

5-4-2018

## **Making the Abstract Accessible: The Importance of Concrete Connections to Elementary Aged Student's Understanding of New Concepts**

Bonnie L. Basgall

Follow this and additional works at: <https://huskiecommons.lib.niu.edu/studentengagement-honorscapstones>

---

### **Recommended Citation**

Basgall, Bonnie L., "Making the Abstract Accessible: The Importance of Concrete Connections to Elementary Aged Student's Understanding of New Concepts" (2018). *Honors Capstones*. 758.  
<https://huskiecommons.lib.niu.edu/studentengagement-honorscapstones/758>

This Other is brought to you for free and open access by the Undergraduate Research & Artistry at Huskie Commons. It has been accepted for inclusion in Honors Capstones by an authorized administrator of Huskie Commons. For more information, please contact [jschumacher@niu.edu](mailto:jschumacher@niu.edu).

**NORTHERN ILLINOIS UNIVERSITY**

Making the Abstract Accessible: The Importance of Concrete Connections  
to the Elementary Aged Students Understanding of New Concepts

**A Thesis Submitted to the  
University Honors Program  
In Partial Fulfillment of the  
Requirements of the Baccalaureate Degree  
With Upper Division Honors  
Department Of  
Curriculum and Instruction**

**By**

Bonnie Basgall

**DeKalb, Illinois**

May 12, 2018

University Honors Program

Capstone Approval Page

Capstone Title (print or type)

Making the abstract accessible:  
The Importance of Concrete Connections to the  
Elementary Aged Students Understanding of  
New Concepts.

Student Name (print or type)

Bonnie Basgall

Faculty Supervisor (print or type)

James Cohen

Faculty Approval Signature

James Cohen

Department of (print or type)

Curriculum + Instruction

Date of Approval (print or type)

May 1, 2018

**HONORS THESIS ABSTRACT  
THESIS SUBMISSION FORM**

AUTHOR: Bonnie Basgall

THESIS TITLE: Making the Abstract Accessible: The Importance  
of Concrete Connections to the Elementary Aged  
Students Understanding of New Concepts

ADVISOR: James Cohen

ADVISOR'S DEPARTMENT: Curriculum and Instruction

DISCIPLINE: YEAR: 2018

PAGE LENGTH: 20 pages

BIBLIOGRAPHY: Yes

ILLUSTRATED: No

PUBLISHED (YES OR NO): No

LIST PUBLICATION:

COPIES AVAILABLE (HARD COPY, MICROFILM, DISKETTE): 2

ABSTRACT (100-200 WORDS): Yes

# Abstract

This paper is a case study about a second grade student that had high fluency, but low overall reading comprehension and looks to examine both where the comprehension breakdown was coming from and what could be done about it. I began with observation only, watching him as he worked independently and with others in order to gain an insight into his patterns and behaviors. I then began working with him in small groups, pairs, and one on one, in order to learn more about his comprehension and thought processes. As I developed a clearer picture of the student I began researching developmental abilities at specific grade levels and stages of cognitive development. I found that students at his age cannot yet independently understand abstract concepts and inferences. This has implications for teachers today as current curriculum relies more on nonfiction concepts that are new to the students. I addressed these concerns by providing context to the students through concrete connections to their personal lives and explicit examples of the concept. This helps the student connect to the abstract concept and make it meaningful, which in turn can improve comprehension.

