

# Differentiated Instruction: An Introduction



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*“Differentiated instruction has the potential to create learning environments that maximize learning and the potential for success for ALL students—regardless of skill level or background.”*

– McQuarrie, McRae and Stack-Cutler, in *Differentiated Instruction: Provincial Research Review (2005)*

**D**ifferentiated instruction is a philosophy and an approach to teaching in which teachers and school communities actively work to support the learning of *all* students through strategic assessment, thoughtful planning and targeted, flexible instruction. According to Carol Ann Tomlinson, one of the early advocates of this approach, differentiating instruction means ‘shaking up’ what goes on in the classroom so students have multiple opportunities for taking in information, making sense of ideas and expressing what they learn.

Most teachers naturally incorporate elements of differentiated instruction to some degree in their classrooms every day. Every time you use a pre-test to help you plan a learning activity, present information in multiple ways or offer choice in the format for a final project, you are reflecting the key belief of differentiated instruction—that all students can learn, in their own ways and in their own time. In other words, making a commitment to a more differentiated classroom does not mean starting over, but rather building on current best instructional practices in an explicit, intentional, focused and systematic manner.

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## Purpose and contents of this resource

**T**his resource is a synthesis of current research and an introduction to the theory and practice of differentiated instruction within an Alberta context. The resource is organized into three parts.

Part 1 offers general information and strategies for differentiating instruction, including why and how to:

- use a thoughtful planning process
- develop learner profiles
- assess student needs and student progress
- create differentiated learning experiences
- leverage technology to support differentiation
- develop schoolwide support.

Part 2 provides ideas for differentiating learning and teaching for specific student groups, including English as a second language learners, students with disabilities and students who are gifted. Although these groups of students will benefit from the same process and strategies used to differentiate instruction for other students in the classroom, planning effective instruction to meet their specific needs requires additional considerations.

Part 3 offers practical, curriculum-specific ideas and strategies for differentiating learning and teaching within four core subject areas:

- English language arts
- mathematics
- social studies
- science.

## Benefits of differentiated instruction

**T**oday's classrooms are increasingly diverse. Students come from a variety of backgrounds and have a wide range of interests, preferences, learning strengths and needs. Differentiated instruction makes it possible for teachers to reach *all* learners and can particularly enhance the success of:

- students with disabilities (as part of or in addition to an individualized program plan)
- English language learners
- students who are gifted
- students considered at risk for leaving school before completion.

At the same time, the recent Alberta Initiative for School Improvement research indicates that many of the strategies used to differentiate instruction for students with disabilities were also effective within the general student population across grade levels and curriculum areas. Several projects also noted a spill-over effect where gains in one subject area had positive impacts across the curriculum, or where all students (not just the target group) benefited from differentiation strategies.

An important part of differentiated instruction is a way of recognizing that education needs are not as straightforward as just regular or special. On any given day, in any given subject area, or for any given type of activity, *different* students may have difficulty engaging in classroom activities, or learning new skills and concepts. Differentiated instruction offers multiple pathways to learning, so that all students are engaged and successful learners each and every school day.

Effective differentiated instruction also helps students understand what they are expected to learn, evaluate their own progress, and articulate their learning strengths, challenges and interests. Starting where students are at, providing meaningful choice, and creating opportunities for students to demonstrate their interests and skills increases students' motivation, self-confidence and willingness to assume responsibility for their learning.



## Key elements of differentiated instruction

**W**hen done effectively, differentiated instruction is a seamless part of everyday instructional planning and practice. It is woven throughout the school day for all students and is integrated into how the physical space is organized, what learning resources are used, how instruction is planned and delivered, and how student learning is assessed.

The very nature of differentiated instruction means that it will look different in different learning contexts and environments, depending on the students, teacher, and/or curriculum. In all contexts, however, effective differentiated instruction involves:

- knowing your students
- understanding the curriculum
- providing multiple pathways to learning
- sharing responsibility with students
- taking a flexible and reflective approach.



