

    complexity. *Educational Researcher*, *44*(7), 387-393.

Gándara, P., & Baca, G. (2008). NCLB and California's English language learners: The perfect

    storm. *Language Policy*, *7*(3), 201-216.

Garner, R. (1987). *Metacognition and reading comprehension.* Norwood, NJ: Ablex.

García, O. & Menken, K. (2006). The English from Latinos from a plurilingual transcultural

    angle: Implications for assessments and schools. In S. Nero (ed.) *Dialects, Englishes,*

    Creoles, and Education. Clevedon: Multilingual Matters.

Goodman, Y. M., & Watson, D. (2005). Reading Miscue Inventory: From Evaluation to

     Instruction. *Education Review//Reseñas Educativas*.

Goodman, Y. M., & Burke, C. L. (1972). *Reading miscue inventory: Procedure for diagnosis*

     and evaluation. Macmillan.

Gross, S. (1993). Early mathematics performance and achievement: results of a study within a

     large suburban school system. Journal of Negro Education, 62(3), 269- 287.

Hakuta, K. (2000). How long does it take English learners to attain proficiency? University of

     California Linguistic Minority Research Institute Report.

Hidden curriculum (2014, August 26). In S. Abbott (Ed.), The glossary of education reform.

     Retrieved from http://edglossary.org/hidden-curriculum.

Hiebert, E. H. (2012). The Common Core State Standards and Text Complexity: What Librarians

     Need to Know... and Do. *Teacher Librarian*, *39*(5), 13.

Hwang, J. K., Lawrence, J. F., Mo, E., & Snow, C. E. (2015). Differential effects of

     a systematic vocabulary intervention on adolescent language minority students

     with varying levels of English proficiency. International Journal of Bilingualism, 19,

     314–332.

Jimenez, R. T., Garcia, G. E., & Pearson, P. D. (1995). Three children, two languages, and

     strategic reading: Case studies in bilingual/monolingual reading. *American Educational*

     Research Journal, 32, 31-61.

Johnstone, C. J., Bottsford-Miller, N.A., & Thompson, S. J. (2006). *Using the think aloud*

     method (cognitive labs) to evaluate test design for students with disabilities and English

     language learners (Technical Report 44). Minneapolis, MN: University of Minnesota,

     National Center on Educational Outcomes.

Lieber, E., & Weisner, T. S. (2013). Dedoose. *Web-based qualitative and mixed-methods computer software*.

Lindsay, S. (2015). SAT/ACT Prep Online Guides and Tips: Breakdown of every question type in SAT Reading by %. *Retrieved from* http://blog.prepscholar.com/breakdown-of-every-question-type-in-sat-reading-by-percentage.

MacWhinney, B. (2000). The CHILDES Project: Tools for Analyzing Talk. 3rd Edition. Mahwah, NJ: Lawrence Erlbaum Associates.

Menken, K. (2010). NCLB and English language learners: Challenges and consequences. *Theory Into Practice*, *49*(2), 121-128.

Menken, K. (2008). *English learners left behind: Standardized testing as language policy* (Vol. 65). Multilingual Matters.

Menken, K. "What are the critical issues in wide-scale assessment of English language learners? NCBE Issue Brief No. 6. Washington, DC: National Clearinghouse for Bilingual Education." (2002).

Menken, K. (2000). What are the critical issues in wide-scale assessment of English language learners? *NCBE Issue Brief No. 6.* Washington, DC: National Clearinghouse for Bilingual Education. On WWW at http://ncbe.gwu.edu/ncbepubs/issuebriefs/ib6.pdf.

National Center for Education Statistics. (2016). English Language Learners in Public Schools. *Retrieved from* https://nces.ed.gov/programs/coe/indicator_cgf.asp.

Nelson, J., Perfetti, C., Liben, D., & Liben, M. (2012). Measures of text difficulty: Testing their predictive value for grade levels and student performance (Technical report). Retrieved from the Council of Chief State School Officers website: http://www.ccsso.org/documents/2012/measures%20oftext%20difficulty_final.2012.pdf.

Oakes, J., & Lipton, M. (1999). *Teaching to change to change the world.* New York: McGraw

   Hill College.

Olsen, L. (2010). Reparable harm: Fulfilling the unkept promise of educational opportunity for

   California's long-term English learners. *Retrieved from* http:// www. californianstogether.

   org/.

Osterlind, S. J., & Everson, H. T. (2009). *Differential item functioning* (Vol. 161). Sage

   Publications.

Pappamihiel, N. E., & Walser, T. M. (2009, April). English language learners and complexity

   theory: Why current accountability systems do not measure up. In *The Educational

   Forum* (Vol. 73, No. 2, pp. 133-140). Taylor & Francis Group.

Pinnell, G. S., & Fountas, I. C. (2007). The Continuum of Literacy Learning, Grades K-8:

   Behaviors and Understandings to Notice, Teach, and Support. *Heinemann*.

PrepScholar (2015). How to improve your SAT Reading score: 8 strategies. Retrieved from:

   http://blog.prepscholar.com/how-to-improve-your-low-sat-reading-score-6-strategies.

Saldaña, J. (2015). *The coding manual for qualitative researchers*. Sage.

Slama, R. B. (2014). Investigating whether and when English learners are reclassified into

   mainstream classrooms in the United States: A discrete-time survival analysis. *American

   Educational Research Journal, 51*(2), 220-252.

Solano-Flores, G. (2008). "Who is given tests in what language by whom, when, and where?

   The need for probabilistic views of language in the testing of English language

   learners." *Educational Researcher* 37 (4) 189-199.

Solano-Flores, G. (2006). Language, dialect, and register: Sociolinguistics and the estimation of

   measurement error in the testing of English language learners. *Teachers College Record,

   108*(11), 2354.

Solano-Flores, G. & Trumball, E. (2003). Examining language in context: The need for new

    research paradigms in the testing of English-language learners. *Educational Researcher,*

    32(2), 3-13.

Sound, N. S. (1993). Express Scribe. *Bruce ACT*, *2617*.

U.S. Department of Education. (2016). College-and Career-Ready Standards. *Retrieved from*

    https://www.ed.gov/k-12reforms/standards.

U.S. Department of Education. (2016). Every Student Succeeds Act (ESSA). *Retrieved from*

    http://www.ed.gov/essa?src=rn.

Valdés, G. (2001). *Learning and not learning English: Latino students in American schools.*

    New York: Teachers College Press.

Verdugo, R. R., & Flores, B. (2007). English-language learners key issues. *Education and Urban*

    Society, *39*(2), 167-193.

Voice Project. (2007). *VOICE Transcription Conventions [2.1].*

    http://www.univie.ac.at/voice/voice.php?page=transcription_general_information

    (November, 2015).

Zeno, S. M., Ivens, S. H., Millard, R. T., & Duvvuri, R. (1995). The educator's word frequency

    guide. New York: Touchstone Applied Science Associates. *Inc. My Book*.

Zwiers, J. (2014). Building academic language: Meeting Common Core Standards across

    disciplines, grades 5–12 (2nd ed.). San Francisco: Jossey-Bass.