## Making the Abstract Accessible: The Importance of Concrete Connections to Elementary Aged Student's Understanding of New Concepts

*The students were gathered whole group sitting on the floor while the teacher read a nonfiction text explaining the concept of scarcity as part of an overall economics unit. Jason (all names and places are pseudonyms) was sitting on the left side of the group. The teacher was using the text as an opportunity to review text features. She asked the students how the title of the first paragraph could help you figure out what the reading would be about, the title in question being "What is Scarcity?". The teacher called on Jason and asked him what he might learn as he read. As I watched, Jason's eyes started tracking the page projected on the smart board, his mouth moving along as he read the paragraph. His teacher stopped him from reading the passage, telling him he did not need to. She asked again, "without reading the paragraph, can you tell me what you might learn about when you read this story, if the title is "What is Scarcity?". A number of hands went up in the room, but Jason remained silent. He looked at the board and back at her without speaking. She asked if he needed any help answering the question and he nodded yes. Jason's teacher called on another student who replied, "It will tell us what scarcity is".*

### **Cognitive Development of Elementary Aged Children**

According to Piaget's Stages of Development, children aged 7 to 11 fall into the concrete operational stage. This stage is characterized by what Piaget called a "growing understanding of the principle of conservation (p. 1)". He further stated that at this stage "a child begins to think with logic but is still constrained by his affinity to the concrete, physical realities of the here and

now. Therefore, he still has some difficulty understanding questions and problems of an abstract or hypothetical nature” (Psychology notes HQ, 2017). This theory postulates that abstract thinking is difficult for children at this age, who require concrete examples of concepts. This is further supported by research into the development of the Rostral Prefrontal Cortex (RPFC), which is thought to take place during adolescence. The RPFC is broken into two parts the lateral and the medial aspects. The lateral aspects support the ability to detach oneself from the environment and to elaborate, evaluate and maintain abstract rules and information, as it is involved in reasoning, problem solving, and more generally abstract thinking (). The medial aspect of RPFC, or medial prefrontal cortex (MPFC), is implicated in social cognition, that is, the understanding of other people's minds. As this develops during adolescence, that means that children who have not yet entered adolescence or who have just started their adolescence will struggle to meet academic demands when abstract concepts are being introduced or discussed. This is especially true if the student has not needed to think abstractly before. Vygotsky believed that students thinking develops in the everyday interactions they have with others. If those around them have not modeled or taught how to think abstractly before then the child has no frame of reference to draw from in order to make meaning out of the information being provided to them. (Gauvain & Cole, 2009)

These facts coupled with the current educational trends introduce interesting dilemmas. Today's educational system puts an emphasis on student comprehension and higher order thinking skills. The majority of schools today utilize the Common Core State Standards, which put a greater emphasis on higher level of comprehension skills than previous programs did. They require students to read more nonfiction texts, they ask them to answer higher order thinking questions, and put an emphasis on explaining their thinking. Students in first grade are now being asked not only to be able to answer questions based on details from the text, but ask

their own. The higher level of expectations regarding nonfiction texts also impacts the need for higher levels of comprehension and higher order thinking as well, because many of the concepts will be new or will introduce new vocabulary. (Calkins, Ehrenworth, & Lehman. 2012)

The same can be seen in the Next Generation Science Standards (NGSS), which align themselves to the Common Core and require the same higher order thinking at a young age. For instance one of the standards for second grade asks the students to “compare multiple solutions designed to slow or prevent wind or water from changing the shape of land”. If students are expected to think more critically and comprehend texts at a higher level, how can they if the students they are teaching are developmentally not ready for the material? That is the question this paper looks to answer through a year long study of a second grade student.

### **The Context: The Classroom**

Jason’s classroom was made up of 24 second grade students of middle to upper class backgrounds with the majority being white. The class was arranged so that the students sat in pods of four or five. Each student had a chromebook as part of the districts one to one technology program, and they used them often. The classroom was led by a woman who had been teaching at the school for eleven years, seven at the kindergarten level and four in the second grade. During the time I observed Jason the teacher was co-teaching with a student teacher (myself) who was a part of a year long placement.

For literacy instruction, the students were intended to have a half hour of writing, a half hour of science *or* social studies, and two and a half hours of literacy instruction. This schedule however saw some changes as the year progressed as the teacher in Jason's room moved away from prescribed curricula and started designing standards based integrated science and



social studies units. These units combined reading and writing into science and social studies and made it possible for the half an hour allotted for the subjects to be spread out over the entire morning from math until lunch. The students read nonfiction texts on the subject to discuss text features; they listened to fiction stories to discuss story elements, and their writing had to do with their overall understanding of the topic.

