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## **What Visualising Strategic Reading Means for Young Adolescents**

Cynthia Reyes

Penny Bishop

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# What visualising strategic reading means for young adolescents

*By Reyes, Cynthia, and Bishop, Penny*

## Introduction

The need for continued focus on young adolescent literacy is well documented (Carnegie Council, 2010; IRA, 2012; Fisher & Ivey, 2006; Ivey, 2011; Snow & Moje, 2010) in the reading field. The National Assessment of Educational Progress (NAEP) suggested a downward trend, with fewer 8<sup>th</sup> grade students performing at or above the *Basic* and *Proficient* reading comprehension levels in 2015 than in 2013 (NAEP, 2015), justifying the field's ongoing need to examine reading trends for students as they transition into adolescence and adulthood. As students move from the younger grades into middle school, they face increasingly sophisticated text (Kim, Hemphill, Troyer, Thomson, Jones, LaRusso, & Donovan, 2016). Yet without formal reading instruction, many young adolescent readers flounder in their attempts to understand challenging text. Reading instruction in the middle grades is often informal, represented at times as part of occasional vocabulary or comprehension activities (Vaughn, Swanson, Roberts, Wanzek, Stillman-Spisak, Solis, & Simmons, 2010). At just the time that lessons call for increased content area reading, "middle school reading instruction is full of mixed messages and inconsistency" (Ivey & Broaddus, 2001, p. 350), highlighting the need for more nuanced strategies for content area reading in later grades (Guthrie & Klauda, 2014; Moje, 2008; Shanahan & Shanahan, 2008; Snow, 2010). How does one know what strategies do young adolescents employ when faced with challenging reading?

When understanding how and why students struggle with reading there are traditional research methods for gaging student perspective such as documenting student meta-awareness on reading strategies whether through a group focus interview (Afflerbach, Moni, & Dwyer, 1994), surveys (Chishom, Shelton, & Sheffield, 2017), and think aloud protocols (Dempsey, 2015; Oster, 2001), or visual aids (Zambo, 2006). Yet with a preponderance of visual literacy in research and the collection of visual data in education (DeFauw, 2015; Finson & Pederson, 2011; Sheridan, 2002; Watkins, Miller, & Brubaker, 20004) there is still a dearth of research studies utilizing student drawing to illuminate issues of reading such as reading comprehension (Authors, 2009) in the classroom. Student produced drawings have been used as a tool to gage student perception, which, in turn, has helped to inform teacher instruction. For example, the use of visual data in science education (Chambers, 1983; Mead & Metraux, 1957) resulted in the initial discovery of students' narrow perception of scientists. Modifications of this experiment (Finson, Beaver, & Cramond, 1995) further highlighted students' stereotypical image of the scientist as a middle-aged white male in a lab coat. These findings were essential to training teachers to unpack with their students socially constructed images of scientists. A similar protocol could also support more understanding of student perspective in a field where reading proficiency is predominantly determined through standardized and teacher-based fluency and comprehension assessments.

Based on a larger, ethnographic study on student engagement (Author, 2009), we sought to describe and analyze middle school students' strategies for reading. Given what we knew about the use of visual data in education, for this particular report we decided to

focus solely on the set of student produced drawings that visually depicted how middle school students made sense of challenging reading. Given the more nuanced perspectives on reading within disciplinary literacy, or the thinking, reading, writing, and talking within academic fields (Brozo, Moorman, Meyer, & Stewart, 2013; Moje, 2015; Pressley & Allington, 2014; Shanahan, Shanahan, & Misischia, 2011), we found it beneficial to employ Mokhtari and Reichard's (2002) strategic reading responses as an analytic framework for the study to understand the general reading strategies that students engaged when reading. In spite of the need for the more sophisticated strategies that disciplinary literacy required, we agreed with Brozo, Moorman, Meyer, & Stewart (2011) that general reading strategies were still critical for young adolescents to develop and for teachers to foster in the classroom. As such, we considered the student data in relation to the three categories of literacy strategies outlined in the Mokhtari and Reichard (2002) framework: *Problem Solving*, *Support* and *Global*. By examining a set of student drawings, we sought to address the following questions:

1. Using a strategic reading framework, what can we learn from students about the strategies they employ to read challenging texts?
2. In what ways do the students' drawings reflect how they perceive reading, and what implications might that have on how they view literacy in general?

We first describe the literature on reading and metacognition that guided our study. Next, we outline our research methodology, delineating multimodality and the use of drawing as a visual method of data collection. We then share our findings, illustrating how students' perceptions of their strategies both confirm Mokhtari and Reichard's (2002) framework of reading comprehension strategies and extend our thinking about

students' responses to challenging reading. Finally, we discuss the implications of these findings for educators and researchers, including the need to enhance teaching of global strategies and to recognize the emotional weight that might be attributed to literacy struggles in early adolescence.

### **Metacognition and Reading**

Improving reading comprehension through cognitive strategies has a long history in education (Baker, 2017; Brown, 1985; Brown & Palincsar, 1985; Lubliner & Smetana, 2005; Pressley, 2002). Many studies have focused on metacognition and comprehension, including employing strategies for generating questions (Ciardiello, 1998); modeling and teaching explicit comprehension strategies to English language learners (Jiménez, 1996); using online think-alouds to develop online comprehension (Kymes, 2005); and identifying methods of improving reading comprehension that may be adapted and applied to vocabulary instruction (Lubliner & Smetana, 2005). Metacognitive knowledge is a key factor in the implementation of word learning strategies and the transfer of word knowledge from one context to another (Afflerbach, Pearson, & Paris, 2008; Lubliner & Smetana, 2005).