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#### Knowing your students

Differentiated instruction begins with truly knowing your students, both as individual learners and as a community of learners. It is important to intentionally create opportunities to learn about students' strengths, needs, interests, preferences and ways of learning.

It also is important to know about students' cultural and linguistic backgrounds. These have an important impact on how students view and interact with each other, how they tend to process and use information and what their expectations of school and learning might be.

Learner profiles, interest inventories, and ongoing formal and informal assessment can all provide essential information for planning instruction that goes beyond general student needs to address the specific, identified needs of your students. Throughout the instructional cycle, continue to systematically study learner traits to understand what each student brings to tasks and what he or she needs to succeed. For strategies and tools you can use to get to know your students, see *Chapter 3: Developing Learner Profiles* and *Chapter 4: Differentiated Assessment*.

#### Understanding the provincial curriculum

Differentiated instruction is built on a recognition that students learn at different rates and in different ways. For activities and assessment to be useful and fair, they must sometimes be different for different students. At the same time, within an Alberta context, all students are expected to achieve outcomes from the provincial, standardized program of studies. Effective differentiated instruction supports and strengthens this quality curriculum; it does not replace it. The first step is to thoroughly understand the provincial curriculum you are working

with. Then you can begin to identify ways to help all students achieve learning outcomes by asking yourself questions such as the following.

- What are the big ideas in this curriculum?
- What are the implications of these learning outcomes for student learning and growth?
- What skills and processes are essential to meeting these learning outcomes?
- What are logical sequences of instruction for these outcomes? At what different points will students need support?
- How will these outcomes relate to different experiences and backgrounds that students have?
- What will motivate and engage students?
- How can I help each student build his or her own map of understanding and skill related to these outcomes?

For more information on purposeful planning in an Alberta context, see *Chapter 2: Purposeful Planning*, as well as relevant subject-area chapters in *Part 3: Diverse Learning Contexts*, of this resource.

### **Providing multiple pathways to learning**

Differentiation depends on knowing and using a variety of teaching methods so that students have opportunities to learn and demonstrate their learning in multiple ways. For example, this may involve teaching to different intelligences or to different learning styles, or appealing to a variety of interests during a unit, term or course. You can address differing levels of readiness and ability by building open-endedness, choice and the potential for simple or complex responses into activities. In this way, you not only create opportunities for students to show their learning in different ways, but also make it possible for students with differing degrees of readiness or skills to respond. Offering a greater variety of challenging, engaging and curriculum-linked activities means a better chance of reaching more students.

Students also need opportunities to work in a variety of contexts including independently, with partners or small groups, with larger groups, and as a whole class. The contexts and ways in which these groups are organized is an essential component of differentiated instruction. Learning groups should change over the course of the day and over the course of the year, and should be based on a variety of differing factors including student interests, learning preferences, background experience, social preferences, readiness level or learning needs.

For more information on differentiating learning experiences by providing variety, choice and flexible grouping, see *Chapter 5: Differentiated Learning Experiences*.

## Sharing responsibility with students

One of the ultimate goals of education is to gradually transfer responsibility for learning to students so that they become capable and motivated lifelong learners. In differentiated instruction, teachers actively work toward this goal by:

- scaffolding instruction so that all students can experience success
- building on student interests and skills to increase motivation
- providing opportunities for appropriate student choice and independent learning
- helping students to build a personalized repertoire of strategies to organize information, make sense of ideas, communicate clearly, and retain and retrieve information, concepts and ideas
- providing frequent opportunities for students to set goals, reflect on their own learning and develop self-monitoring and self-assessment skills.

The nature of students' involvement in their own learning and the degree of independence will vary depending on students' ages and development levels, and the demands of the curriculum.

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## Taking a flexible and reflective approach

Putting this philosophy into practice requires proactive planning, in which teachers identify, from the beginning, multiple routes for students to succeed, rather than retrofitting one-size-fits-all approaches after the fact. At the same time, it is important to plan with flexibility in mind. This flexibility, in terms of both scheduling and attitude, allows you to respond as much as possible when new student needs or interests emerge in relation to a topic or concept of study.