Many of these lessons took place in a small group setting with the other students which allowed a certain level of free choice in which they could choose any of the approved literacy activities after they had finished any work they had to accomplish. The students would work independently until their group was called to the back table to work on the specific skill of that lesson. The reading groups had been chosen at the start of the year based on a fluency read and comprehension reading the students completed one on one with the instructor at the start of the year.

These groups were only used for the small group lesson, which was the same for every group, but provided more or less scaffolding depending on the group in question. These groups were reassessed every week as the students completed Fresh Reads (Afflerbach, 2011) which tested their comprehension on a text that fell into their assigned reading level. When the students weren't working in small groups, the teacher utilized a number of read alouds and discussion based lessons that allowed for collaboration.

The district broke its elementary schools into a lower and upper elementary, with students in kindergarten through second grade at one school and students in third through fifth in another. This meant that Jason was a part of this school's oldest set of students and was being prepared to "graduate" into its sister school, where I have been told, the demands on the students would be much higher. As a result there was a push this year to address any academic

concerns now before the students moved on. For this reason there were three different tier 2 interventions available based on the student's need.

## **Introducing Jason and Data Collection**

Jason is an eight year old African American male. He is the youngest of four children, three boys and one girl, the oldest of whom is 23 and the next closest in age to him being 13. He is social but quiet and has a handful of friends he is closer to. He enjoys sports and learning about large cats, like panthers and mountain lions, and he also has an interest in comic books. During his free choice time in the classroom he usually chooses to play a phonics game with a partner. When that is not an option, he will read a non-fiction text on a subject that interests him.

Data collection consisted of observations with field notes, interviews, and one to one tutoring. I observed him every day for almost a full school year. While observing and taking field notes, I also interviewed him multiple times. During the first interview I wanted to get a better picture of how Jason felt about reading, by using the Burke Reading Inventory (Goodman, Y., Watson, D., & Burke, C., 2005.). His responses indicated a student with a positive view of reading and his own reading ability, as seen by his response to the question "how would you rate yourself as a reader?", where he replied a four, because he could read older stories from his dad or brothers. He also cited his brother as the best reader he knows because... "he reads a lot and is smart". It was interesting to note that even though he could tell me what strategies he used when reading, if he came to a word he didn't know or didn't understand, when I asked him if he thought his brother would do the same things he said no, because his brother wouldn't have those problems. The second interview I gave was primarily to gain insight into what he liked to read during his own free time. He indicated that he liked to read about sports,

superheroes, hobbies, and animals, but that his favorite book of all time was the Diary of a Wimpy Kid, because it was funny. This all paints a picture of a student with a specific set of interests that utilizes positive strategies when reading, and that enjoys it. However, academically there were other aspects of Jason that need to be discussed so as to get a clearer picture of him as a reader.

At the start of the year based on his fluency read and his comprehension assessment, Jason scored into the “on-level” reading group, which receives minimal scaffolding before being allowed to work independently on a skill. As the year progressed Jason was found to need more substantial scaffolding, and as a result, changed groups in mid October. His teacher struggled to find where Jason’s problems were coming from. Jason was a strong reader, who utilized strategies to decode text. He was willing to share in class and was skilled at locating text evidence to grade level questions. However he sometimes struggled to work independently after the teacher scaffolded the lesson. He tended to write answers word for word from the text instead of putting it in his own words and when prompted couldn’t explain what it meant, and his weekly fresh reads were showing fluctuating scores from week to week.

