Depth & Complexity History and Info


Developed first with concepts; later icons were added, based on dual-coding research (supporting that people learn and retain better with combination of word/concept and picture)

**Depth and Complexity** represented an approach to curriculum differentiation for gifted students, that originated from a California Department of Education document in 1994. (CDE, 2005)
Derived from 4 sources

1) A review of Advanced Placement curriculum and assessment
2) A study of California Golden State Exam requirements
3) Conventional wisdom about the nature of academic disciplines
4) A review of classic literature

J Taylor Education begins in 2006 to focus on practitioner to practitioner training and practical products.

Depth & Complexity = THE Differentiation Solution

J Taylor Education is the official Depth and Complexity resource company where practitioners lead other practitioners in training.

Used in 41 states, 80,000+ classes and in 9 countries
Depth & Complexity Framework
Understanding the parts...

Think Like A...
- Geographer
- Historian
- Economist
- Anthropologist
- Geologist
- Physicist
- Political Scientist

Universal Concepts & Generalizations
- Power: Power may be used or abused.
- Change: Change is inevitable.
- Structure: Structures have parts that interrelate.
- Conflict: Conflict is composed of opposing forces.

J Taylor Education, 2016
Raising the Bar: Teaching ELs with Depth and Complexity

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Educational Consultant
Boerne, TX
830-456-7101
What is one challenge English Learners face?

Stand when you can respond to the following stem:

One challenge ELs face is...

“High five” 3-4 other standing colleagues and share your sentence with them.
Research: The Effects of Higher Order Thinking on Student Achievement and English Proficiency

• When teachers used higher order thinking, their students made significant gains in both language arts achievement and English proficiency.

• Implications point to the value of increasing the level of cognitive challenge when teaching culturally, linguistically, and economically diverse students.

Elements of Depth

- Language of the Discipline
- Details
- Patterns
- Trends
- Unanswered Questions
- Rules
- Ethics
- Big Idea
Elements of Complexity

Over Time
Different Perspectives
Interdisciplinary Relations
Colorado English Language Proficiency (CELP) Standards

1. English Learners communicate for **Social and Instructional** purposes within the school setting.

2. English Learners communicate information, ideas, and concepts necessary for academic success in the content area of **Language Arts**.

3. English Learners communicate information, ideas, and concepts necessary for academic success in the content area of **Mathematics**.

4. English Learners communicate information, ideas, and concepts necessary for academic success in the content area of **Science**.

5. English Learners communicate information, ideas, and concepts necessary for academic success in the content area of **Social Studies**.
Sheltered Instruction

• First used by Stephen Krashen in 1982 to describe an approach to instruction for second language acquisition.

• In this approach, teachers use second language acquisition strategies while delivering content-area instruction.
What are the **two goals** of Sheltered Instruction

1. Make content comprehensible
2. Develop academic language
Essential Practices Common to All Models of Sheltered Instruction
(Saunders, Goldenberg, & Marcelletti, 2013)

➢ Build on student experiences and familiar content
➢ Provide students with necessary background knowledge
➢ Use graphic organizers
➢ Make instruction and learning tasks extremely clear
➢ Use pictures, demonstrations, and real-life objects
➢ Provide hands-on, interactive learning activities
➢ Provide redundant information using gestures and visual cues
➢ Designate language and content objectives for each lesson
➢ Use sentence frames and models to help students talk about academic content
➢ Provide instruction differentiated by students’ English language proficiency levels
Sheltered Instruction + Depth and Complexity = TALK Cards

➢ Use pictures, demonstrations, and real-life objects
➢ Provide redundant information using gestures and visual cues
➢ Use sentence frames and models to help students talk about academic content
➢ Provide instruction differentiated by students’ English language proficiency levels
➢ Provide hands-on, interactive learning activities
Thinking with Academic Language and Knowledge (TALK) Cards

- Based on the elements of depth and complexity
- Sentence stems include blanks so that the academic vocabulary of the lesson objective may be inserted
- Differentiated for Beginning/Intermediate and Advanced/Advanced High levels of language proficiency
- Helps students acquire the academic vocabulary of the content, as well as thinking in more in-depth and complex ways
Example:
Question: What is one generalization that summarizes how living organisms within an ecosystem interact with one another and with their environment?

Stems:

B/I One general statement is ________.
A/AH One generalization that summarizes how living organisms within an ecosystem interact with one another and with their environment is ________.

