ARIZONA DEPARTMENT OF EDUCATION

Arizona Professional Learning Series for Creating Systems Change to Increase Literacy Achievement for All Students

Differentiation Guide

AZPLS Rooted in Systems Change

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Differentiated instruction is well received as a classroom practice that may be well suited to the principles of UDL. The following section looks at the foundational principles of Universal Design for Learning (UDL): engagement, action and expression, and representation—to address the ways in which differentiated instruction coordinates with UDL principles.

Recognition networks. The UDL principle that focuses on representation and the importance of providing multiple, flexible methods of presentation when teaching indicates that no single teaching methodology for representing information will be satisfactory for every learner. The theory of differentiated instruction incorporates some guidelines that can help teachers to support critical elements of recognition learning in a flexible way and promote every student's success. Each of the four key elements of differentiated instruction (content, process, product, and affect/environment) supports an important UDL practice for meeting the needs of all learners.

The content guidelines for differentiated instruction support the UDL principle, *provide multiple means of representation,* in that they encourage the use of several elements and materials to support instructional content. A teacher following this principle might help students in a social studies class to understand the location of a state in the union by showing them a wall map or a globe, projecting a state map, or describing the location in words. Also, while preserving the essential content, a teacher could vary the difficulty of the material by presenting smaller or larger, simpler or more complex maps. For students with physical or cognitive disabilities, such a diversity of examples may be vital for them to access the pattern being taught. Other students may benefit from the same multiple examples by obtaining a perspective that they otherwise might not. In this way, a range of examples can help to ensure that each student's recognition networks are able to identify the fundamental elements characterizing a pattern.

This same use of varied content examples supports a recommended UDL principle: *provide options for perception*. A wide range of tools for presenting instructional content are available, especially in the digital environment; thus, teachers may manipulate size, color contrasts, audio, and other features to develop examples in multiple media and formats. These can be saved for future use and flexibly accessed by different students depending on their needs and preferences.

The pillars of differentiated instruction also recommend that content elements of instruction be kept concept-focused and principle-driven. This approach is consistent with the UDL principle, *provide options for language, mathematical expression, and symbols*. By avoiding any focus on extensive facts or seductive details and reiterating broad concepts, a goal of differentiated instruction, teachers are highlighting essential components and better supporting recognition networks.

The UDL principle, *provide options for comprehension*, and, in this context, the assessment step of the differentiated instruction learning cycle is instrumental. By evaluating student knowledge about a construct before designing instruction teachers can better support students' knowledge base, scaffolding instruction in a very important way.

Strategic networks. People find for themselves the most desirable method of learning strategies; therefore, teaching methodologies need to be varied. This kind of flexibility is key for teachers to help meet the needs of their diverse students, and this is reflected in the UDL principle, *provide multiple means of action and expression*. Differentiated instruction can support this practice in valuable ways.

Differentiated instruction recognizes the need for students to receive flexible models of skilled performance, which reflects the UDL principle, *provide options for expression and communication*. As noted above, teachers implementing differentiated instruction are encouraged to demonstrate information and skills multiple times and at varying levels. As a result, learners enter the instructional episode with different approaches, knowledge, and strategies for learning.

When students are engaged in initial learning on novel tasks or skills, the UDL principle, *providing graduated support for practice and performance* should be used to build fluency, ensure success, and support eventual independence. Supported practice enables students to split up a complex skill into manageable components and fully master those components. Differentiated instruction promotes this teaching method by encouraging students to be active and responsible learners and by asking teachers to respect individual differences and scaffold students as they move from initial learning to practiced, less-supported skills mastery.

To successfully demonstrate the skills that they have learned, students need the UDL principle, *flexible opportunities for demonstrating skill.* Differentiated instruction directly supports this UDL checkpoint by reminding teachers to provide multiple options for learning and expressing knowledge, including the degree of difficulty and the means of evaluation or scoring.

Differentiated instruction and UDL bear another important point of convergence with the UDL principle, *affective networks,* recognition of the importance of engaging learners in instructional tasks. UDL calls for motivating and sustaining learner engagement through flexible instruction, an objective that differentiated instruction supports very effectively.

Differentiated instruction theory reinforces the importance of effective classroom management and reminds teachers of meeting the challenges of effective organizational and instructional practices. Engagement is a vital component of effective classroom management, organization, and instruction. Therefore, teachers are encouraged to offer choices of tools, adjust the level of difficulty of the material, and provide varying levels of scaffolding to gain and maintain learner attention during the instructional episode. These practices bear much in common with the UDL principle, *provide multiple means of engagement* by *offering choices of content and tools, providing adjustable levels of challenge*, and *offering a choice of learning context.* By providing varying levels of scaffolding when differentiating instruction, students have access to varied learning contexts as well as choices about their learning environment.

Excerpted from: Hall, T., Vue, G., Strangman, N., & Meyer, A. (2003). Differentiated instruction and implications for UDL implementation. Wakefield, MA: National Center on Accessing the General Curriculum. (Links updated 2014). Retrieved from http://aem.cast.org/about/publications/2003/ncac-differentiated-instruction-udl.html

The UDL framework is based on neuroscience research evidence that individual learners differ in the ways in which they are motivated (affective network), how they comprehend information (recognition network), and how they express what they know (strategic network). Whether the differences facilitate learning or become a detriment to learning depends largely on the educational context. If a learning environment is flexible and can be adjusted to match an individual's strengths, then a characteristic that is a deficit in one learning context becomes an asset in another. The characteristics of a learner and the curriculum are not fixed entities, but continuously evolve together as the learner grows and progresses. As Meyers, Rose, and Gordon explain, "Success occurs when the learner and the curriculum interact in ways that help them both improve at the same time" (2014).

To guide educators in creating lessons, curricula, and learning systems that are engaging, maximize flexibility, and optimize learning, the three primary brain networks are translated into three UDL principles of design: 1) provide multiple means of engagement, 2) provide multiple means of representation, and 3) provide multiple means of action and expression (Rose, Meyer, & Gordon 2014).

