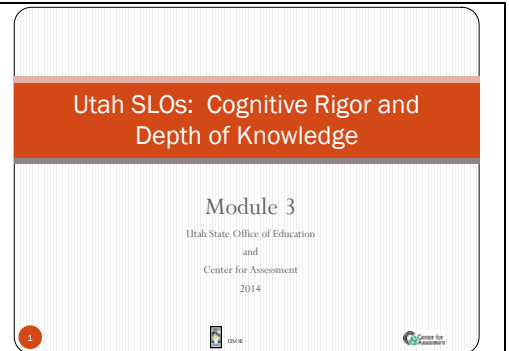


Utah SLOs: Cognitive Rigor and Depth of Knowledge

Module 3

Slide 1:

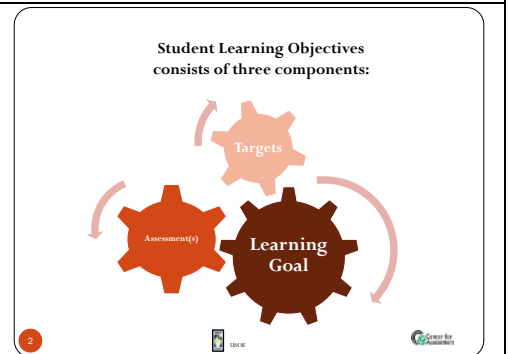
Welcome to the Utah State Office of Education's **Cognitive Rigor and Depth of Knowledge for SLOs Module 3**. We have prepared a series of six modules with a focus on the needs of teachers that will help you to deepen your understanding of the SLO components as well as the information that supports it. In order to expand your knowledge of SLOs we suggest you view each of the modules and to use the [Utah SLO Guidelines and Toolkit](#) to assist in your learning about SLOs. You may also wish to visit the Center for Assessments SLO Toolkit at www.nciea.org.



Slide 2:

Student Learning Objectives consists of three components: a learning goal, assessment(s), and targets.

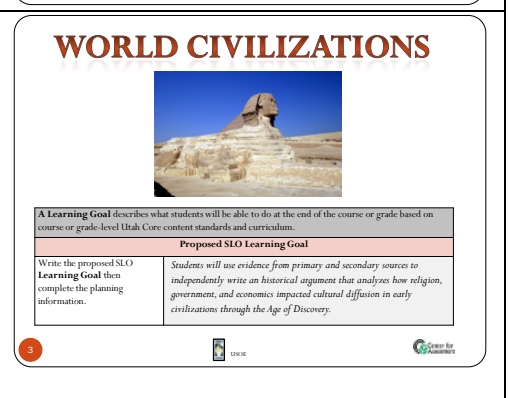
In order to develop a coherent SLO, you will need to consider the alignment of your **learning goal** and corresponding **assessments** used to measure the learning goal, as well as the expected **cognitive rigor** of those standards.



Slide 3:

Jim is a 10th grade World Civilization teacher. He is developing his SLO Learning Goal and identifying the assessments that he will use to measure his learning goal. He has **proposed** his learning goal as:

Students will use evidence from primary and secondary sources to independently write an historical argument that analyzes how religion, government, and economics impacted cultural diffusion in early civilizations through the Age of Discovery.



Proposed SLO Learning Goal	
Write the proposed SLO Learning Goal then complete the planning information.	Students will use evidence from primary and secondary sources to independently write an historical argument that analyzes how religion, government, and economics impacted cultural diffusion in early civilizations through the Age of Discovery.

Slide 4:

He has identified the Utah State Social Studies standards that he will measure as:

Standard 1: Students will gain an understanding of early civilizations and their contributions to the foundations of human culture.

Standard 2: Students will comprehend the contributions of classical civilizations.

Standard 3: Students will investigate the diffusion and interaction of cultures from the Classical Period through the Age of Discovery.

