

The Teacher Breaking Content into Chunks and Time Processing

Objectives

At the conclusion of this lesson, the student will be able to:

- Create new strategies for unique student needs and situations
- Break input experiences into small chunks based on student needs
- Monitor the chunks, small pieces of learning, to maximize student learning

Eating an Elephant

There's an adage: "How do you eat an elephant? One bite at a time!"

Who in the class likes to see the WHOLE picture of something before you begin a job? You like to know what the end-product needs to look like before you begin. Or, maybe, you want to consider the entire job before you begin so you know if you have the necessary supplies. If you were painting a house, you would spend some time carefully gathering your equipment such as brushes, rollers, drop cloths, etc. You would carefully measure the area to be painted to make sure you had enough paint.

Perhaps you're a person who just DIVES right in to work on a project without much thought for the outcome. If you were painting a fence, you would joyfully start right in sloshing paint on the boards of the fence without knowing if you have enough paint, or brushes or paint rollers.

Nevertheless, you can only finish a painting project a bit at a time. Throwing the bucket of paint on the fence just will not get the job done. Not only would the paint make a huge mess, it would waste a lot of paint and the job would suffer and, in the end, take much longer.

The same is true for teaching students. Students will retain and hold onto material much longer if we can learn to give it to them a few bites at a time. Think of your lessons as an

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elephant that is much larger than a jeep and then think of your students being required to eat the entire elephant! Wow! What a job!

Through this lesson, you will learn to break content into chunks, bite-size pieces, to better equip your students to learn the material.

Here a Little, There a Little

Isaiah 28:10 (KJV)

10 For precept must be upon precept, precept upon precept; line upon line, line upon line; here a little, and there a little:

For this lesson, we are going to refer to *precept upon precept* as chunks: small bits of learning that are bite-size pieces and are easily managed and learned.

Robert Marzano says that teachers should break content into small chunks of information that can be easily processed by students. (Marzano)

To accomplish this, the teacher must be able to understand the material of the lesson well enough to break the lesson into small digestible pieces and insert stops at strategic places in the lesson to assure learning is occurring.

Lesson Pacing

Most traditional lesson plans take this format:

Emotional Hook: getting the students' attention at the beginning

Show/Model: Optional use of an object to demonstrate the concept to be taught

Explain: Main focus of the teacher-directed lesson, or the content of the new material

Guided Practice: student practice with teacher guidance

Independent Practice: allowing the students to feel and experience the "*productive struggle*" that comes naturally with learning something new; this is most often done to allow students to work individually before the assessment is given; *if learning breaks down here, the instructor must go back to the Explain section and repeat until learning has occurred*

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Assessment for mastery: checking for 80% or higher learning of the content taught in the lesson

In these six steps, students should have an easy grasp on the new concept, or learning that has been presented. The Guided practice is done with the TEACHER guiding every step. The Independent practice is done with the students feeling the struggle to learn the new material. The productive struggle awakens the learners brain because the brain enjoys novelty and learning new things. This format is not new and should be familiar to all instructors.

The part of this that is NEW however, is the pacing piece, or the chunking into bite-sized pieces. In pacing for student learning, be sure to offer plenty of stops and pauses in the “EXPLAIN” section. Instead of lecturing for a long while only to discover that the students did not retain the material, schedule pre-selected stopping points to break the learning into small bite-sized chunks that are more brain-friendly.

Again, the material must be well-known enough to the instructor to break the learning into strategic stops to make sure that deep learning takes place in every student.

Every lesson has an assessment piece. However, we are instituting that we will no longer wait until we get to the assessment piece to see how we have done as teachers.

We will begin breaking our lessons into chunks, bite-sized pieces of learning, that enables every student to achieve mastery at 80% at least. This way of teaching forces us to stop and to catch misconceptions and lack of mastery before we move to the next section of each lesson. This does take longer but in the end, you accomplish more than if you only sped through the lesson without stopping.

The key is the figuring out where and how to stop or to pause in lessons to gain the most impact. This lesson has built-in pause points to practice. However, true learning will take place when each instructor can install or insert the pauses and intentional stops in each lesson he or she teaches in the future.

Brain Research—Short Term to Long Term

The brain seeks novelty and responds well to strategic stopping points in a lesson. (Sprenger)

Marilee Sprenger, an international educational neuroscience consultant has a step by step process for retaining important information in the brain.

(Teacher, it is recommended here that these words that begin with R be written out in list form as you teach these steps for easy retrieval later in the lesson.)

