

A Colorful Field of Learners: Visualizing the Beauty of Diverse Learners in a Classroom Community

Susan Glaeser

Doctoral Student

Texas A&M University-Commerce
Commerce, TX

Leslie Haas

Doctoral Student

Texas A&M University-Commerce
Commerce, TX

Susan Szabo

Associate Professor of Reading

Texas A&M University-Commerce
Commerce, TX

Abstract

Stanovich (1986) determined there were four factors that affected the learning process: cognitive consequences, developmental change, reciprocal causation, and organism-environment correlation. A classroom activity was developed to help the doctoral student participants to visualize how individual learner's histories are influenced by the interaction of these four factors. This visualization activity helped these participants to see the 'beauty' of diversity, as well as how each of the four terms does affect students' reading and histories differently.

Diversity can be a wonderful and beautiful thing and should be embraced by every classroom teacher. This is important because English language learners (ELLs) population is growing at a rapid pace. It is estimated that 20% of students today speak a language other than English at home (US Census Bureau, 2010), and this number is expected to grow to 40% of the school-age population by 2030 (Thomas & Collier, 2002).

As educators working on our doctorate degrees in reading, we were able to explore the reasoning behind this value. One of the required courses is *Reading Process: Theories and Implications*. This course work not only allowed doctoral students to analyze varied definitions and theories of reading/learning but it also helped them to determine the role they played in the reading/learning instruction. The doctoral course was designed to help graduate students reflect and transform

ideas about the importance of theories and how, why, and when they are used in the K-12 classroom to enhance the reading/learning process. What teachers think, does determine the theories that are used and the way the teacher approaches used in the classrooms (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005).

One of the assignments was facilitating a chapter review to our classmates, other teachers, and educational administrators. In addition, we had to provide an “after” activity that would help our classmates visualize what the author wanted us to learn from the chapter.

Chapter Review

Keith Stanovich (1986) coined the term the “Matthew Effect” to explain the gap between strong readers and weak readers. The idea behind the “Matthew Effect” is that those who do well participate more and develop better skills, and those who do poorly participate less and are slower to progress. Students who need to read the most are the very ones who are reading the least (Cunningham & Stanovich, 2001). As this cycle of poor reading is set in motion, teachers search for clues in an effort to break this cycle. Unfortunately, while teachers are looking for a cause for struggling readers, teachers may overlook that the reason for poor reading may also be the consequences of being a poor reader (Stanovich, 1986).

Stanovich (1986) came up with four terms to describe this circular thinking. He states that there are four circumstances or factors that affect the reading and/or learning process. They are cognitive consequences, developmental change, reciprocal causation, and organism-environment correlation. These four circumstances are interactive and create part of each reader’s history. As the Transactional Theory (Rosenblatt, 1978) explained, this history effects how a reader respond to reading a text. As a reader’s history may positively or negatively influence a student’s reading outcome, educators must keep in mind each reader’s history as they make judgments on and about students’ reading ability.

Cognitive Consequences

Cognitive consequences are the processes that a reader engages in when reading a text. Cognitive processes are influenced by many things including the reader’s confidence in their ability to read the text, background experiences with the text and the topic being read, as well as the developmental stage on the reader. Ehri and McCormick (1998) discussed that some children may be delayed readers or less mature readers than their fellow classmates leading to a mistaken judgment on their ability.

Developmental Change

Developmental change is always in a state of flux, as what a child had difficulty doing at five will not be the same at six or sixteen. The problem with developmental change is it may become part of a reader’s history. For example, if a reader experiences a great deal of anxiety over certain reading situations, it is possible that in the future this anxiety will interfere when

learning new material, which may lead to a learned helplessness as struggling readers give up (Vacca & Vacca, 2008).

Reciprocal Causation

Reciprocal causation explains the process of a cause becoming a consequence. For example, children who like to read will be more inclined to read widely and deeply. These children will encounter new vocabulary words at a greater rate than those who do not like to read (Beck, McKeown, & Kucan, 2002). Those readers who do not read widely or deeply have a smaller vocabulary leading to difficulty when encountering new vocabulary words in future readings, thus, creating a new cycle of not reading widely or deeply, having a smaller vocabulary, and difficulty with new vocabulary words (Blachowicz & Fisher, 2000).

Organism-Environment Correlation

The organism-environment correlation is seen as a strong factor of the Matthew effect. Children who are in environments that do not foster strong reading environments are in danger of passively accepting their reading fate. Research conducted by Share, Jorm, Maclean, and Matthews, (1984) demonstrated that children who are in classrooms or schools with other children who are strong readers make better progress than those who are surrounded by weak readers. This led educators back to the beginning of the cycle; the cause and effect in the reading cycle takes place while interacting with a reader's past and current history.

Theoretical Framework

The 'after' learning activity used was posited in several learning theories. First, is the social cognitive theory (SCT; Bandura, 1989), which comes from the social learning theory, which states that learning is the interaction between the text we read, our perceptions of what is read and the dialogue of others that have read the same text. Second, the constructivist learning theory has its roots in SCT and states that learning takes place with real-world hands-on experiences that makes the learners an active participant in the learning process. In addition, social interactions between other humans are important in the learning process (Melzoff, 2009). The final theory is the dual coding theory, which describes how both print and pictures are equally important in the learning process.

