



Executive Function for Lesson Design and Student Motivation

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**Framingham Adult English
as a Second Language *PLUS***



COLLABORATIVE COLLEGE COACHING



Featured Article

How Scientific is Cognitive Load Theory Research Compared to the Rest of Educational Psychology?



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Workshop Objectives

Gain a foundational understanding of executive function

Gain an understanding of cognitive load and how to limit extraneous cognitive load while lesson planning

Define intrinsic vs. extrinsic motivation and identify strategies for increasing student motivation

Learn how to help students set effective goals using self-assessments and non-directive coaching

What is “executive function?”

“The cognitive processes that regulate an individual’s ability to sustain self-directed behavior directed toward a goal.”

Such as: motivation, procrastination, working memory, inhibitory control, organization, prioritization, time management, task initiation, task persistence, mental flexibility, focus and attention, self-regulation

Executive Skills Questionnaire

Executive Functions
(work together in various combinations)

**Organizing,
prioritizing,
and
activating
to work**

**Focusing,
sustaining,
and shifting
attention to
task**

**Regulating
alertness,
sustaining
effort, and
processing
speed**

**Managing
frustration
and
modulating
emotions**

**Utilizing
working
memory
and
accessing
recall**

**Monitoring
and self-
regulating
action**

**1.
Activation**

**2.
Focus**

**3.
Effort**

**4.
Emotion**

**5.
Memory**

**6.
Action**

The Quick Guide to Cognitive Load Theory

The key to smarter instructional design

Intrinsic Cognitive Load

The inherent difficulty of the material itself, which can be influenced by prior knowledge of the topic

Extraneous Cognitive Load

The load generated by the way the material is presented and which does not aid learning

...and lots of other factors!

Cognitive Load Theory

Learners can only absorb and retain information when it is presented in such a way that does not overload capacity.

Think of it like “brain space” ... there’s only so much to go around, and it can change from day to day.

The more information that is presented at once, whether intrinsic or extraneous, the less likely a student will actually be able to learn and recall what is taught.

Cognitive capacity is dependent on working memory.

