Differentiated Curriculum

Differentiation of Instruction is a teacher's response to learner's needs
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Differentiation of Instruction is a different way to think about the classroom and the students in the class. Benjamin (2003) refers to differentiated instruction as a broad term for a variety of classroom practices that allow for differences in students' learning styles, interests, prior knowledge, socialization needs, and comfort zones. Bender (2002) states, "The concept of differentiated instruction is based on the need for teachers to differentiate instruction to meet the needs of diverse learners in the general education class." All students learn at different rates.

- Carol Ann Tomlinson (1995) states, "In a classroom with little or no differentiated instruction, only student similarities seem to take center stage. In a differentiated classroom, commonalities are acknowledged and built upon and student differences become important elements in teaching and learning as well."
- How then is it possible to reach the needs of all children while still focusing on standards and the state tests? Actually, standards are made for differentiation. Tomlinson (2008) states, "There is no contradiction between effective standards-based instruction and differentiation. Differentiation simply suggests ways in which we can make sure that curriculum works best for varied learners. In other words, differentiation can show us how to teach the same standard to a range of learners by employing a variety of teaching and learning modes."

Carol Ann Tomlinson (2001) says, "Differentiation is not the individualized instruction of the 1970's. It is not chaotic. It is proactive. It provides multiple approaches to content, process, and product, in anticipation of and response to student differences in readiness, interest, and learning needs. It is student-centered. It is a blend of whole-class, group, and individual instruction."

An Introduction to Differentiated Instruction

The following was adapted from "Differentiation of Instruction in the Elementary Grades," by Carol Ann Tomlinson, ERIC Digest, August 2000, EDO-PS-00-7. Reprinted with permission from the May 2009 issue of 2e: Twice-Exceptional Newsletter (www.2eNewsletter.com).

In most elementary classrooms, some students struggle with learning, others perform well beyond grade-level expectations, and the rest fit somewhere in between. Within each of these categories of students, individuals also learn in a variety of ways and have different interests. To meet the needs of a diverse student population, many teachers differentiate instruction.

What Is Differentiated Instruction?
At its most basic, differentiation is responding to variance among learners in the classroom. Whenever a teacher reaches out to an individual or small group to vary his or her teaching in order to create the best learning experience possible, that teacher is differentiating instruction.

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile. The following table describes these four elements and gives examples of how a teacher might differentiate content for students at the elementary level. (Tomlinson, 1995, 1999; Winebrenner, 1992, 1996)

Classroom Element	Description	Examples of Differentiating Content at the Elementary Level
Content	What the student needs to learn or how the student will get access to the information	Using reading materials at varying readability levels • Recording text materials • Using spelling or vocabulary lists at readiness levels of students • Presenting ideas through both auditory and visual means • Using reading buddies • Meeting with small groups to re-teach an idea or skill for struggling learners, or to extend the thinking or skills of advanced learners
Process	Activities in which the student engages in order to make sense of or master the content	Using tiered activities through which all learners work with the same important understandings and skills, but proceed with different levels of support, challenge, or complexity • Providing interest centers that encourage students to explore subsets of the class topic of particular interest to them • Developing personal agendas (task lists written by the teacher that contain both in-common work for the whole class and work that addresses individual needs of learners) to be completed either during specified agenda time or as students complete other work early • Offering manipulatives or other hands-on supports for students who need them • Varying the length of time a student may take to complete a task in order to provide additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth
Products	Culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit	Giving students options of how to express required learning (e.g., create a puppet show, write a letter, or develop a mural with labels) • Using rubrics that match and extend students' varied skill levels • Allowing students to work alone or in small groups on their products • Encouraging students to create their own product assignments as long as the assignments contain required elements
Learning Environment	The way the classroom works and feels	Making sure there are places in the room to work quietly and without distraction, as well as places that invite student collaboration • Providing materials that reflect a variety of cultures and home settings • Setting out clear guidelines for independent work that matches individual needs • Developing routines that allow students to get help when teachers are busy with other students and cannot help them immediately • Helping students understand that some learners need to move around to learn, while others do better sitting quietly

What Makes Differentiation Successful?

