BUILDING COGNITIVE READING FLUENCY THROUGH ‘TAGGING’ FOR METACOGNITION

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ABSTRACT
This study examined how purposely exposing students to types of ‘tagging’ opportunities for metacognitive reading skills strengthened cognitive reading fluency, or the fluidity and awareness of thinking, applying, and reflecting on their critical reading skills. Additionally, another purpose was to uncover if becoming metacognitively aware of these moments increased reading motivation. The study found that purposely exposing students to a variety of tagging options for metacognitive reading skills did have a positive impact on their motivation to read and for increasing cognitive reading fluency. The more students tagged and ‘criss-crossed’ their experiences, the more cognitively fluent the students appeared as they used these responses more freely and authentically to build a literacy conversation.

To the unfamiliar eye, Mrs. Smith's fourth grade classroom might look like a beehive with “busy bees” moving around the room. Well, it is! And like a beehive, everyone has a task to assist in building a reading community. Some students are conferencing with peers about the current book they are reading. Others are in their favorite place with their special book, while a small group meets at the table for a more guided literacy discussion. This day is a typical day for this classroom until Sara (all names are pseudonyms) breaks this picturesque scene with an outburst of, “Oh, My Gosh! How did I miss that?” With the classes’ undivided attention, she proceeds to explain that her Goosebumps book just took a turn of events she had not predicted. Even more excited was Mrs. Smith, as this student just ‘tagged’ her realization that she was ‘astonished’ by the unexpected twist. Much like how users of social media have grown accustomed to ‘tagging’ known friends in photos or posts, good readers develop this same ability to identify and ‘tag’ known critical literacy connections made with the text. When teachers purposely build a reading community which fosters developing metacognitive ‘tagging’ skills, they help readers strengthen their critical thinking skills by drawing on connections while reading. So to help frame ‘tagging’ for metacognition, think of the types of responses and connections to literature as the social media ‘friends’ of a reader.

FLUENT AND FLEXIBLE THINKING
The literary moment described above involved much more than a reader engaging with the surface level of the text. This was a transaction which involved the past, present, and future connections of the reader. The reader had to draw on past experiences to visualize certain aspects of the text. She had to think about what the text meant to her at the present moment and wonder how the experience with the text will affect her personally in the future. For some readers this comes naturally, but for many others it must be modeled, fostered, and ‘tagged’ to be put into practice. Students such as Sara must have the confidence that they are truly reading scholars equipped with the proper aesthetic and efferent attire for reading. When children believe in the image of being a confident and effective reader they are more likely to interact more with the text (Gambrell, 2015;...
Wigfield & Guthrie, 1995). In order for appreciation to arise the feelings, ideas, connections, and attitudes of readers need to be born unto the reader (Rosenblatt, 2001). Such an environment allows readers to listen to the text in a way that opens channels for the author to be heard, as well as find the right combination for encouraging an efferent and aesthetic stance to reading. Using a collaborative discourse approach in a small guided discussion setting supports such an environment and develops fluent and flexible thinking skills. The more aware students become of these exchanges and how to learn from them through categorically ‘tagging’ such occurrences, the more likely they are to identify and use them in authentic dialogue. Pintrich (2002) addresses the important connection between student’s motivational beliefs and their cognition but concedes that accuracy of self-knowledge supersedes everything. It is far more valuable to have an accurate perception of one's knowledge base and abilities than to have a façade created. If students are not aware of their limitations and abilities, they may be less likely to construct new reading behaviors. Additionally, students need to see the authentic connections between what they are doing in class to what readers do in their daily lives (Gambrell, 2015).

Through an instructional read aloud, the teacher models how to become cognitively fluent and aesthetically connected with the text using the “think aloud” (Keene & Zimmerman, 1997; Keene & Zimmerman, 2007; Morgan & York, 2010; Pintrich, 2002; Serran, 2002). If readers are made aware of when and how they respond to literature, they can develop cognitive strategies by ‘tagging’ their enjoyments, emotions, opinions, wonders, connections, and anticipations with the text. Additionally, a cognitively fluent reader can reflect with ease on mystifying parts as well as quotable aspects of the text allowing for a deeper connection with the text. Through these transactions, the reader is no longer a passive traveler on a journey alongside the text, but an active navigator with the text. A sort of “literary guild” forms between text and reader, where the literature serves as the “master” and the reader becomes the “apprentice.” When the text becomes a dimensional space to interact with, a reader becomes free to interconnect with feelings, opinions and emotions with the text to create a deeper understanding (Many, 1990; Mizokawa & Hansen-Krening, 2000; Morgan & York, 2010; Rosenblatt, 2001; Spiro, Coulson, Feltovich, & Anderson 2013).