Brick words: living organisms, ecosystem, environment

Mortar terms: interact, one another, their
## Incorporate Academic Vocabulary

<table>
<thead>
<tr>
<th>Type of Academic term</th>
<th>Where do you find it?</th>
<th>How do you teach it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brick—Tier 3</td>
<td>Glossary</td>
<td>Directly</td>
</tr>
<tr>
<td>Mortar—Tier 2</td>
<td>Non-glossary</td>
<td>Use them</td>
</tr>
<tr>
<td>Content Area Examples</td>
<td>Math Geometry</td>
<td>Science Water Cycle</td>
</tr>
<tr>
<td>-----------------------</td>
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</tr>
<tr>
<td><strong>Brick – Tier 3</strong></td>
<td>polygon, quadrilateral, parallel, rhombus, rectangle, etc.</td>
<td>cycle, cumulus, evaporation, precipitation, condensation, etc.</td>
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<tr>
<td><strong>Content</strong></td>
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<tr>
<td><strong>Obligatory</strong></td>
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<tr>
<td><strong>Words</strong></td>
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<tr>
<td><strong>Polygon</strong></td>
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<tr>
<td><strong>Quadrilateral</strong></td>
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<td><strong>Parallel</strong></td>
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<td><strong>Rhombus</strong></td>
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<tr>
<td><strong>Rectangle</strong></td>
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<tr>
<td><strong>Mortar – Tier 2</strong></td>
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<tr>
<td><strong>Process</strong></td>
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<td><strong>Functional</strong></td>
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<tr>
<td><strong>Words</strong></td>
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<tr>
<td><strong>Compare &amp; Contrast</strong></td>
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<tr>
<td><strong>Words:</strong></td>
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<td><strong>Similar</strong></td>
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<td><strong>Difference</strong></td>
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<td><strong>Example</strong></td>
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<td><strong>Between</strong></td>
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<tr>
<td><strong>Therefore</strong></td>
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<tr>
<td><strong>Sequence</strong></td>
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<tr>
<td><strong>Words:</strong></td>
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<td><strong>First</strong></td>
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<td><strong>Next</strong></td>
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<tr>
<td><strong>Finally</strong></td>
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<tr>
<td><strong>Sequence Words/Discussion</strong></td>
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<tr>
<td><strong>Words:</strong></td>
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<tr>
<td><strong>Agree</strong></td>
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<tr>
<td><strong>Disagree</strong></td>
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<tr>
<td><strong>Because</strong></td>
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<tr>
<td><strong>Opinion</strong></td>
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<tr>
<td><strong>And</strong></td>
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<tr>
<td><strong>Possibility</strong></td>
<td></td>
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<tr>
<td><strong>However</strong></td>
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<tr>
<td>Language of the Discipline</td>
<td>Stems for Beginning Students</td>
<td>Stems for More Advanced Students</td>
</tr>
<tr>
<td>----------------------------</td>
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<td>----------------------------------</td>
</tr>
<tr>
<td>The word is...</td>
<td>The specialized language used to describe... includes ...</td>
<td></td>
</tr>
<tr>
<td>The skills/tools are ...</td>
<td>The skills/tools used by... are ...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>Stems for Beginning Students</th>
<th>Stems for More Advanced Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>One ... is...</td>
<td>The .... of ...are...</td>
<td></td>
</tr>
<tr>
<td>The attributes are ...</td>
<td>The distinguishing attributes of...are ...</td>
<td></td>
</tr>
<tr>
<td>The evidence is...</td>
<td>The evidence used to substantiate the claim of ... is...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Stems for Beginning Students</th>
<th>Stems for More Advanced Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>The repeat is...</td>
<td>The repeated... in ...is/are...</td>
<td></td>
</tr>
<tr>
<td>One... that occurs over and over is...</td>
<td>One reoccurring ... is ...</td>
<td></td>
</tr>
<tr>
<td>One prediction is...</td>
<td>One prediction based on the pattern in ... is...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trends</th>
<th>Stems for Beginning Students</th>
<th>Stems for More Advanced Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>One trend is...</td>
<td>One trend that led to/followed ... is...</td>
<td></td>
</tr>
<tr>
<td>One effect is ...</td>
<td>The ongoing influence of ... affected ... by ...</td>
<td></td>
</tr>
<tr>
<td>The ongoing factors are...</td>
<td>The ongoing factors of ... contributed to...</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unanswered Questions</th>
<th>Stems for Beginning Students</th>
<th>Stems for More Advanced Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>We do not know...</td>
<td>The unknown/unproven/unresolved ... regarding... is ...</td>
<td></td>
</tr>
<tr>
<td>The missing information is</td>
<td>The information that is unclear, incomplete, or lacking about ... is ...</td>
<td></td>
</tr>
</tbody>
</table>
Why Sentence Stems for ELs?