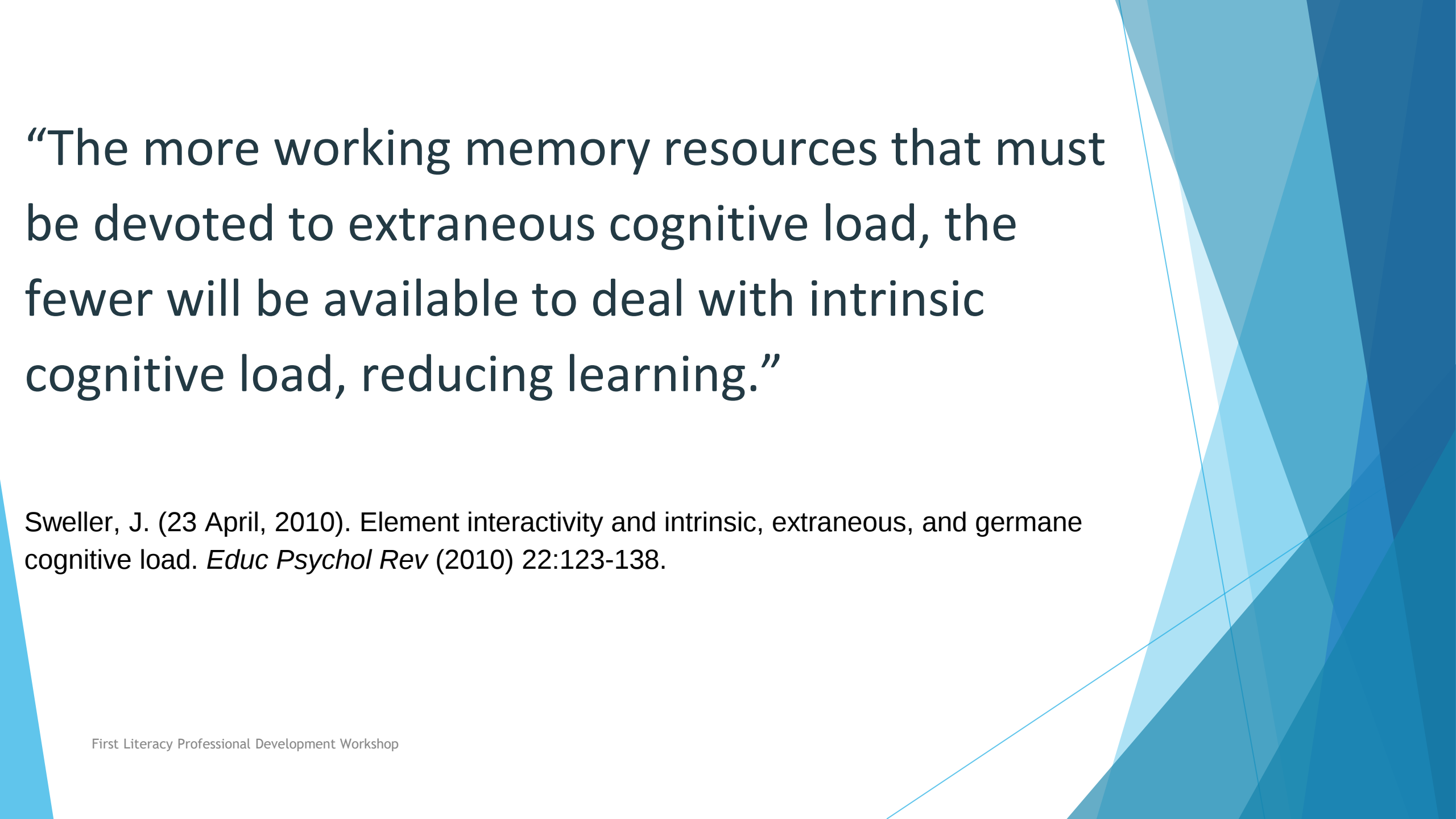
working memory



the ability to hold information in memory while
performing complex tasks

incorporates the ability to draw on past learning or
experience to apply to the situation at hand or to
project into the future

@studytoolsbyjules

The background of the slide features an abstract design composed of various shades of blue. On the right side, there are several overlapping, semi-transparent geometric shapes, including triangles and polygons, creating a dynamic, layered effect. These shapes extend from the top right towards the bottom right. On the left side, there are thin, light blue diagonal lines that intersect the main text area. The overall aesthetic is modern and professional, typical of educational or corporate presentations.

“The more working memory resources that must be devoted to extraneous cognitive load, the fewer will be available to deal with intrinsic cognitive load, reducing learning.”

Sweller, J. (23 April, 2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. *Educ Psychol Rev* (2010) 22:123-138.

Non-academic stressors also limit cognitive capacity

Any source of stress

Stereotype Threat

Poor Mental or Physical Health

Anxiety about Covid-19 for in-person classes

Tension with classmates

Lack of a sense of belonging

Social Anxiety

Poor Technology Skills

Poor memory, attention, or other executive functions

Poorly automatized skills

Language deficits

Available cognitive capacity of someone without executive function challenges or other stressors

Cognitive capacity

Poor EF Skills
Other stressors

Cognitive capacity

Executive Dysfunction
Significant stressors

“Instructional effectiveness will be compromised by the extent that instructional choices require learners to devote working memory resources to dealing with elements imposed by extraneous cognitive load.”

Sweller, J. (23 April, 2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. *Educ Psychol Rev* (2010) 22:123-138.