Then in mid October his scores on Map and Aimsweb (the schools standardized tests), gave his teacher (and me) a place to start. Jason’s score fell slightly below the class average, and these tests showed us the specific breakdown as to why. It was in the area of comprehension that his scores showed a breakdown was occurring. This knowledge allowed Jason’s teacher to look at the things that were giving Jason trouble in a new light and allowed her to begin making changes to help address her concerns. As I had said earlier she moved him to the strategic group where he could receive more scaffolding and modeling before working independently. She also had him start taking his Fresh Reads (Afflerbach, 2011) on paper with either her or myself, so that he could locate his evidence and we could work with him to

understand when he made a mistake and why. Finally she made a push to have Jason entered into the comprehension based intervention to help build better comprehension skills and strategies that he could use going forward.

As this progressed and I observed, I started to see that it wasn't all aspects of comprehension that were causing his confusion. Jason had several strengths when reading:

- 1) He was strong at pulling information directly from the text
- 2) .He had a very good memory
- 3) He could explain the details of what happened in a story or text.

Through my observations of Jason and my work with him as a student teacher in his room, I began to notice a pattern in his comprehension breakdown, which fell into two major categories that will be described during the following section.

### **Comprehension Breakdown**

Jason in general had difficulty in two major areas: making inferences and understanding abstract concepts. The latter in particular was a cause for concern, particularly in his current classroom setting as most of his literacy instruction was being presented through science and social studies texts on new concepts, such as Erosion, Economics, the Native Americans and Colonists, and Local Government. In the following sections, I will provide specific examples of both areas of concern in context so as to provide you with a more comprehensive picture of Jason as a reader.

### **Inferencing**

To give a more complete picture of Jason as a reader I have chosen three examples that all took place in different instructional settings. The first of which was an assessment that Jason took as a part of his intervention unit. Jason was asked to read a passage about bamboo, as all the texts in the unit had related to plants, and answer five questions at the end that required him to identify details in the text. The final question asked the reader to identify the reason that bamboo was so useful, as the text had explained that it was used to build roofs, musical instruments, baskets, and many other things. The options were: because it grows in China, because it grows in other parts of the world, because it is light and strong, or because it is used for toys. The answer to this question was not in the text and instead the students had to use their own understanding to identify what makes bamboo so useful. This would include recognizing what facts about bamboo have to do with its usefulness. Jason read the question and then went back to the text and reread it looking for his text evidence. As he came to the end of the passage a second time he picked up his pencil and filled in the bubble labeled because it grows in China. I asked him if he was sure and he replied "I think so, because it does say here that bamboo grows in China". He had found one of the answers in the text and chosen it without understanding that the answer didn't make sense. I replied to him that it was true that bamboo grew in China, but is that why it was useful. I asked if bamboo grew somewhere else would it be less useful. Jason replied no, but even with further prompting was unable to identify the correct answer.

The next example took place one on one, with myself during one of Jason's weekly "Fresh Reads". The passage was titled \_\_\_\_\_ and was about a boy named Jose who was learning to fish from his grandfather. At the end of the passage the boy's grandfather makes the boy throw the fish back into the lake. The boy is upset and asks his grandfather why he has to do that, to which his grandfather replies, it gives the fish the chance to get bigger. The final line of the story

has Jose tell his grandfather that he hopes to catch a released fish next time. The passage reading aloud was completed smoothly with very little error, and Jason moved onto the associated questions. The first four were multiple choice and Jason answered them quickly. The final question was a short answer, and asked why Jose wanted to catch a “released fish”. After a pause Jason indicated that he thought Jose wanted to catch a fish again. At this point I prompted Jason and asked why he thought that might be, why would the boy in the story want to catch a fish that had already been caught once. Jason paused without response. I prompted him again by saying what happens to a fish that is thrown back, to which Jason replied “It gets bigger”. I told him that was right and asked him again, so why would Jose want to catch a released fish, how would that fish be different. After a pause Jason responded, “It would be bigger”. This showed that with guidance Jason could make those inferences, but that he still needed support and wasn’t doing so independently.

