

# Instructional Design Principles

## 1. Critical Content

What?

- Critical content refers to the most important things a student needs to know, understand, and be able to do. It promotes understanding, application, generalization and it engages students in further learning.
- Critical content also refers to the content that is most closely matched to what the student needs. It is essential to match the instruction to the student's readiness for what is being taught.
- Whenever possible, new content should build on what has been taught previously. The connections need to be made apparent to the student. The teacher must strategically integrate learned knowledge with new knowledge.

Why?

According to Rosenshine (2012), our working memory, the place where we process information, is small. It can only handle a few bits of information at one time. Presenting too much material at once may result in cognitive overload and result in confusion for students because their short term memory will be unable to handle the processing demands. In addition, students with persistent difficulties need to make gains larger than one year of instruction in reading if we are going to close the gap that exists for them between what they know and what they are expected to know and do for their developmental peer group. When a teacher has clarity about the most important concepts and understandings, it ensures that learners with significant and persistent learning difficulties focus on what is most essential and don't drown in facts and details or become confused by activities that may be fun but are only loosely connected to what is critical.

*Questions to ask to select critical content:*

*What matters most?*

*What is this subject or topic really about?*

*What will be of enduring value to my students?*

*What do my students need to know 10 years from now to be an independent thinker and learner?*

Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module



# Instructional Design Principles

## 2. Conspicuous Strategies

- Planned
- Purposeful
- Obvious
- Understandable

A conspicuous strategy is a systematic sequence of teaching events and teacher actions that make explicit the steps in learning. They are made conspicuous by the use of visual maps or models, verbal directions, full and clear explanations. Conspicuous strategies are most important in initial teaching of concepts.

To make a strategy conspicuous:

- Describe the strategy.
- Tell the purpose of the strategy.
- Model the strategy and explain its use.
- Provide adequate practice.
- Monitor and provide feedback.
- Promote student self-monitoring.
- Encourage the use of the strategy.

*Example:*

*When applied to a process such as solving word problems or to a specific skill such as multiplying 2-digit numbers, a conspicuous strategy is the set of steps that leads students to comprehend and identify what the problem is asking effectively and efficiently.*



Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module

# Instructional Design Principles

## 3. Primed Background Knowledge

Successful acquisition of new information depends largely on:

- The knowledge the learner brings to the task
- The accuracy of that information
- The degree to which the learner accesses and uses that information.

Accessing a student's background information is critical for students with persistent reading difficulties because it is not uncommon for these students to have memory deficits. Priming background knowledge readies the learner for successful performance.

When priming background knowledge, the emphasis is on the prerequisites needed for learning new information. Priming, using a "hook", reminder, or prompt, can alert the learner to retrieve information.

NOTE: Strategic integration is closely related to priming background knowledge. However, strategic integration refers to combining knowledge to create new knowledge and depth of understanding while priming background knowledge emphasizes the prerequisites needed for learning new information.

*Example:*

*When choosing vocabulary words for instruction, instructor thinks about the prerequisite skills her students need and what words are already in their vocabulary to develop student-friendly definitions. Students can often struggle with the language of mathematics if we don't prime their background knowledge.*



Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module

# Instructional Design Principles

## 4. Judicious Review

- Review should be sufficient to enable a student to perform a task fluently.
- Review should be distributed over time.
- Review should be cumulative, and the information should be applied and generalized.
- Review should be varied.
- Review opportunities must be frequent to ensure automaticity of the skill or knowledge and brief yet repeated over time to ensure the skill or knowledge is sustained.
- Review should be judicious, not haphazard.
- Judicious review offers structured opportunities to recall or apply previously taught information.

### *Example:*

*Students play fluency games in centers, for homework, as a do-now to practice vital fact fluency in engaging, authentic ways throughout the school year and day.*



Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module

# Instructional Design Principles

## 5. Strategic Integration

For new information to be understood and applied, it should be carefully combined or integrated with things the learner already knows and understands. The teacher needs to make the critical connections strategically and make the critical connections clear so that the new information does not become confused with what the learner already knows. The goal of strategic integration is the combination of what the student knows with what the student is learning, so that the relationship between the two things is clear and results in new knowledge. Strategic integration links the essential big ideas across lessons to result in new or more complex knowledge or skills.

*Examples of strategic integration include:*

- *Integrating letter-sound correspondence knowledge to form words.*

*When learners are beginning to read and can hear sounds in words and recognize letter-sound correspondences fluently, those skills can be integrated to recognize words.*

- *Integrating fact memory knowledge with strategy training to solve word problems.*

*Students can use their knowledge of the math facts and previously learned concepts as they work through the steps of solving a word problem.*



Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module



# Instructional Design Principles

## 6. Mediated Scaffolding

In order for students to have success with the work, instructional support or scaffolding, is provided and varied according to learner needs or experiences, goals of instruction and the complexity of the task. Students are supported at each step of the learning process. They are not asked to do something they do not know how to do.

Support is temporary and is removed gradually according to learner proficiency. As students acquire knowledge, self-regulate and become more independent, teachers should gradually remove the scaffolding. On new or difficult tasks, scaffolding may be substantial at first then systematically removed as learners acquire knowledge and skills.

Dr. Joe Torgesen, Florida Center for Reading Research, describes **programmatically scaffolded** as the program of instruction being carefully sequenced so that students are explicitly taught the skills and knowledge they need for each new task they are asked to perform. Ideally, this scaffolding is systematically built into the materials that are being used for instruction. The more built-in support structures contained in curricular materials the easier it is for teachers to provide responsive scaffolding.

### *Examples:*

*Teachers can provide extra support to assist students who struggle with learning the meaning of words by using graphic organizers and other visual supports.*

*Teachers can purposefully separate potentially confusing facts and concepts.*

*Teachers move the through the steps of Concrete-Representational-Abstract, spending more time where students need the support to gain conceptual understanding of a mathematical concept.*

Adapted from FDLRS PDA Effective Teaching Practices for Students with Disabilities Focusing on the Content Areas module