When we ask our students to experience the “happening” of a text, we are asking them to view the piece for its quality. When quality or complexity is the focus, readers call up experiences, feeling, and emotions. Rosenblatt (1968) would argue that creating personal meaningfulness allows the student to grow and mature as a reader, “the personal involvement of the reader, the engagement in the actual process of bringing the work into being from the text, has been taken for granted. All, no matter what their emphasis, usually consider the word as given-as an object for study and analysis” (p. 342). If we as teachers want to change the analytic direction that has been created so that our students can experience literature and make it “happen” for them, we must provide appropriate literature with a strong text complexity; in other words, we should be giving students text worthy to be read and thought about. Such text builds reader’s metacognitive tagging skills.

**Fluent and Flexible Thinking as an Experience of Understanding.** Much literature has connected collaborative discourse to developing a deeper comprehension of text for its allure to invite open responses, provide opportunity to talk, and to construct intertextual connections (Keene, 2008; Keene & Zimmermann, 2013; Many, 1990; Mills, 2009; Mills, 2010; Mizokawa & Hansen-Krening, 2000). Mizokawa and Hansen-Krening (2000) discuss that as educators, we are actively concerned with not only can our students read, but do they like to read. Thus, when a student reveals to us interest in a genre (or disinterest) we are encouraged that the student may be on the road to finding his/her aesthetic stance for reading. Becoming metacognitively cognizant of these interactions or how fluent they are at making these awareness’s can be mysterious in nature
as teachers can only evaluate physical behaviors without conferring more with the reader. The facial features created while reading, the sudden ‘Ah-Ha’, or the urgent need to tell someone about an event just read all represents the reader’s aesthetic behaviors for reading. Connected to this behavior is cognition. Believing, thinking, feeling, and connecting are all descriptors of the cognitive domain. As teachers, we want readers to grow as engaged fluent users of higher order thinking skills such as tagging or becoming aware of an “Ah-ha” moments rather than to simply recall or retell facts from literature. We want them to be readers who use their metacognitive knowledge to determine the appropriate tag for the experience, construct a fluid and critical dialogue to express the experience, engage in a literacy conversation with the text, and take action to evaluate the connection made (Grote-Garcia & Durham, 2013). Without tagging for and building fluency for these processes, reading can become dry and unfulfilling.

The Cognitive Flexibility Theory supports such a reader that seeks to manipulate their schema to make sense of the reading experience. Spiro et al. (2013) explains this theory to be dependent on the diversity of experiences or ‘cases’ a learner uses to experiment within a learning situation to develop a deeper understanding of the concept. Learners must ‘criss-cross’ established knowledge or experiences not just to activate prior fixed-knowledge but to mobilize this fixed-knowledge to explain new knowledge through multiple lenses. Cognitive Flexibility Theory “requires information to be coded conceptually for the many different kinds of use that new situation may require” (p. 554). Tagging or coding for these interconnections allows the learner to map out an experience through multiple viewpoints. The flexibility to code a connection made with the text through the lens of the past knowledge or experience, allows the reader to form an interconnected relationship with the text, their experiences, the old knowledge, and new. Even knowledge that has yet to be uncovered or yet to be clarified can be coded as a result of the awareness the reader makes for a need to fill that void.

The purpose for creating tagging experiences presented in this article is to determine if purposely exposing students to types of tagging opportunities for metacognitive reading skills strengthens the fluidity and awareness of thinking, applying, and reflecting on their critical reading skills. Drawing from metacognitive research and Cognitive Flexibility Theory, it is our belief that when a reader effortlessly brings the above sets of skills to the reading transaction, they become skilled cognitive readers, a term we are calling ‘cognitive reading fluency’. Additionally, another purpose is to uncover if becoming metacognitively aware of these moments increases reading motivation.

**Introducing Tagging to Students**

A set of ‘tagging’ experiences were created for a group of 21 fourth grade students over a six weeks period. Reading behaviors (reading attitude, motivation, and types of response to literature) were premeasured followed by a series of ‘tagging’ lessons designed to foster tagging for critical reading skills. The metacognitive reading strategies selected were tagging for enjoyment, imagery, wonders, curiosities, and ‘ah-ha’ or realization moments. For these experiences, students self-selected literature on their instructional levels to be read during the sustained silent reading segment of a Readers Workshop.

