GOALBOOK

DIFFERENT PATHS UP THE SAME MOUNTAIN

A 5-Step Instructional Design Process That Integrates Standards-Based Instruction and Universal Design for Learning

Published by Enome, Inc.

Full text available at www.goalbookapp.com

ISBN: 151510172X
ISBN-13: 978-1515101727

PO Box 1289
San Mateo, CA 94401

Executive Summary

The new state and Common Core standards were intended to prepare ALL students to be college and career ready. The continuing transition from a segregated delivery model to an integrated one (inclusion of more and more students with special needs and English Language Learners in general education classrooms) has increased the diversity of students that is present in general education classrooms. Furthermore, brain science continues to demonstrate that even amongst groups of students that may be described as "typical", there is in fact great variability in how their brains process information. **Diversity and variability is the norm—not the exception—in the US K-12 classroom.**

Without an instructional approach that is universally designed to address the diversity of learners present in classrooms, schools run the risk of having significant populations of students who do not reach their full potential. Universal Design for Learning is a framework that offers a research-based approach to closing the achievement gap by allowing educators to design accessible and engaging instruction for a diverse classroom of learners.

At Goalbook, we've developed a 5-Step Instructional Design Process to unify standards-based instruction and Universal Design for Learning so that educators can ensure that ALL students will be college and career ready.

GOALBOOK

Contents

Yosemite's Half Dome and Standards-Based Instruction

Climbing to the top of Yosemite's Half Dome and looking out over the entire Yosemite Valley is an experience that attracts people from all over the world. While only the most well-trained and well-resourced climbers access the summits of Everest, K2, and Denali, novice hikers can stand alongside the most seasoned professionals at the top of Half Dome and feel the same sense of achievement. ***How is this possible?***

Half Dome is able to challenge the most skilled technical climber and the recreational hiker because it offers multiple paths—differing in challenge and support—to reach its summit.

Most recreational hikers take the one-day hiking path, allowing them to reach the summit and come back down in 10-12 hours, trekking a total of 16 miles with an elevation gain of 5,000 feet. Cables and stepping boards built into the curved part of the dome allow hikers with no technical climbing ability to safely scale the last 400 feet of granite.

Professional climbers often take a different path—an ascent up the vertical northwest face of Half Dome. That path requires a great deal of technical knowledge, well-trained climbing skills, and sustained motivation.

In the classroom, teachers are tasked with guiding students of all ability levels to reach the summit of academic success. At Goalbook, we aim to provide support for educators by drawing from research that has been proven to impact teacher practice and student learning.

By helping teachers reach their students through multiple means of access to rigorous learning, we believe that ALL students can succeed.

The Challenge of College and Career Readiness

The new college and career readiness standards present an entire range of mountains that our students are expected to climb. It is easy to stand at the base of just one standard and feel overwhelmed the same way a novice climber could at the foot of Half Dome.

How can educators ensure the rigorous learning objectives, embedded in a standards-based curriculum and in increasingly diverse classrooms, have the broad accessibility of Half Dome and not the unattainability of Everest?

The answer lies in integrating two instructional best practices that so far have developed in parallel (and sometimes in opposition of each other): standards-based instruction and Universal Design for Learning[1].

Standards-Based Instruction

While college and career readiness standards like the Common Core are relatively new[2], standards-based instruction is not[3]. Each state has already established its own learning standards and developed assessments aligned to those standards; while some states have adopted Common Core, others have re-aligned their standards to college and career readiness. In both cases, standards-based instruction has emerged to ensure students make systematic, measurable progress towards the statewide learning standards[4].

Standards-based instruction has been successful in helping educators define *what* is taught and *how* what is being taught is assessed. The standards themselves define what students should learn; the assessments aligned to those standards help educators determine how students can demonstrate mastery of the standards[5].

Revisiting our mountaineering metaphor, standards-based instruction helps educators clearly see the mountain their students need to climb. Furthermore, a standard helps an educator map a single pathway to the summit through backwards-planning instructional objectives that build toward mastery, as demonstrated by summative assessments.

By itself, standards-based instruction is insufficient as a guide to educators for developing students who are "expert learners".[6] In order to help students develop the skills to learn, experience learning, and foster a desire to learn more, educators must map out **multiple pathways** that account for the wide variability of individual students, so that all students can succeed at becoming experts in their own learning[7].

In the coming pages, we'll discuss a five-step approach to designing instruction that engages and supports every student—no matter what level of skill he or she currently has. Setting high standards and providing support to overcome learning barriers with the UDL framework will allow all students to have the rewarding satisfaction experienced by every climber after reaching the summit.

---

[1] Tomlinson, Carol Ann. "Reconcilable Differences? Standards-Based Teaching and Differentiation." EL (Educational Leadership), September, 6-11. Accessed September 15, 2015. http://www.ascd.org/publications/educational_leadership/sept00/vol58/num01/Reconcilable_Differences%C2%A2_Standards-Based_Teaching_and_Differentiation.aspx

[2] NGA (National Governors Association) "National Governors Association and State Education Chiefs Launch Common State Academic Standards." Common Core State Standards Initiative. Accessed September 15, 2015. http://www.ccsso.org

[3] Hamilton, Stecher, and Yuan. 2009. "Standards-Based Reform in the United States: History, Research, and Future Directions" Accessed September 15, 2015. http://www.rand.org/content/dam/rand/pubs/reprints/2009/RAND_RP1384.pdf

[4] Wiggins, Grant and Jay McTighe. 2005. Understanding by Design, Second Edition. Alexandria, VA: Association for Supervision and Curriculum Development

[5] WestEd. 2002. The Standards-based Instructional Planning Process: Backwards Mapping from Standards to Instruction" California State University: California Academic Partnership Program. Accessed September 15, 2015. http://www.calstate.edu/CAPP/projects/Module_2.pdf

[6] Common Core State Standards Initiative. 2012. "Application to Students with Disabilities" Accessed September 15, 2015. http://www.corestandards.org/assets/application-to-students-with-disabilities.pdf

[7] Meyer, A., Rose, D.H., & Gordon, D. (2014) Universal design for learning: Theory and practice, Wakefield MA: CAST

> ***Individuals bring a huge variety of skills, needs, and interests to learning. Neuroscience reveals that these differences are as varied and unique as our DNA or fingerprints.***
>
> - Center for Applied Special Technology

Universal Design for Learning

The key to enabling ALL students to access the goals posed by rigorous learning standards is in ensuring that there are multiple pathways to meet those goals.