As well as Writing Standards for Literacy in History/Social Studies :

CCSS-ELA-Literacy.WH.9-10 (a-e): Write arguments focused on *discipline-specific Content* with well-developed claims and counterclaims using reasons and evidence that is well-organized, and includes a concluding section.

**Utah Core Standards:
 Social Studies – World Civilizations**

- Standard 1** • Students will gain an understanding of early civilizations and their contributions to the foundations of human culture.
- Standard 2** • Students will comprehend the contributions of classical civilizations.
- Standard 3** • Students will investigate the diffusion and interaction of cultures from the Classical Period through the Age of Discovery.
- WH.9-10 (a-3)** • Write arguments focused on *discipline-specific Content* with well-developed claims and counterclaims using reasons and evidence that is well-organized, and includes a concluding section.

Slide 5:

The planning section asks Jim to:

*Describe how the Learning Goal requires students to demonstrate deep **understanding** of the knowledge and skills of the standards or big idea being measured.*

As he considers **deep understanding**, he thinks about what he has learned about depth-of-knowledge and cognitive rigor.

What does deep understanding mean?

Planning Information for Writing the Learning Goal

Describe how the Learning Goal requires students to demonstrate deep understanding of the knowledge and skills of the standards or big idea being measured.

Slide 6:

He knows that **deep understanding** or cognitive rigor is the kind of thinking required of students to interact with the task AND the level or complexity required of the task. But Jim is not sure what is expected at the different DOK levels, so he refers to several resources that have been given to him to clarify his understanding.

DOK (Depth of Knowledge)

- Level 1: Recall**
 D1A. Focus is on specific facts, definitions, details, or using number procedures (e.g., multiply, divide, follow a recipe, etc.) B. Explaining "what." C. Can be "difficult" without requiring "deep" content knowledge to respond to item. Questionnaire a complete "theory" without being able to apply it in meeting or apply it to a real world situation. D. Combination of level ones does NOT = level 2. E. One right answer.
- Level 2: Skill/Concept**
 D2A. Focus is on applying skills and concepts (in a familiar but abstract), relationships (compare, cause-effect), math ideas. B. Uses deep knowledge "how" definition. C. Explaining how or why D. Making decisions E. Estimating, interpreting in order to respond F. One right answer.
- Level 3: Strategic Reasoning**
 D3A. Focus is on reasoning & planning in order to respond (e.g., write an essay, apply in new/real situation). B. Complex and abstract thinking is required. C. Often need to provide support for reasoning or conclusions drawn. D. More than one "correct" response approach is often possible.
- Level 4: Extended Reasoning**
 D4A. Require complex reasoning, planning, and thinking generally over extended periods of time for the investigation. B. Assessment activities have multiple steps with extended time provided. C. Students may be asked to relate concepts with the content or an analogy of other content areas. D. Students make real-world applications in new situations.

THINKING CAP

Who? What? Why? How?

"He who learns but does not think, is lost! He who thinks but does not learn is in great danger." Confucius

Slide 7:

Jim specifically begins with the resource *Applying Depth-of-Knowledge (DOK) Levels in Social Studies*.

See the identified website for more information.

Applying Depth-of-Knowledge (DOK) Levels in Social Studies

Level 1	Level 2	Level 3	Level 4
Recall of Information	Basic Reasoning	Complex Reasoning	Extended Reasoning

See http://www.nciea.org/publications/DOKsocialstudies_KH08.pdf

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Slide 8:

Depth-of-Knowledge Level 1 requires *Recall and Reproduction* in which students are expected to have a basic recall of facts, terms, concepts, definitions, or processes. He learns that responding to a Level 1 assignment involves following a simple, well-known routine or procedure and requires simple skills and abilities or the recall of one right answer.

DOK Level 1: Recall and Reproduction

Basic recall of facts, terms, concepts, definitions, or processes	Answering a Level 1 item can involve following a simple, well-known routine or procedure	Requires simple skills and abilities or recall one right answer
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Slide 9:

In social studies, that would include students responding by:

- Recalling or recognizing facts, terms, concepts, or events
- Identifying or describing features of places
- Identifying key figures in a particular context
- Describing or explaining who, what, where, when
- Identifying specific information contained in maps, charts, tables, graphs or drawings.