**Pre-Assessments.** The Elementary Reading Attitude Survey (McKenna & Kear, 1990) assessed the student’s attitudes toward recreational and academic reading. Class averages set a baseline for reading attitude and gave a general snapshot of the classes’ opinion toward aesthetic reading. The Motivation to Read Profile: Reading Survey (Gambrell, Palmer, Codling, & Mazzoni, 1996) measured the readers’ self-concept about reading, as well as their value for reading. Reading groups were digitally recorded during small group discussion meetings to establish the quality of reader’s responses or metacognitive tags students already possessed without prompting. This was used as a
gauge for determining reading cognitive fluency as there was no known assessment currently available. These responses were categorized for depth and complexity using the “Response/Tagging Critiquing Guide” (Appendix 1). Anecdotal notes and the critiquing guide were used to evaluate responses. The guide used a point system:

- 3 points - responses with regards to enjoyment, imagery plus wonders, and connections;
- 2 points - response with listing and mention of enjoyment or imagery or predictions;
- 1 point - summary by listing/retelling; or,
- 0 points - no response.

This teacher-created guide was also used as a correlation for efferent to aesthetic stances. A score of 1 reflected a more efferent stance, while a score of 2 or 3 reflected an aesthetic stance.

**Organizing for Tagging.** For six weeks, tagging experiences were introduced using a guided instruction approach (Fountas & Pinnell, 2012). Beginning with the Instructional Read aloud, a piece of literature was selected with an engaging text complexity level to share with the class. Before, during, and after the instructional reading, ‘tagging’ for metacognitive awareness was modeled through think alouds about images from the reading, recalled memories, references to other literature or visual media, and relationship to real-world events, that could be discussed. Through these think alouds, tangible connections to reader thoughts were highlighted by ‘tagging’ when they occurred. Figure 1 provides an outline of the process for introducing certain tags for metacognitive awareness reading skills to develop reading cognitive fluency. Figure 2 offers some samples of think aloud statement starters modeled.
To see if tagging for metacognitive awareness would have an impact on developing cognitive reading behaviors, a critiquing rubric was used to assess the presence of metacognitive awareness skills and collected the students’ self-assessment rubric at the end of the small group sessions. During each student’s response to his or her literature, anecdotal notes were taken and responses were scored using the same “Reader’s Response Critiquing Guide” from the pre-assessment (Appendix A). Additionally, students returned to their seats to complete a self-assessment of their awareness of tagging during discussion group time (Appendix B). The remainder of the tagging experiences was planned in two weeks sessions. Each session began with one week of modeling two “tagging” concepts followed by introducing how a reader would log these tags in a response journal. These tagging concepts were presented to small groups of three to four students. The students were asked to record responses related to these tags for one week. The following week, the students brought their journals to small group to use as a tool to help increase oral responses related to their reading. Students discussed amongst themselves as well as with the teacher about what the metacognitive tag sounded like and where in their readings they became aware they were having those reader thoughts. The second week of the session was for formal assessment of the strategy.

The first session focused on the metacognitive strategies of identifying what they were enjoying about the literature and what visualization they created. The second session focused on identifying “ah-ha” moments (predictions that were verified, or invalidated) and making wonders and asking the “what if” questions for future reading. At the end of the fourth week, the students were instructed to utilize the metacognitive tagging strategies that best fit their needs and to tag them with sticky notes making additional notes in their response journals for group sharing the following week. During the fifth week, the students were assessed for the responses they made without prompting.

At the conclusion of the experiences, reading behaviors (reading attitude, motivation, and types of response to literature) were post-measured.

**DID ‘TAGGING’ MAKE A DIFFERENCE?**

The intent of creating these tagging experiences for the students was to determine if purposely exposing students to types of tagging for metacognitive reading strategies develops what we call ‘cognitive reading fluency’, and if this awareness to tagging would lead to increasing motivation for reading. At the beginning of the study, the class had an average to below average level of motivation towards reading for pleasure. Data from the *Motivation to Read Profile: Reading Survey* indicated that the median of the class’s self-concept towards reading increased from the 75th to 80th percentile. As indicated from the *Elementary Reading Attitude Survey*, the pretesting indicated a
low attitude for reading with a class median in the 51st percentile. After the tagging sessions, the numbers from this assessment increased. For “recreational” reading, the median increased from the 54th to the 78th percentile, the “academic” reading increased from the 72nd percentile to the 87th percentile, and the “full-scale” data increased from the 51st percentile to the 78th percentile. Purposely exposing students to a variety of tagging options for metacognitive reading strategies did seem to have a positive effect on their motivation to read.