Just as the various trails that lead up a mountain can pose differing challenges and opportunities for different climbers, lessons can pose very different challenges, opportunities, and even obstacles for different learners: like climbers, students approach potential challenges equipped with a wide variety of knowledge, skills, and motivations.

While one objective of designing instruction is to make learning accessible for all students, another is to ensure a lesson is challenging enough for all students. There's little satisfaction in accomplishing a task without experiencing any difficulty: it is essential that instruction presents meaningful challenges.

A group of climbers is strengthened by each climber's individual contributions, and a classroom functions in a similar manner. When a diverse group of students is presented with a clear learning objective that is both accessible and challenging, and they work together to achieve a common goal, the result is immensely rewarding.

Designing instruction that meets the needs of a diverse group of students can feel like a mountain of a task in and of itself, but the right tools can make designing this type of instruction an equally gratifying accomplishment for educators.

Universal Design for Learning is a design framework that helps educators accomplish the following:

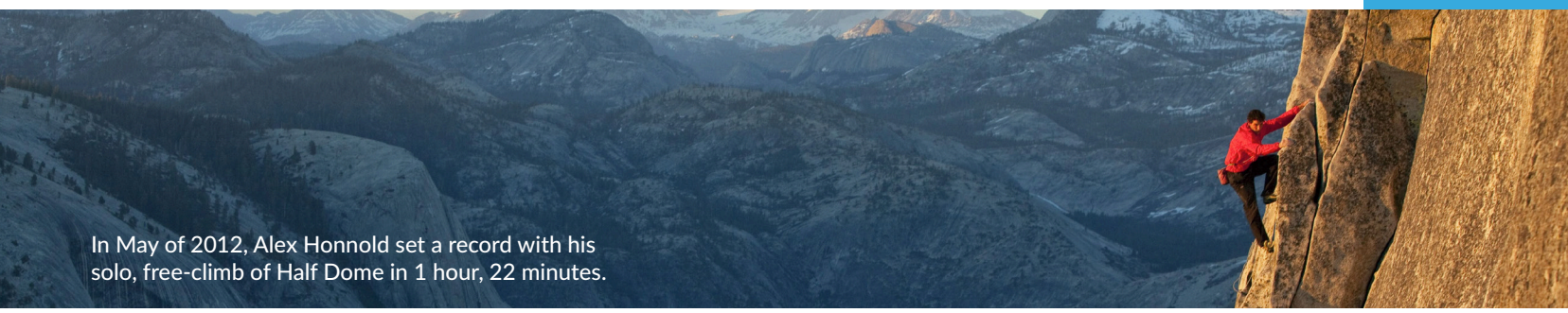
1. Identify learning barriers inherent in a given standard, learning goal, or curriculum
2. Develop evidence-based strategies that reduce barriers and improve access for all students

UDL has identified common barriers that are present in almost any learning activity and has matched them with best-practice strategies that educators and curriculum designers can use to remove or reduce these barriers.

Universal Design for Learning can help educators anticipate challenges and develop multiple pathways of learning, which in turn helps their diverse group of students achieve a common set of learning goals and standards[8].

[8] CAST. "Planning for All Learners" CAST: UDL Toolkits. Accessed June 9, 2014. http://www.cast.org/teachingeverystudent/toolkits/tk_introduction.cfm?tk_id=21

[9] CAST. 2011. "Universal Design for Learning Guidelines version 2.0." National Center on Universal Design for Learning. Accessed September 15, 2015. http://www.udlcenter.org/aboutudl/udlguidelines



In May of 2012, Alex Honnold set a record with his solo, free-climb of Half Dome in 1 hour, 22 minutes.

UDL Principles: The 3 HOWs of Learning

The Universal Design for Learning framework is organized as a hierarchy of three levels[9]:

1. **Principles:** Essential components of any learning activity
2. **Guidelines:** Common types of barriers that impede learning
3. **Checkpoints:** Strategies to help overcome barriers

The 3 UDL Principles provide structure for the UDL Guidelines, which are further organized into Checkpoints. In order to put UDL into practice, it is essential to first understand the 3 UDL principles: Representation, Action and Expression, and Engagement.

At the highest level, UDL is organized into three broad principles that elaborate on HOW students participate in any learning activity:

Representation

HOW information is presented to students in the lesson (e.g. written text or verbal communication).

Action + Expression

HOW students navigate a learning environment and express what they know.

Engagement

HOW students will be motivated and sustain engagement throughout the lesson.

Integrating Standards-Based Instruction and Universal Design for Learning

At Goalbook, we've developed a 5-Step Instructional Design Process that blends standards-based instruction with Universal Design for Learning. The process brings together the WHAT behind a lesson (learning standards) with the HOW (UDL instructional strategies) so that educators can design multiple pathways of learning that ensure a diverse classroom of students can access and achieve college and career readiness.

Steps 1-3 are constructed on standards-based instruction, which helps educators establish a pathway of learning that is clearly aligned to a specific grade-level standard.

Steps 4-5 leverage Universal Design for Learning to help educators identify key learning barriers present in an individual learning pathway. Selecting targeted, instructional strategies then opens up multiple pathways around these barriers so that all students can be engaged and successful in making progress toward the standard.

> ***"Whereas traditional curricula focus on content or performance goals, a UDL curriculum focuses on developing 'expert learners.' This sets higher expectations, reachable by every learner."***
>
> - National Center on Universal Design for Learning

5 STEPS FOR

Designing Instruction

THAT ENGAGES AND SUPPORTS ALL STUDENTS

1. SELECT A KEY LEARNING STANDARD

A set of standards presents an entire range of mountains for our students to climb. We select a single peak for the focus of our instruction.