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From Sensory (or Short-Term Memory) to Long-Term Memory in Seven Steps:

1. **Reach:** Grab students' attention by introducing the topic in a way that is meaningful to them.
2. **Reflect:** Allow students to make connections between new information and prior learning through such activities as writing [a summary of the latest portion of the lesson] or responding to a question.
3. **Recode:** Have students put ideas they have encountered in their own words.
4. **Reinforce:** Provide positive reinforcement to students when recoding is accurate, or give informational feedback to avoid lingering misconceptions.
5. **Rehearse:** Engage students in related activities that demand higher levels of thinking and incorporate multiple memory systems.
6. **Review:** Offer brain-compatible review activities such as practice tests, games, drawing, writing, mind maps, and acting.
7. **Retrieve:** Ask students to retrieve newly-formed memories and apply them in different ways. (Sprenger)

This information is vitally important in this process because the brain has to move new information from short-term memory to long-term memory. Intentional pauses in the lesson to allow for concept chunking enables the brain to make the transfers necessary.

Strategic Stops in a Lesson

At those strategic stops, some choices:

- If playing a video, the teacher would stop the video at key places and ask the students to re-tell an important point to a neighbor.
- If the teacher is lecturing, the teacher would stop at strategic points and give the students a directive such as: write three points that I just taught. The teacher could also ask the students to stand up and walk to someone across the room and tell the person something important from the lecture.
- If the students are reading information from an article or a biblical text the teacher would again stop at strategic points to enable learners to process the information.

The digestible bites are necessary for students to be able to process new information and to commit the information to long term memory. Research has shown that cramming information in the brain at short bursts result in no long-term retention of the information. (Covey)

From this information and quote, we realize that it would be better to teach LESS and students retain more than to teach MORE and students retain less.

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Less is always MORE in every teacher's lesson. Better to teach short and impactful with many pauses for retention rather than long and shallow with NO retention.

Pause to Assess Learning

Give each student a piece of plain paper.

Ask students to pair up with another student.

Students will fold paper into four boxes—two folds.

Label each box as follows: (*Teacher, write four labels on a chart tablet or chalkboard*)

1. Two important points from the lesson so far
2. Two ideas for strategic stops in a lesson
3. What is the trickiest part of every lesson? (*the Explain section*)
4. List THREE reasons to break learning into bite-sized chunks
- 5.

Offer several minutes for each partnership to develop their ideas on paper.

Cold-call (without warning or volunteering) several groups of partners to share their ideas from their paper with the whole group.

Celebrate the learning that has taken place so far. Re-teach any misconceptions or misinformation you heard from the students.

Perhaps offer a ten-minute (or longer) break here.

Concept Development

Concept development is formative assessment in real-time without waiting for assessment results after the class is long over. Instructors must realize that they cannot just lecture for an hour or more and expect mastery of the topic to simultaneously occur. Learning to stop and pause and expecting the students to demonstrate learning at that particular juncture is a key development in a teacher's classroom management and expertise of instructional strategies.

Concept development is asking students to:

EXPLAIN:

- What it is?
- Why it is important?
- How it is done?

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If students are unable to answer those questions in pairs, the instructor must be prepared to go back and figure out where the learning broke down. This is the Guided Practice piece where students are working with a partner and/or with the direction of the teacher. Do NOT move on to Independent Learning if learning has broken down in the Guided Learning step.

For this lesson, the concept being developed is breaking learning into bite-sized chunks. At the conclusion of THIS lesson, ALL students should be able to tell or write:

- What does it mean to break learning into bite-sized chunks?
- What is the importance of breaking learning into bite-sized chunks?
- How does an instructor break learning into bite-sized chunks?

To use a metaphor: if a semi-truck was unloading bananas at a loading dock, the truck driver would be required to back the truck up to the point that the truck was touching the loading dock for a successful unloading operation to take place. If the truck driver only backed the truck half way and started unloading or tossing pallets and boxes of bananas onto the ground, the shipment of bananas would be damaged. The bananas would be bruised and the shopkeepers would be sore about their shipment.

When an instructor is teaching a new concept, topic or precept to a group of students, that instructor must be skilled in assessing the students' mastery of the information in real-time. Usually, if the instructor waits for the written exam to reveal the student's understanding, it is too late. The load of bananas was dropped and damaged. In order to become skilled with this, instructors must learn to pause and check for understanding on a regular basis throughout the lesson.