To better understand metacognition and reading, Mokhtari & Reichard (2002) developed the Metacognitive Awareness of Reading Strategies Inventory (MARSII) to assess 6<sup>th</sup>- through 12<sup>th</sup>-grade students' awareness and perceived use of reading strategies while reading academic or school-related materials (p. 251). Mokhtari & Reichard's (2002) research resulted in a tripartite framework of reading strategies: Support, Problem-Solving and Global. Support Strategies include paraphrasing text information, taking notes while reading, asking oneself questions, discussing reading with others, using

reference materials as aids, and revisiting previously read information. Problem-solving Strategies include paying close attention to reading, adjusting reading rate, reading slowly, visualizing information, reading text out loud, and guessing the meaning of unknown words. Finally, Global Strategies include activating prior knowledge, predicting what the text is going to be about, skimming text, using context clues, using text structure and textual features (p. 259). Overall, some or most of these strategies are generally present in teacher instruction or reading curriculum in the schools. Although Mokhtari and Reichard cautioned readers to use the MARSII as a supplementary tool for gauging learner self-awareness of reading strategies, the list of reading behaviors was nevertheless a useful organizing frame for coding the reading behaviors we examined in student drawings.

## **Methodology**

### ***Children's Drawings and Research***

The field of children's drawings in research is too broad to expand on here, but it is important to note they have been studied, analyzed, and theorized for over 150 years (Duncan, 2013). Many of these drawing research studies have also focused on young children because of the early developmental connections researchers strived to understand between children's drawings and cognition, as well as play and developmental growth (Duncan, 2015). Student drawings have been used considerably as "projective measures for assessing intelligence, psychological disorders, emotion, cognitive abilities, and learning" (p. 45). They have been used in different ways and through a variety of disciplines using structured methodologies such as the pre- and post-test format. Goodenough's (1926) "draw a man" is one example of such a construction to

assess intellectual maturity, which was later modified and adapted by others (Harris, 1963; Koppitz, 1968) for slightly different purposes. The point is that student drawings were routinely used to elicit different kinds of responses and were often thought to be easy to facilitate and conduct.

Drawing as a method for understanding student perspective as well as the ethics involved has been widely thought to make valuable contributions (Bruck, Melnyk, & Ceci, 2000; Harrison, Clarke, & Ungerer, 2007) to improving the educational, medical, and health conditions and settings in which children live and learn. As such, researchers are able to gain understanding through children produced drawings how children see and experience the world around them.

A concept of drawing that this report also touches on is drawing as meaning-making and its implications for research methodology and analysis. Visual literacy, which includes images or drawings, has been expanded from a view of skills in traditional literacy to a view of multimodality in *new literacies*. The field of New Literacies (Cope & Kalantzis, 2009; Kress, 2000; Hull & Nelson, 2005) ushers in a more sophisticated framework that views literacy as mediating complex ideological messages rather than teaching utilitarian skills. Social semiotics, a field that focuses on alternative modes of self-expression, is relevant to visual literacy, because visual meaning making is taken to mean or refer to different aspects of constructing, as well as conveying, knowledge and meaning through visual means (Kress, 1996, 2003; Kress & Van Leeuwen, 2001). Visual data can be thought of as a mode/multimodality representing another type of language that takes on particular meanings in a particular setting or structure.

There have been studies particularly with young children (Brooks, 2009; Coates, 2002; Cox, 2005) that have looked at meaning making and drawing. “Meaning-making can refer to children’s attempts at abstraction, the use of symbol systems...” (Duncan, 2015, p. 62), and as a methodological tool can be useful for gaining insight into a child’s cognitive development because they create their own theories about the world based on their interactions and experiences. According to Duncan (2015), whose own work focused on looking at younger children’s drawings, meaning making was an idea she sought to highlight as a message that children conveyed for communication’s sake, which is different from construction of knowledge. She viewed their drawings as a semiotic tool to communicate a particular message rather than to further her knowledge about the way they came to understand something. In a similar vein, student produced drawings convey a message of how they feel about reading challenging texts based on the ways they construct and interpret the signs and symbols that they use to convey their ideas about reading (Wright, 2007). These messages (i.e., drawings) can help teachers understand their students’ coping strategies with difficult material, as well as the kinds of strategies students call upon to remedy their reading when something goes wrong during the act of reading

### ***Visual Research Design in Education***

In research, visual methods are the means through which visual data are produced, collected and analyzed (Weber & Mitchell, 1995). Within education research, scholars have used drawing to understand student perception of schooling and teachers (Weber & Mitchell, 1995), to explore pre-service teachers’ perspectives on technology (Kolb & Fishman, 2006), and to examine education reform (Haney, Russell, & Bebell, 2004). We



employed drawing to understand the kinds of strategies young adolescents use to comprehend challenging text. While methods for understanding metacognition have traditionally included observations, interviews, reading inventories, and controlled tests, visual methods allow for feelings and expression (Ganesh, 2011), providing an alternative window into the practices of those who struggle with verbal modes (Authors, 2006), like many young adolescent readers.

### ***Participants and Sites***

Research participants consisted of 80 seventh graders who represented a balance of gender, a range of academic achievement, and broad differences in social class. This sample of predominantly White students resided in socioeconomically diverse, New England communities that ranged from a small town with a median household income of \$28,000 to a more affluent suburb with a median household income of above \$62,000. The five schools they attended included a range of grade configurations, including K-8, 5-8, and 7-12 buildings.