Ways to Reduce Extraneous Cognitive Load

Post and review class objectives

Pre-teach

Provide concise instructions in multiple modalities

Establish routines

Minimize visual and auditory distractions

Break tasks into smaller, more manageable chunks

Provide guided notes

Teach strategies for planning and organization

GRADUAL RELEASE OF RESPONSIBILITY MODEL

DEFINITION

The Gradual Release of Responsibility Model is an instructional framework that transitions the responsibility of learning from the teacher to the student progressively. The model emphasizes scaffolding, where support is provided in the early stage and gradually is removed as the learner becomes more competent and independent.

STEPS

There are four steps to the gradual release of responsibility model:

- Modeling (I Do)
- Co-Construction (We Do)
- Facilitation (You Do)
- Independent Practice (You Do)

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“Gradual Release of Responsibility”

Controlled
Practice



Semi-Controlled
Practice



Example: Explicit grammar lesson

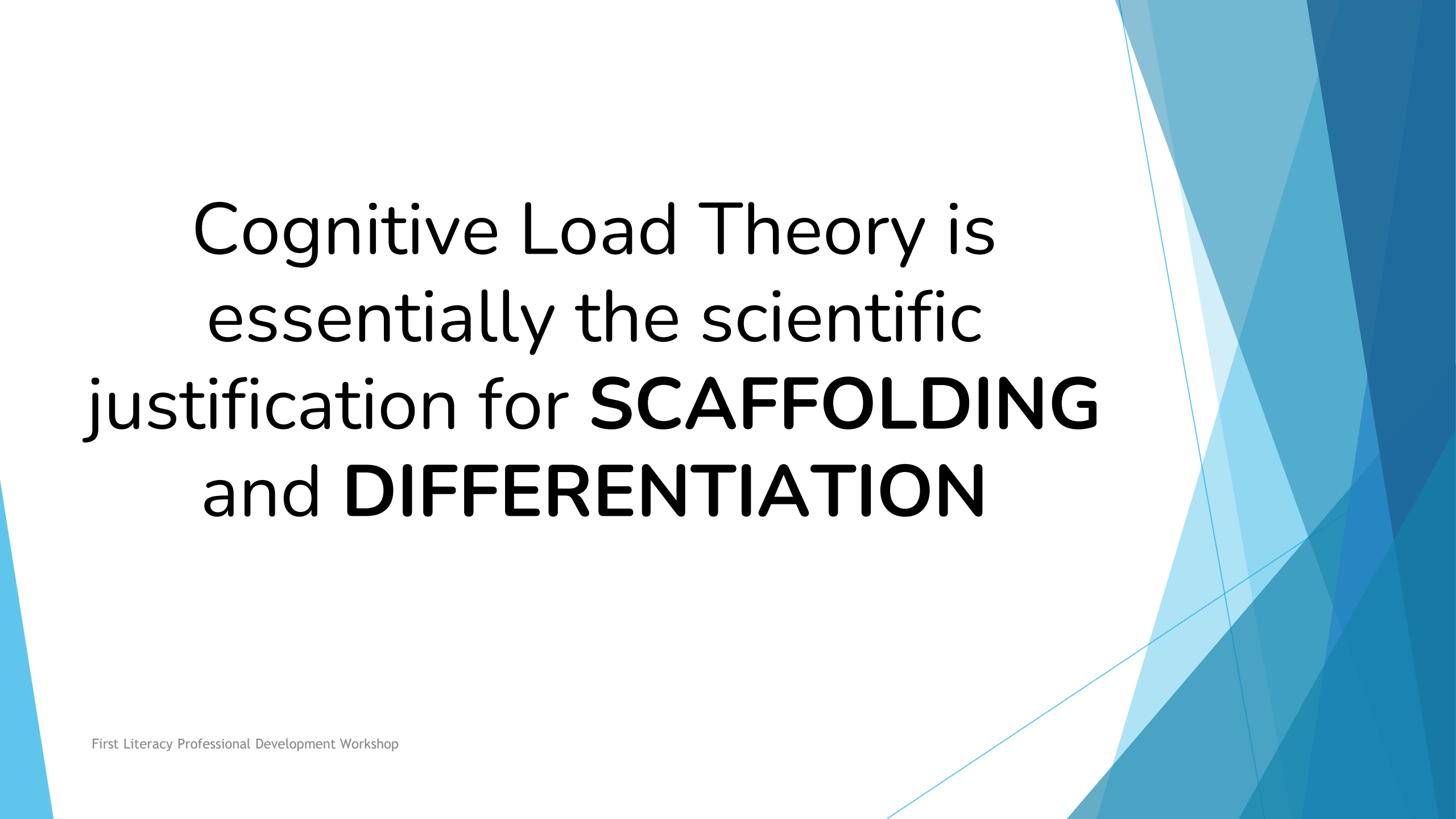
conjugation

prompts

Cloze exercises for verb

Sentence completion with visual

Open-ended questions

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Cognitive Load Theory is essentially the scientific justification for **SCAFFOLDING** and **DIFFERENTIATION**

“The more working memory resources that must be devoted to extraneous cognitive load, the fewer will be available to deal with intrinsic cognitive load, reducing learning.

This formulation assumes that motivation is high...”

Sweller, J. (23 April, 2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. *Educ Psychol Rev* (2010) 22:123-138.

Motivation

An internal state or condition (a need, desire, or want) that serves to activate or energize behavior and gives it direction.



Self-Efficacy