There is no recipe for differentiation. Rather, it is a way of thinking about teaching and learning that values the individual and can be translated into classroom practice in many ways. Still, the following broad principles and characteristics are useful in establishing a defensible differentiated classroom:

- Assessment is ongoing and tightly linked to instruction. Whatever the teachers can glean about student readiness, interest, and learning helps the teachers plan next steps in instruction.
- Teachers work hard to ensure "respectful activities" for all students. Each student's work should be equally interesting, equally appealing, and equally focused on essential understandings and skills.
- Flexible grouping is a hallmark of the class. Teachers plan extended periods of instruction

so that all students work with a variety of peers over a period of days. Sometimes students work with like-readiness peers, sometimes with mixed-readiness groups, sometimes with students who have similar interests, and sometimes with students who have different interests. Sometimes students work with peers who learn as they do, sometimes randomly, and often with the class as a whole. In addition, teachers sometimes assign students to work groups, and sometimes students will select their own work groups.

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Differentiated Curriculum Meets the Needs of Twice-Exceptional Learners

Curriculum Component	Build on Strengths	Adaptations for 2e Learner Needs
Content: What students should know, understand, and be able to do as a result of the study.	• Focus on broad-based issues, themes, or problems. • Pretest to find out what a student knows and eliminate unnecessary drill and practice. • Student readiness, interest, and learning profile-shape instruction. • Guide students in making interest-based learning choices. • Explore the topic in greater depth; issues and problems should be complex and multi-faceted. • Combine ideas or skills being taught with those previously learned.	• Key concepts, ideas, and skills the teacher wants students to learn remain constant. The way students access this information is varied in response to student's readiness, interest, and learning profile. • Use multiple texts and supplementary print resource materials to accommodate students' reading level. • Use varied computer programs, audio/video recording, high-lighted print materials, and digests of key ideas. • Provide support mechanisms such as note-taking organizers to help students organize information. • Time allocation varies according to student needs.
Process: Activities designed to help students make sense of the content.	• Teacher facilitates students' skills at becoming more self-reliant learners. • Encourage students to develop independent learning skills. • Respectful (engaging, high-level) tasks for all learners. • Focus on key concepts, principles/generalizations, and skills versus coverage. • Tasks should be based on readiness, interests, and learning profiles of students. • Encourage creativity and skills of fluency, flexibility, originality, and elaboration.	• Encourage students to make sense of an idea in a preferred way of learning (multiple-intelligence assignments). • Match the complexity of the task with the student's level of understanding. • Give choices about facets of topic to specialize and help link a personal interest to sense-making goal. • Vary the amount of teacher/peer support or scaffolding. • Provide graphic organizers to help students synthesize information. • Teach investigation and research skills. • Promote cognition and metacognition.
Product: The vehicles through which students demonstrate and extend what they have learned.	• Product assignments should cause students to rethink, apply, and expand on key concepts and principles. • Multi-option assignments are used allowing students to use their strengths to demonstrate their knowledge. • Use products as a way to help students connect what they are learning to the real world. • Set clear standards of high expectations. • Encourage self-evaluation based on agreed-upon criteria. • Use formative (in-process) and summative (end-of-process) evaluation by peers, self, and teachers to promote growth and success. • Excellence is defined by student growth: continually model and talk about what constitutes personal excellence.	• Support the use of varied modes of expression, materials, and technologies • Balance clear directions that support success, with freedom of choice that supports individuality of interest and learning profile. • Provide templates or organizers to guide students' work. • Help students break down projects into manageable steps and develop a timeline. Stress planning, check-in dates, and logs so students use all the time allocated. • Help build passion for the ideas being pursued. • Product assignments should necessitate and support creativity. Help students develop skills needed to create authentic products.
Adapted from The Differentiated Classroom: Responding to the Needs of All Learners by Carol Ann Tomlinson.		