2. DETERMINE THE CORE PURPOSE

We study our selected standard to get a sense of its unique terrain and features. Then we distill it to an essential destination point at the summit that we want all students to reach.

3. DEVELOP A CLEAR INSTRUCTIONAL OBJECTIVE

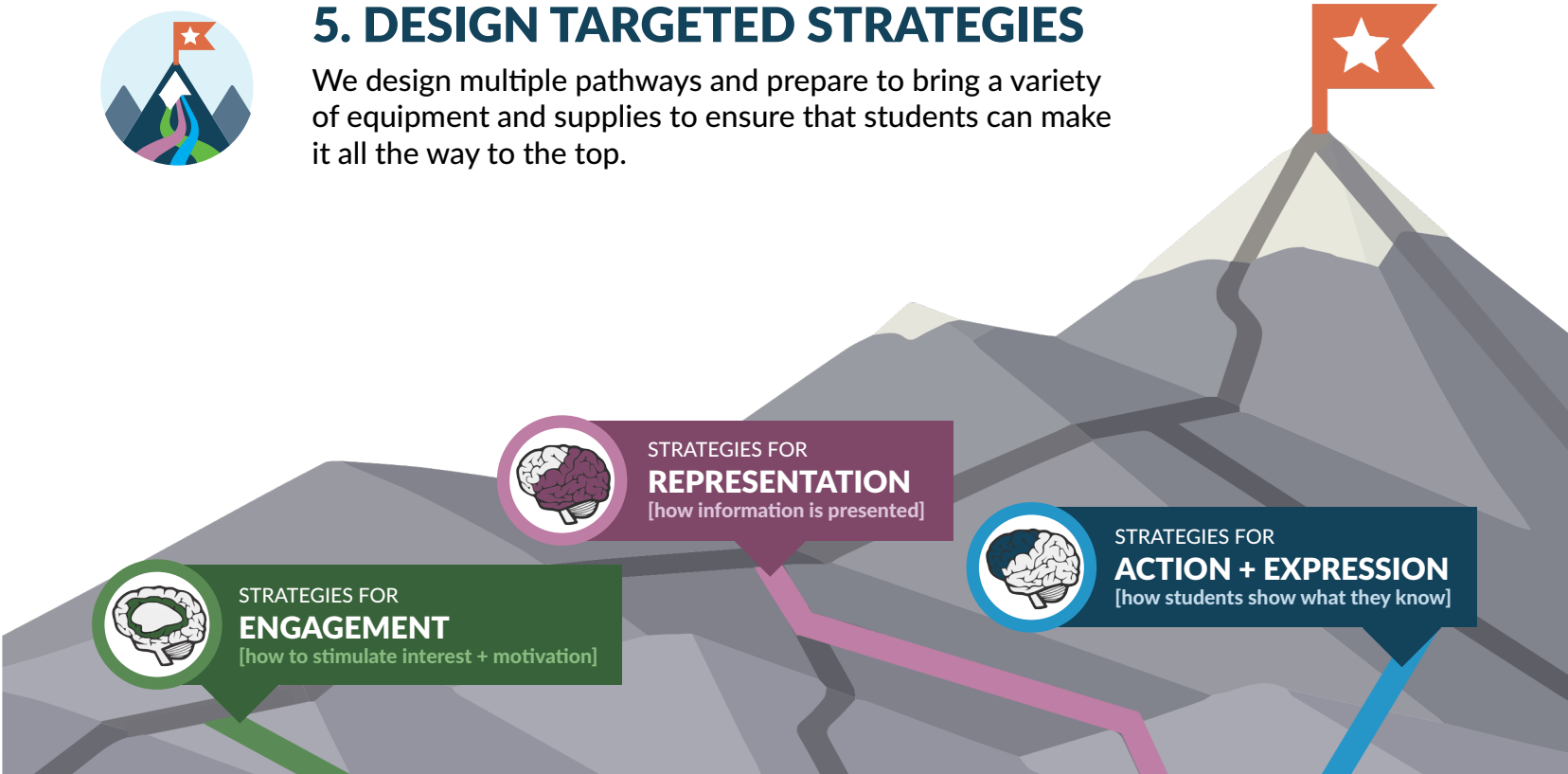
We design a clear pathway of instruction to the top that attains our Core Purpose. Often this is the most direct and commonly taken path to the top.

4. IDENTIFY POTENTIAL BARRIERS

We proactively identify challenges that students will face along our initial route. There might be steep passageways, unnavigable stretches, or barriers in the path.

5. DESIGN TARGETED STRATEGIES

We design multiple pathways and prepare to bring a variety of equipment and supplies to ensure that students can make it all the way to the top.



THE GOALBOOK 5-STEP PROCESS APPLIED TO DEVELOPING INSTRUCTIONAL GOALS

Developing measurable and specific learning goals is a critical step in the design of intervention plans, IEPs, and other forms of specialized instruction.

In this section, we walk step-by-step through the Goalbook Instructional Design Process. In order to create multiple pathways of learning, we will develop a Common Core-aligned learning goal that incorporates UDL.

Steps 1-3: Developing a Clear Learning Pathway Using Standards-Based Instruction

1. Select a key learning standard

Before we embark on a climb, we first need to choose WHICH mountain to climb.

Before setting an instructional goal for a student, it is important to be strategic about which standard the goal will align to. Though this step might initially sound trivial, selecting which standard to focus on in a learning goal is a critical part of the planning process that requires thoughtfulness[10].

When selecting a standard for an individual student, it is important to ensure it meets the following criteria:

1. The standard is from the enrolled grade level of the student.
2. The standard is fundamental to the grade level. It is a skill that is used throughout the year and in multiple contexts.
3. The standard addresses an area in which the student needs additional support.

For the purpose of walking through the 5-Step Process, we've selected a key reading standard, CC.ELA-Literacy 3.RI.3 (pictured to the right).

2. Determine the Core Purpose of the standard

We survey the mountain and select a specific destination at the summit to where our pathway will lead.