An additional measuring assessment included digital recording of the students’ responses to literature and was used as a gage for determining cognitive reading fluency. The initial findings related to the students’ responses indicated that 71.5% of the class responded by retelling facts only about the literature they were reading or with no response at all (score of 0 or 1 on the Reader’s Response Critiquing rubric). Prior to treatment, only 28.5% of the class responded (6) with any form of aesthetic connections to the literature and only two students specifically referenced tags for emotions and connections (score of 2 or 3). Overall, the classes’ cognitive reading fluency for metacognitive reading response skills as measured by the scoring rubric was low. After the treatment, a substantial increase was observed. Only 23% of the class responded by simply retelling facts and there were no students who did not respond to their literature. Seventy-six percent of the students (15) responded with some form of tagging skills to the literature with 48% of the class (10) scoring a 3 on the scoring rubric indicating high level of tagging using the metacognitive tags presented in the lessons during their reading responses. The Student Self-Assessment was given after each response group met. From the average of these self-assessments, 5 percent of students did not respond, 10% felt they retold the story and listed events that happened, 40% felt they retold and mentioned what they enjoyed or imagined in their mind, and 45% felt they responded by explaining what they enjoyed and gave details about what images came to them while reading. They also gave some wonders and “ah-ha’s” during their response. Purposely exposing students to a variety of tagging options for metacognitive reading skills did seem to have a positive effect increasing cognitive reading fluency or the fluidity and awareness of thinking, applying, and reflecting of critical reading skills as evidenced in the depths of their responses.

I wrote in my journal that I was curious what a murphy bed was. Then I read that the character reached at the wall and pulled out the bed. The bed actually came out of the wall! I didn’t know beds could do that!

—Student curiosity and ah-ha tag response in small group discussion of a Boxcar Children book.

At the end of these experiences, the students completed a survey rating how they felt about their responses to literature and how using the tagging strategies helped toward improving their literature experiences. The survey asked: 1) It helped me enjoy the book 2) It motivated me to read 3) It helped me understand things going on in the story, and 4) It helped me remember more about my story. Students were able to circle as many statements as they needed. Ninety-five percent of the students (19/20) felt that developing these metacognitive reading behaviors was helpful. Of the four choices, 40% selected all statements. Seventy-five percent felt it helped them
remember more about the story, 65% believed it helped them enjoy the book more, and over 50% perceived it motivated them to read and helped understand the story better.

**DISCUSSION**

If the goal is to develop critical independent readers then the environment of the classroom will need to support opportunities to engage with the text so that authentic experiences can be formed. While some readers may arrive at this destination with little assistance, we must not take for granted that all can navigate the course of becoming cognitively fluent readers. The experiences presented here supports that scaffolding for what it looks and sounds like to be an engaged critical reader allows for students to identify and tag these behaviors which can in turn improve motivation. Others have found similarly that scaffolding literacy awareness assists students in developing their cognitive processes and builds confidence (Meyers, 2005; Keene, 2008). This inquiry also found that tagging for what the students enjoy, imagine, and wonder; as well as the validation of these aspects seemed to have had a positive effect on the attitude of these students. These skills not only were documented in small groups but were also observed during whole class read-alouds and the discussions that followed. The students interacted with the teacher using the tags presented over the six week sessions such as “this reminds me of...”, “I wonder...,” or “what if...” More students could identify what caused them to enjoy the text and carry a conversation using vivid details. They enjoyed sharing with each other about their tags and how they were interconnecting to the text and developing a deeper appreciation and understanding for the text. Wigfield and Guthrie (1995) and Gambrell (2015) also found children who were inquisitive about what they were reading enjoyed reading more; and when reading for a social reason, they enjoyed the sharing and acknowledgment aspects of these behaviors.