Differentiated Instructional Strategies

Strategy	Description of Strategy	Why Appropriate for 2e Students
Flexible Skills Grouping	Students are matched to skills work by virtue of readiness, not with the assumption that all need the same spelling task, computation drill, writing assignment, etc. Movement among groups is common, based on readiness on a given skill and growth in that skill.	• Exempts students from basic skills work in areas where they demonstrate a high level of performance (100% is not required). • Can allow a chance for independent work at the student's own pace.
Compacting	A 3-step process that (1) assesses what a student knows about material to be studied and what the student still needs to master, (2) plans for learning what is not known and excuses student from what is known, and (3) plans for freed-up time to spend in enriched or accelerated study.	• Eliminates boredom from unnecessary drill and practice. • Satisfies student's desire to learn more about a topic than school often allows. • Encourages independence.
Most Difficult First	Students can demonstrate mastery of a concept by completing the five most difficult problems with 85% accuracy. Students who can demonstrate mastery do not need to practice anymore.	• Honors student's mastery of a concept. • Eliminates unnecessary drill and practice. • Reduces homework load of students who can demonstrate mastery.
Orbital Study	Independent investigations, generally of three to six weeks. They orbit, or revolve, around some facet of the curriculum. Students select their own topics for orbital, and they work with guidance and coaching from the teacher to develop more expertise on the topic and the process of becoming an independent investigator.	• Allows students to develop expertise on a topic and work with complex ideas. • Builds on student interest and enables students to use their preferred learning style. • Teachers and students establish criteria for success.
Independent Projects, Group Investigations	Process through which student and teacher identify problems or topics of interest to the student. Both student and teacher plan a method of investigating the problem or topic and identifying the type of product the student will develop. The product should address the problem and demonstrate the student's ability to apply skills and knowledge to the problem or topic.	• Builds on student interest and encourages independence. • Teacher provides guidance and structure to supplement student capacity to plan. • Uses preset timelines to zap procrastination and logs to document the process involved. • Teachers and students establish criteria for success.
Problem-Based Learning	The student is placed in the active role of solving problems as a professional would.	• Utilizes varied learning strengths, allows use of a range of resources, and provides a good opportunity for balancing student choice with teacher coaching.
Agendas	A personalized list of tasks that a particular student must complete in a specified time.	• Teacher moves among individual students, coaching and monitoring their understanding and progress.
Learning Centers, Interest Centers	Centers are flexible enough to address variable learning needs. Interest centers are designed to motivate student exploration of a topic.	• Materials and activities address a wide range of reading levels, learning profiles, and student interests. • Activities vary from simple to complex, concrete to abstract, structured to open-ended.
Choice Boards, Tic-Tac-Toe RAFT	Students make a work selection from a certain row or column. Teachers can target work toward student needs while giving students choice.	• Well suited to dealing with readiness, interests, and learning style preferences among students.
Portfolios	A collection of student work that can be a powerful way of reflecting on student growth over time.	• Portfolios are motivating because of emphasis on student choice and focus on readiness, interests, and learning profile.
Assessment	Assessment is ongoing and diagnostic. It provides the teacher with day-to-day data on students' readiness, interests and their learning profile. Assessment has more to do with helping students grow than with cataloging their mistakes.	• Assessment is used to formally record student growth. • Varied means of assessment is used so that all students can fully display their skill and understanding.
Adapted from The Differentiated Classroom: Responding to the Needs of All Learners by Carol Ann Tomlinson		

Adolescent Twice-Exceptional Learner

Secondary Education for Twice-Exceptional Students
Excerpts reprinted from "Twice-Exceptional Adolescents: Who Are They? What Do They Need?" by S. Baum, M. G. Rizza, and S. Renzulli, in *The Handbook of Secondary Gifted Education* (pp. 137-164), by F. A. Dixon and S. M. Moon, 2006, Waco, TX: Prufrock Press. Copyright 2006 by Prufrock Press. Reprinted with permission. Web site address (*www.prufrock.com*).

> "It seems that gifted education, when it does exist, is focused upon at the elementary level. There is little thought given to secondary education, as if students are no longer gifted once they hit the secondary grades, especially high school. The amount of literature on secondary gifted education is scant, but becoming more available."

Why is this a concern?
A direct relationship seems to exist between inappropriate or unchallenging contents in elementary school and underachievement in middle or high school. Sometimes it is the inappropriate and unchallenging curriculum that needs to be fixed, and not the student needing disciplined or "fixed." One way to encourage an adolescent to succeed is participation in a variety of activities. The more an adolescent is involved in any of a number of extra-curricular activities, the less likely they are to underachieve in school.

What can teachers do about gifted underachievement?
It makes a difference when teachers:

- Take the time to learn about the unique characteristics of gifted students so that these characteristics can be addressed in the classroom, because students are much more likely to be motivated to attend class if they feel understood and cared about;
- Are willing to learn more, in general, about high-ability students who have disabilities and their specific disability
- Demonstrate passion for their subject (and teaching) since this elicits energy from students – yielding better effort an greater focus; and
- Reveal a general respect for an environment that is supportive of intellectual pursuits.

In 2004, the federal government for the first time recognized that gifted students may also have disabilities that impede their achievement. This recognition was put forth in the IDEA (Individuals with Disabilities Education Act). The terms deficits and giftedness are incompatible for too many practitioners, therefore being Twice-Exceptional is an impossible phenomenon. To be Twice-Exceptional is to demonstrate gifted behaviors or traits at certain times, under certain circumstances, in certain areas, but simultaneously experience problematic weaknesses in other areas.