### ***Data Collection***

We began by inviting students to depict their reading strategies in response to the prompt: “Please draw pictures to show what you do when you read something that is hard to understand.” Students received a paper divided into six blank spaces, each with a pre-labeled sentence tag that read, “Here I am...” (Figure 1). We encouraged them to finish that sentence with words (e.g. Here I am...using the dictionary) after they completed each drawing.

(Insert Figure 1)

We emphasized that we were interested only in the ideas conveyed by the drawings and that the quality of the artwork was not of consequence. We encouraged those students who did not consider themselves artistic to use line drawings, stick figures or other forms of representation. Students were invited to produce as many drawings as they had responses. The 80 participants created a total of 365 drawings.

### ***Data Analysis***

To analyze the drawings, we conducted a priori coding using the Mokhtari and Reichard's (2002) framework. When responses fell outside of the Mokhtari and Reichard categories, we concomitantly applied an emergent and analytic approach similar to the work of Haney, Russell, and Bebell (2004). To establish the trustworthiness of our coding, we individually reviewed a sample of three sets of twenty drawings, recording various features, and developing separate coding lists. According to Ganesh (2011), issues with validity and reliability pertaining to visual data can be ameliorated by pairing the data with other sources, such as description. Similarly, the degree to which raters can develop trait coding is enhanced in such cases where both drawing and caption matches (Haney, Russell & Bebell, 2004). We therefore used the sentence tag at the bottom of each drawing to verify interpretations. We paused after each set of twenty drawings to compare and discuss any differences in interpretation. After arriving at 91% inter-rater reliability, we then individually assigned codes to the remainder of the 365 drawings.

Next, we determined that 24 of our 61 codes aligned with one of Mokhtari and Reichard's (2002) framework of reading comprehension strategies. These therefore were considered to be Strategic Responses and classified under one of the three types of strategies: Support, Problem-solving or Global (See Appendix A for codes and number of

responses). For the remaining 37 codes, we created a second classification entitled Alternative Responses, which was further broken out into Taking Action and Expressing Emotion (See Appendix B). Finally, some drawings were difficult to discern and lacked captions, making it difficult to categorize them with any degree of confidence. We classified these 22 drawings as Other and dropped them from further analysis, leaving us with a final total of 343 coded student drawings.

### *Limitations*

In spite of the rich description that is a potential affordance of visual methods, there were limitations. Visual methods required a degree of interpretation, adding complexity to the process of data analysis. This was further complicated by the reliability of self-reporting in general. What participants report cannot always be certified, as we know that personal perspective and the circumstances in which participants share their responses cannot be controlled. Duncan (2015) discusses both the advantages and disadvantages to using children's drawings. On the one hand, she describes how reporting the contents of a drawing is less threatening than giving verbal feedback. She also cites Cox (2005) who emphasizes the independence of drawing to language making it facile for students who are less verbal to truly engage in their drawings. However, Duncan highlights the necessity of language to describe the drawings, "language is an indispensable component for their interpretation and understanding" (p. 47). While the project did not allow us to interview students personally about their drawings, we used the caption as a modest attempt for students to explain their drawings through writing. Another limitation that warrants more studies about drawing as a tool to understand student perspective is the issue of drawing abstract concepts. Asking students to draw the

strategies they use when they read challenging material seemed specific enough but they could also be interpreted differently, which could also be seen as a benefit. We used the reading framework because we knew that the teachers had been using these strategies in the classroom and students were aware of them. However, the texts that teachers used with their students were varied and the “reading” portion of the study was not contingent on the “drawing” portion. As such, it was up to the student to interpret what those strategies might look like and to determine how to visualize them. Lastly, our methods and modest sampling size keep us from generalizing to other settings and different student demographics.

## **Findings**

Mokhtari and Reichard’s (2002) framework of reading comprehension strategies served as a useful lens to apply to the data from these middle school readers. As shown in Table 1, 343 drawings fell into two categories. The vast majority (252 drawings) depicted identifiable reading strategies based on the MARSII survey of comprehension strategies (Mokhtari & Reichard, 2002). These Strategic Responses included Support (122 drawings), Problem-solving (92 drawings), and Global (38 drawings). A smaller number of drawings constituted the Alternative Responses (91 drawings), divided into the categories of Taking Action and Expressing Emotion. In the following section, we share one example of each of the strategic responses and then present the alternative responses.

### ***Strategic Response***

Of all identified reading strategies, support strategies were depicted the most by students. Problem-solving strategies were also widely employed and global strategies were applied to a much lesser extent.

*Support.* The students in our study reported using more support strategies than any other type. 122 of the 343 drawings depicted what students did to enable that support, such as note taking, finger pointing, using the dictionary, or asking a parent or peer for help with vocabulary. From the 10 reading codes for support (see Appendix A), students drew the following two characteristics most frequently when faced with confusing words or passages: using reference materials (e.g., dictionary, computer) (37) and asking others for help (72), which included parents (19); teachers (19); peer (15); a non-specified person (11), and other adults (8).

In Figure 2, for example, the young girl's caption of "help!" illustrated her act of pursuing assistance from others.

(Insert Figure 2)

When young adolescents are asked in authentic ways what kind of help would they need to solve problems (Van Sluys, 2010), they give direction to adults as to how responsive they want them to be. The drawing method suggested that students felt comfortable in giving their perspective on the importance of adults helping them achieve success in their academic studies. This is also reflected in the literature where students who trust adults also see them as collaborative partners in their educational endeavors (Authors, 2009; Mirra, 2017).