Before an educator can effectively plan and design instruction around a standard, it is imperative he or she understands the standard itself. Standards such as those found in Common Core are often long, multi-faceted, and abstractly worded. This makes it challenging for educators to conceptualize a complex standard and visualize what a student is actually doing when he or she demonstrates mastery of the standard.

Below is a third grade Reading: Informational Text standard from the Common Core:

CC.ELA-Literacy 3.RI.3:
Key Ideas and Details

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

The standard presents an abstract task ("Describe the relationship…"), incorporates multiple types of texts ("historical ... scientific ... technical procedures…"), and specifies multiple uses of language ("time, sequence, and cause/effect").

[10] Courtade, Ginevra and Diane M. Browder. (2013) Aligning IEPs to the Common Core State Standards for Students with Moderate and Severe Disabilities. Verona, WI: IEP Resource

The complexity present in even the briefest of standards is why we recommend that educators first distill a standard down to its Core Purpose, or essential learning element[11].

Identifying the Core Purpose helps educators demonstrate that they have taken the crucial first step in understanding a standard by identifying its "main idea" and recasting it in their own words.

For example, for the standard, 3.RI.3 above, we can distill it into its **Core Purpose**:

Describe the relationship between events in a text in terms of time and cause/effect.

For this standard, we chose to simplify the language by removing the specifications of different types of informational text (e.g. "technical procedures"). We also chose to consolidate "time" and "sequence" into "time." Finally, we considered the fact that basic sequencing (e.g. beginning, middle, end) is presented in prior grade levels.

There is no official "right answer" when developing a Core Purpose. At Goalbook, we use the following two guidelines when developing the Core Purpose:

1. The Core Purpose should not be a "watered-down" (i.e. less rigorous) version of the standard.
2. The Core Purpose should be kept to 15 words or less.

3. Develop a clear learning goal around the Core Purpose

We plan out a single pathway up to our specific destination. Our route needs to be clearly mapped out and articulated; otherwise, we may get lost.

Once educators understand a standard and distill it into its Core Purpose, the next step is to develop a learning goal that articulates how the student will demonstrate progress on the Core Purpose. The main challenge in this step is translating an abstract standard into a concrete student learning goal that clearly describes what progress towards the Core Purpose actually looks like in the classroom.

Standard 3.RI.3 and its Core Purpose both start with the phrase, "Describe the relationship ...." We call this type of language "abstract" because it does not specify how students will demonstrate progress on the standard. How will students "describe the relationship"? Are they writing? Are they speaking? What are the contents of their description?

At Goalbook, we've developed two guiding questions that help create a learning goal that is concrete, specific, and measurable:

1. **Can someone else read the goal, close his or her eyes, and visualize the task the student is performing (i.e. observable and measurable)?**
2. **Can someone clearly determine whether the student has met the goal or not (i.e. specific criteria)?**

[11] Rose, David and Anne Meyer. "Chapter 5: Using UDL to Set Clear Goals" In Teaching Every Student in the Digital Age. Alexandria, VA: ASCD. Accessed June 4, 2014. http://www.cast.org/teachingeverystudent/ideas/tes/chapter5.cfm

Using these two guiding questions, our completed goal has a grade-level standard at its core, but provides support for the student by integrating Universal Design for Learning.

Below, we've categorized different elements of our sample goal into the three UDL Principles of **Representation**, **Action and Expression**, and **Engagement:**

> *After **self-selecting** and **independently reading a historical grade-level text**, students will **answer 4 out of 5 short-answer comprehension questions in 2-3 written sentences** that require an understanding of how events are connected in time or by cause/effect.*

With the goal we've developed, it is easy to visualize not only *what* the student is doing, but *how* he or she is demonstrating progress toward the standard: the student is independently reading a historical grade-level text, writing short-answer responses to specific types of comprehension questions using 2-3 sentences, and answering 4 out of 5 questions correctly in order to meet the specific criteria of the goal.

Most instructional design processes end once one articulated pathway has been developed; however, we know that if our instruction only offers one narrow pathway for mastery, then we limit how effectively we will support all students.

The final two steps in the process incorporate Universal Design for Learning to select targeted instructional strategies that reduce barriers and create multiple pathways so that all students can access instruction.

> ***"Within the UDL framework, goals themselves are articulated in a way that acknowledges learner variability and differentiates goals from means. These qualities enable teachers of UDL curricula to offer more options and alternatives—varied pathways, tools, strategies, and scaffolds for reaching mastery."***
>
> - National Center on Universal Design for Learning

UDL Guidelines: Common Types of Learning Barriers

Any lesson can contain barriers that prevent students from learning. UDL Guidelines help educators identify the most common types of barriers that should be considered in the design of their lessons. For each of the three principles, UDL suggests three barriers that may prevent students from learning.

UDL PRINCIPLES	GUIDELINES Potential Barriers to Student Learning
 **Representation**	1 Perception 2 Language, Expressions, and Symbols 3 Comprehension
 **Action + Expression**	4 Physical Action 5 Expression and Communication 6 Executive Function
 **Engagement**	7 Interest 8 Effort and Persistence 9 Self-Regulation

Steps 4-5: Designing Multiple Pathways Using Universal Design for Learning

4. Identify Barriers to the Learning Goal

Any clear pathway will present challenges along the way. We need to identify places where the path may be unnavigable for students.

In any individual learning goal, there will be learning barriers that can prevent students from being successful. We can more readily identify the barriers present in our learning goal by decomposing elements of the goal into **Representation**, **Action & Expression**, and **Engagement**:

> *After **self-selecting** and **independently reading a historical grade-level text**, students will **answer 4 out of 5 short-answer comprehension questions in 2-3 written sentences** that require an understanding of how events are connected in time or by cause/effect.*

Once we have broken down the goal into the three Principles, we can use UDL to identify the barriers present in each component. To make the process efficient and implementable, we suggest that educators select the most significant barrier for each UDL Principle based on the knowledge of their students.