- Provides **scaffolding** to help students **get started** in speaking or writing without the added pressure of thinking about how to correctly formulate a response.
- Helps students develop specific **language and grammatical structures**.
- Gives students the opportunity to **respond in the form of a complete sentence** to effectively communicate and to think in complete thoughts.
- Gives students an opportunity to **practice new vocabulary** in context.
- Facilitates **conversations using academic language**.
- Helps ELLs in both the areas of **oral language and writing** (students cannot write in a way that they cannot speak).
- Helps ELLs adequately **interact with their native English-speaking peers**.
- Increases **English language proficiency**.
Ways to Use TALK Cards

- In an EL classroom for academic language instruction
- In a regular classroom to create the environment to identify gifted ELs
- In a gifted classroom with ELs

See p. 1 of the Activity Ideas card set.
Listening and Speaking Activities
Turn and Talk

- The teacher poses a question and provides a sentence stem for student response.
- The students use the stem to turn and talk to a partner.
- The teacher calls on students to share their response.
Turn and Talk Using TALK Cards

- The teacher decides which element of depth and complexity best aligns with the lesson objective.
- The teacher uses the **advanced stem** from the card to form a question.
- The teacher offers **both stems** from the card to the students for discussion.
- The teacher has the class **choral read** the stems, **pointing to the words** as they read.
What are the distinguishing attributes of fairy tales?

- The attributes are __________.
- The distinguishing attributes of fairy tales are __________.

Your Turn: Create your own question and sentence stems for a Turn and Talk activity.
Reading and Writing Activities
Conga Line using TALK Cards

- The teacher follows the same procedures as Turn and Talk, but students write their sentences.

- **When ready, students form two lines facing one another.**

- Students take turns reading their sentences to each other.

- **After the first discussion, the person at the beginning of one line moves to the end of that line by “dancing” down the center.**

- Each person in the lines moves to the next space. The students in the other line remain stationary so each has a new partner.

- The activity repeats.
What is one prediction you can make based on the pattern of data in the graph?

One prediction is __________.

One prediction based on the pattern of the data in the graph is __________.
Listening, Speaking, Reading and Writing Activities
**QSSSA** (Seidlitz, J. & Perryman B, 2008)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>Ask a question based upon a key concept</td>
</tr>
<tr>
<td>Signal</td>
<td>Provide a way to indicate readiness</td>
</tr>
<tr>
<td>Stem</td>
<td>Provide a sentence starter for answering the question</td>
</tr>
<tr>
<td>Share</td>
<td>Provide a way for students respond to the question using the stem</td>
</tr>
<tr>
<td>Assess</td>
<td>Randomly select students to share or ask everyone to write their response</td>
</tr>
</tbody>
</table>
QSSSA – Adult Example

**Question:** What is one new thing you have learned in this session?

**Signal:** Thinker’s Chin

**Stem:** One new thing I have learned in this session is ______.

**Share:** Find someone you do not know and share your sentence.

**Assess:** Numbered Heads
### QSSA With Depth and Complexity – Student Examples

<table>
<thead>
<tr>
<th>Question</th>
<th>Signal</th>
<th>Stem</th>
<th>Share</th>
<th>Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELAR</strong></td>
<td>How did the main character change from the beginning to the end of this story?</td>
<td>Stand when you can complete one of the following sentence stems.</td>
<td>One change is . . .</td>
<td>When all students are standing, they share with a student at another table.</td>
</tr>
<tr>
<td><strong>Math</strong></td>
<td>What rule do we follow to measure perimeter?</td>
<td>Raise your thumb when you can complete one of the following sentence stems.</td>
<td>The rule is . . .</td>
<td>When all thumbs are up, have students share with their elbow partner.</td>
</tr>
</tbody>
</table>

**Note:**
- The question for **ELAR** is from a reading comprehension exercise involving a character transformation.
- The question for **Math** is about understanding the rule for calculating perimeter.