Provide Multiple Means of **Engagement**	Provide Multiple Means of **Representation**	Provide Multiple Means of **Action and Expression**
Affective Networks The ***WHY*** of Learning 	**Recognition Networks** The ***WHAT*** of Learning 	**Strategic Networks** The ***HOW*** of Learning 

The three UDL principles call for flexibility in relation to three essential facets of learning, each one orchestrated by a primary brain network. Each UDL principle is then expanded into UDL guidelines and checkpoints. The depth and comprehensiveness of the UDL guidelines can guide educators to build flexibility into all components of a curriculum—goals, methods, materials, and assessment—so that all students are supported in their access, participation, engagement, and ongoing monitoring of progress across all facets of learning.

Although the three primary brain networks that facilitate learning are described separately, they are in fact highly interconnected and continuously work in concert. The flexibility that is at the core of a UDL curriculum is the result of crafting goal statements that avoid prescribing a particular way to achieve them. Learning goals that separate the means from the end provide educators the flexibility to include a variety of teaching methods and materials that can be adjusted to match student needs and strengths. For example, if the learning goal is for students to understand a specific content piece then multiple options can be built into the curriculum for students to interact with that content (recognition network), for them to demonstrate their understanding of it (strategic network), and to engage and sustain their motivation in learning (affective network).

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	Provide Multiple Means of **Engagement**	Provide Multiple Means of **Representation**	Provide Multiple Means of **Action and Expression**
	Affective Networks **The *WHY* of Learning**	**Recognition Networks** **The *WHAT* of Learning**	**Strategic Networks** **The *HOW* of Learning**
Access	Provide options for **Recruiting Interest** • Optimize individual choice and autonomy • Optimize relevance, value, and authenticity • Minimize threats and distractions	Provide options for **Perception** • Offer ways of customizing the display of information • Offer alternatives for auditory information • Offer alternatives for visual information	Provide options for **Physical Action** • Vary the methods for response and navigation • Optimize access to tools and assistive technologies
Build	Provide options for **Sustaining Effort and Persistence** • Heighten salience of goals and objectives • Vary demands and resources to optimize challenge • Foster collaboration and community • Increase mastery-oriented feedback	Provide options for **Language and Symbols** • Clarify vocabulary and symbols • Clarify syntax and structure • Support decoding of text, mathematical notation, and symbols • Promote understanding across languages Illustrate through multiple media	Provide options for **Expression and Communication** • Use multiple media for communication • Use multiple tools for construction and composition • Build fluencies with graduated levels of support for practice and performance
Internalize	Provide options for **Self-Regulation** • Promote expectations and beliefs that optimize motivation • Facilitate personal coping skills and strategies • Develop self-assessment and reflection	Provide options for **Comprehension** • Activate or supply background knowledge • Highlight patterns, critical features, big ideas, and relationships • Guide information processing and visualization • Maximize transfer and generalization	Provide options for **Executive Functions** • Guide appropriate goal-setting • Support planning and strategy development • Facilitate managing information and resources • Enhance capacity for monitoring progress
Goal	**Expert learners who are...** **Purposeful and Motivated**	**Expert learners who are...** **Resourceful and Knowledgeable**	**Expert learners who are...** **Strategic and Goal-Directed**

CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from http://udlguidelines.cast.org

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Organization of UDL Guidelines Tool

The UDL Guidelines are organized both horizontally and vertically. Vertically, the Guidelines are organized according to the three principles of UDL: engagement, representation, and action and expression. The principles are broken down into Guidelines, and each of these Guidelines have corresponding "checkpoints" that provide more detailed suggestions.

Provide Multiple Means of Engagement	Provide Multiple Means of Representation	Provide Multiple Means of Action and Expression
Affective Networks **The *WHY* of Learning** 	**Recognition Networks** **The *WHAT* of Learning** 	**Strategic Networks** **The *HOW* of Learning** 

The Guidelines are also organized horizontally. The "access" row includes the guidelines that suggest ways to increase access to the learning goal by recruiting interest and by offering options for perception and physical action.

Access	Provide options for **Recruiting Interest**	Provide options for **Perception**	Provide options for **Physical Action**

The "build" row includes the guidelines that suggest ways to develop effort and persistence, language and symbols, and expression and communication.

Build	Provide options for **Sustaining Effort and Persistence**	Provide options for **Language and Symbols**	Provide options for **Expression and Communication**

Finally, the "internalize" row includes the guidelines that suggest ways to empower learners through self-regulation, comprehension, and executive function.

Internalize	Provide options for **Self-Regulation**	Provide options for **Comprehension**	Provide options for **Executive Functions**

Taken together, the Guidelines lead to the **ultimate goal of UDL: to develop "expert learners"** who are, each in their own way, resourceful and knowledgeable, strategic, and goal-directed, purposeful, and motivated.

Goal	**Expert learners who are...**	**Expert learners who are...**	**Expert learners who are...**
	Purposeful and Motivated	**Resourceful and Knowledgeable**	**Strategic and Goal-Directed**

CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from http://udlguidelines.cast.org

ENGAGEMENT

Learners differ markedly in the ways in which they can be engaged or motivated to learn**.** There is not one means of engagement that will be optimal for all learners in all contexts.

Recruiting Interest

Optimize Individual Choice and Autonomy

- Provide choices, such as:
  - o Level of perceived challenge.
  - o Type of rewards or recognition.
  - o Context or content for practicing and assessing skills.
  - o Tools for information gathering or production.
  - o Color, design, or graphic layouts, etc.
  - o Sequence/timing for task completion.
- Allow participation designing classroom activities and academic tasks.
- Involve learners in setting their own academic and behavioral goals.

Optimize Relevance, Value, and Authenticity

- Vary activities/information to be:
  - o Personalized and contextualized to learners' lives.
  - o Culturally relevant and responsive.
  - o Socially relevant.
  - o Age and ability appropriate.
  - o Appropriate for different racial, cultural, ethnic, and gender groups.
- Design activities with authentic learning outcomes, communicate to real audiences, and reflect a clear purpose.
- Provide tasks for active participation, exploration, and experimentation.

Sustaining Effort and Persistence

Heighten Goal and Objectives Salience

- Prompt or require learners to explicitly formulate or restate goal.
- Display goal in multiple ways.
- Encourage division of long-term goals into short-term objectives.
- Demonstrate use of hand-held or computer-based scheduling tools.
- Use prompts or scaffolds for visualizing desired outcome.
- Engage learners in assessment discussions of what constitutes excellence and generate relevant examples that connect to their cultural background and interests.

Vary Demands and Resources to Optimize Challenge

- Differentiate degree of difficulty or complexity for completing core activities.
- Provide alternatives in permissible tools and scaffolds.
- Vary degrees of freedom for acceptable performance.
- Emphasize process, effort, improvement in meeting standards as alternatives to external evaluation and competition.

