Georgia Journal of Literacy
2024, Vol. *46*(2), pp. 46–49
https://doi.org/10.56887/galiteracy.143
ISSN: 2833-7611

It's Time for a "Brain Drain!"

Amy Davis
Eastern Illinois University, Charleston, IL

ABSTRACT

In their classrooms, teachers create learning environments that foster knowledge acquisition through the strategies they choose to implement. This article highlights a strategy called Brain Drain, which teachers can set up as an activity that will help students access their prior knowledge, connect new learning, and have an opportunity to discuss and build upon this learning with peers. The Schema, Cognitive Load, and Sociocultural Learning Theories are mentioned, briefly highlighted, and connected to this strategy.

KEYWORDS

schema theory; collaborative learning environment; social interaction; long-term memory integration

Teachers have the formidable task of planning strategies that will foster a collaborative learning environment and help students acquire, retain, and recall information. Each student comes to the learning space with prior knowledge based on their personal experiences. While learning is a social process, allowing students to discuss their learning deepens those existing connections.

The Brain Drain strategy is one that allows students time to access their prior knowledge, connect new learning, and express their understanding with peers. As students acquire, recall, and share their learning with others, they can feel their contributions are heard and valued. The learning space becomes an expressive, collaborative, and rich experience for students.

Background Knowledge and Social Learning Theories

Creating learning environments that foster the recall and sharing of knowledge are ones where students are actively engaged in the learning process. There are two theories that support the Brain Drain strategy. The Schema Theory introduced by British psychologist, Frederic Bartlett in 1932, states that acquiring knowledge is a two-step process. The first process is that individuals build mental representations of the world around them. When acquiring new knowledge, they integrate information stored in long-term memory, referred to as *schemata*. Schemata will be different for every reader, and mental structures will slowly change over time as new knowledge is assimilated (Bartlett, 1932).

The likelihood of information being encoded to long-term memory is dependent on the ability of working memory to process and integrate new information into existing schema. According to Smith et al. (2021), knowledge stored in long-term memory can be categorized into two types: *availability* and *accessibility*. *Availability* refers to that relevant knowledge that is held in one's long-term memory, while *accessibility* is the time and ease in which this knowledge can be retrieved.

Students learn from their interactions with others. Russian psychologist Lev Vygotsky (1962) examined how social interactions influenced the learning process. He concluded that learning cannot be separated from a social context. Through these interactions with others,

CONTACT **Dr. Amy Davis**, Assistant Professor; Department of Teaching, Learning, & Foundations; Eastern Illinois University, Charleston, IL; email addavis7@eiu.edu.

individuals learn the rules, skills, and abilities that are shaped by one's culture. Furthermore, Vygotsky (1978) concluded that language is the tool that promotes thinking and reasoning and supports reading and writing.

When teachers utilize strategies that promote and celebrate individuality and the collective expression of all those participating, the reading and learning experience is enhanced.

Brain Drain Strategy

The Brain Drain strategy can be used with students of varying ages and abilities. The purpose is to allow time for "draining" the brain of previously read content and background knowledge, then allowing time for peer-to-peer discussion. There are two steps in implementing this strategy.

Step 1: Preparation. To prepare, post self-adhesive chart paper around the classroom. Give each student a marker, then ask students to find a partner and a piece of paper.

Step 2: Implementation. Set the timer between two to five minutes; time will vary depending on students' ages and abilities. Pose a question to the group and ask students to quietly use words or pictures to represent their understanding of the text.

Step 3: Discussion and Wrap-Up. When the timer goes off, allow two to five minutes for them to discuss with their partner what they've drawn or written and allow them to add to their initial explanation or drawings. Ask each group to share their posters with the group.

Table 1: Directions for Brain Drain Strategy Implementation

Step	Directions
Preparation	• Post self-adhesive chart paper around the classroom • Pass out markers to students
Implementation	• Ask students to find a partner and paper • Pose question • Ask students to respond to the question in words or pictures individually • Set a timer for 2-5 minutes
Discussion & Wrap Up	• After the timer goes off, allow students to discuss their interpretations • Allow students to add to their interpretations • Ask each partnership to share their posters with the group

Brain Drain Example

Figure 1 is an example of the strategy I implemented with my undergraduate preservice teachers in an English as a second language methods course. They had read, and we discussed the stages of language acquisition, Vygotsky's zone of proximal development, and Dr. Jim Cummin's Iceberg theory. I found it interesting how the discussion with their partner helped them remember additional details. For example, in Figure 1, the time periods of language acquisition stages were added after the discussion.