DOK Level 1 Examples

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Slide 10:

Depth-of-Knowledge Level 2 requires the *Basic Reasoning and Application of Skills and Concepts*. This level anticipates students engaging in some mental processing beyond recalling or reproducing a response. Specifically, students would be required to make decisions as to how to approach the question or problem and then acting on the information. Jim realizes that responding to a Level 2 assignment involves moving beyond a description or explanation of recalled information to describe or explain a result. In other words, answering “how” or “why”.

DOK Level 2: Basic Reasoning and Application of Skills and Concepts

Engagement of some mental processing beyond recalling or reproducing a response	Items require students to make decisions as to how to approach the question or problem – acting on the information	These actions imply moving beyond a description or explanation – answering “how” or “why”
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Slide 11:

At this level students would respond by:

- Describing the cause-effect of a particular event
- Describing or explaining the significance or impact of an event
- Comparing and contrasting people, events, places, or concepts
- Categorizing events or figures in history into meaningful groups
- Identifying and summarizing major historical events, problems, solutions, and conflicts

DOK Level 2 Examples

- Describe the cause-effect of a particular event
- Describe or explain the significance or impact of an event
- Compare and contrast people, events, places, or concepts
- Categorize events or figures in history into meaningful groups
- Identify and summarize major historical events, problems, solutions, and conflicts



Slide 12:

A Depth-of-Knowledge Level 3 expects students to engage in *Strategic and Complex Thinking*. At this level, students will need to go beyond describing or explaining “how and why” to justifying the “how and why” through application and evidence. This level requires deep understanding as exhibited through decision-making. Jim realizes that DOK Level assessments must go beyond one right answer, but need to be abstract, complex, or non-routine.

DOK Level 3: Strategic and Complex Thinking

Requires deep understanding as exhibited through planning or sequencing of steps	Requires some decision making and justification of the “how and why”	Assessment items have more than one possible answer and are abstract, complex, or non-routine
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Slide 13:

Students will need to:

- Explain, generalize, or connect ideas, using supporting evidence from a text/source
- Make and support inferences about implied causes and effects
- Analyze how changes have affected people or places
- Analyze similarities and differences in issues or problems
- Draw a conclusion or form alternative conclusions

DOK Level 3 Examples

- Explain, generalize, or connect ideas, using supporting evidence from a text/source
- Make and support inferences about implied causes and effects
- Analyze how changes have affected people or places
- Analyze similarities and differences in issues or problems
- Draw a conclusion or form alternate conclusions



Slide 14:

Finally, a Depth-of-Knowledge Level 4 requires *Extended Reasoning*. This level requires the complex reasoning of Level 3 along with having students plan, investigate, research, or develop a task or product that most likely requires an extended period of time. But more important than the amount of time is the expectation that the task or product requires complex and high levels of cognitive demand, such as to analyze and synthesize information from multiple sources, examine and explain alternative perspectives across a variety of sources and/or describe and illustrate how common themes and concepts are found across time and place.

DOK Level 4: Strategic and Complex Thinking

Requires high levels of cognitive demand and is very complex	An investigation or application that requires <u>time</u> to plan, investigate, research or develop a task or product	Non-routine or analysis, synthesis, and connections across multiple sources/ disciplines/ content areas/ themes
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Slide 15:

At this level, students will need to:

- Analyze and explain multiple perspectives or issues within or across time periods, events, or cultures
- Gather, analyze, organize, and synthesize information from multiple (print and non-print) sources
- Research, define, and describe a situation/problem and provide alternative solutions
- Describe, define, and illustrate common social, historical, economic, or geographical themes and/or how they interrelate
- Plan and develop solutions to problems

DOK Level 3 Examples

Slide 16:

Jim recalls that Depth-of-Knowledge is about **complexity**, not **difficulty**. The intended learning outcome determines the DOK level. He understands that he must think about the mental processing that must occur and not just on the verb. It is what comes after the verb that is the best indicator of the complexity. As Jim thinks about this, he knows that it may be difficult for his students to understand the trends in culture, religion, government, economics, and other elements of civilization. However, understanding this information does not make the learning complex.