Identifying Barriers to Representation

It is almost certain that the complexity of the language in the grade-level historical text will prevent some students from being able to decode the text or read the text fluently enough to support comprehension.

UDL Guideline 2 points to language as a potential barrier to learning:

> Guideline 2: Provide options for language, mathematical expressions, and symbols

Identifying Barriers to Expression

The current goal we've drafted asks that students answer questions by writing a multi-sentence response. Even a student who has comprehended the content of the text could face a barrier in expressing his or her understanding in written form.

The most relevant UDL Guideline around the challenges of developing a written response is Expression Guideline 5:

> Guideline 5: Provide options for expression and communication

Identifying Barriers to Engagement

For any given historical text, there will be students who are naturally interested in the historical topic addressed in the text and students who are not. Students who are not initially interested in the topic will likely be disengaged in the reading and may lack the motivation necessary to wrestle with a challenging historical text.

The UDL Guideline which most directly addresses barriers around student interest and motivation is Engagement Guideline 7:

> Guideline 7: Provide options for recruiting interest

5. Identify Strategies That Address the Barriers

We can increase our chances of reaching the summit by bringing additional equipment or taking alternate routes (i.e. multiple pathways) to our destination.

Once we've identified barriers present in our original learning goal, we can start identifying multiple strategies that help our students access multiple pathways to the Core Purpose and standard. Let's revisit our original goal:

> *After **self-selecting** and **independently reading a historical grade-level text**, students will **answer 4 out of 5 short-answer comprehension questions in 2-3 written sentences** that require an understanding of how events are connected in time or by cause/effect.*

UDL helps us identify effective strategies. We don't want to include strategies in instruction just for the sake of using them. Instead, we select strategies that directly address the barriers we have identified in the previous step. That way, we ensure that our strategies will support students for the specific goal we want them to reach.

Identifying Strategies for Barriers to Representation

To address the barrier of language complexity in text, UDL recommends UDL Checkpoint 2.3 as the most relevant option for strategies:

Checkpoint 2.3: Support decoding of text, mathematical notation, and symbols

To support the decoding of historical text, we can use the strategy of partner reading with a more fluent reader to scaffold both decoding text and comprehending text auditorily.

Identifying Strategies for Barriers to Expression

To address the barrier of composing written answers, we can consider UDL Checkpoint 5.3:

Checkpoint 5.3: Build fluencies with graduated levels of support for practice and performance

Given that the Core Purpose of our goal is around a reading standard rather than a writing standard, we can provide a significant amount of writing support without compromising access to the Core Purpose of our reading standard.

To support the student in writing, it might be helpful to begin by having the student review and select pre-written answers. This not only removes the barrier of having students compose on their own, but also allows them to see models of short written answers before they practice composing their own answers.

Identifying Strategies for Barriers to Engagement

To address the barrier of disinterest in the historical topic of the text, the most relevant UDL Checkpoint is 7.1:

Checkpoint 7.1: Optimize individual choice and autonomy

We can have the student choose between three different texts, each on a different historical topic. Not only will the student end up with a text that is more interesting to him or her, but the exercise of choice gives the student more ownership of the text he or she has chosen.

In Summary: Developing an Individual Learning Goal with Multiple Means of Access

We've used the 5-Step Process to design a learning goal focused on a key standard, beginning with identifying the standard's Core Purpose. This created a single pathway of access for students. Next, we used the UDL framework to identify potential barriers students might face. UDL Guidelines and Checkpoints then helped select and develop targeted strategies that open up multiple pathways of success for students. Our work is summarized below:

Standard (CC.ELA-Literacy 3.RI.3):

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

Core Purpose:

Describe the relationship between events in a text in terms of time and cause/effect.

	Representation	Expression	Engagement
Learning Goal Component	Read a grade-level historical text	Develop and write short-answer responses	Recruit and sustain effort/ interest in grade-level text
Potential Barrier	Difficulty decoding language of a historical grade-level text fluently **(UDL Guideline 2)**	Difficulty developing a multi-sentence answer **(UDL Guideline 5)**	Lack of interest in the historical topic **(UDL Guideline 7)**
Instructional Strategy	Partner Reading: pairing more fluent readers with less fluent readers **(UDL Checkpoint 2.3)**	Select answer from pre-written model responses **(UDL Checkpoint 5.3)**	Choose from three different texts on three different historical events **(UDL Checkpoint 7.1)**

Our Individual Learning Goal:

After **self-selecting** and **partner reading** a historical grade-level text, students will answer 4 out of 5 short-answer comprehension questions that require an understanding of how events are connected in time or by cause/effect by selecting from **pre-written model responses** of 2-3 written sentences.

THE GOALBOOK 5-STEP PROCESS APPLIED TO DEVELOPING A LESSON PLAN

Designing instruction for a diverse classroom does not mean developing multiple lesson plans: an individual lesson plan with targeted UDL strategies can help ensure all students have access to a clear instructional objective.

In this section, we start with a lesson plan for a diverse classroom of students that describes a single pathway of instruction aligned to a Common Core standard (Steps 1-3). We then apply UDL to integrate instructional strategies that enable multiple pathways of learning and access so that more students will be successful in the lesson (Steps 4-5).

Steps 1-3: A Lesson with a Single Pathway

Our sample lesson below depicts a single pathway of learning for a metamorphosis lesson. We also have deconstructed the elements of the lesson by the three UDL Principles of Representation, Action & Expression, and Engagement.

Sample Lesson on Metamorphosis:

1. Students will think-pair-share about the last time they have seen a butterfly or caterpillar.
2. Students will independently read a short article that describes each stage of metamorphosis for Monarch butterflies.
3. Students will demonstrate their understanding by writing a paragraph that describes each step of the cycle.

Sample Lesson Deconstructed Using UDL Principles:

UDL Principle	Key Question	Lesson Component
Representation	How is the information in the learning activity presented to the student?	Students read a short article about a butterfly's life cycle.
Action + Expression	How will the student participate and demonstrate mastery in the learning activity?	Students write a paragraph that describes each stage in the metamorphosis cycle.
Engagement	How will students be motivated and sustain interest in the learning activity?	Students think-pair-share about an experience from their own lives.