Additionally, there was enough evidence to conclude that for this class, tagging for metacognitive awareness skills did help improve motivation and develop confidence to share their thinking processes. It provided an avenue for the reader to move deeper into the text which built a relationship with the text. The awareness of the relationship to the text-thinking about, applying that thinking, and reflecting on the thinking with ease-during reading can be connected to what has been referred to in this article as **cognitive reading fluency**. The students demonstrated a fluent and flexible ability to naturally connect and map out their thoughts to aspects that good readers do when reading for authentic purposes. The thinking and awareness skills necessary to become engaged with the text could be identified through their ability to tag these occurrences, which is supported by the theory of Cognitive Flexibility (Spiro et al., 2013). The more they tagged and ‘criss-crossed’ their experiences, the more cognitively fluent the students appeared as they seemed to use these responses more freely and authentically to build an identity for being a reader. When we ask students to become engaged with the text we are asking them to call up experiences, feeling, and emotions. Creating personal meaningfulness allows the reader to grow and mature through the literary experience (Rosenblatt, 1968).

**LIMITATIONS.** The main limitation of these experiences was the length of time, environment, and the assessment for cognitive reading fluency. Of the six weeks, four weeks were devoted to scaffolding the “tagging” of metacognitive awareness strategies. More time between assessments may have shown different results. Additionally, this study was conducted as an action research project as such the classroom was not a controlled group and only consisted of 21 students. While the time frame and environment may seem like limitations, it also shows what amazing things can happen in an authentic classroom in just six weeks. The term ‘cognitive reading fluency’ is a new term used by the authors and is in need of further exploration. Additionally,
there was not an available established assessment for cognitive reading fluency; a self-created rubric was used limiting the reliability and validity of the results for cognitive reading fluency.

**Implications**

**Evolving Tagging for Developing Cognitive Reading Fluency.** Through the analysis of the responses and interactions the students were making during the discussion session, other “tagging” aspects arose from the experiences. Ten additional metacognitive aspects were extrapolated from the student’s responses. In addition to the tagging aspects of enjoyment, imagery, wonders, and Ah-ha’s that were introduced and modeled during the six weeks; the recorded conversations revealed students also were tagging for connections, emotions, reflections, opinions, anticipations, as well as for moments that were quotable, mystifying, astonishing, and rewarding aspects while reading (Figure 4).

**Creating a Cognitive Reading Fluency Checklist.** The next logical step in exploring tagging for metacognition would be to define specific qualities for cognitive reading fluency. Further research to define as well as measure this term is needed. What characteristic are evident when a reader is cognitively fluent? Is it enough just to expose, model, and encourage readers to use metacognitive strategies regardless of the level of cognitive fluency, or does the degree of confidence, efficiency, articulation, and smoothness to engage cognition impact motivation and comprehension of text? In other words, are there degrees of fluidity and awareness of thinking, applying, and reflecting on their critical reading skills? How reliable would such an assessment be to measure growth of the reader in terms of motivation and comprehension? Could a chart such as the 5 Point Fluency Checklist by Johns and Berglund (2002) transfer to measuring the degree of cognitive fluency in a reader?

**In Closing**

Encouraging readers to use ‘tagging’ to help them create a metacognitive map while reading strengthens not only their motivation to read, their comprehension skills as a reader, but also provides them with authentic literary experiences. Keene and Zimmerman said,

*If reading is about mind journey, teaching reading is about outfitting the travelers, modeling how to use the map, demonstrating the key and the legend, supporting the travelers as they lose their way and take circuitous routes, until, ultimately, it’s the child and the map together and they are off on their own. Keene and Zimmerman, 1997, p. 28.*
Keeping Keene and Zimmerman’s words in mind, we can see the power of Mrs. Smith providing her students with the tools they needed in order to effectively navigate their way through text for successful comprehension. As they continue their reading exploration they are truly prepared for whatever text they encounter, because they have become strategic readers through ‘tagging’ for metacognition.

REFERENCES


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http://www.texasjournalofliteracy.org/
APPENDIX A

Response/Tagging Critiquing Guide

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0= No Response
1= Summary by listing/retelling no tagging
2= inferred 1-2 tagging for enjoyment, connection, wonders, curiosities, ah-ha's
3= Purposeful tagging for enjoyment, connections, wonder, curiosities, ah-ha's
APPENDIX B

Student Self-Assessment for Tagging

Rate how you responded during group discussion.

1  I did not respond.
2  I retold my story and listed events that happened.
3  I retold my story and mentioned what I enjoyed or imagined in my mind.
4  I responded by explaining what I enjoyed and gave details about what images came to
   me while I read. I even gave some wonders and “Ah-ha’s”.

Did you feel that responding about what you enjoyed, imagined, and wondered helped you with
your reading?

___Yes          ___No

If yes, how did it help? (Select all that apply)

___ It helped me enjoy the book.
___ It motivated me to read.
___ It helped me understand things going on in the story.
___ It helped me remember more about my story.