In differentiated instruction, ongoing assessment of students drives and extends instruction and helps you to continually refine your efforts. Along with ongoing assessment, differentiated instruction also demands that teachers systematically reflect on their instructional practices and use this information to improve their practice. Consider the following self-assessment.

Does my instructional approach:

1. use assessment strategies at the beginning of the instructional cycle, to determine what students already know and understand?  
 Yes       Not yet
2. use varied instructional approaches including discussion, demonstration, guided reading and discovery activities?  
 Yes       Not yet
3. emphasize critical and creative thinking and the application of learning?  
 Yes       Not yet

4. use varied instructional groupings, including whole class, small groups, partners and individuals?  
 Yes       Not yet
5. provide opportunities for students to choose activities based on their interests and preferences?  
 Yes       Not yet
6. provide opportunities for guided and independent practice of new skills and concepts?  
 Yes       Not yet
7. incorporate ongoing assessment strategies to check student learning and understanding throughout instructional sequences?  
 Yes       Not yet
8. accommodate for learner differences by providing a variety of ways to show learning?  
 Yes       Not yet
9. use strategies for reteaching, which are different from those strategies used to teach the skills and concepts the first time?  
 Yes       Not yet
10. ensure those reteaching activities demand higher-level thinking skills while reinforcing basic skills and content?  
 Yes       Not yet
11. provide enrichment activities that demand critical and/or creative thinking and the production of new ideas, thoughts and perspectives?  
 Yes       Not yet
12. provide learning activities and ways of organizing that will scaffold student learning?  
 Yes       Not yet



## Links to other instructional theories and practices

**D**ifferentiation is a compilation of many theories and practices. It is grounded in an understanding of effective pedagogy and learning theories, including current research and best practice in the areas of brain-compatible learning, multiple intelligences, Bloom's taxonomy of thinking, and universal design for learning.

## Brain research

Over the past 30 years, new technology has created new understanding about the brain and how we learn. Researchers and educators are using this information to support and inform classroom practice. Politano and Paquin (2000) outline nine factors to create brain-compatible teaching and learning environments in a differentiated classroom.

- *Uniqueness*—To be truly engaged, students need opportunities to identify their unique strengths and needs as learners and community members. They also need choices on how to process their thinking and represent their learning. This choice and variety allows students to work in ways that most suit their unique learning styles, developmental stages and personality.
- *Assessment*—A differentiated approach uses classroom assessment to find out what students know and what they need to learn, which in turn helps inform instruction. Assessment is most authentic when learning is demonstrated through tasks and assignments that closely reflect previous work in the classroom.
- *Emotions*—Emotion strongly affects learning, attention, memory and overall health and well-being. Learning activities such as storytelling, singing, humour and drama help to emotionally engage students. Students also benefit from approaches that enhance their understanding of their own emotional states, and create opportunities to develop strategies for managing and expressing their emotions.
- *Meaning*—The brain is always trying to create meaning. Teachers can help students create meaning by providing opportunities to explore the big picture perspective of concepts and issues, and by making links between what students are learning and how they are living in the world.
- *Multi-path*—The brain is constantly making new connections between ideas and experiences, which allows us to understand and remember material. Presenting information to students through a variety of rich, multidimensional, sensory experiences encourages students to make those brain connections.
- *Brain-body*—Using physical activity as part of instruction helps motivate and energize students. Role-plays, cooperative games and service learning projects, all tools of differentiated instruction, have instructional potential for helping the brain learn more effectively and efficiently. Activities such as dance and dramatic movement also can help learners process and represent abstract concepts.
- *Memory*—Memory plays an important role in learning. There are many strategies teachers can use within a differentiated instruction approach that will help students build strong personal memories, including role-plays, reflective journals and storytelling.