“...the belief that you are capable of carrying out a specific task or of reaching a specific goal...Self-efficacy beliefs, furthermore, are not the same as “true” or documented skill or ability. They are *self*-constructed, meaning that they are personally developed perceptions.” (Seifert & Sutton, 2009)

How might a low sense of self-efficacy affect adult learners, either in the classroom or in life, in general?

“...self-efficacy belief is antecedent to academic success because it motivates behavior (primarily perseverance) that leads to success.”

Jinks, J., & Lorschach, A. (2003) Introduction: Motivation and self-efficacy belief. *Reading & Writing Quarterly*, 19:2, 113-118, DOI: [10.1080/10573560308218](https://doi.org/10.1080/10573560308218)

Table 1: Ways of encouraging self-efficacy beliefs

Strategy

Set goals with students, and get a commitment from them to reach the goals.

Encourage students to compare their performance with their own previous performance, not with other students.

Point out links between effort and improvement.

In giving feedback about performance, focus on information, not evaluative judgments.

Point out that increases in knowledge or skill happen gradually by sustained effort, not because of inborn ability.

**Growth
Mindset**

Increased dopamine levels in the brain can increase motivation to learn:

Movement
Music

Competition
Laughter

CHOICE

has been shown to improve student engagement and motivation!

How can we offer choices, either in-class or with homework, to increase student engagement and motivation?

S

Specific:

Determine exactly what you want to accomplish

M

Measurable:

Make it quantifiable and verifiable

A

Achievable:

Don't bite off more than you can chew

R

Relevant:

Consider how it fits with your 'big picture'

T

Time-Bound:

Set a deadline and stick to it

ESL Monthly Goal

Choose a goal below, or make your own, to practice English this month.

I will...