Foster Collaboration and Community

- Create cooperative learning groups with clear goals, roles, and responsibilities.

Provide Options for Self-Regulation

Promote Expectations and Beliefs That Optimize Motivation

- Provide prompts, reminders, guides, rubrics, checklists that focus on:
  - o Self-regulatory goals like reducing frequency of aggressive outbursts in response to frustration.
  - o Increasing length of on-task orientation in face of distractions
  - o Elevating frequency of self-reflection and self-reinforcements.
- Provide coaches, mentors, or agents that model the process of setting personally appropriate goals that account for both strengths and weaknesses.
- Support activities that encourage self- reflection and identification of personal goals.

Facilitate Personal Coping Skills and Strategies

Provide differentiated models, scaffolds, and feedback for:

- Managing frustration.
- Seeking external emotional support.
- Developing internal controls and coping skills.
  - Appropriately handling subject specific phobias and judgments of "natural" aptitude (e.g., "How can I improve on the areas I am

- Invite personal response, evaluation, and self-reflection to content and activities.
- Include activities that foster imagination to solve relevant problems or make sense of complex ideas creatively.

Minimize Threats and Distractions

- Create an accepting, supportive classroom climate.
- Vary the level of novelty or risk to:
  - Charts, calendars, schedules, visible timers, cues, etc. that can increase predictability of daily activities and transitions.
  - Creation of class routines.
  - Alerts that help learners anticipate and prepare for changes in activities, schedules, and novel events.
  - Options that maximize the unexpected in routinized activities.
- Vary the level of sensory stimulation in:
  - Presence of background noise, visual stimulation, noise buffers, number of features or items presented at a time.
  - Pace of work, length of work sessions, availability of breaks, or timing/sequence of activities.
- Vary social demands required for learning/performance, perceived level of support and protection, requirements for display and evaluation.
- Involve all in whole class discussions.
- Create school-wide programs of positive behavior support with differentiated objectives and supports.
- Provide prompts that guide learners in when and how to ask peers and/or teachers for help.
- Encourage and support opportunities for peer interactions and supports (e.g., peer-tutors).
- Construct communities of learners engaged in common interests or activities.
- Create expectations for group work (e.g., rubrics, norms, etc.)

Increase Mastery-Oriented Feedback

- Provide feedback that encourages perseverance, focuses on development of efficacy and self-awareness, and encourages the use of specific supports and strategies in the face of challenge.
- Provide feedback that emphasizes effort, improvement, and achieving a standard rather than on relative performance.
- Provide feedback that is frequent, timely, and specific.
- Provide feedback that is substantive and informative rather than comparative or competitive.
- Provide feedback that models how to incorporate evaluation, including identifying patterns of errors and wrong answers, into positive strategies for future success.

improve on the areas I am struggling in?" rather than "I am not good at math.").
- Use real life situations or simulations to demonstrate coping skills.

Develop Self-Assessment and Reflection

- Offer devices, aids, or charts to assist individuals in learning to collect, chart, and display data from their own behavior for the purpose of monitoring changes in those behaviors.
- Use activities that include a means by which learners get feedback and have access to alternative scaffolds (e.g., charts, templates, feedback displays) that support understanding progress in a manner that is understandable and timely.

REPRESENTATION

Learners differ in the ways that they perceive and comprehend information that is presented to them. There is not one means of representation that will be optimal for all learners.

Perception

Offer Ways of Customizing the Display of Information

- Display information in a flexible format so that the following perceptual features can be varied:
  - Size of text, images, graphs, tables, or other visual content.
  - Contrast between background and text or image.
  - Color used for information/emphasis.
  - Volume or rate of speech or sound.
  - Speed or timing of video, animation, sound, simulations, etc.
  - Layout of visual or other elements.
  - Font used for print materials.

Offer Alternatives for Auditory Information

- Use text equivalents in the form of captions or automated speech-to-text (voice recognition) for spoken language.
- Provide visual diagrams, charts, notations of music or sound.
- Provide written transcripts for videos or auditory clips.
- Provide American Sign Language (ASL) for spoken English.
- Use visual analogues to represent

Language and Symbols

Clarify Vocabulary and Symbols

- Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge.
- Provide graphic symbols with alternative text descriptions.
- Highlight how complex terms, expressions, or equations are composed of simpler words or symbols.
- Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations).
- Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect).

Clarify Syntax and Structure

- Clarify unfamiliar syntax (in language or math formulas) or underlying structure (in diagrams, graphs, illustrations, extended expositions, or narratives) through alternatives that:

Comprehension

Activate or Supply Background Knowledge

- Anchor instruction by linking to and activating relevant prior knowledge (e.g., using visual imagery, concept anchoring, or concept mastery routines).
- Use advanced organizers (e.g., KWL methods, concept maps).
- Pre-teach critical prerequisite concepts through demonstration or models.
- Bridge concepts with relevant analogies and metaphors.
- Make explicit cross-curricular connections (e.g., teaching literacy strategies in the social studies classroom).

Highlight Patterns, Critical Features, Big Ideas, and Relationships

- Highlight or emphasize key elements in text, graphics, diagrams, formulas.
- Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships.
- Use multiple examples and non-examples to emphasize critical features.
- Use cues and prompts to draw attention

emphasis and prosody (e.g., emoticons, symbols, or images).

- Provide visual or tactile (e.g., vibrations) equivalents for sound effects or alerts.
- Provide visual and/or emotional description for musical interpretation.

Offer Alternatives for Visual Information

- Provide descriptions (text or spoken) for all images, graphics, video, or animations.
- Use touch equivalents (tactile graphics or objects of reference) for key visuals that represent concepts.
- Provide physical objects and spatial models to convey perspective or interaction.
- Provide auditory cues for key concepts and transitions in visual information.
- Text is a special case of visual information:
  - Follow accessibility standards (NIMAS, DAISY, etc.) when creating digital text.
  - Allow for a competent aide, partner, or "intervener" to read text aloud.
  - Provide access to text-to-speech software.

- Highlight structural relations or make them more explicit.
- Make connections to previously learned structures.
- Make relationships between elements explicit (e.g., highlighting the transition words in an essay, links between ideas in a concept map, etc.).