From a visual perspective, it is interesting to note the centrality of adults in young adults' lives as reflected in the size and proportion of the persons depicted in this drawing. Clearly, adult participation in student learning was important here and the caption of "HELP!", which is emphasized in capital letters and ends with an exclamation point, further adds a level of urgency in the student's request. Yet the facial expressions

on both figures do not convey a sense of distress, anger, or seriousness, which is sometimes implied in such a request. Quite the opposite, as both the adult and child wear expressions of congeniality, suggesting a collaborative exchange between the two.

***Problem-solving.*** These middle school students drew themselves applying many problem-solving strategies, from adjusting the reading rate and reading slowly to visualizing and reading aloud. 92 drawings depicted a problem-solving strategy. Of the 8 reading codes applied to problem-solving, the three expressed most in students' drawings were 1) rereading a difficult part (38 drawings); 2) sounding out a word (17 drawings), and 3) thinking/trying harder (14 drawings). These findings suggest that these students were able to use strategies based in rereading and identifying challenging vocabulary (Lubliner & Smetana, 2005).

In Figure 3, the colorful drawing presents a young girl lying in bed looking up from her book and asking herself questions. The room is filled with large question marks and a thought bubble from the student reads, "There saying hes misunderstood, so that might mean he doesn't know?" Underneath, the caption reads, "Thinking to myself about the book." The thought bubble suggests that she is asking herself questions about her book. This particular example holistically captured one student's multi-level approach to difficult reading: relaxing or meditating about the book, thinking about what she read, and reflecting on a question. This approach to how students approach reading furthers our insight into reader strategy as well as broadens adult perspective into what we might consider a strategy.

(Insert Figure 3)

*Global.* Global strategies were the least reported by students in our study, identified in only 38 drawings. Of the six codes used for global strategies, two ranked the highest: making decisions about what to read or skip (15 drawings) and using context clues to figure out words (13 drawings). In a few drawings depicting the use of context clues, students captured their thoughts about the text and what was happening on the page. The manner in which students used context clues varied greatly from one drawing to the next. A rare example showed one student thinking about context clues (Figure 4) and providing a specific example demonstrating knowledge of the strategy. This student drew a picture of a stick figure looking at a book with the thought bubble, “I bet forlorn means sad, because that’s how the sentence uses it.” The caption underneath reads, “Guessing the meaning judging by the rest of the section.”

(Insert Figure 4)

This example highlighted the potential for drawing to enhance student critical thinking about language. While the student understood the basic concept of contextual clues (Ganesh, 2011) more teacher prompting based on the drawing could push the student to compare the degree of difference in these words more closely. The student could use the information learned from the drawings to practice more nuanced understanding of synonyms.

### **Alternative Categories: Taking Action and Expressing Emotion**

While the majority of drawings depicted students applying school-learned strategic responses to reading challenging text, 91 of the 343 drawings suggested a range of responses ranging from taking a short break from a reading activity to exhibiting a stronger, more affective, sometimes negative, response to challenging text. In her work

with struggling readers, Lenter (2006) explored the definition of the resistant adolescent reader. She argued that not all reluctant readers lack literacy skills and that individual readers require relevance in order to approach reading tasks. According to Lenter, the apathy some students express toward reading is “a reactive posture, in part a response to perceived irrelevance, and thus relate[d] to resistance” (p. 141). Our participants’ drawings communicated this apathy but also offered creative alternatives to reading. Some drawings suggested a respite from the act of reading and centered on doing activities they enjoyed before returning to the reading. Other students’ drawings communicated stronger emotion in response to reading. Departing from Mokhtari and Reichard’s (2002) framework, which did not attempt to account for responses outside of strategic reading, we created a new category of drawings that we labeled Alternative Responses, which was sub-divided into Taking Action and Expressing Emotion.

***Taking Action.*** Sixty-five of the 91 drawings in the Alternative category depicted a pause from reading and depicted engagement elsewhere. Overall, Taking Action responses reflected a variety of activities that ranged from seeking a more conducive environment to pursuing more recreational activities, but all held in common the notion that the student chose those tasks over the reading at hand. Of the 23 codes that we identified for Taking Action, the majority were labelled as Taking a Break (46), followed by creating a more conducive environment (10). One such drawing depicted a type of visual map suggesting geographical movement from one location to another (See Figure 5).

(Insert Figure 5)



In the upper left-hand corner of the image, a student sits on a bench on a busy street corner with honking cars zooming by. Above the student is a thought bubble, which reads “I can’t hear myself think!” This portion of the drawing is segmented off in a box that is labelled “Before.” In the opposite corner is a drawing labelled “After.” In this box, the student seeks refuge in a room with a bed. Above the student’s head is a thought bubble that reads, “Ahhh...peace and quiet.” The noisiness depicted in the “Before” frame is exaggerated and represented by the exclamation mark in the thought bubble. The “After” picture depicts a smiling student, suggesting satisfaction after changing location from a noisy spot to a quieter one. Other activities in the more specific category of Taking a Break included listening to music, using the computer, eating, spending time with pets and doodling (see Appendix B for a complete list).

Whereas middle grades students are often described as reluctant readers (Ranck-Buhr, 2012), the opposite side of how they use their time is rarely explored in the literature and, more importantly, is rarely considered to be a legitimate activity that contributes to their growth, even though how they see themselves in both their school and home environments are tied closely to their self-perception of growth, agency, and motivation (Eccles & Midgeley, 1989).

(Insert Figure 6)

(Insert Figure 7)

These various tasks are also reflected in the following two drawings (See Figures 6 & 7). While the figures in these drawings are taking a break, the activities they engaged in were pleasurable based on the happy expressions on the figures’ faces.