Twice-Exceptional students are at risk for underachievement because they will have barriers to achieving at their level of giftedness. These dual exceptionalities are more common than most educators may think. The incongruity between educators' expectations about the rarity of Twice-Exceptional students and the observable fact that they exist may be accounted for by the trend of misdiagnosis. A student can also be mislabeled as a result of inappropriate interventions or a lack of understanding of the complex interactions between giftedness and learning differences, or the lack of attention given to the unique needs of gifted students. Gifted students who are forced to complete work that is inappropriate may exhibit characteristics that are oppositional defiant. When gifted students cannot read because of a learning disability, they have a difficult time paying attention.

Twice-Exceptional students learn and behave differently than their gifted peers due to some sort of disability [or learning challenge]. Testing and the accurate interpretation of results are important for diagnosis, curricular programming and social-emotional interventions.
Twice-Exceptional adolescents may find that they have greater dependence on their parents to advocate for them because, compared to educators, parents are often in a position of having a greater understanding and more information of both exceptionalities, possibly due to the reality that they have greater interest and concern for their child.

Teachers must be willing to understand that the parent has already experienced much frustration in raising the child, and has a comprehensive picture of the child's strengths and weaknesses. An understanding that the disability diagnosis is not intended to restrict, but rather to help the student's educators have a greater understanding of the unique learning and social-emotional needs of the student is important. Collaboration between professionals and parents must take place.

What can Superintendents, Principals and Counselors do to help?

Professionals in the school, in addition to teachers, play an important role in the lives of Twice-Exceptional students. Superintendents, principals and counselors have a significant impact on gifted adolescents. Superintendents can provide the finances and encouragement needed for professional development; insist on appropriate programming inside and outside of the classroom; ensure adequate staffing for gifted education; and recognize cognitive and affective concerns of gifted education. Principals can support staff development geared to building a pertinent knowledgebase; raise own awareness of cognitive and affective concerns; create a safe school climate; examine own attitudes regarding gifted and Twice-Exceptional students; and encourage affective curriculum and creative programming to meet needs of gifted and Twice-Exceptional students. Counselors can examine their own attitudes and raise own awareness regarding gifted and Twice-Exceptional students; be alert to school safety issues related to giftedness; advocate for equitable services for nonmainstream gifted students; serve as a referral source for mental health concerns; serve as a liaison between gifted / Twice-Exceptional students and classroom teachers when appropriate; create appropriate career-development programming for gifted / Twice-Exceptional students; make prevention of social and emotional problems a priority; provide literature relate to giftedness and Twice-Exceptionalities to teachers; and be a clearinghouse for information about extra-curricular opportunities.

What is needed?

It is believed by some that a child's struggles actually help them become stronger, develop coping skills and frustration tolerance later in life. The fact is that without appropriate diagnosis and effective programming, [and supports] these students become confused and depressed and doubt their academic abilities. The longer it takes to identify students and provide them with accommodations, the more problematic it is for students, parents, and teachers to cope with the inconsistencies in performance and behavior as is seen with the Twice-Exceptional student. In 2006, four known Twice-Exceptional high school students from a single Idaho high school dropped out of school their senior year. Were they receiving the appropriate social-emotional supports, academic challenges and accommodations? We don't know for certain, but the answers do not seem positive.

There are many strategies used by Twice-Exceptional students to fit in or compensate for their academic difficulties, some appropriate, and some highly problematic. Many Twice-Exceptional students develop strategies on their own and are able to elude detection far longer than their counterparts who are gifted. **As these students continue their educational**

journey through middle and high school, the challenges of being Twice-Exceptional become more complicated and may have dire social, academic, and emotional implications if not addressed. Confounding one's development are typical adolescent stressors, issues of being gifted and learning challenges. This is evident in Sara's story:

Sara was able to use her memory to maintain the façade of reading even though, as was later discovered, she was severely dyslexic. Because she remained on grade level in many areas due to her ability to compensate for her weaknesses and her willingness to put forth extraordinary efforts to achieve, the school was reluctant to believe she had a disability. Her increasing feelings of failure compounded by issues of adolescence negatively impacted her attempt at success and happiness. With the many hours put in by her parents and sister in which they would read to her, and finding books that related to her hobbies, Sara learned to read. Due to a discrepancy between her performance on school achievement tests and her verbal IQ score (99th percentile), she was tested and it was confirmed in fifth grade that Sara had a learning disability. She felt relief. She worked with an LD specialist and gained confidence in the classroom as well as outside the classroom. Sara's problem was identified, she was receiving academic support and had educational enrichment as well – all essential ingredients inTwice-Exceptional programming.