Support Decoding of Text, Mathematical Notation, and Symbols

- Allow the use of Text-to-Speech.
- Use automatic voicing with digital mathematical notation (Math ML).
- Use digital text with an accompanying human voice recording (e.g., Daisy Talking Books).
- Allow for flexibility and easy access to multiple representations of notation where appropriate (e.g., formulas, word problems, graphs).
- Offer clarification of notation through lists of key terms.

Promote Understanding Across Languages

- Make all key information in the dominant language (e.g., English) also available in first languages (e.g., Spanish) for learners with limited-English proficiency and in ASL for learners who are deaf.
- Link key vocabulary words to definitions and pronunciations in both dominant and heritage languages.
- Define domain-specific vocabulary (e.g., "map key" in social studies) using to critical features.
- Highlight previously learned skills that can be used to solve unfamiliar problems.

Guide Information Processing and Visualization

- Give explicit prompts for each step in a sequential process.
- Provide options for organizational methods and approaches (tables and algorithms for processing mathematical operations).
- Provide interactive models that guide exploration and new understandings.
- Introduce graduated scaffolds that support information processing strategies.
- Provide multiple entry points to a lesson and optional pathways through content (e.g., exploring big ideas through dramatic works, arts and literature, film and media).
- "Chunk" information into smaller elements.
- Progressively release information (e.g., sequential highlighting).
- Remove unnecessary distractions unless they are essential to the instructional goal.

Maximize Transfer and Generalization

- Provide checklists, organizers, sticky notes, electronic reminders.
- Prompt use of mnemonic strategies and devices (e.g., visual imagery,

	both domain-specific and common terms. • Provide electronic translation tools or links to multilingual glossaries on the web. • Embed visual, non-linguistic supports for vocabulary clarification (pictures, videos, etc).	paraphrasing strategies, method of loci, etc.). • Incorporate explicit opportunities for review and practice. • Provide templates, graphic organizers, concept maps to support notetaking. • Provide scaffolds that connect new information to prior knowledge (e.g., word webs, half-full concept maps). • Embed new ideas in familiar ideas and contexts (e.g., use of analogy, metaphor, drama, music, film, etc.). • Provide explicit, supported opportunities to generalize learning to new situations (e.g., different types of problems that can be solved with linear equations, using physics principles to build a playground). • Offer opportunities over time to revisit key ideas and linkages between ideas.
	Illustrate Through Multiple Media • Present key concepts in one form of symbolic representation (e.g., an expository text or math equation) with an alternative form (e.g., an illustration, dance/movement, diagram, table, model, video, comic strip, storyboard, photograph, animation, physical/virtual manipulative). • Make explicit links between information provided in texts and any accompanying representation of that information in illustrations, equations, charts, diagrams.	

ACTION AND EXPRESSION

Learners differ in the ways that they can navigate a learning environment and express what they know. There is not one means of action and expression that will be optimal for all learners.

Physical Action

Vary the Methods for Response and Navigation

- Provide alternatives in the requirements for rate, timing, speed, and range of motor action required to interact with instructional materials, physical manipulatives, and technologies.
- Provide alternatives for physically responding or indicating selections (e.g., alternatives to marking with pen and pencil, alternatives to mouse control).
- Provide alternatives for physically interacting with materials by hand, voice, single switch, joystick, keyboard, or adapted keyboard.

Optimize Access to Tools and Assistive Technologies

- Provide alternate keyboard commands for mouse action.
- Build switch and scanning options for increased independent access and keyboard alternatives.
- Provide access to alternative keyboards.
- Customize overlays for touch screens and keyboards.
- Select software that works seamlessly with keyboard alternatives and alt keys.

Expression and Communication

Use Multiple Media for Communication

- Compose in multiple media such as text, speech, drawing, illustration, comics, storyboards, design, film, music, dance/movement, visual art, sculpture, or video.
- Use physical manipulatives (e.g., blocks, 3D models, base-ten blocks).
- Use social media and interactive web tools (e.g., discussion forums, chats, web design, annotation tools, storyboards, comic strips, animation presentations).
- Solve problems using a variety of strategies

Use Multiple Tools for Construction and Composition

- Provide spellcheckers, grammar checkers, word prediction software.
- Provide text-to-speech software (voice recognition), human dictation, recording.
- Provide calculators, graphing calculators, geometric sketchpads, or pre-formatted graph paper.
- Provide sentence starters or sentence strips.
- Use story webs, outlining tools, or concept mapping tools.

Executive Functions

Guide Appropriate Goal Setting

- Provide prompts and scaffolds to estimate effort, resources, and difficulty.
- Provide models or examples of the process and product of goal setting.
- Provide guides and checklists for scaffolding goal setting.
- Post goals, objectives, and schedules in an obvious place.

Support Planning and Strategy Development

- Embed prompts to “stop and think” before acting as well as adequate space.
- Embed prompts to “show and explain your work” (e.g., portfolio review, art critiques).
- Provide checklists and project planning templates for understanding the problem, setting up prioritization, sequences, and schedules of steps.
- Embed coaches or mentors that model think-alouds of the process.
- Provide guides for breaking long-term goals into reachable short-term objectives.

	• Provide Computer-Aided-Design (CAD), music notation (writing) software, or mathematical notation software. • Provide virtual or concrete mathematics manipulatives (e.g., base-10 blocks, algebra blocks). • Use web applications (e.g., wikis, animation, presentation).	**Facilitate Managing Information and Resources** • Provide graphic organizers and templates for data collection and organizing information. • Embed prompts for categorizing and systematizing. • Provide checklists and guides for note-taking.
	Build Fluencies with Graduated Levels of Support for Practice and Performance • Provide differentiated models to emulate (i.e. models that demonstrate the same outcomes but use differing approaches, strategies, skills, etc.). • Provide differentiated mentors (i.e., teachers/tutors who use different approaches to motivate, guide, feedback or inform). • Provide scaffolds that can be gradually released with increasing independence and skills (e.g., embedded into digital reading and writing software). • Provide differentiated feedback (e.g., feedback that is accessible because it can be customized to individual learners). • Provide multiple examples of novel solutions to authentic problems.	**Enhance Capacity for Monitoring Progress** • Ask questions to guide self-monitoring and reflection. • Show representations of progress (e.g., before and after photos, graphs/charts showing progress over time, process portfolios). • Prompt learners to identify the type of feedback or advice that they are seeking. • Use templates that guide self-reflection on quality and completeness. • Provide differentiated models of self-assessment strategies (e.g., role-playing, video reviews, peer feedback). • Use of assessment checklists, scoring rubrics, and multiple examples of annotated student work/performance examples.

To differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning, and interests; and to react responsively. As Tomlinson notes in her book, *Differentiated Classroom: Responding to the Needs of All Learners* (2014), teachers in a differentiated classroom begin with their current curriculum and engaging instruction. Then they ask, what will it take to *alter or modify* the curriculum and instruction so that so that each learner comes away with knowledge, skills, and understanding necessary to take on the next important phase of learning. Differentiated instruction is a process of teaching and learning for students of differing abilities in the same class. Teachers, based on characteristics of their learners' readiness, interest, and learning profile, may adapt or manipulate various elements of the curriculum (content, process, product, affect/environment).

Pillars that Support Effective Differentiation

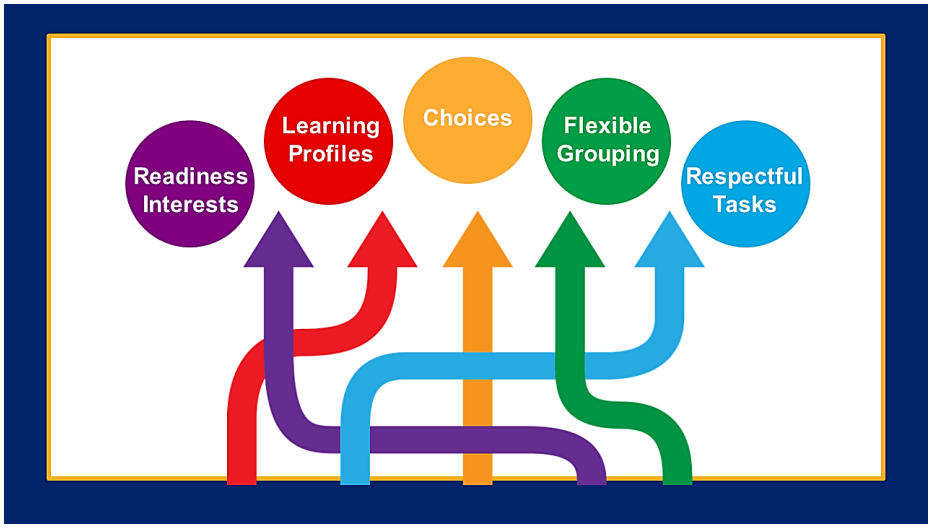
Philosophy	Principle	Practice
Recognizing diversity is normal and valuable.	Creating an environment conducive to learning.	Proactive planning to address student profiles.
Understanding every student has the capacity to learn.	Identifying a quality foundational curriculum.	Modifying instructional approaches to meet student needs.
Taking responsibility to guide and structure student success.	Informing teaching and learning with assessments.	Teaching up. Students should be working just above their individual comfort levels.
Championing every student entering the learning environment and assuring equity of access.	Designing instruction based on assessments collected.	Assigning respectful tasks responsive to student needs - challenging, engaging, purposeful.
	Creating and maintaining a flexible classroom.	Applying flexible grouping strategies, e.g., stations, interest groups, orbital studies.

Several key elements guide differentiation in the education environment through which teachers may differentiate instruction:

Content—what the student needs to learn or how the student will get access to the information.
Process—activities in which the student engages to make sense of or master the content.
Product—culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit.
Affect/environment—the way the classroom works and feels.

Excerpted from: Hall, T., Vue, G., Strangman, N., & Meyer, A. (2003). Differentiated instruction and implications for UDL implementation. Wakefield, MA: National Center on Accessing the General Curriculum. (Links updated 2014). Retrieved from http://aem.cast.org/about/publications/2003/ncac-differentiated-instruction-udl.html

Differentiated Instruction: Supporting Core Elements



Differentiation includes varying how content is delivered, what activities students will engage in to practice their knowledge of the content, and how students will demonstrate learning. The strength of these core elements of differentiating instruction is knowing student readiness, interests, and learning profiles and expanding on that information to include choices, flexible grouping, and respectful tasks.

Readiness levels and interests set the stage for deeper engagement. Readiness refers to the current skill level of each student. Formative assessments are used to identify where each student is in relation to a learning goal and what is needed for them to increase their skill level. Making a connection between the learning goal and student interest provides more motivation for learning.

Student learning profiles indicate preferred ways of learning. Learning profiles help in planning lessons that include a variety of ways for students to learn, practice, and demonstrate learning. When preferred ways of learning are included, students are more likely to be motivated.

Choice empowers students to be active participants in their education. Because every student is different, it is important to offer a variety of ways to demonstrate learning. Giving students a choice in how they show their learning helps them be more invested in their learning.

Flexible grouping is a staple of differentiated instruction. Flexibility is key. Students are provided multiple opportunities to be part of groups that change based on their readiness, interest, or learning style. For example, readiness levels change over time and may be different for various subjects so group members would change accordingly. Groups may be homogenous, heterogenous, student-selected, or teacher-selected.

Respectful tasks are worthwhile to each student, relatable to the real world, and connected to meeting learning goals. Every students' tasks should be equally engaging and important.

Content is what the student needs to learn or how the student will get access to the information. When teachers differentiate content, the same concept or skill is taught to each student; however, the curriculum used to teach the concept or skill might be different for different students.

- Use reading materials at varying readability levels.
- Put text materials on tape.
- Use spelling or vocabulary lists at readiness levels of students.
- Present ideas through both auditory and visual means.
- Use reading buddies.
- Meet with small groups to re-teach an idea or skill for struggling learners or to extend the thinking or skills of advanced learners.

Differentiating Content Examples	
Tiered Instruction	Adjust activities in any of the following ways: Level of complexity, pacing of the assignment, amount of structure, number of steps required for completion, materials provided, form of expression (letter, essay, report, research paper, short story, speech), time allowed, level of independence required.
Varied Texts	Use supplemental texts that are written at different grade levels but convey the same meaning as the standard textbook. Put text on tape.
Highlighting	Emphasize key ideas, vocabulary, and definitions.
Chunking	Chunk information into smaller parts to emphasize main ideas and make it easier to understand.
Graphic Organizers	Use visual representations to help learners understand content.
Multi-Media	Vary use of media: video, audio, computer, television, or manipulatives.