The final example of inferencing took place during his comprehension intervention which he was in with one other student. The passage that day had to do with telling time, something the students had been learning how to do in math the previous month. The passage explained all the different ways that people used to tell time. This included sundials, hourglasses, wind-up clocks, and digital clocks. The passage had explained that sundials were large stone objects that told time using the sun’s shadow. I tried to make this more concrete by asking the students if they had ever noticed that their shadow got longer and shorter during the day, and Jason replied “like when you are a baby”. I explained that I was talking about the how long our shadow was in the morning and at the end of the day, compared to the middle of the day, and asked if they had ever noticed that the sun moved across the sky, to which both students said yes. I explained that as the sun moves across the sky our shadow moves too, just like the shadow on the sundial. I explained that the arm on the sundial doesn’t move, and as the day goes by the

shadow moves around the sundial just like ours does, and that in the past people used it to tell time. At the end of the passage were a series of comprehension questions that assessed the student ability to draw conclusions. The first question asked the students to identify a time the sundial wouldn't have worked. Jason immediately raised his hand and said "maybe when it's jammed". When I asked what he meant by that he replied, "you said the arm doesn't move", referencing an explanation of a sundial I had given during the reading. I reminded him that the arm wasn't supposed to move, but praised his guess. I then asked both students again if they could think of a time a sundial wouldn't work. I further prompted "if the sundial tells time by using shadows, when wouldn't a sundial work?". Both students were silent, Jason looked back to the text with a frown on his face as he re-read. I asked again putting additional emphasis on the word sun trying to guide the students to the idea that the sundial needed the sun to work, and therefore wouldn't work at night, however before I could see if the third prompt would work a passing student who heard the question as he walked by, responded "it wouldn't work at night". I took this opportunity to ask Jason and his partner if that made sense and why. Jason nodded, but when prompted could not explain why that answer was correct, while his partner shrugged. I explained that there would be no shadows at night because there is no sun before moving onto the next question.

### Abstract Concepts

The second area of comprehension that Jason needed additional support in was in understanding abstract concepts. As with his inferencing ability the examples provided are collected from multiple instructional settings. The first example took place in small group. The students were reading a magazine about the power of wind over the course of two days. One of the examples talked about the lee side of a tree. The reading was discussing how powerful wind

could be, and as an example provided a picture of a tree that was growing sideways. It explained that the branches on the side being hit by the wind had been killed by the strong winds, but the branches keep growing on the "lee side". It goes on to say "That is the side of the tree that is protected from the wind." The longer the tree is alive, the longer the branches on the lee side gets, until the tree look like they are bending in the wind. As a refresher of the reading done the day before the teacher asked the students "Why does the tree in the picture grow sideways?" She had the students turn and talk to a neighbor. Jason had been absent the day before when the initial reading was completed and had done it independently before the group started, instead of with them the day before. Due to this she had Jason share with her instead of a partner to see what he had gotten out of his independent reading. As the other groups got started she restated the question to Jason, but he shrugged his shoulders. She asked him to look back at what it says in the text, but even after rereading it he could not locate the answer, replying "maybe because that's the way it faces?". She replied "No, it's right here in the text, read it out loud to me." Jason reread the passage out loud to her and as he finished she asked him to restate what he just read. He said "because it's windy". This was in the text, but it was only the first sentence and didn't explain why the tree grew sideways. It was a part of it, as the wind is what killed the tree on one side, but there were parts of the text that could more easily answer the question that he did not reference. She indicated this to him and asked him to relate what he read to why the tree grows sideways. At this point she referred back to the text and asked if the tree would stand upright if the wind stopped blowing. This conversation carried on for another few minutes, with her referencing the fact that the branches facing the wind was dead, and that the other side grew without it. Still Jason could not explain what that had to do with the tree growing sideways. The teacher in the end told him the reason the tree grows sideways as the rest of the group came back together to finish their discussion.