- **Signal** indicates when students should prepare to share their responses.
- **Stem** provides a framework for students to structure their responses.
- **Share** outlines the sharing model used to discuss responses.
- **Assess** outlines a method to assess student understanding.
<table>
<thead>
<tr>
<th>Question</th>
<th>Signal</th>
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<th>Share</th>
<th>Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science</strong></td>
<td>Put your hand down when you can complete one of the following sentence</td>
<td>The special words are . . . The specialized vocabulary used to describe the process for forming fossil fuels includes . . .</td>
<td>When all hands are down, have students stand and share with someone at another table.</td>
<td>Have students whose birthdays are in the current month stay standing and share either their or their partner’s sentence while the rest of the students sit down.</td>
</tr>
<tr>
<td>We have been studying fossil fuels. What specialized vocabulary would</td>
<td>stems.</td>
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<tr>
<td>a geologist use to discuss the process by which fossil fuels are</td>
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<tr>
<td>formed?</td>
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</tr>
<tr>
<td><strong>Social Studies</strong></td>
<td>Put your pen down when you can finish writing a response using one of</td>
<td>One trend is . . . One trend that followed the industrialization of the US during the mid 1800’s is . . .</td>
<td>When all pens are down, have students read their sentence stem to a partner.</td>
<td>Pull popsicle sticks with student names to call on students to share their sentence.</td>
</tr>
<tr>
<td>What trends followed industrialization of the US during the mid 1800’s?</td>
<td>stems.</td>
<td></td>
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</tbody>
</table>
Other Activity Ideas
Ticket Out the Door

- To get a “Ticket Out” of class, students write a short reflection at the end of the lesson.

- The reflection includes facts, details, ideas, impressions, opinions, information, and vocabulary from the unit they have just studied. To help students begin writing, a prompt can be offered.

Example:

Question: What is the rule for solving equations using the order of operations?

Stem: The order is ______.

The rule used to solve equations using order of operations is ______.
Talk, Read, Talk, Write  
(Nancy Motley, 2016)

Summary of the Process

Talk #1: Engage with content concept and set purpose for reading

Read: Read an academic text to develop content understanding

Talk #2: Process the text and prepare for writing

Write: Communicate content understanding
Talk, Read, Talk, Write with Depth and Complexity (1st Grade Student Example)

Talk #1: How are these bears different?

Read: Purpose: Identify the attributes of living and non-living things. (Students read a science textbook.)

Talk #2: What are the attributes of living things? What are the attributes of non-living things? (Students work in teams to complete a T-chart.)

Write: Is a butterfly living or non-living? What attributes make you think this?
1. I think a butterfly is _____. The attributes are _______.
2. I think a butterfly is _____. The distinguishing attributes that make a butterfly ____ are _______.
What ongoing factors contributed to Cleopatra’s influence and power?

The ongoing factors of family, beauty, and political circumstances contributed to Cleopatra’s influence and power. She was fortunate that she lived in an area of the world where women were allowed almost the same rights as men. This affected how much power and influence she had in her people and her country.
Dual Language Classroom
Cooperative Grouping Activity

Whole Class Activities –
Social Studies Cooperative
Grouping Activity
Dual Language Classroom Student Presentation
Dual Language Classroom Book Quilt
Dual Language Classroom Worksheet for Analyzing Book

Nombre: ____________________________  Fecha: ____________________________
Título: ____________________________  Nivel: ____________________________

Escribe 3 oraciones que resumen la lectura:

Escribe 2 preguntas que tienes sobre lo que leíste:

¿Cómo crees tú que una persona que se dedica a la medicina interpretaría esta lectura?

¿Qué harías tú diferente en esta lectura?
Dual Language Classroom Frame

1. ¿Qué personaje lo enfrento bien o mal? ¿Cómo lo habrías enfrentado tú?

2. ¿Para quién fue escrita esta historia en tu opinión? ¿A quién crees que le gustaría leer esta historia?

3. ¿Qué mensaje cree el autor desea que aprendas en esta historia?

4. ¿Quién cree tu personaje?

¿Si tu pudieras cambiar algo en la historia, qué cambiarías y cómo?

Dibujar una escena de uno de los capítulos que leiste esta semana.

Título:
Raising the Bar: 
*Teaching ELS with Depth and Complexity*

What questions do you have?

Session Code
RTB-MV4