Junior high school was a different story. Although Sara received accommodations for her disabilities (she also had ADD), she was reluctant to use them or discuss because she did not want to be different. She felt guilty when she received a good grade believing that she was cheating due to her accommodations. What was her identity? How could she preserve the concept of being a highly able and capable young woman when she felt different and frustrated?

Gifted students may have difficulties with adolescence because their abilities set them apart from their peers; not what an adolescent desires. Gifted students manage their identities in three different ways:

- becoming highly visible (school leaders, contest winners, and enthusiastic participants in many activities)
- becoming invisible by hiding or camouflaging their talents to appear normal; and
- disidentifying with gifted peers by demonstrating or adopting the behaviors of a more desirable group.

For the Twice-Exceptional students, the conflict of adolescence is compounded by the possibility that they may not be seen as gifted, normal or disabled, thus not fitting into any group. Which behaviors they hide and which they assume depends on their individual personalities. Twice-Exceptional students will simultaneously feel less capable than their gifted peers and more capable than their peers in special education [or regular education] thus causing them to question who they are. Their peers and many adults find it difficult to understand that someone who is able to succeed in one area may need assistance in another. This misunderstanding may cause the Twice-Exceptional student to withdraw from their peers or act out.

Sara started high school in a highly-charged emotional state. She had little self-confidence and was not prepared for the social or academic issues that were about to confront her. She was over her head in the honors biology class. She switched to an average level biology class. She was receiving failing grades in other classes and was moved down to average level classes in those courses as well because she believed that the school staff did not think she was smart enough to handle the material. She thought that in their minds, if she couldn't pass the written test, then she didn't understand the material.

After a teacher embarrassed and humiliated her in front of her peers, Sara became more introverted. She was afraid to approach her teachers fearing that a similar situation would

occur. This was a major step backwards in her attempt to become more independent and to advocate for herself. She had convinced herself that she was a burden for which the teachers had no time or energy to handle. Even though her parents and the teachers she had in the regular classes reassured her that she was smart, Sara still felt dumb. She thought, "Why can I not get good grades in these non-challenging classes if I am smart?" She struggled with taking traditional tests.

In her sophomore year, Sara took a law class. This proved to be her one saving grace. This class tapped into all of her best attributes: her excellent verbal skills and critical thinking abilities. The teacher in this class became a strong advocate and guide for Sara.

Socially, Sara was isolated from the friends she had in middle school because they were all in honors classes. By this time, she had become too shy to make new friends so she sought refuge in the special education resource room where she had wonderful support from the LD specialist. Sara became depressed and started seeing a counselor, but the counselor didn't understand, leaving Sara feeling that no one could understand. On top of academic problems, teachers not understanding and social concerns, crowded hallways and other sensory issues in the building bothered Sara. She felt that she was in a jungle with people out to devour her. She decided to look at private schools.

Being successful at the high school level demands intellectual fortitude and self-regulation, especially if the student participates in honors, AP or IB classes. These classes usually demand proficiency in – and expect lots of – reading, listening, and note-taking. Long-written assignments are expected to be completed, as is work that requires higher levels with little acknowledgement of differences in learning needs**. All too often, teachers of high-ability students expect these students to take responsibility for their own learning, without adequately preparing them for the task.** Although Twice-Exceptional students qualify for honors classes, they will most likely need accommodations to succeed. For these students there is a fine line between understanding and accepting differences. Adults, and especially teachers, play an important role in fostering self-efficacy and overall functioning in school. Sara's law teacher and LD specialist focused on her gifts and provided support for her learning difficulties.

Continued frustrations with meeting expectations of self and others ultimately caused Sara to withdraw academically and socially, and to become deeply depressed. Depression is a common by-product of adolescence. Gifted students may also become depressed as a result of perfectionism, asynchronous development, social isolation and sensitivity. **For Twice-Exceptional students, the stressors are magnified. Their reality is coping daily with the discrepancy of what they can and cannot do.** Finding a peer group with whom they can identify, and extreme sensitivity makes Twice-Exceptional students acutely aware of their plight. For these reasons, many Twice-Exceptional students take medication for depression, and lose their motivation to achieve. Counselors can help students to accept their differences, to identify what they need to be successful and to advocate for their own needs. More appropriate learning environments will help reverse the downward spiral.