Review the lessons in Google Classroom every week

Do all homework pages in the workbook

Watch TV in English everyday

Speak English with someone outside of class everyday

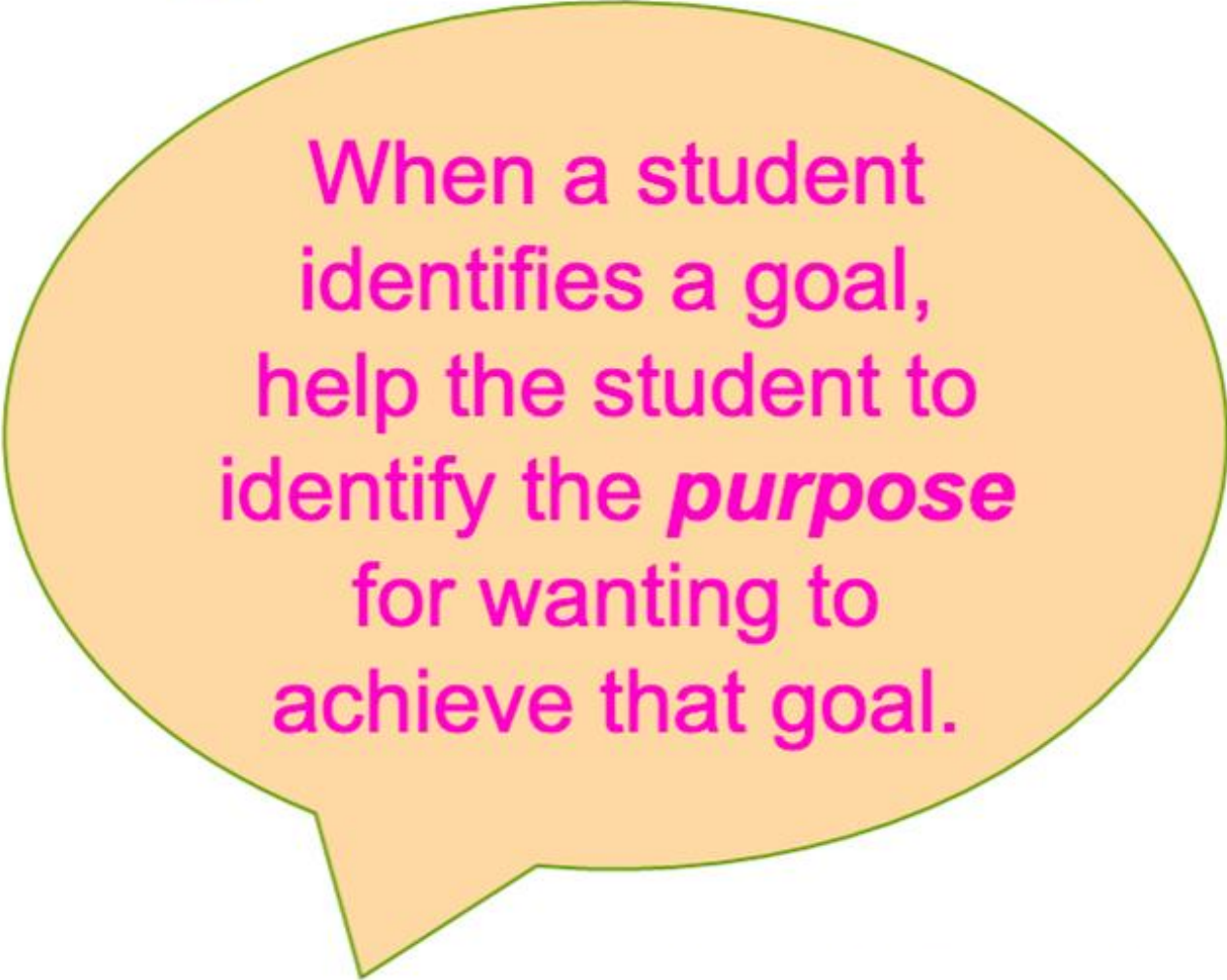
Listen the radio in English everyday

Read something in English everyday

Sample Self-Assessment

1. Do I enjoy coming to class? Why or why not?
2. What study strategies have worked well for me in the past?
3. What new study strategies can I try?
4. What can I do to prioritize homework?
5. Am I committed to attending class as often as possible? How can I improve?
6. Am I committed to doing my homework regularly? How can I improve?
7. How often do I study outside of class? How can I study more?
8. How can I improve my home environment to pay better attention and study more?

Setting Goals with Intention



When a student identifies a goal, help the student to identify the ***purpose*** for wanting to achieve that goal.

From Teaching Students to Drive Their Brains: Metacognitive Strategies, Activities, and Lesson Ideas by Donna Wilson and Marcus Conyers

Sample Curious Questions



Thank you!

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