Another example from the category of Taking Action not only depicted action but also captured strong emotion about the activity of reading challenging text (Figure 8). In Figure 8, the drawing depicted a stick figure plunging a knife with a brown handle into a giant-sized book. The picture emphasized black lines radiating from the book where the knife went in and the facial features such as the black holes for eyes and the open vacuous mouth. On the book spine were the words “Big Plethora of vocab” with the word

(Insert Figure 8)

*plethora* underlined. On the edge of the book was a question that read “Oh...but why?” with an arrow pointing down to the edge of the book cover. It suggested that the book had a voice lamenting its violent predicament. The student was clearly frustrated at the number or “plethora” of words included in the text. Ironically, the student had used the word “plethora” accurately and in a sophisticated way.

While it may be tempting to gloss over the more comical perspectives of this student drawing, something deeper is captured in these alternative responses that poignantly reflects students’ challenges with difficult reading. This drawing illustrated a response not easily captured in surveys related to student responses to challenging reading. Although the caption for this drawing did not relate to expressing emotion, deep-seated feelings that this one reader had for his difficult book were viscerally explored in this particular drawing. We explore more emotional responses within the following section.

***Expressing Emotion.*** We identified 14 codes in the Expressing Emotion category, including shame, stress, boredom, annoyance and helplessness. In some drawings, students illustrated feelings of confusion, frustration and betrayal. Of the 26 drawings in

this category, six communicated negative feelings spanning from anger, stress, and boredom to confusion when faced with challenging text. The following two illustrations suggested how students felt about their lack of success with the reading task. In Figure 9, one student drew a stick figure with hair standing on end, hands to face and a mouth open wide missing teeth. The figure was crying out, “The author betrayed me!! Why, why, why did he use big complicated words and make me look them up!!” The caption read “Feeling Betrayal.”

(Insert Figure 9)

Other drawings expressed varying levels of frustration (Figure 10). Figure 10 depicted a giant thought bubble that said “negative. This is Stupid! Why do we have to do this? I can’t do this! I am going to fail! I hate this! Underneath the thought bubble the caption said “Acting Negatively.” In this particular drawing, the student expressed both negativity toward the text but also a hint of giving up because no other useful strategy came to mind. Giving up is obviously at the opposite end of strategic reading (Alvermann, Phelps, & Ridgeway, 2007), but it is this chipping away of confidence when reading breaks down that leads to disengagement and eventually to perceptions of failure at reading. Similar to the drawings that depict strategic reading approaches, these drawings of taking action and expressing emotion remind teachers that reading is a process that requires continual modeling of what it means to be a fluent reader. We explore this further within the following section.

(Insert Figure 10)

## **Discussion and Implications**

This study contributes an understanding of young adolescents' responses to literacy tasks in three main ways, which we discuss within the context of our initial research questions. These findings also describe how these findings can be operationalized in reading instruction, and also illuminate the more abstract elements of reading from a student perspective. The first addresses what we learned from students about the strategies they used to read challenging texts. Our findings suggest the need for a more explicit pedagogy of reading strategies. The second addresses how students' drawings give us a more visually nuanced way for understanding how students generally perceive reading and literacy in general. From our findings emerged a category of alternative approaches, which broadens Mokhtari and Reichard's reading comprehension strategy framework for looking at metacognition and comprehension in young adolescents. Lastly, the findings suggest the promise of the use of drawing in literacy education research as well as further research into student perspective.

### **Explicit Reading Strategies in Middle Grades**

In addressing our first research question of which strategies students used when faced with challenging text, most of our middle grades readers demonstrated familiarity with Support and Problem-Solving Strategies. To a much lesser extent, students identified using Global Strategies, including relating what they read to their own experiences and skimming text for important information. Because skilled readers are deliberate in monitoring their reading (Mokhtari, 2017), the lack of such strategy application amongst this population should still be of concern as we prepare young adolescents to be proficient readers in a multimodal society.

Noteworthy were the strategies that students did not identify in their drawings. There were no drawings of previewing or predicting text, or making decisions about what is read closely, approaches that are often highlighted in literacy instruction. These strategies are emphasized in both state and national reading standards (Common Core, International Reading Association) for helping students to examine text closely in both fiction and informational text. Such global strategies are often difficult to teach because teachers need to model these more sophisticated skills in order to guide students through the process.

Since Global Strategies (e.g., making connections, making inferences, using graphic clues) constitute a more critical approach to tackling comprehension (Afflerbach, Pearson, & Paris, 2008; Cantrell, Almasi, & Rintamaa, 2017), educators should consider how explicitly these strategies are modeled not only in reading classes but also in other content areas where reading is frequently required. The ubiquity of online reading adds another layer to our understanding of its effects on reading comprehension. Scholars (e.g. Coiro, 2015; Henry 2006) are now identifying strategies necessary for Internet reading that require a nuanced understanding of how online and offline reading intersect. How might these strategies correspond to other multimodal forms of literacy? As both the drawings and other research suggest, middle grades readers may find little relevance in the way critical thinking skills are currently modeled. Future research that invites student perspective may uncover other areas where students do employ these skills.

Additionally, our middle grades readers relied a great deal on *Support* strategies, particularly on asking parents and peers for help on their reading. Based on the study's findings, students turn to parents and peers before using other resources, including

technology, material aids, or even the teachers. Future research would be helpful to understand the relationship between students turning to others for reading help and independently developing their own skills. How do these interactions reflect a deeper community that students need in the classroom? What role do teachers play in helping middle grades readers develop stronger, reading identities if they are not the ones that students first turn to when encountering difficult reading? Is it possible that our pedagogy of literacy strategies requires a broader connection to the world of youth? The next two sections discuss the ways in which the student drawings reflect how students generally perceive literacy, and the important reminder that student perspective can have for teachers.