Sara attended a private high school in New England. The school community was very supportive and caring; class size was smaller and she felt more comfortable taking with each teacher individually. She was quite aware that she had to work harder than most others. Her classes required enormous amounts of reading outside the classroom. Sara developed a strategy and methods of talking notes on what she read to help her to understand classroom

discussions. This, in turn, helped her to begin to hear the teacher's lecture differently and much more effectively, and even forced her to stay focused in class.

The greatest challenge and most rewarding academic experience came from her independent study and AP classes. She was able to shine and show everyone that she was smart and passionate about schoolwork. Sara began tutoring most of her classmates before tests and helping them plan their papers. This was so gratifying and different. Sara was finally feeling competent and smart.

Sara started taking an anti-anxiety medication, which proved to help her in social situations. She tried out for and made the debate team. She and her partner won the team award and took two top slots for individual speaking. Sara's confidence soared. She made many friends-good friends. Most importantly, Sara became comfortable with who she was. She had figured out how to deal with her learning disability and be successful. Her friends do not define her by her learning disability, but rather by her weird, quirky traits that make up her character.

Meeting the Needs of Twice-Exceptional Adolescent Students

- Finding appropriate academic challenge and talent development
- Offering a learning environment that aligns to how these students learn
- Discovering individual compensation strategies to regulate learning and behavior, including metacognitive strategies, appropriate medication as indicated, and academic accommodations
- Learning how to balance academic and social needs

How these issues play out in the lives of Twice-Exceptional students is idiosyncratic to their individual personalities, family values, and school opportunities. Driven by their need, some choose to abandon social life and extracurricular activities and spend many hours completing assignments. Others may do the opposite and give up trying. To fail because one didn't hand in an assignment is preferable to struggling with it and receiving a low grade. In either case, these students become discouraged and depressed.

Most students will not have the luxury of attending private schools, but some public schools can provide many of the same accommodations Sara found in a private setting. Programs in the public sector have offered flexible opportunities in class placement and instruction, as well as talent development opportunities.

What Can We Learn from Sara's Experience?

- Focus on developing the talent while attending to the disability.
- Recent research suggests that the happiest people make life and career decisions that align with their individual strengths, interests, and passions. For the adolescent, another benefit is gained: the opportunity to meet others with similar gifts and interests.

- Schools need to design educational programs that consider the whole student.
- By making sure that Twice-Exceptional students appreciate and develop their unique gifts, we can furnish them with self-knowledge and skills that will promote their self-actualization.

- Twice-Exceptional students require challenging opportunities, but in an environment that is both stimulating and accommodating.
- Schools that try to find ways to accommodate the needs of Twice-Exceptional students fare much better than those that insist that the students fit into traditional offerings.

- Social and emotional support is a high priority.
- These supports help them deal with

depression and anger they may feel struggling with the inconsistencies in their performance and help them gain an acceptance of being Twice-Exceptional.

School for the Twice-Exceptional student is rarely a positive experience, but for the adolescent learner, it can be a nightmare. When they are engaged, their efficacy soars, but when they are struggling with reading, writing, paying attention or organizing, they find themselves in survival mode fighting to stay afloat.

Essential Program Components

An appropriate Identification system
- Identification of giftedness
- Evidence and description of academic performance discrepancies

Attention to the student's gifts
- College courses
- AP classes [with accommodations if needed]
- Honors Programs [with accommodations if needed]
- Online courses
- Mentorships and internships
- Specialized programs and competitions

Placement in, and assurance of, the least restrictive supportive environment(s) (Continuum of Services)
- Regular classroom with support
- Resource room support
- Special classes for gifted
- Special classes [or seminar programs] for Twice-Exceptional
- Special schools for Twice-Exceptional

Classroom intervention strategies
- Alternate approaches to curriculum and instruction for all students [provide alternative means to access advanced information]
- Accommodations and modifications allowed for all students
- Self-regulation and compensation strategies provided [study skills, note-taking skills, learning style recognition & strategies, advocacy skills]
- Remedial support as needed

Social and emotional support
- Group counseling
- Family counseling
- Individual counseling

From: *To Be Gifted and Learning Disabled: Strategies for Helping Bright Students with LD, ADHD, and More* by Susan Baum and S. Owen, 2003, Creative Learning Press. Bracketed items from Baum, Rizza & Renzulli, The Handbook of Secondary Gifted Education, 2005

Differentiation at the Secondary Level

Reprinted with permission by Rick Wormeli

Differentiated instruction is a commonly found term in middle and high school improvement plans these days. It's a very effective focus for any school, but many educators claim to be differentiating instruction when they're not actually doing it; and many educators write long, complicated professional development plans outlining how they will learn to differentiate over the next three years—plans that become little more than shelf-liners due to overextended teachers and revolving-door administrators. Of course, some teachers think differentiation is a passing fad that, they hope, will not interfere with their normal classroom routines.

