Scaffolding of Instruction Is Necessary for Gifted Students, Too

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Scaffolding as an educational strategy is sometimes thought to be reserved only for students below grade level. However, any student who is grappling with content that is advanced beyond their current readiness level needs a support structure in place in order to attain higher levels of achievement and continue on their path toward developing expertise. This article highlights how the *Jacob's Ladder Reading Comprehension Program* framework can be used in multiple content areas to differentiate instruction for gifted and advanced learners by applying accelerated content and scaffolding as a way to support learning.

Scaffolding Defined

According to Merriam-Webster, a scaffold is "a supportive framework" or "a temporary or moveable platform to stand or sit on when working at a height above the floor or ground". In education, instructional scaffolds serve as a framework to support learning when students are working at a "height" that is above their readiness. Instructional scaffolds allow students to perform a skill or a task they would not otherwise be able to do without that support. In general education, instructional scaffolding approaches can take on many forms such as: providing exemplars before engaging students in a task; asking lower to higher level questions to guide problem solving or critical thinking; modeling thinking; reviewing vocabulary or providing background knowledge before discussing a difficult text; or adjusting the level of difficulty of a task over time—slowly building to more advanced levels of content and understanding. Scaffolds can be created for content, material, or tasks.

Scaffolds are not intended to be a huge jump, but a gradual climb. The amount of scaffolding a child needs is dependent upon their readiness, experience, and the complexity of the required task. Scaffolding is not permanent. Once students can consistently and successfully perform the intended task, the scaffolds are removed. This concept is likened to training wheels on a bicycle. As students become more competent riders, the training wheels are removed, yet students continue to ride their bike successfully without the support. Hammond & Gibbons (2005) explained that the decisions for adding or removing instructional training wheels take thoughtful practice. They cite specific criteria that necessitate the need for scaffolding:

- Students could not succeed without the teacher's intervention.
- The teacher aims for some new level of independent competence on the students' part.
- The teacher has the learning of some specific skill or concept in mind.
- There must be evidence of students successfully completing the particular task at hand.
- There must also be evidence that learners are now able to go on to deal independently with subsequent related tasks or problems. (Mercer, 1994 as cited in Hammond and Gibbons, p. 11)

The authors identified two objectives of scaffolding including a) empowering students to work independently and successfully on their own given a particular task and b) applying scaffolding techniques to newly encountered situations, tasks, or problems.

Scaffolding of instruction is more commonly cited as a strategy for struggling learners even though scaffolds are important for any student who needs assistance climbing to higher levels of achievement. Once students consistently and successfully perform tasks at an independent level without the need for scaffolds, they are ready to move to a higher platform. As this occurs, more scaffolding is necessary to obtain a new level of content acquisition. Many of us are familiar with Vygotsky (1978) and the zone of actual and proximal development. Vygotsky argued that a student who solves a problem or task independently has already learned that task—it is their zone of actual development. It is yesterday's learning. A student is in the zone of proximal development when he/she requires support from a "more knowledgeable other" (MKO) as he/she is unable to perform the task or meet the

intended goal independently. As such, if gifted students are consistently provided tasks that they can easily and independently perform without support, are they learning? Maybe not. We want to celebrate students' independence when accomplishing tasks but if students rarely require a scaffold, perhaps the tasks they are performing are not high enough.

In order for gifted students to continue learning, the content, processes, and tasks need to be advanced enough that the student actually needs an instructional support in order to successfully and independently achieve the intended goal. This means that we must accelerate the content **and** adjust the concepts and thinking models or processes (VanTassel-Baska & Little, 2017). Although gifted students show higher levels of critical thinking in general (Stambaugh, 2007) they still benefit from the explicit teaching of thinking models (Rogers, 2007) and the deliberate use of frameworks and models over time (VanTassel-Baska & Stambaugh, 2007). One such framework to support deliberate scaffolding is the *Jacob's Ladder Reading Comprehension Program*. This framework was originally designed to support skill development for students from low income households who, with intentional support and scaffolds, could attain higher levels of achievement and thinking. Since inception, the framework has been successfully used in a variety of content domains and with students from a variety of backgrounds and ability levels.

A Successful Framework

The *Jacob's Ladder* program is a compilation of instructional scaffolding models intended to move students to higher levels of critical thinking, concept development, inference-making and the development of thematic ideas, or creative production. Each ladder stands alone and focuses on a different thinking component. Students "climb" the ladders by answering lower level to higher level questions as they move toward deeper understanding of a content area.