Process is activities in which the student engages to make sense of or master the content. When teachers differentiate process, they teach the same concept or skill to each student; however, the way each student makes sense of the topic or skill can vary. Therefore, teachers should vary the activities students use to master the concepts or skills. They can decide how best to do this by considering their students' readiness levels, interests, or learning profiles.

- Use tiered activities through which all learners work with the same important understandings and skills, but proceed with different levels of support, challenge, or complexity.
- Provide interest centers that encourage students to explore subsets of the class topic of particular interest to them.
- Develop personal agendas (task lists written by the teacher and containing both in-common work for the whole class and work addressing individual needs of learners) to be completed during specified agenda time or as students complete other work early.
- Offer manipulatives or other hands-on supports for students who need them.
- Vary the length of time a student may take to complete a task to provide additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth.

Differentiating Process Examples	
Cubing	Put a different activity on each side of a cube. A student rolls the cube and does the activity that comes up.
Learning Center	Provide a classroom area that contains a collection of activities or materials designed to teach, reinforce, or extend a particular skill or concept.
Learning Station	Create several spots where students work on different tasks simultaneously. Students rotate through stations to learn and practice skills related to a topic.
Student Agenda	Design activities for the working level and needs of the learner. Agendas allow a student to: • work at appropriate pace • manage personal time • order work to their liking • work at their level of readiness • develop independence
Cooperative Learning	Put students of different abilities into small teams and use various learning activities to improve their understanding of the subject. Each team member is responsible for every team member's learning.
Think—Pair—Share	Pair students to think about a given topic, formulate individual ideas, and share with each other.
Manipulatives	Use concrete objects to develop a conceptual understanding of a topic or skill. These objects help students represent the idea they are trying to learn or the problem they are trying to solve.

Products are culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit. When teachers differentiate product, they assess the same concept or skill for each student at the end of a unit of study; however, teachers offer their students a variety of ways to demonstrate their knowledge (e.g., video, written report). When doing so, the teacher strives to:

1. Make the product assignment challenging but not so difficult or complex that the students are unable to complete it on their own.
2. Provide clear directions.
3. Create a task that reflects real-world application.

Teachers should also include visual, auditory, and kinesthetic (i.e., involving movement or hands-on activities) options, as well as, analytic, creative, and practical ones.

Differentiating Product Examples	
Tic-Tac-Toe	Create a tic-tac-toe board that provides activity choices for students to demonstrate their levels of learning. Students choose three tasks across, down, or random.
Six Facets of Understanding	Provide a graphic organizer for students to explain, interpret, apply, shift perspective, empathize, and self-assess their levels of understanding.
Multi-Media Possibilities	Allow students to design their own product to demonstrate their learning, e.g., create an exhibit, present a news report, design a game, write a song, create a photo essay.
Technology	Allow students to create a podcast, website, game, PowerPoint, or video.
RAFT	Allow students to demonstrate learning through their **role** as a writer, the **audience** they will address, use of varied writing **formats** for the **topic** they will write about.
Menu	Create varied activities and levels for completing activities in a menu format. Students choose one appetizer, one entrée, two sides, and one dessert to demonstrate understanding.
Rubrics	Customize to match and extend different student skill levels.
Open-Ended Projects	Ask individual students to design how they will demonstrate learning.
Peer Teachers	Ask some students to teach other students how to complete the object of the lesson.
Varied Requirements	Vary means of expression and alternative procedures. Offer varying degrees of difficulty, types of evaluation, and scoring.

Learning Environment is the way the classroom works and feels. When teachers create a healthy classroom, all students—regardless of their differences—are actively engaged and learning. A teacher might make adjustments in the classroom environment itself in response to a student's affective or cognitive needs. For example, some students work more comfortably with peers than alone. Some students need supports to help them with organization. Some students need more structure in their day while other students would benefit from greater autonomy in decision-making. Some students might benefit from working in an area of the classroom where there are no visual stimuli that could be distracting.

- Make sure there are places in the room to work quietly and without distraction, as well as, places that invite student collaboration.
- Provide materials that reflect a variety of cultures and home settings.
- Set out clear guidelines for independent work that matches individual needs.
- Develop routines that allow students to get help when teachers are busy with other students and cannot help them immediately.
- Help students understand that some learners need to move around to learn, while others do better sitting quietly (Tomlinson 1995, 1999; Winebrenner 1992, 1996).

Differentiating Learning Environment Examples	
Tone	Provide tasks that are challenging, interesting, and worthwhile to students.
Places to Work	Offer option to work quietly without distractions.
Materials	Provide materials that reflect a variety of cultures and home settings.
Balanced Structure	Provide a balance between teacher-assigned and student-selected tasks.
Independent Work	Set clear guidelines that match individual needs.
Routines	Develop routines for how students get help when teachers are busy with other students and cannot help them immediately.
Understanding	Help class understand that some students need to move around to learn, while others do better sitting quietly.
Movement	Take stretch breaks or play physical games during transitions.
Guided Meditation	Lead students in relaxation activities.

Linking UDL and Differentiated Instruction

Universal Design for Learning is a theoretical framework developed by CAST (the Center for Applied Special Technology) to guide the design and development of learning environments that represent materials in flexible ways and offers a variety of options for learners to comprehend information, demonstrate their knowledge and skills, and be motivated to learn.

Differentiated instruction is a process of teaching and learning for students of differing abilities in the same class. Based on characteristics of their students' readiness, interest, and learning profile, teachers may adapt or manipulate various elements of the curriculum (content, process, product, affect/environment).

Together, they offer research-based teaching methods to fulfill every individual student's needs for high level learning.