Then there are the rest of us. We recognize differentiation as just good teaching. It's what we've been striving to do since our first day on the job, and the direct, observable results of differentiation provide the meaningful experiences that keep us showing up every day.

So that we have a common frame of reference, let's briefly define differentiation: Differentiation means we do whatever it takes to maximize instruction over what could otherwise be achieved through whole-class, one-size-fits all approaches. It's teaching in ways students learn best, not just presenting material and documenting students' success (or lack thereof) with it. In addition, differentiating teachers spend considerable time preparing students to handle anything in their current and future lives that is not differentiated. It does not mean we make things easier for students; rather, it means we provide appropriate challenges students need in order to grow at each stage of their development, and that varies from student to student. While individualization is occasionally used in differentiated classes, it's more common to find students grouped and regrouped flexibly. At the secondary level, most of us wouldn't last long if we had to do over a 100 IEPs, one for each student. No one is asking us to do this.

Differentiation and standardization are not oxymoronic, nor is differentiation disabling. How will students do well on the standardized state exam? They'll do well if they've learned the curriculum well. How will they do well in high school? They'll do well if they've learned well in middle school. How will they do well in college? They'll do well if they've learned well in high school. Again, differentiation is how we maximize instruction so students learn and retain the material—and so students learn how to be successful no matter what life presents. When teachers don't differentiate, that's when we should worry about being ill-prepared for standardized tests, high school, college, and beyond.

We can differentiate formally, such as when we preassess and formatively assess students and design specific lesson plans based on those data. We can differentiate informally, such as when we stop by their desks and brainstorm with students how they might revise something done incorrectly, or when we push an advanced student to examine a topic via critical thinking skills the rest of class is not ready to use.

We can differentiate instruction in many ways, but they will all boil down to one or more of the following, first popularized by Dr. Carol Ann Tomlinson at the University of Virginia:

- **Content.** The content is your legally mandated curriculum. It's what students are supposed to learn.
- **Process.** Process means the way in which your students learn the content.
- **Product.** Product refers to the way in which your students prove they learned the content.
- **Affect.** Affect concerns the socioemotional factors that influence learning. We might need to adjust something in order for students to feel safe and invited.

- **Learning environment.** The learning environment is the physical setup of the learning situation, such as whether a class is self-contained, inclusive, small, large, or multiage.

Some of these approaches can be negotiable from time to time with students. For example, when it comes to the product used to demonstrate full understanding of the dual nature of light (as both particle and wave), it doesn't matter how students show us that they understand it as long as they really do understand it. They can take our test, do a project, explain things orally, or use many other products that would generate acceptable evidence of mastery. No matter what they choose, however, we hold them accountable for the same universal factors as we do other students.

Remember, too, that if the assessment format does not allow a student to portray her learning accurately, we have an obligation to change the format so that she can be assessed accurately. Grades must be accurate in a differentiated class, just as in any other class, in order to be useful to everyone involved. Telling a student to toughen up and learn how to deal with our test formats is a copout. It's as much a false sense of student accountability as it is a false sense of teaching. In other situations, some of these approaches cannot be negotiated: "No, Sean, you can't do a diorama of a flying buttress. I asked you to write a formal paper on how building cathedrals during that period of history revealed new scientific principles to the craftsmen of the time. You're being assessed on writing the paper, not just your research. You can provide the diorama if you wish, but evidence of your knowledge via the written essay is paramount."

Eighty percent of differentiation is mind-set; the rest is craft. Like so much of education, if we embrace the principles behind the concepts, difficult questions are more readily answered. To learn the practical techniques for differentiating instruction and increasing diverse students' achievement, educators need to answer the following questions affirmatively:

- Are we willing to teach in whatever way students best learn, even if it's not the way we best learn?
- Do we have the courage to do what works, not just what's easiest?
- Do we actively pursue our own awareness of students' knowledge, skills, and talents so that we can provide a match for their learning needs?
- Do we actually make those matches?
- Do we continually build a large and diverse repertoire of teaching strategies so we have more than one way to teach?
- Do we keep up to date on the latest research regarding cognitive science, on students' development in the grade levels we teach, and in our content specialty areas?
- Do we ceaselessly self-analyze and reflect on our lessons, including assessments, searching for ways to improve?
- Are we open to correction by others?
- Do we push students to become their own advocates for how to learn, and do we give them the tools to do so?
- Do we regularly close the gap between knowing what to do and actually doing it?