Examples of ladders and question stems for each rung are provided in Table 1. Ladder A focuses on critical thinking and asks students to determine implications and consequences of various issues or ideas. By leading students through sequencing and cause-and-effect activities, they learn to draw implications and consequences from readings, science experiments, or historical analyses. Ladder B focuses on making generalizations and developing concepts. Students first learn to provide details and examples, and then move to classifying and organizing those details in order to make generalizations or statements about a concept or idea that would be true in most situations or disciplines. Ladder C focuses on main ideas, themes, and conceptual understandings. Students begin by considering facts, details, or elements of a literary text, problem, situation, or task and then make inferences about the findings, events, or text as they determine thematic ideas and deeper content-specific understandings. Ladder D focuses on creative synthesis by leading students through paraphrasing or retelling facts, events, or plot lines, and summarizing key ideas before asking new questions or creating original products.

This framework can be used in a variety of ways to differentiate and scaffold instruction as students are presented with accelerated content and processes that require them to draw upon the expertise of others to obtain higher levels of thinking and content acquisition. Teachers can map their required standards to a specific ladder and the subsequent ladder rungs. After determining which ladder and rung best matches the standard, teachers can adjust the complexity of the questions and tasks by providing activities that move students to higher levels (i.e., rungs) of instruction as they show mastery of lower level rungs.

For example, if a standard requires students to list or sequence the events that led to the signing of the Declaration of Independence, we might plot this as a Ladder A sequencing task. Students who know or could perform this task quickly would be provided with a replacement task at the next rung of the ladder (i.e., cause and effect). They may be asked to discuss the cumulative effects of two or three key events (e.g., Stamp Act, Intolerable Acts, Boston Tea Party) before moving to the highest rung of the ladder in which they debate the positive and negative long-term implications of these events on future decisions. If differentiating in math and the standard requires students to understand ratios and fractions, one might begin with Ladder B because definitions may be seen as details or elements of a problem or concept. After defining ratios and fractions and providing examples of each (rung 1), students could defend whether or not all ratios are fractions (categorization/classification) by explaining the similarities and differences between ½ and 1:2. Then, they would move to the highest rung of Ladder C and create a rule about the relationship between ratios and fractions that could be used in a mathematics textbook. By plotting where a standard fits on a ladder rung, and then adjusting the instruction by differentiating questions and tasks accordingly, teachers have a guide for scaffolding up or down as necessary to support student learning.

Scaffolding accelerated content or advanced processes is another way to use the *Jacob's Ladder* framework. This use was the original intent of the ladders. Using this method, teachers present accelerated content, tasks, or questions that are above the student's levels of readiness. Students then climb up and down the ladder, building upon previously learned skills to reach to the most accelerated or advanced content at the highest rungs. For example, if students are expected to make inferences and determine how a writer develops a theme, Ladder C could be applied because of the focus on determining and justifying themes as the highest rung. Teachers would first select a more advanced text based on each student's reading level (e.g., accelerate the resource first). Assuming the text is sophisticated enough that students need additional support, they would begin at the bottom rung of Ladder C examining literary elements such as symbols, metaphors, images, and structure. Then students make inferences based on key passages before discussing how the use of literary elements and key phrases develop the theme. In this way they climb the ladder with a challenging text, breaking it down from literary elements, to inference-making, to how elements and inferences interact to support a theme.

Similarly, in science, if students are asked to create an experiment for a science fair project (Ladder D—creative synthesis), they first need to read infor-

mational texts and gain an understanding of the construct they want to pursue by paraphrasing multiple articles and reviewing ideas about their topic (rung 1). Then, moving up to the second rung of the ladder, students summarize the information they acquired from multiple articles and determine new questions from the literature that need exploration, including patterns and issues that have emerged. Finally, at the highest rung of Ladder D, they would create a testable question (creative synthesis) and design an experiment. As illustrated in Table 1, the sentence stem for the top rung of Creative Synthesis ladder states: "create a ____ that ____ and ____" (Stambaugh, 2013). These criteria are set based on the standards, outcomes, or purpose of the task or product. This stem is designed to focus a task, add depth, and support the development of expertise—as criteria and parameters still need to be met as part of creative production. Therefore, instead of simply asking students to design a science experiment, parameters or criteria would be added so that students would be asked to design an experiment that solves a problem such as overpopulation of invasive species, and is scalable, affordable, and does not negatively affect the balance of the ecosystem.

Student readiness is a critical consideration when using the ladders. If students do not need scaffolding and they can independently and successfully perform the most advanced tasks from the ladder without support, then accelerated content or more complex tasks need to be considered. Likewise, just as teachers can adjust questions to differentiate using the ladder framework and mapping standards to the rungs, students can internalize the ladder processes and apply them to their own learning. For example, if they know they are uncertain about the implications and consequences of a given problem or scenario (Ladder A) they can apply the ladder structure on their own and go back to sequence events, determine cause and effect relationships, and then use that information to consider short and long-term consequences.