Another example of an abstract concept that Jason needed additional support with dealt with text structures. We had been reading a story a day all dealing with different kinds of plants and each text was a different writing style. The focus of the lesson was identifying details in the text, and one of the overarching details the students were looking for was how each text was different. Day one and four were general nonfiction texts, day two was a series of journal entries, and day three was a poem. The question posed to the student was "How is the text we read today different from the one we read yesterday". The story he was currently reading was a poem about a Venus fly trap, and the text he read the day before was about a flower called the titan arum and was written in a journal style. The poem has stanzas and a rhyme scheme, while the journal was written like a story under headings such as Monday and Tuesday. Separate of the differences in writing style the poem also used cartoon illustrations while the titan text used real images.

I first asked the group if they noticed any differences between the two texts. Grace (the student in the intervention program with Jason) shrugged, while Jason noted that the kind of plant being discussed was different. I asked if there was anything else different, to which they said they didn't know. I had them look at the pictures from both stories and asked if they noticed that the new story used drawings instead of real pictures, and they said they did. I then asked why they think the texts had different pictures, to which the students indicated that they were not sure. I asked if they remembered what kind of story we read yesterday and Jason rose his hand and confidently replied "a journal". I asked if this story was the same, and he said no. As we read it I asked them to see if they could figure out what kind of text this was. Through this modeling Jason and his partner could see the differences between the texts when they were pointed out to him, that they could not see when they were working on their own. As both used real facts, were part of the same unit, and talked about similar topics, Jason could not easily

identify any differences, especially because both were unfamiliar to him and he had little background knowledge to draw on.

The final example that I will discuss took place with Jason and another student Sarah. The whole class had been learning about erosion, watching videos and doing hands on activities about how things break down. As part of a culminating assessment the students were asked to define erosion and explain each of the different kinds of erosion (ice, wind, and water). The students were working independently and being checked as they went along. The classroom teacher and I were circulating the room to aid individual students who needed help. Jason and another student named Sarah in particular needed additional support. Their information was pulled directly from their resources word for word, and portions of it did not relate to the lessons objectives. These students were pulled to the back table to work with me to work through the question in a more step by step manner. We began by reading the texts definition of erosion "Erosion is the wearing away of Earth's surface by wind, water, and ice". I asked the students to break down the definition with me into smaller sections. We started with the phrase wearing away. I asked the students if they knew what it meant, to which I got a guess from each student, "blowing away" from Jason and "taking away" from Sarah. I used a word written on a whiteboard slowly fading away as we handled it to illustrate wearing away and asked what was happening. We eventually came to the definition that wearing away meant breaking down or disappearing. We then moved onto the phrase earth's surface, and Jason was able to connect that the earth's surface was the land we live on. I then asked the students to rewrite the definition of erosion using the new terms we had talked about so that it made more sense to them. My hope was that they could keep the format of the original definition but replace the vocabulary that was causing their confusion with the simpler terms we had come to together. Sarah could explain that erosion was "something that was caused by something else, and that

after it happens parts of the earth would not be there anymore”, but couldn't write a definition that explained how that happens or that used any of the terms we had just worked to define. Jason was still trying to grasp the concept as well and as the conversation went on was sharing less with the group. To pull him back in I asked him to help his partner find a word that we could use to replace wearing away in the texts definition. Jason paused, looked back at his original definition and said “Erosion?” with an unsure lit to his voice, indicating it as a possible word to replace wearing away. I reminded him that erosion was the word we were trying to define, and asked if it would make sense for the word to be inside the definition. Jason shook his head, and down at his paper. I praised him for his guess, and tried to guide him to the answer by reminding him of the conversation we had earlier about what wearing away was pulling out the visual of the dry erase board again. Eventually the definition was created that erosion was the breaking down or damaging of the earth and that it happened because of wind, ice, and water. I asked both students at the end if they understood what erosion was a little better now that we had worked together. Sarah said that she did, but Jason replied that he still did not understand that well.