Universal Design for Learning	Linked Attributes	Differentiated Instruction
Theoretical framework based on neuroscience research that individual learners differ in ways they are motivated, comprehend information, and express what they know	Recognize individual needs	Philosophy and way of teaching that respects the different learning needs of students and expects all students to experience success as learners
Anticipates students' needs	Provide access to high quality, meaningful curriculum	Adapts instruction to meet students' needs
Occurs during lesson planning by building differentiation into the lesson	Provide a safe, supportive, flexible learning environment	Occurs during and after instruction in response to students' needs and preferences
	Provide multiple ways with choices to develop and demonstrate new knowledge and skills	
	Emphasize critical thinking and strategic learning	
	Use ongoing formative assessment	

Collaborative Planning Connections

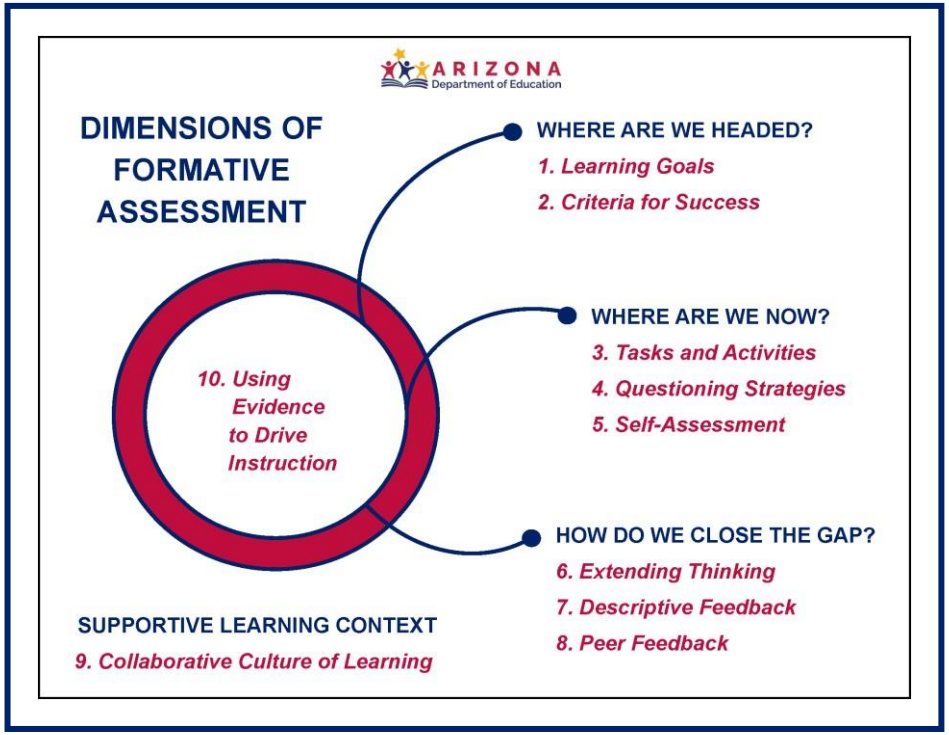
The AZPLS provides Collaborative Teams with evidence-based practices to support high levels of instructional literacy planning. Using the Three Questions at every level determines:

- Where are we headed?
- Where are we now?
- How will we close the gap?

The Dimensions of Formative Assessment provide a framework for teachers to collaboratively plan teaching and learning strategies that meet the needs of all learners.

Tools and Resources to Enhance Instructional Planning:

- Collaborative Team Tools
- Arizona English Language Arts Anchor Standards
- Explicit Vocabulary Strategies
- Direct and Explicit Comprehension Strategies
- Depth of Knowledge and Hess Cognitive Rigor Matrix
- Universal Design for Learning
- Differentiated Instruction



Collaborative Planning to Meet the Needs of All Learners

Learning improves when teachers have real-time evidence of student learning because teachers can alter instruction at that critical moment during instruction. For this to be possible, all lesson tasks and activities need to relate directly to the Learning Goals. The results of the student work provide evidence of student understanding and set the next steps for instruction.

Review, examine, and discuss your current lesson planning. How might you enhance your practice?

1. Review

Read the questions below and check the ones you think about regularly when creating your lesson plans.

I Do This	Lesson Planning Questions
	What is the topic?
	What do you want your students to learn?
	What do you want your students to be able to do at the end of the lesson?
	How will you find out if your students know anything about the topic?
	How will you introduce the topic?
	How will you explain the topic?
	How will you present the topic in multiple ways?
	How will you engage your students in learning activities?
	What examples will you use to help your students understand the topic?
	What questions will you ask your students to check for understanding?
	What tasks will you use for your students to demonstrate their level of understanding?
	How will you have your students check if they are meeting their Learning Goals?
	How will you adjust your teaching to meet your students' learning needs?
	What other questions do you ask?

2. Examine and Discuss: What checklist points do you have in common as a Collaborative Team?

- How well do your plans support student-friendly Learning Goals?
- How well do your activities align with your student-friendly Learning Goals?
- How well do your students understand the Criteria for Success of each lesson?
- How well do you use evidence of student learning to differentiate to meet the needs of all students?

3. Activity: Review the example Lesson Plan with Formative Assessment and Differentiated Instruction format.

- Use the graphic organizer, Compare and Contrast Lesson Plans, to compare your lesson plan activities to the example.
- Discuss how you plan to enhance your lesson planning process.

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Lesson Plan with Formative Assessment and Differentiation

Lesson:	**Date:**
Learning Goal(s):	
Success Criteria:	

PROCEDURE

1. Establish a way that gets everyone's attention**.** *(An example would be: "All eyes on me, please.)*
2. Review previous lesson(s) related to **Learning Goals**.
3. Clearly define the **student-friendly Learning Goals and related Criteria for Success.**
   - Make sure every student understands before continuing.

DIFFERENTIATION

4a. **Tasks and Activities: New material.** (I do it.) (Show them.)

- Model and think aloud.
- Use **evidence of learning** to check for understanding and guide further instruction.

4b. **Tasks and Activities: Guided Practice** (We do it.) (Help them.)

- Continue to model and think aloud.
- Use **questioning strategies**.
- Guide student **self-assessments**.
- Use **evidence of learning** to check for understanding and guide further instruction.

4c. **Tasks and Activities: Peer Guided Practice** (You do it together.) (Help them.)

- Assign peers to work together.
- Use **questioning strategies.**
- Provide time for student **self-assessments.**
- Apply **extended thinking strategies**.
- Give **descriptive feedback.**
- Allow time for **peer feedback.**
- Use **evidence of learning** to check for understanding and guide further instruction.