DOK is about complexity—not difficulty!

Slide 17:

Now that Jim has a clearer understanding of cognitive rigor, he refers to the Social Studies World Civilization standards and the objectives that align to his Learning Goal, as well as the Literacy standards for Social Studies and realizes that there is a range of cognitive rigor expected in these standards.

For example, in order for students to comprehend the contributions of classical civilization they must investigate by examining and comparing which is a DOK 2. But students must also analyze the impact of diffusion and interactions of cultures in early civilizations which is a DOK 3. And the ability to analyze the interrelationships among the concepts within these early civilizations – religion, government, economics –using reasoning and evidence to develop an argumentative essay is a DOK 3. Because many of the resources will be provided for the students, the process will be scaffolded, and the argument is grounded in facts rather than a judgment or policy, Jim determines that the argumentative writing is **not** at a DOK Level 4.

Slide 18:

Jim wants to be sure that his learning goal focuses on the highest level of complexity aligned to the standards, which is a DOK 3. He revisits his learning goal:

Students will use evidence from primary and secondary sources to independently write an historical argument that analyzes how religion, government, and economics impacted cultural diffusion in early civilizations through the Age of Discovery;

and considers whether it requires students to demonstrate deep **understanding** of the knowledge and skills of the standards and big idea being measured.

A Learning Goal describes what students will be able to do at the end of the course or grade based on course or grade-level Utah Core content standards and curriculum.	
Proposed SLO Learning Goal	
Write the proposed Learning Goal then complete the planning information.	Students will use evidence from primary and secondary sources to independently write an historical argument that analyzes how religion, government, and economics impacted cultural diffusion in early civilizations through the Age of Discovery.

Slide 19:

Jim determines that his learning goal does indeed require students to demonstrate deep understanding because students are expected to:

- Explain, generalize, or connect ideas, using supporting evidence from a text or source
- Make and support inferences about implied causes and effects
- Draw conclusion or form alternative conclusions
- Analyze how changes have affected people or places

In addition, students are required to write a multi-paragraph composition that analyzes interrelationships among concepts using reasoning and criteria for making and supporting an argument, and supporting the conclusion with evidence.

He records this information in the section: *Describe how the Learning Goal requires students to demonstrate deep **understanding** of the knowledge and skills of the standards or big idea being measured.*

Deep understanding = Complexity

Planning Information for Writing the Learning Goal	
Describe how the Learning Goal requires students to demonstrate deep understanding of the knowledge and skills of the standards or big idea being measured.	Students are expected to: <ul style="list-style-type: none"> • Explain, generalize, or connect ideas, using supporting evidence from a text or source • Make and support inferences about implied causes and effects • Draw conclusions or form alternative conclusions • Write a multi-paragraph compositions that analyzes the interrelationships among concepts using reasoning and criteria for making and supporting an argument, and supporting the conclusions with evidence. This expectation requires students to demonstrate strategic and complex thinking which is at a DOK Level 3.

Slide 20:

Reflect on Depth-of-Knowledge for developing SLOs :

- What is the Depth-of-Knowledge of the standards you are measuring?
- Is your Learning Goal aligned to the highest level of Depth-of-Knowledge of the standards you are measuring?
- Is your Learning Goal complex rather than simply difficult?

DOK = Depth-of-Knowledge

Depth-of-Knowledge Reflection

- What is the Depth-of-Knowledge of the standards you are measuring?
- Is your Learning Goal aligned to the highest level of Depth-of-Knowledge of the standards you are measuring?
- Is your Learning Goal complex rather than simply difficult?