## Implications

Jason was an intelligent student who enjoyed reading and learning. He was able to make basic inferences with teacher support and could understand concrete concepts that he had a point of reference to draw from. However, when the material dealt with new information that he had no knowledge of, or asked him to make inferences beyond what was present in the text, he struggled to make the connections. What does this mean for Jason and for other students in the same position as him.

As I discussed in an earlier section, children at Jason's age rely on concrete information. Their cognitive development has not yet reached the point that they can independently make connections to abstract concepts without support especially when the concept is entirely new to them. However, the educational trends today require students to think abstractly more and more, as we push towards higher order thinking in our students and place a higher emphasis on nonfiction texts.

How can teachers of primary aged elementary students successfully meet the requirements of the Common Core and the Next Generation Science Standards, if the students cognitively cannot be successful?

### **Implications**

In this section I discuss three possible strategies to improve students overall change of success.

The first strategy was something that was briefly introduced in the examples I provided above. In the situations that Jason proved able to make those abstract connections and inferences, it did not happen independently. He was guided to the answer through careful scaffolding and modeling of the questions we were trying to guide them to. By scaffolding the skill for the student and breaking down the concepts into smaller sections, we allow them to learn how to do the same thing for themselves. This allows them to be successful on the skill you are scaffolding while also teaching them the strategies that will allow them to be more successful the next time they attempt the skill independently.

The second method to improve student comprehension is to provide explicit examples. This will be especially important in nonfiction topics where the subject is completely unfamiliar to them. This is because, "Without prior knowledge, a complex object, such as a text, is not just difficult to interpret; strictly speaking, it is meaningless" (Stevens Pg. 2). By showing them what

you meant through video's, read aloud's, pictures, or hands on experiences, the students gain something tangible to connect the concept to, and are better equipped to understand it moving forward. This new knowledge becomes relevant background knowledge they can now access as you move forward into the topic of study.

The final method is to utilize the students funds of knowledge. Each student has knowledge and understandings that they carry into your classroom that can be built on as the student learns new concepts. When teaching a concept that is new, relate it back to something that they do know about, something that they have experience with in their day to day lives, so that it can have meaning to them and they can better conceptualize the topic at hand (Gonzalez, Moll, & Amanti). Every subject no matter how abstract has a relevant connection to the students own understanding. For instance, when teaching about economics, students might not understand scarcity or shortages of food or other products, but they know what it's like to run out of something, to try to save the last few pieces of candy or toys so that they will last longer. By connecting the term to a personal experience the students can better connect with the topic and then use that connection to make those abstract connections more concrete.

## References

- Afflerbach, P. (2011). *Reading street*. Glenview, IL: Pearson.
- Calkins, L., Ehrenworth, M., & Lehman, C. (2012). *Pathways to the common core: Accelerating achievement*. Portsmouth, NH: Heinemann.
- Gauvain, M., & Cole, M. (2009). *Readings on the development of children*. New York: Worth.
- Goodman, Y., Watson, D., & Burke, C. (2005). *Reading miscue inventory: From evaluation to instruction* (pp. 273-274). New York: Richard C. Owen.
- González, N., Moll, L. C., & Amanti, C. (2009). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. New York: Routledge.
- Psychology Notes HQ. (2017, April 10). Piaget's Stages of Cognitive Development: A Closer Look. Retrieved from <https://www.psychologynoteshq.com/piaget-stages/>
- Langer, J. A. (1984). Examining Background Knowledge and Text Comprehension. *Reading Research Quarterly*, 19(4), 468. doi:10.2307/747918
- Next Generation Science Standards. (2018, April 06). Retrieved from <https://www.nextgenscience.org/>
- Stevens, K. (1982). Can We Improve Reading by Teaching Background Information. *Journal of Reading*, 25(4), 326-329. Retrieved from <http://www.jstor.org/stable/pdf/40030380.pdf?refreqid=excelsior:136aeaf6cbcb12d0f6bc90b87341d9>