Step 4: Identify Potential Barriers to Student Learning

Let's analyze our metamorphosis lesson with a specific focus on the UDL Principle of **Representation**—or, how information is presented to a student in the lesson. In our metamorphosis lesson, information is represented primarily through written text. Written text can present a range of different barriers for a student, depending on factors such as his or her skill level, life experiences, and personality traits.

UDL Principle: **Representation**

↳ **UDL Guidelines** (barriers that might prevent students from learning):

1 Perception

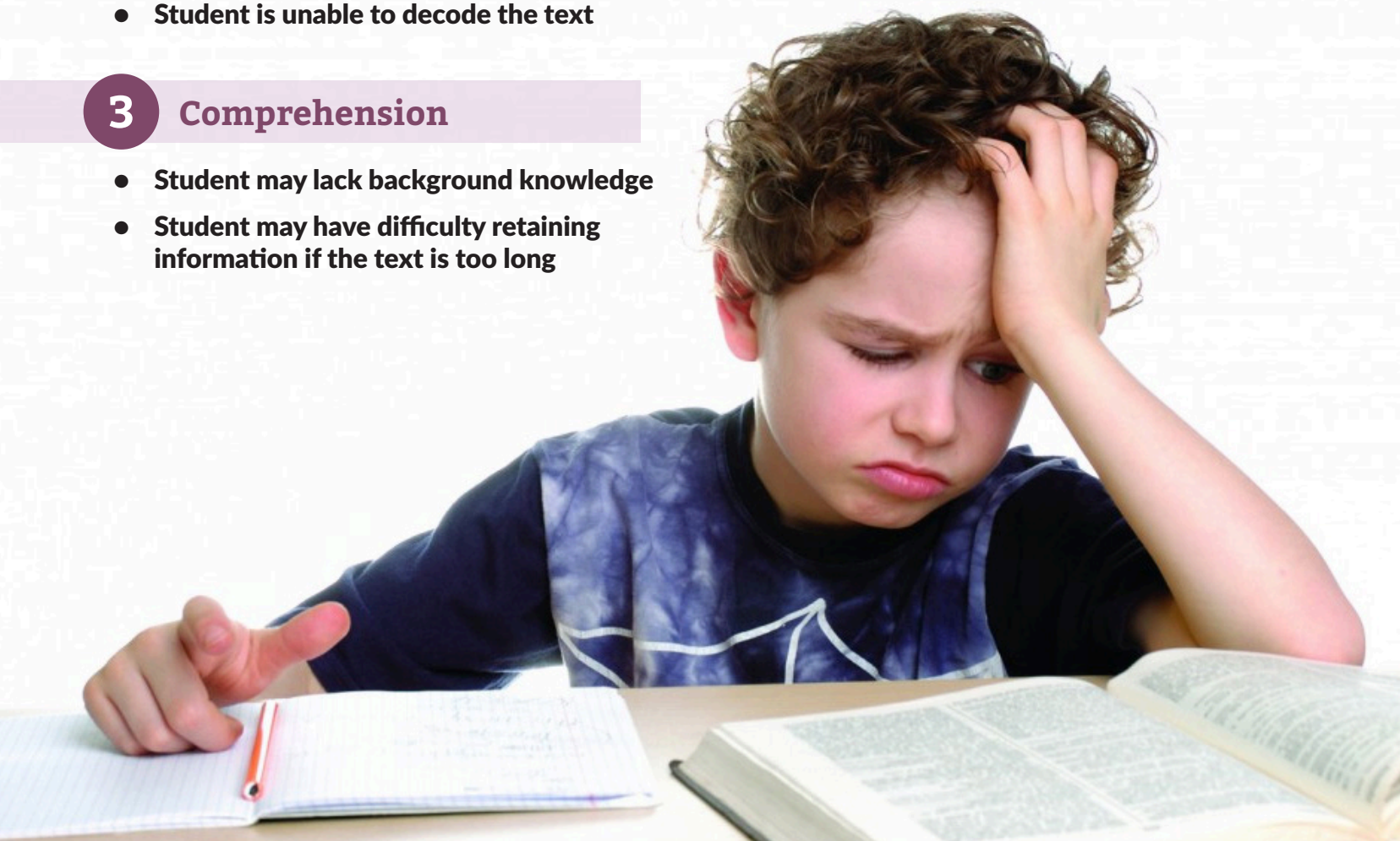
- **Print is too small for student to read**
- **Print from photocopier is too light for student to read**

2 Language, Expressions, and Symbols

- **Student is unable to decode the text**

3 Comprehension

- **Student may lack background knowledge**
- **Student may have difficulty retaining information if the text is too long**



Step 5: Design Strategies That Address Learning Barriers

UDL Guidelines are an articulation of the UDL framework that can assist with planning lessons or developing curricula by helping teachers identify and address barriers to learning[12]. To help devise targeted strategies that will ensure individual students have access to learning, each UDL Guideline is organized by Checkpoints.

There are multiple Checkpoints aligned to each Guideline, which means that educators have multiple strategies to choose from when addressing a barrier. Let's look at the UDL Checkpoints that align to the UDL Principle of Representation under the Guideline of Comprehension:

UDL Principle: **Representation**

UDL Guidelines (barriers that might prevent students from learning):

1. Perception
2. Language, Expressions, and Symbols
3. **Comprehension**

POSSIBLE BARRIERS TO COMPREHENSION

- Student may lack background knowledge
- Student may have difficulty retaining information if the text is too long

Checkpoints that specifically target barriers to comprehension

- 3.1 Activate or supply background knowledge
- 3.2 Highlight patterns, critical features, big ideas, and relationships
- 3.3 Guide information processing, visualization, and manipulation
- 3.4 Maximize transfer and generalization

[12] CAST (2011). Universal Design for Learning Guidelines version 2.0. Wakefield, MA: Author.