- *Cycles and rhythms*—Brain functioning is affected by the varying body rhythms and energy cycles of the individual. By providing choice and variety, wherever possible, teachers create the most productive learning climate for the most number of students.
- *Elimination of threat*—The flight or fight response is a well-documented phenomenon in brain research. A safe and supportive classroom climate is critical to engaging students in the learning process. Teachers need to observe students, identify common stressors that inhibit learning and then work proactively with students to minimize and manage the effects of these stressors.

### **Multiple intelligences**

A differentiated instruction approach uses a variety of curriculum and instructional strategies to respond to student diversity and differences in learning needs. Multiple intelligences, a concept developed by Howard Gardner in the early 1900s, offers one flexible framework for planning for differentiation. Gardner identified eight basic types of intelligence that could provide potential pathways to learning. These are:

- verbal-linguistic intelligence (or word smarts)
- logical-mathematical intelligence (or number smarts)
- interpersonal intelligence (or people smarts)
- intrapersonal intelligence (or self smarts)
- spatial intelligence (or picture smarts)
- musical-rhythmic intelligence (or music smarts)
- bodily-kinesthetic intelligence (or body smarts)
- naturalist intelligence (or nature smarts).

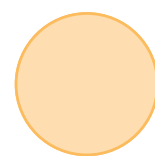
Purposefully planning to engage as many of these intelligences as possible throughout the school day will ensure more students have additional opportunities to learn.

### **Bloom's taxonomy of thinking**

Bloom's taxonomy provides another useful framework for planning for differentiated instruction.

Bloom's taxonomy is a hierarchy of thinking skills including:

- knowing (ability to remember something previously learned)
- comprehending (demonstrating basic understanding; e.g., paraphrasing)
- application (ability to transfer learning from one situation to another; e.g., build a model)



- analysis (understand how parts relate to whole; e.g., develop solution to problem)
- evaluation (judge value of something; e.g., decision-making process)
- synthesis (rearrange parts to make a new whole; e.g., invention)

Differentiation involves making decisions about what level of thinking skills are required for a particular task for different students.

The amount of time students spend at each level may vary depending on their academic readiness and the particular task. For example, some students will require more time to learn new skills and practice in a variety of contexts. However, these students still need plenty of opportunities to use their creativity and higher-reasoning skills. Ultimately, all students need opportunities to explore and apply a range of thinking skills at all levels of the taxonomy.

### Universal design for learning

Universal design for learning (UDL) is an educational approach that aims to increase access to learning for all students by reducing physical, cognitive, intellectual, organizational and other barriers. UDL describes three main principles to guide the selection and development of learning environments, resources and activities that support individual learning differences:

- *multiple means of representation*, to give learners various ways of acquiring information and knowledge
- *multiple means of expression*, to provide learners alternatives for demonstrating what they know
- *multiple means of engagement*, to tap into learners' interests, challenge them appropriately and motivate them to learn.

UDL is based on the concept of universal design in architecture, which proposes that designing for the divergent needs of special populations increases usability for everyone. A classic example is the sidewalk curb cut. Although it was originally created to allow wheelchairs to move more freely between roads and sidewalks, an unintended consequence was that other people, including parents with strollers, cyclists and people with shopping carts, also found it easier to move from the sidewalk to the street.

Likewise, educators began to realize that many teaching strategies and materials that were originally designed for students with specific learning needs often can be useful for all students. For example, the use of visuals to support English language learners or students who are hard-of-hearing also will enhance learning for all students who learn visually.

The principles of UDL overlap with and complement the approach of differentiated education. Much of the application of UDL principles relies on the use of technology to make learning resources and environments more flexible. Within this combined approach, the classroom is *inclusive by design*. All students have access to the learning because teachers:

- assume that there will be diverse learning needs in their classroom and plan in advance to meet all student needs
- ensure learning materials and activities are available in flexible formats and options
- intentionally and proactively work to eliminate barriers in the physical environment, materials and learning activities
- maintain high, appropriate expectations for all learners.

For more information about the UDL visit the CAST Web site at [www.cast.org](http://www.cast.org).