SIDE NOTE for instructor:

The difference between skill and concept development is vague at times but is explained here:

- *Skill development is the explanation of HOW something is done.*
- *Concept development is the explanation of WHAT something is and why it is important.*
- *Procedural knowledge is step by step.*
- *Declarative knowledge is a strategy of clearly explained steps.*
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The above information is only an added bit of knowledge for the instructor—not necessary to teach the group of learners.

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T-APPLE Strategy

There is a high success rate with strategically stopping during a lesson because one speeds up, slows down and re-teaches as needed in direct response to students' learning. A sure way to gauge that learning is through concept development and the following strategy of the **T-Apple strategy**. (Ybarra and Hollingsworth)

After a teacher has been teaching a concept for a while, this is a great strategy for stopping at those strategic points to solidify the learning that has taken place. This would be in the EXPLAIN section of the lesson pacing guide that was offered earlier in this lesson.

(Instructors—please write this strategy on a chart paper or a chalk board)

T-APPLE strategy:

Teach first
Ask a Question
Pause—Pair Share
Pick a NON-volunteer
Listen to response
Effective Feedback—
 Offer an Echo, Elaborate or Explain

In order to understand this strategy, please stop and review the steps to the T-APPLE with the class to check for understanding of the strategy.

- T- Why should we teach first and then ask as a question? (assessment of the concept, or mastery of the concept)
- T- What do we measure if we ask a question before teaching? (background information on the topic or concept)
- What type of question should students be asked? (if the concept is specific, absolute recall and application)
- P-Name several reasons for pausing?
- P- Name two ways to elicit students' responses.
- P- What is the rationale behind selecting a non-volunteer to respond to questions? (cold-call as an example from earlier)
- L-Why is listening important? (many students are passive learners and stopping with pauses and demanding action will force those students to be active learners)
- E-What are the main differences between ECHO, ELABORATE & EXPLAIN?
 - (Echo—repeat the concept; Elaborate—teach in an extended manner to make sure the students learned the concept and/or re-teach in a different way;

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Explain—re-teach the concept again and again, perhaps asking another student to re-teach using different words)
(Ybarra and Hollingsworth)

Pause to Assess Learning

Ask students to reassemble into the partnerships from earlier in the lesson.

Ask students to retrieve their piece of paper from earlier.

Turn the paper over.

Ask the students to respond to these TWO questions:

1. What is concept development?
2. What is the T-Apple strategy and why is it useful?

Offer several minutes for each partnership to develop their ideas on paper.

Cold-call (without warning or volunteering) several groups of partners to share their ideas from their paper with the whole group.

Celebrate the learning that has taken place so far. Re-teach any misconceptions or misinformation you heard from the students. Utilize the Echo, Elaborate & Explain if possible here.

Conclusion

Sit for a moment and consider all that you have learned in this lesson. I will give you several moments to reflect. You are welcome to just sit and think or you could write as you reflect, whichever works the best for your brain and the transfer of information.

This lesson has taught you the importance of intentionally pausing in the instruction of new material to make sure that students make the transfer of the concept from short-term memory to long-term memory. If an instructor teaches too much at time, the student will not be able to make the transfer. If the instructor teaches in bite-sized chunks, the student will be able to retain much more.

New concept development is vitally important in the lives of our students. More important is the transfer of short-term memory to long-term memory that can only take place if the learning is memorable, novel and chunked enough for the brain to remember long after the lesson.

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The Teacher and Breaking Content into Chunks and Time Processing

Lesson in Review

Name: _____

Nation: _____ Date: _____

1. Explain why Isaiah 28:10 teaches us such an important lesson for a strategy in teaching.

2. Explain exactly what a “bite-sized chunk” in learning is and an example from this lesson.

3. Explain the importance of breaking every lesson into bite-sized chunks.

4. In order for a teacher to be able to break the content into bite-sized chunks, the teacher must “know” the material very well. How do you plan to learn each lesson so well that you’re able to break the lesson into bite-sized chunks?

5. What is more important in the hearts of students? Retention and depth of knowledge or much material covered but no retention? WHY?

6. List the six steps in traditional lesson pacing.

10. List at least FOUR ideas for a strategic stop to pause and encourage learning to move from short-term to long-term memory.

11. In teaching, less is always more. Explain this adage.

12. List THREE reasons to break learning into bite-sized chunks.

13. What is concept development?

17. Write the T-Apple strategy:

18. What is the reason for asking a non-volunteer—a cold-call? How does that promote learning?

19. Explain the Effective Feedback piece and especially the Echo, Elaborate and Explain piece. Why is this part so important to the learning process?

20. One more time, explain why it is vitally important to break all NEW learning into bite-sized pieces or chunks? What is your biggest take-away from this concept development?

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