Instructional Strategies for a Lesson on Metamorphosis

Checkpoint	In order to...	The teacher could...
3.1	activate or supply background knowledge	present a short video clip on metamorphosis
3.2	highlight patterns, critical features, big ideas, and relationships	chunk the text so each section corresponds to each stage of metamorphosis
3.3	guide information processing	pair a graphic organizer with the text, providing a structured method for note-taking while students read

UDL Checkpoint 3.1 suggests that we can remove barriers to comprehension when we **activate or supply background knowledge**. In our metamorphosis lesson, we can implement this Checkpoint by introducing the concept of metamorphosis in a short video clip before the students engage with the text[13].

UDL Checkpoint 3.2 suggests **highlighting patterns, critical features, big ideas, and relationships** to address comprehension. For students where comprehension is a barrier because the text is too long or too complex, we can divide the text (e.g. by highlighting, adding headers, or even physically dividing the text onto cards) so that each section corresponds to each stage of metamorphosis. Chunking the text will help students process it in smaller pieces while making the underlying structure and organization of the text more visible[14].

In our metamorphosis lesson, we can implement UDL Checkpoint 3.3, **guide information processing, visualization, and manipulation**, by pairing the text with a graphic organizer that provides a structured way for students to take notes as they read[15].

[13] Marzano, Robert J. 2004. Building Background Knowledge for Academic Achievement: Research on What Works in Schools. Boston, MA: Heinle ELT

[14] Barrera, Liu, Thurlow, and Chamberlain. 2006. "Use of Chunking and Questioning Aloud to Improve the Reading Comprehension of English Language Learners with Disabilities". ELLs with Disabilities Report 17. Accessed September 15, 2015. http://www.cehd.umn.edu/nceo/onlinepubs/ellsdis17/default.html

[15] Bulgren, Graner, and Deshler. 2013. "Literacy Challenges and Opportunities for Students with Learning Disabilities in Social Studies and History" Learning Disabilities Research & Practice 28 (1), 17–27.

Lesson Plan on Metamorphosis

UDL strategies added to address learning barriers are highlighted

1. **Teacher will present a short video clip that illustrates and narrates the various stages of the metamorphosis of butterflies.**
2. Students will think-pair-share about the last time they have seen a butterfly or caterpillar.
3. Students will independently read a short article that describes each stage in metamorphosis for Monarch butterflies.
4. **Students can choose to read a chunked version of the article that is broken up into each stage of metamorphosis.**
5. **Students can choose to use a graphic organizer to take structured notes.**
6. Students will demonstrate their understanding by writing a paragraph that describes each step of the cycle.

Now using the UDL framework, we can proactively reduce the barriers to Representation present in our simple lesson by enhancing it with strategies we selected.

In Summary

Before, our metamorphosis lesson presented a single pathway to accessing information, namely by independently reading a short article. Now, students have multiple pathways to access this information. All students are presented with a short video clip that develops background knowledge about metamorphosis. Some students can have a chunked version of the text that is broken up by each stage of metamorphosis.

Some students can also choose to take notes using a structured graphic organizer.

The strategies we incorporated into the lesson are not only going to make this lesson more effective and engaging for students who have comprehension challenges but are going to improve how ALL students, reading at different levels, access the information present in the text. That is the power of designing multiple pathways.

Note that we did not have to create an entirely separate lesson for our struggling readers—**we have a single lesson that offers multiple access points for all students.**

Conclusion

Just as a mountain can pose a formidable challenge to anyone who stands at its base, rigorous standards might seem intimidating to students —especially given the barriers they might find blocking their paths on the way up.

Completing a difficult climb offers an intangible reward of satisfaction: a sense of accomplishment and a unique perspective, shared only by others who have reached the same summit.

When shown multiple pathways to the top and equipped with strategies that target the specific barriers students face, ALL students can reach the high expectations set by standards-based instruction. We believe that students want to be challenged; therefore, it is essential to design instruction that also offers support for diverse learners.

Every student ***can*** learn—a teacher crafts multiple ways that address ***how*** different students learn. Planning instruction for a group of students with diverse learning styles doesn't require multiple plans for the same lesson; instead, offering multiple pathways for success within the same lesson can achieve this goal.

After following Goalbook's Instructional Design Process, we've developed the foundation for a lesson that opens up multiple pathways for all students.

We first developed a single pathway aligned to a standard by distilling a standard into its Core Purpose and designing a clear, concrete instructional objective. Then we used Universal Design for Learning to identify key strategies that target barriers present in the original learning goal. When incorporated into a lesson, these strategies remove barriers and open up multiple pathways for students to approach the learning goal and to make progress toward mastering the standard.

This is the "Universal" in Universal Design for Learning. By incorporating strategies that open up multiple pathways for students, we do not just help remove barriers for a few students, but we create a more engaging and accessible lesson for all students.

Goalbook Works with Districts Across the Country to Empower Educators

Why Goalbook?

DESIGN IMPACTFUL INSTRUCTION

Goalbook helps teachers design individualized and whole-class instructional objectives and plan meaningful classroom activities that challenge and support all learners.

RESEARCH-BASED BEST PRACTICES

Drawing from decades of research by leading organizations like CAST and CASEL, Goalbook makes best practices actionable for teachers.

PARTNERS IN TRANSFORMING TEACHER PRACTICE

Goalbook partners with schools and districts throughout the country to support teachers with a blend of professional development and innovative, web-based resources.

Contact Us:

Please contact Mark Arnold, District Partnerships Lead, to learn more about how your school or district can partner with Goalbook.

marka@goalbookapp.com | (650) 554-1409

Praise for Goalbook

HERE'S WHAT OUR PARTNERS ARE SAYING:

"With clear alignment between measurable goals and state standards, along with instructional best practices using UDL strategies, Goalbook can transform our teaching. Our principals and teachers are excited to use Goalbook to improve instruction for ALL students."