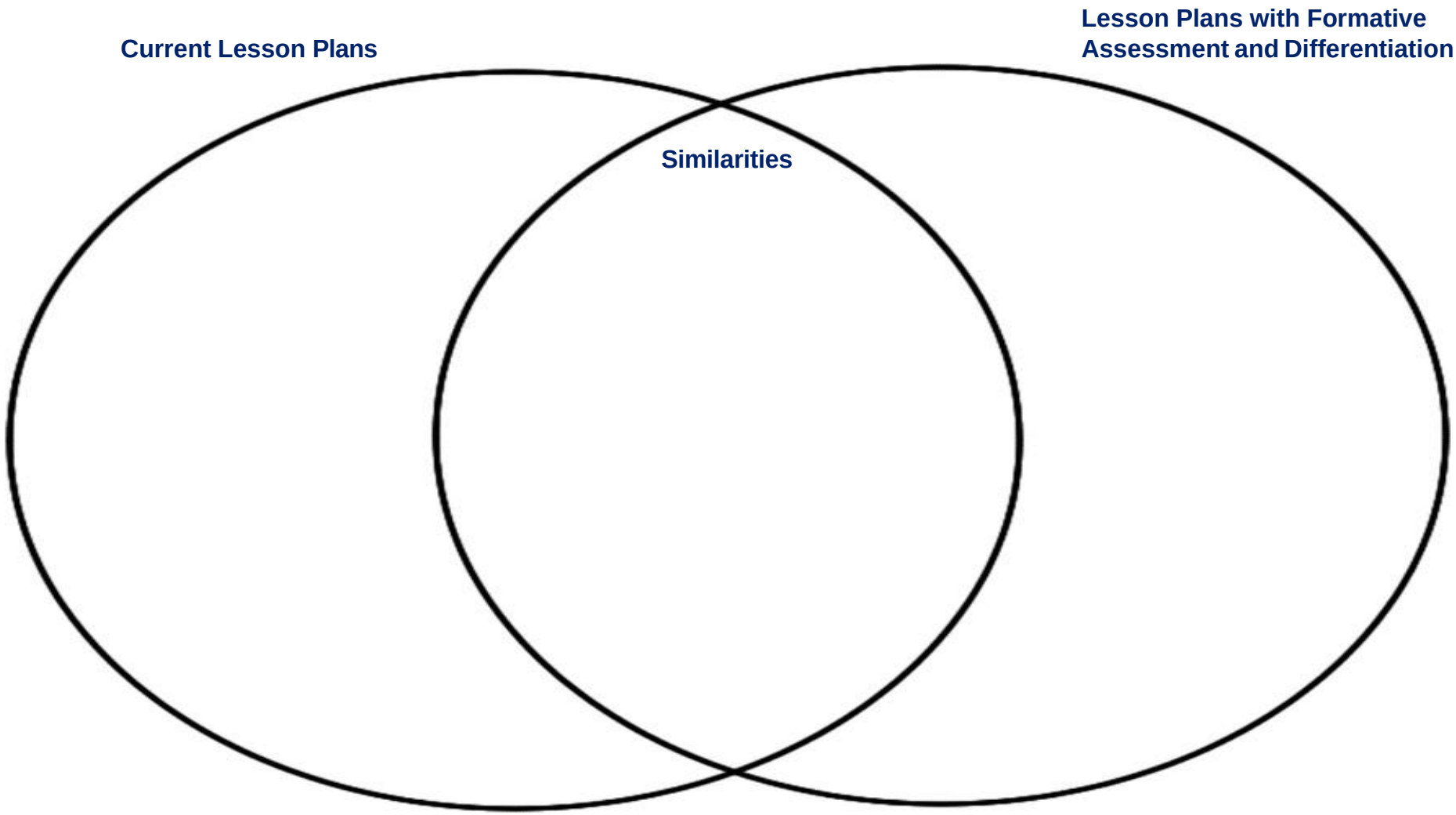
4d. **Tasks and Activities: Independent Practice** (You do it.) (Let them.)

- Offer a variety of **tasks and activities** aligned with the **Learning Goal** and **Criteria for Success**.
- Use **evidence of learning** to check for understanding and guide further instruction.

5. Closing: (Review critical content of lesson. Preview content of next lesson.)
6. Plan for further instruction, if needed, based on **evidence of learning.**

Activity

1. Review the example Lesson Plan with Formative Assessment and Differentiation format.
2. Compare and contrast your lesson plans to the example.



Discuss: What changes will you make to your lesson planning process?

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Lesson Planning Connections

Lesson Topic	Learning Goal	Criteria for Success	Learning Tasks	Discussion Questions

UDL: Because my students differ in ways they are motivated, comprehend information, and express what they know, how will I differentiate this lesson to meet each student's needs?

DI: While using the Dimensions of Formative Assessment in this lesson, how will I differentiate teaching and learning during and after instruction to meet each student's needs and preferences?

Content:

Process:

Product:

Learning Environment:

Self-Assessment and Peer Feedback

Self-assessment: Using the Dimensions of Formative Assessment rubrics, assess where you believe your Collaborative Team is in planning for evidence of student learning.

Peer Feedback: Have another Collaborative Team review your planning and self-assessment to provide additional feedback.

Note: When providing feedback to peers, use the Dimensions of Formative Assessment rubric language to identify a specific response. Use the rubric information to ask questions to your peers on how they plan to instruct their lesson with teacher and student actions.

Learning Goal	Yes	No	Self-Assessment Notes	Peer Feedback
There is alignment with the Arizona English Language Arts Anchor Standards.				
The focus is on what students should know, understand, or be able to do by the end of the lesson.				
The Learning Goals are written in student accessible language.				
All students can accomplish the Learning Goals within the allotted time.				

Criteria for Success	Yes	No	Self-Assessment Notes	Peer Feedback
There is alignment with the Learning Goals.				
The criteria are written in student accessible language.				
Student progress data can be recorded.				
The criteria will lead to success.				

Task and Activities	Yes	No	Self-Assessment Notes	Peer Feedback
There is a series of integrated, well-crafted tasks and activities that are closely aligned to the Learning Goals.				
The tasks and activities will provide evidence of student progress toward the Learning Goals.				
The tasks and activities are accessible to all students.				

Questioning Strategies	Yes	No	Self-Assessment Notes	Peer Feedback
There are questions designed to elicit evidence toward meeting the Learning Goals.				
There are questions designed to encourage classroom discourse.				
Questioning and discussion are seamlessly integrated into instruction.				

Differentiated Instruction	Yes	No	Self-Assessment Notes	Peer Feedback
Before planning, students' readiness, interests, and learning profiles are considered.				
Before, during, and after the lesson, evidence of student learning is used to differentiate instruction.				
Content, process, product, and learning environment are used to differentiate instruction.				