### **Broadening the Framework**

We found Mokhtari & Reichard's (2002) well-known framework of reading comprehension strategies based on the MARSII to be a valuable lens for identifying and analyzing comprehension strategies. At the same time, data from this study suggested a broader framework centered on students' perceptions of student-friendly approaches to challenging reading, one that considers reading within the context of students' lives. In addressing our second question related to how students generally perceive reading and literacy, our identification of Alternative Responses details both Taking Action and Expressing Emotion strategies.

The drawings in the Taking Action category suggested a range of specific activities that young adolescents found joy in doing but they also suggested feelings that were directed at unsuccessful literacy experiences. Many young adolescent readers struggle in the middle grades and the motivation to read effectively decreases in some

adolescent readers who confront increasingly difficult literacy tasks as they concomitantly experience the challenges of early adolescence (Muth & Alvermann, 1999). This pattern of observing challenges during early adolescence is also reflected in the impact of the stage environment fit (Eccles & Midley, 1989), which may account for the level of motivation that students dedicate or not to school tasks including reading. Ivey & Broaddus (2001) argued this is because of the mismatch between what middle grades students need and what they likely receive as instruction. Therefore, the strategies that students used to delay reading temporarily may be described as avoidance by adult norms, but for these students it served as a bridge to fulfill some of their own personal and social needs.

These findings have implications for understanding the emotional side of literacy development, as discussed by Lenter (2006). She suggested that students make meaning through their relationships with teachers and peers and that these relationships are critical to understanding who they are as literacy learners. Future research that investigates avoidance and emotional responses to reading could contribute to greater understanding of the role negative emotion plays in reading development.

Furthermore, the Taking a Break and Expressing Emotion responses, which the student drawings vividly captured, explored a range of young adolescent interests that are often excluded from classroom experiences. This becomes even more critical in light of the ubiquity of 21<sup>st</sup> century literacy skills and the expanding divide between those students who navigate the infinite stream of technology and teachers who feel less capable doing so. An increase in teacher interest with integrating new literacies (e.g.

podcasts, digital literacies, gaming) can potentially foster more enriched student engagement with reading, as long as the instruction is relevant to student interest.

### **The Use of Drawing in Literacy Research**

Finally, this study highlights the potential of non-verbal or visual methods for data collection in literacy education research. Although a great deal of literature on reading comprehension exists from research and pedagogical perspectives, there remains little on the use of drawing to understand student perspectives. A plethora of historical and current research has demonstrated the importance of subject-produced drawings that examined what children know (Duncan, 2013; Ganesh, 2011), but we need more that draws upon the potential of what drawings can uncover about student perspective related to instruction in school and its effect on student learning (Bebell, 2001; Haney, Russell, & Bebell, 2004). Teachers can learn from examples of how their students read text, how they approach difficult reading, and what strategies might be missing from their repertoire.

As this study conveys, visual methods can illuminate student perspective in ways that other methods may not. Student drawings complement and often elaborate on the accompanying text. When students made generalized or ambiguous statements about reading through the sentence tags, the drawings were helpful in depicting specific activities or behaviors. The opposite also held true; the drawings alone at times could be misleading without the sentence tag to orient the researcher. Through drawing, there is potential for understanding the sensorial experience that students feel when they come across tasks such as reading that they perceive as failing at that cannot be documented as effectively or as evocatively through surveys and think-aloud protocols. Likewise,



drawings could potentially be helpful for students to become more aware of their own reading and of the kinds of strategies they might employ to help them with comprehension. More literacy studies could employ the use of student produced drawings to gain perspective, and to couple the protocol with an interview thus enhancing the drawing-language conundrum that was discussed in the limitations section. The drawings themselves could provide fruitful discussion between teacher and students or students with their peers on the reading strengths or challenges they identify in each other's reading.

### **Conclusion**

Reading instruction is a ubiquitous activity that in the classroom tends to occur as a proficiency and achievement-based process; it is also a process that school personnel invest in whether through professional development or training. However, rarely are there student insights into how they experience challenging reading especially from a visual perspective. This report described an examination of a set of student produced drawings obtained from a larger ethnographic study that highlighted student perspective on reading challenging texts. The findings highlighted both an emergent understanding of the kinds of skills-based strategies students utilized to repair their reading, as well as the emotions these reading tasks evoked and subsequently conveyed in their drawings. Student drawings can offer a valuable tool for teachers who can use student perspective to inform their instruction and curriculum.

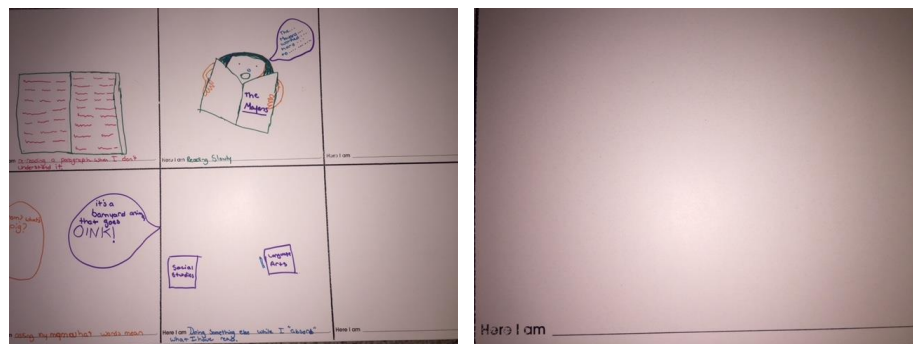


Figure 1. Example paper with six spaces followed by a close-up of a blank space including the tag “Here I am...”