Sowmya Kumar
Assistant Superintendent
Houston Independent School District, Texas

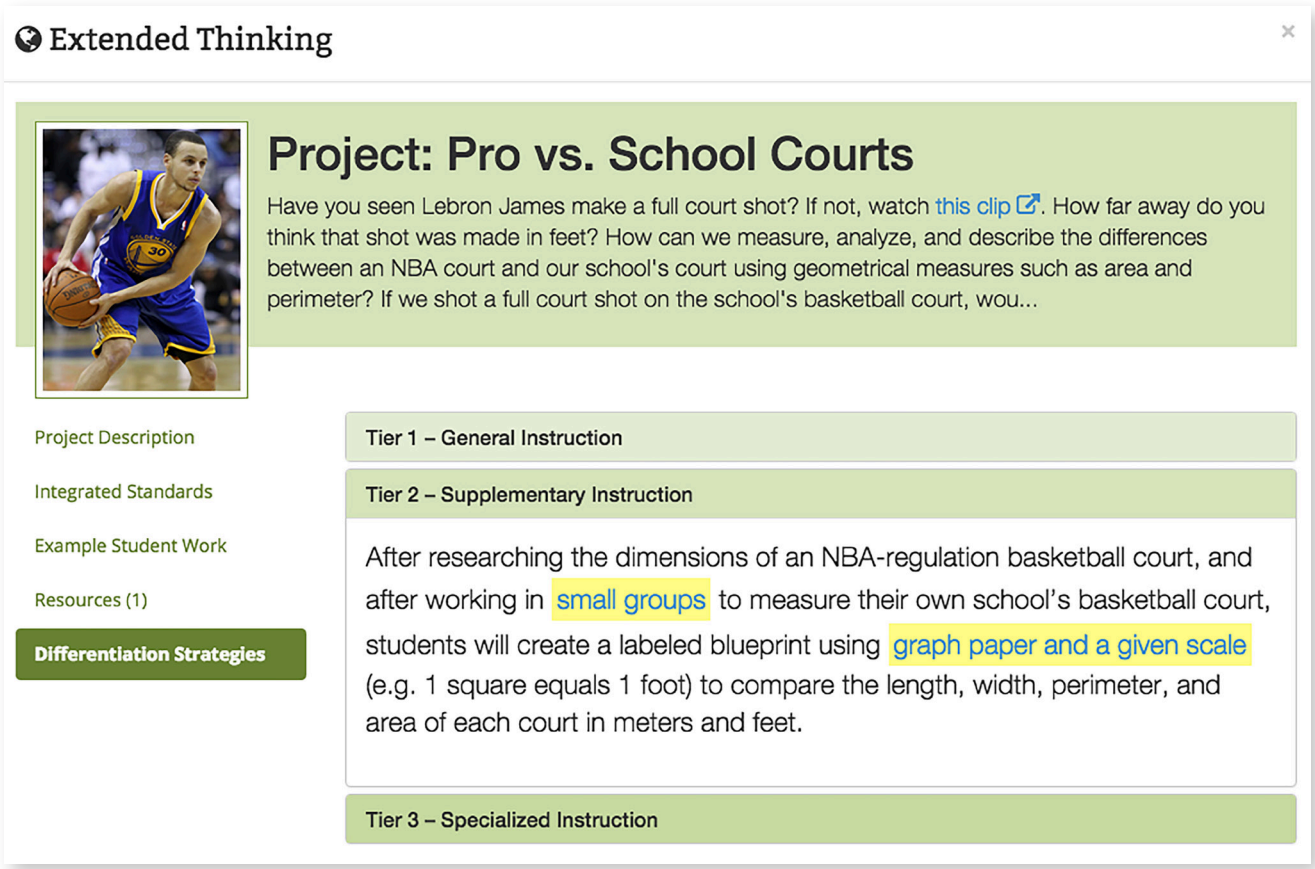
"Goalbook brings our teachers clarity around the expectations of the Common Core and makes sure we are focused at the right level of rigor."

Crystal Hill
Assistant Superintendent
Mooresville Graded School Dist., North Carolina

"I am excited because for the first time we can truly meet the needs of all kids. Goalbook has allowed us to integrate instructional practice for gen ed and special populations. It is phenomenal."

Eric Andrew
Superintendent
Campbell Union School District, California

Goalbook provides instructional resources that help teachers plan for different levels of rigor while simultaneously differentiating lessons using targeted, research-based strategies.



About This Publication

AUTHOR

Daniel Jhin Yoo
Founder, Goalbook

ADDITIONAL CONTRIBUTORS

Steve Saul
Success Lead, Goalbook

Wendy Zeng
Support Lead, Goalbook

REVIEWERS

David Rose
Chief Education Officer
CAST
Wakefield, Massachusetts

Allison Posey
Professional Learning Associate
CAST
Wakefield, Massachusetts

Sowmya Kumar
Assistant Superintendent
Houston Independent School District
Houston, Texas

Lauren Katzman
Deputy Executive Director
Urban Collaborative
Waltham, Massachusetts

Rob Neu
Superintendent
Oklahoma City Public Schools
Oklahoma City, Oklahoma

Bridgette Ealy
Special Services Assistant Director
Fontana Unified School District
Fontana, California

Amy Williams
Principal
Sanger Unified School District
Sanger, California

Goalbook's Mission

TRANSFORMING INSTRUCTION

Research has proven that the most significant school-based factor that affects a student's achievement is his or her teacher. For example, an effective teacher can impact student growth in reading and math 2 to 3 times more than any other factor, including services, facilities, and leadership.

Teachers are faced with many challenges, such as new initiatives, shifting standards, and emerging practices, that make their instructional time an incredibly valuable resource.

At Goalbook, our mission is to empower teachers to transform instruction so that ALL students succeed. District and school leaders across the country partner with our team to create scalable change to instructional practice.

ABOUT CAST

CAST is a nonprofit educational research organization that first coined the term Universal Design for Learning, articulated its principles, developed the UDL Guidelines, and continues to provide leadership in UDL research, policy, and practice. Visit www.cast.org for more information.

Contact Us

GOALBOOK

Mark Arnold
District Partnerships Lead
marka@goalbookapp.com
(650) 554-1409

www.goalbookapp.com
hello@goalbookapp.com
PO Box 1289 | San Mateo, CA | 94401