University Classroom Activity

The purpose of this activity was to have our peers (classroom teachers and administrators) create a visual representation that demonstrated that individual learner's history are influenced by the interaction of cognitive consequences, developmental change, reciprocal causation, and organism-environment correlation. In addition, the activity demonstrated both the art and the science of teaching diverse learners.

Procedure

Each participant was given two objects. First, was a single sheet of paper, which had five circles with “history” printed in the middle of each circle. The second object was four different colors of play-dough that represented the four terms: cognitive consequences, developmental change, reciprocal causation, and organism-environment correlation. Explanations of these terms are in the earlier.

Step 1. The first term, *cognitive consequences*, was briefly explained. While chapter review section explaining the importance of cognitive consequences and how they are influenced by self-confidence, self-motivation, and to developmental stages, the following questions were asked:

1. What are some other things that affect a student’s cognitive ability?
2. What is the affect of developmental change?
3. Are all children expected to be able to walk before the age of 11 months?
4. Why is this not an expectation and what does this expectation do to a child?
5. Why do we expect students to perform the same cognitively, such as all children must read by the end of first grade, when it is not always developmentally appropriate?

Next, the presenters portrayed the cognitive consequences of several types of readers and its effect upon these readers’ “history.” One example given was of a third grade English Language Learner who came to public school in this country with no prior schooling in their native country. This child’s home language was not part of the bilingual program offered at the school and English as a Second Language (ESL) services were offered twice weekly as a pullout program.

While the participants listened, they rolled five pieces of the same colored play-dough into small, medium, or large size balls. They were then asked to place one ball around each of the five circles on the paper.

Step 2. The second term, *developmental change*, was briefly explained. While explaining what developmental change is and why it is important, the following questions were asked:

1. How can we help our students develop in such a way that past failures are not future failures?
2. We also wanted our peers’ input about the importance of scaffolding learning, working within a child’s Zone of Proximal Development (ZPD), and differentiation.

Again, while the participants listened, they rolled five pieces of the same colored play dough into small, medium, or large size balls. They were then asked to place one of these balls around each of the five circles on the paper. There were now two different colored play dough balls around each circle on the sheet of paper of various sizes.

Step 3. The third term, reciprocal causation, was explained. Then the class members were asked if they had experienced reciprocal causation in their own classrooms and asked for examples as well. Self-efficacy was used as an example as a way to show this process. A student

feels good about the effort of the thoughtful work they turn in for assessment, the student is praised for their efforts, and their sense of self-efficacy grows in a positive manner. The next time the student is asked to turn in work for assessment, they work hard and thoughtfully, are praised for their efforts, and once again, their self-efficacy grows in a positive manner. Thus, they learned if they worked hard and did well, they would receive praise, which in turn reinforced their positive self-efficacy toward learning.

Once again, while the participants listened and participated in discussion, they rolled five pieces of the same colored play dough into small, medium, or large size balls. They were then asked to place one of these balls around each of the five circles on the paper. There are now three different colored play dough balls around each history circle on the sheet of paper of various sizes.

Step 4. The fourth and final term, *organism-environment correlation*, was talked about and discussed. In addition, we had the class members discuss the pros and cons of both heterogeneous and homogenous reading groups and we asked for specific examples from their experiences. In addition, we asked them if they believed a student would develop into a better reader if they were surrounded by positive examples of readers.

Finally, while the participants listened and participated in discussion of the final term, they rolled five pieces of the last play dough color into small, medium, or large size balls. They were then asked to place one of these balls around each of the five circles on the paper. There are now four different sized, different colored play dough balls around each history circle on the sheet of paper.

Step 5. Once the teaching of the four terms had taken place as well as discussion, the participants were asked to draw a stem line from the “history circle” to the bottom of the page. Next, they were asked to sit back and describe what they had created with their play-dough creation. Participants quickly noticed that five simple flowers had emerged, each with its own stem. Thus, the majority of the students commented that they had made a flower garden.

The participants were then asked to visualize the development of each student as a “flower” in their class and to realize that each student is different with their own unique histories, as each student (flower) had a different ball size for each term.

Discussion

The four terms affect each student’s reading histories differently. Thus, it is important that each individual “flower” be nurtured differently in order to mature and blossom. Every classroom of students has its own beautifully unique field of flowers, which is represented by the small, medium and large colored clay balls. This visual allowed the class members to see that the histories of children are very different. Using a concrete visualization technique, such as the field of flowers, is an ideal way to represent a difficult concept concerning the interactions between causation, circumstance, and consequence of readers while gaining new understanding on the beauty found within the differences of each child and each classroom.

Implications

For children who come from a background rich in literacy experiences, their first connections are likely to be more positive than those who did not come from literacy rich backgrounds (Tabors, Roach, & Snow, 2001). Children who lack a strong literacy foundation or those who struggle to read will need sensitive teachers to help promote language and literacy development. Thus, as classroom teachers teach young readers or older struggling readers the necessary skills to read, it is necessary that each reader be seen as an individual with his or her own reading/learning history.

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