Figure 2. "Asking for help to understand"

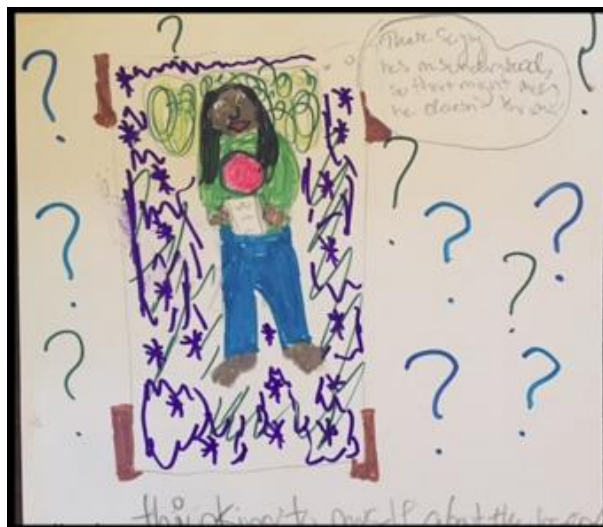


Figure 3. Thinking to myself about the book.

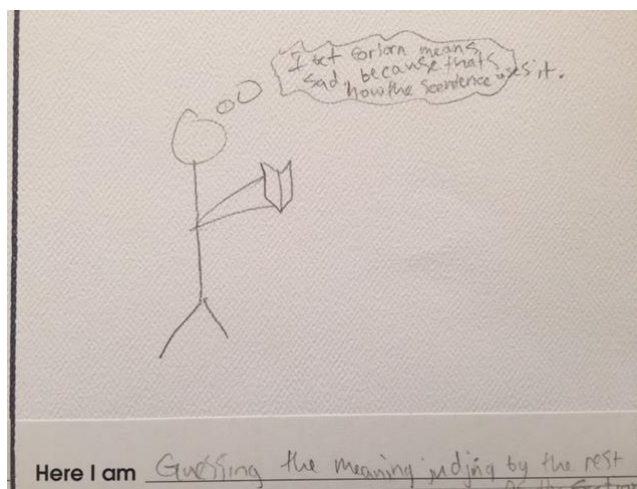


Figure 4. Guessing the meaning judging by the rest of the section

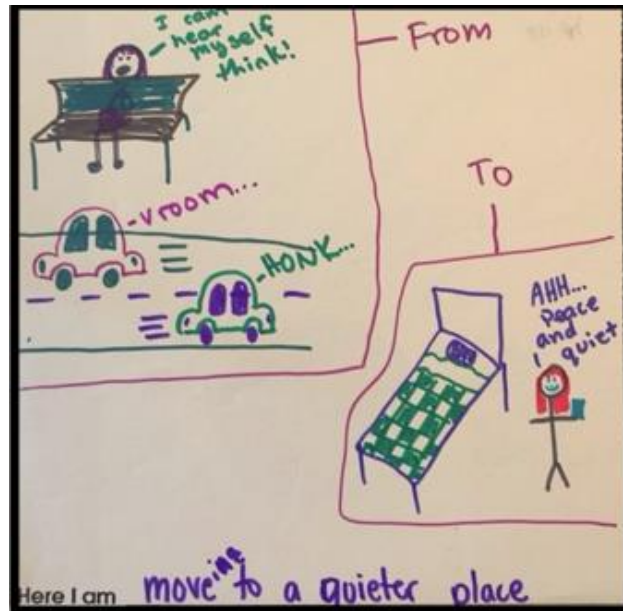


Figure 5. Moveing to a quieter place.

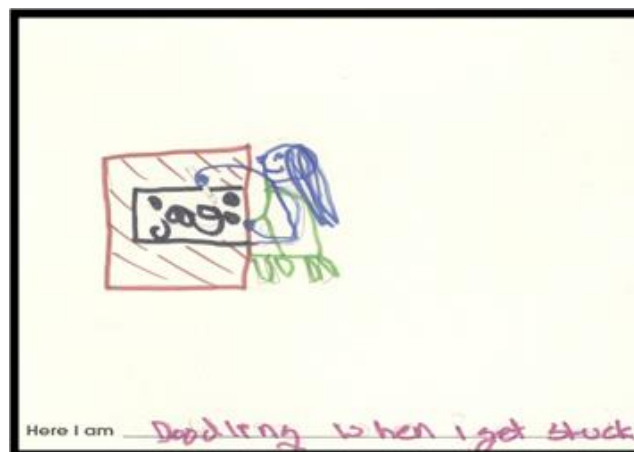


Figure 6. "Doodling when I get stuck"