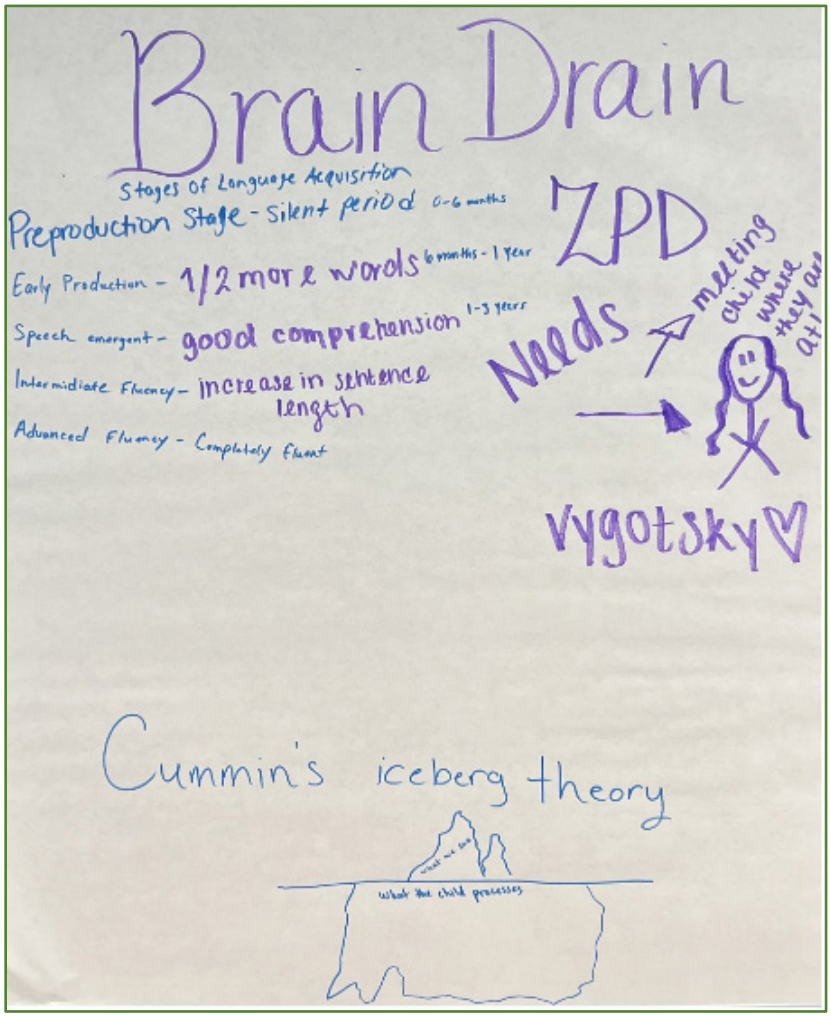
As a group, we discussed modifications and variations for this strategy. I used it as an informal summative assessment and a way to incorporate language for English learners through

the discussion piece. My students suggested that you could use it as a way to assess students' background knowledge of particular content and then assess what they learned. Teachers would follow the same format, with students individually adding to the poster and discussion, and then additional details could be added. One thing I thought was particularly interesting was that one student said to color code these additions. For example, background knowledge is one color, then new learning is another, so students can see how much they learned.

For small group modifications, teachers could ask students to individually write or draw everything they know about a particular topic and then share their drawings or explanations with a partner. After a guided reading experience with text, students could add more detail and then again discuss their drawings or writing with a partner.

The Brain Drain strategy enhances the learning experience for students because they must recall existing knowledge from their long-term memories and display it with words or drawings. Students are given time to access this knowledge, and there is individual accountability in that each participant completes their own work before the peer-to-peer discussion. In addition, this strategy raises students' awareness of what they already know and what they learned and how talking with their peers can both enhance and increase their learning.

Figure 1: Example of Brain Drain Activity



Note. Timeframes were added after discussion with a partner.

Conclusion

Teachers are responsible for designing and implementing instructional strategies that will ultimately assist their students to learn and remember content. The strategy, Brain Drain, allows for individual thinking and expression as well as peer-to-peer interaction. Most importantly, students make connections to previous and new knowledge and discuss with peers, which will enhance and increase their learning experience and create a collaborative, rigorous learning environment. This strategy can be implemented at various ages and skill levels and either with a whole or small group of students. Teachers should observe and adjust based on student responses and learning outcomes.

The Brain Drain strategy does require some teacher preparation such as question generation and gathering supplies. If students are experiencing difficulty either responding to the question or working with a specific peer, the teacher can walk around and monitor the partnerships closely, offer suggestions, or strategically partner students before implementation. Ultimately, it is the teacher's planning for a successful learning experience, and I encourage you to try the Brain Drain strategy with students and share it with colleagues. It's always a good time for a Brain Drain!

References

Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology.* Cambridge University Press.

Smith, R., Snow, P., Serry, T., & Hammond, L. (2021). The role of background knowledge reading comprehension: A critical review. *Reading Psychology*, *42*(3), 214–240. https://doi.org/10.1080/02702711.2021.1888348

Vygotsky, L. S. (1962). *Thought and language.* MIT Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Received: April 16, 2024 | Accepted: June 10, 2024 | Published: November 15, 2024