Applying this approach shows positive academic gains for students. Research from a quasi-experimental design study in reading with just under 500 students suggests that when teachers were provided with the appropriate professional development and modeling of the ladder framework, students exposed to the Jacob's Ladder curriculum showed significant and important gains in reading comprehension and critical thinking (Stambaugh, 2007).

Whether standards are mapped to ladders as part of a differentiated ap-

Table 1. Ladder and Question Stems

Ladder A: Implications and Consequences (Reasoning and Connecting)	**Ladder B: Concept Development** (Abstract connections within and across disciplines)	**Ladder C: Content within a Discipline** (Content Understanding and Inference-making)	**Ladder D: Products or Discussions as a Synthesis of Learning and Creativity**
Implications/Consequences	**Generalizations/Concepts**	**Relationships Among Theories, Laws, Big Ideas**	**Creative Synthesis**
*What are the short and long term effects of x on y? *What are the positive outcomes of x? Negative? *What might happen if x was changed? *What are the consequences of x on y? *What are the implications of...? *Should.....? Why?	*What does this passage say about changes over time? The use and abuse of power? *What are two true statements about _____ based on this passage/lecture/experiment/ problem set? *What generalizations can you make about x from y? *What is the relationship between concept A and concept B in this (problem, experiment, story, time period)?	*Is _____ or _____ a better ____? *How do different perspectives support or deny the idea that....? *How does the author use tone and mood to support the idea that....? *How is the theme of x demonstrated/revealed through y?	*Create/design/write/develop a ____ that ___ and ____.
Cause/Effect Relationships	**Classifications**	**Inferences**	**Summarizing**
*What caused x to ____? How do you know? *What caused x, and how does x impact...? *What effect does x have on y?	*How would you classify ....? -How would you classify the problems into categories? *Organize the xxx into a chart that shows..... *Create a T chart/Venn diagram that shows... *Examine multiple perspectives on the issue and...	*What is meant by..... *How do we know that.... *What is the point of ..... *What can you infer about x based on y? *What evidence do you have to suggest that...	*What are the most important or key ideas _____ that ____? *This ___ was about ___ because..... *Summarize the main idea of... * This is important because....
Sequencing	**Details**	**Facts/Elements/Factors**	**Paraphrasing**
*Create a timeline of x that shows... *Sequence the events that led to... *Explain, step by step how....	*What details in the passage/lecture/experiment/ document support the idea that...? *What do the details from x tell us about y? *List examples that show different rules of...	*What is the.....? *What elements support....? *What factors might we consider....?	*Explain..... *Retell..... *What does..... *What is meant by...? *What are ___ facts that... *Explain how you would solve..

proach or accelerated content and processes are scaffolded by moving students from lower to higher level rungs using the *Jacob's Ladder* framework, students and teachers are applying deliberate approaches for thinking. As new information is learned, and scaffolds are no longer necessary, the process begins again with more challenging tasks, resources, and accelerated content. In this way, all students can learn something new every day and have opportunities to work in the zone of actual and proximal development as they continue on a path toward developing expertise. **THP**

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Note

Portions of the article are adapted from *Jacob's Ladder Reading Comprehension Program: Grades K–1* (2nd ed., pp. 1-34) by T. Stambaugh and J. VanTassel-Baska, 2017, Waco, TX: Prufrock Press. Copyright 2017 by Prufrock Press. Adapted with permission.

Write for THP

Do you have practical classroom applications of current research, theory, and best practices in the field of gifted education? Are you proud of the innovative way you address the needs of gifted students in your school or classroom? Have you created a successful lesson or unit plan that aligns with the revised NAGC Pre-K-Grade 12 Gifted Programming Standards? If so, we want to hear from you! Send manuscripts to: Jeff Danielian, Editor, THP at jdanielian@nagc.org.

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cess intervention for qualified students. The short set of resources highlighted provides high quality recommendations for educators to consider and valuable details for developing accelerative curricular plans. There are additional tools available at catalog prices from many providers to support curriculum acceleration practices. To develop our students' talents, academically advanced learners should have and experience classroom curriculum and instruction that is appropriately paced to their needs and pitched above their current mastery levels. The best practice intervention of curricular acceleration supports learners and educators in offering an engaging and rigorous academic experience. **THP**

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cusing on how the curriculum impacts their academics is relevant and important, but all too often, the powerful emotions that underlie their school experience are lost in the shuffle, both when the curriculum is challenging and also when it is less so. The key is to find a balance between providing what is necessary for all students and what is desired for those students seeking something more. **THP**