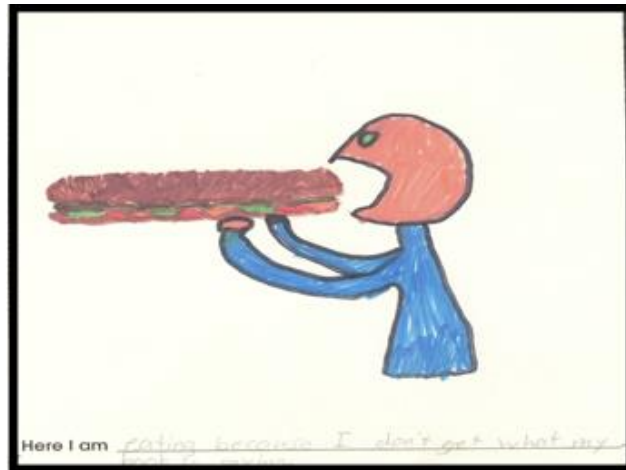


Figure 7. Eating because I don't get what I'm reading



Figure 8. Taking Action

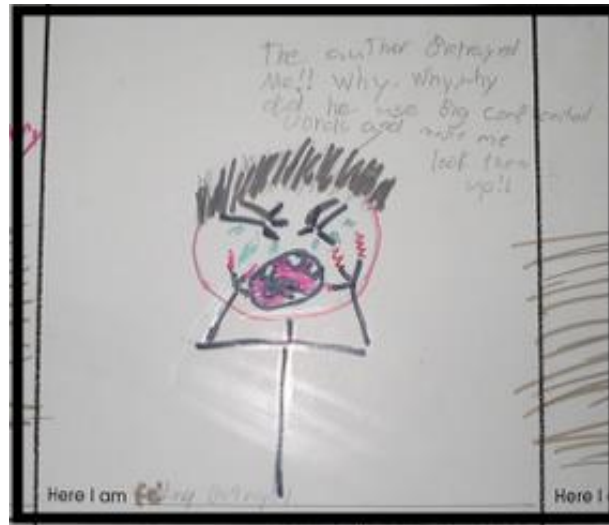


Figure 9. The reader feeling betrayed.

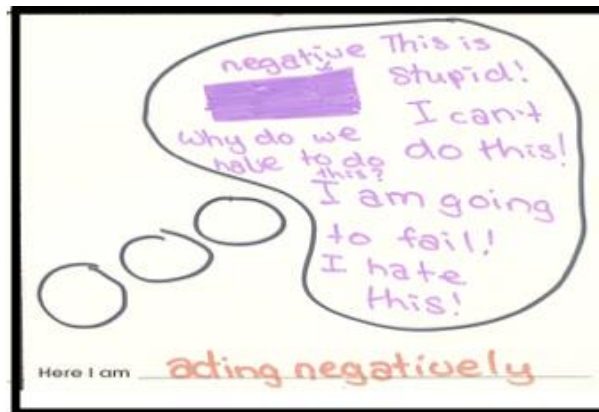


Figure 10. The reader acting negatively.

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Table 1. Overview of Responses, Codes and Number of Drawings

Response	Code	# of Corresponding Drawings
Strategic (24 codes)	<i>Support</i>	122
	<i>Problem-Solving</i>	92
	<i>Global</i>	38
	<i>Total</i>	<b>252</b>
Alternative (37 codes)	<i>Taking Action</i>	65
	<i>Expressing Emotion</i>	26
	<i>Total</i>	<b>91</b>
	<i>Total</i>	<b>343</b>

## Appendix A

### Strategic Reading Table

"Strategic" Responses					
Response	Strategy	Set 1	Set 2	Set 3	Total
Support (10 codes)	using reference materials (e.g. dictionary, computer)	12	21	4	37
	asking parent for help	10	6	3	19
	asking unnamed person for help	2	7	2	11
	asking teacher for help	6	9	4	19

	asking peer for help	9	5	1	15
	asking another adult for help	4	2	2	8
	asking self questions	3	1	0	4
	note taking	2	1	0	3
	Discussing reading with others	1	2	0	3
	Underlining/markings text	3	0	0	3
	<b>TOTAL</b>				<b>122</b>
Problem Solving (8 codes)	rereading	17	14	7	38
	syllabication/sounding out	4	7	6	17
	Pausing to reflect	2	1	0	3
	Visualizing/imagining	2	2	3	7
	reading aloud	2	2	2	6
	slowing	1	4	1	6
	drawing a picture	1	0	0	1
	Thinking/trying harder	11	3	0	14
	<b>TOTAL</b>				<b>92</b>
Global (6 codes)	using context clues	1	7	5	13
	Activating prior knowledge relating to known/connecting	1	3	0	4
	Using text structure/analyzing sentence	1	1	0	2
	making inferences	1	0	0	1
	using other textual features graphic clues, headings	1	2	0	3
	Making decisions about what to read or skip	2	10	3	15
		<b>TOTAL</b>			
	<b>TOTAL</b>				<b>252</b>

Alternative Responses Table

Response		<b>91 total (without other)</b>
Taking Action (23 codes)	Creating more conducive environment	<b>10</b>
	Choosing different book	<b>6</b>
	Acting out a scene	<b>1</b>
	Writing to author	<b>1</b>
	Using extrinsic rewards (rewarding self with candy)	<b>1</b>
	Taking a break	Taking a break total <b>46</b>
	Playing sports	5
	Sleeping	5
	Using computer (games/social)	5
	Eating	4
	Watching TV	3
	Day dreaming	3
	Taking a walk/bike	3
	Listening to music	3
	Relaxing	2
	Clearing my mind	2
	Socializing	2
	Spending time with pets	2
	Working on different homework	1
	Jumping on trampoline	2
Taking break- general	1	
Singing	1	
Doodling	1	
Meditating	1	
Expressing Emotion (14 codes)	Punching pillow	<b>1</b>
	Giving up	<b>1</b>
	Complaining	<b>1</b>
	Physically rejecting the book	<b>5</b>
	Yanking hair	<b>1</b>
	Biting pencil	<b>1</b>
	Laying head down	<b>1</b>
	Crying	<b>2</b>
	Showing Confusion	<b>2</b>
	Showing Anger	<b>1</b>
Showing Stress	<b>1</b>	

	Showing Frustration	<b>6</b>
	Expressing Failure	<b>2</b>
	Expressing Betrayal	<b>1</b>
Other		<b>22</b>
<b>TOTAL</b>		<b>113</b>