On a typical secondary student's day, a student must be simultaneously good at everything, at the same performance level as that of his classmates, regardless of his development with any one of them. He must be able to speak a foreign language fluently, discuss current events, build a functioning motor using magnetic coils, design a website, debate others, graph inequalities, sing in the correct key, write the perfect essay, analyze yellow journalism in a political cartoon, adapt to at least seven different teachers' styles, conduct research, run the mile under a certain time, skillfully hit the ball to a teammate, identify literary devices in an old English poem, manage

his resource needs for each class, and show up on time to all things during and after school, all while governing his impulses, maintaining "with-it" social banter at the cafeteria table, and navigating societal expectations and hormonal needs.

These are humans in the making, without much life experience and adult-level maturity. It is close to malpractice to demand of them adult-level competencies in all of these areas at the same time. No wonder they occasionally need scaffolding, tiering, and differentiated support. We don't want a teacher's approach to be as education expert Dr. Nancy Doda warns against, "Learn, or I will hurt you." This isn't true learning as we are commissioned to provide by our government.

In order to differentiate well, we must be mini-experts in the greatest teaching tool we have: our expertise on how the mind learns. Here are just a few cognitive science principles that make a dramatic difference in student achievement when successfully employed:

- Whereas our goal is to have students learn and retain as much knowledge as they can, very little goes into long-term memory unless it is attached to something already in storage. Create prior knowledge, then, where there was none prior to teaching something new.
- Our capacity to remember content has a tremendous amount to do with how it was structured for meaning the first time we experienced it, not so much how we studied it later.
- We learn more when the brain is primed for learning. Make sure to explain to students the lesson's objectives and what they can expect to experience along the way (an itinerary). Do this up front and periodically along the way.
- Teach the most important concepts in the very first ten minutes, and make sure to revisit them in the last ten minutes. Don't waste these prime learning times with other tasks.
- The brain requires regular and plentiful hydration. Find a way to get students and you drinking water during class. Lots of it.
- The brain responds to movement. Build kinesthetics into each week's lessons, particularly if the topic is abstract.
- Spiral your lessons. Revisit content repeatedly. Every time a neuron fires, it's more sensitive to firing. Every time it goes a while without firing, it takes more and more to get to fire. It will eventually be pruned, especially in adolescence.
- The brain is innately social. It requires social interaction to clarify learning and move most things into long-term memory. Get students talking in substantive ways about content: think-pair-share, peer critiques, small-group work, Socratic seminars, debates, panel discussions, interviews, dramatic portrayals, skits, and plays.

Most of us at the secondary level are nice people who want our students to learn. We may not have a large background in differentiated approaches nor the resources to be able to provide all that is needed, but we have to start somewhere. To show how practical differentiation can be for teachers, here are several great practices typically found in successfully differentiated classrooms.

Tiering

The term tiering in many differentiated instruction books and videos is used to describe how we adjust a learning experience according to a student's readiness, interests, or learner profile. Readiness refers to the challenge or complexity of a task: Is the student ready for only introductory experiences, or is she ready for something more sophisticated? A learning profile is a running record of anything that would affect a student's learning, such as learning styles, multiple intelligences, poverty issues, English as a second language, learning disabilities, and giftedness. In my own use of the term tiering, I focus only on the adjustments in readiness. Tiering to me suggests a vertical

adjustment such as we connote when referring to upper and lower tiers. Interests and learning profiles are not higher or lower "tiers"; they're just different. When it comes to the tiers of readiness, some students might be ready only for understanding how to draw a triangle and determine its area, but other students can use partial knowledge of an isosceles triangle's measurements to determine the volume of a three-dimensional solid of which the triangle is one part of its surface. Still other students are ready to "triangulate" when creating a metaphorical connection among three different philosophies in history class. There are many ways to tier the challenge level of a topic or assignment. Here are just a few:

- Manipulate information, not just echo it ("Once you've understood the motivations and viewpoints of the two historical figures, identify how each one would respond to the three ethical issues provided.")
- Extend the concept to other areas ("How does this idea apply to the expansion of the railroads in the 1800's?" or, "How is this portrayed in the Kingdom Protista?")
- Integrate more than one subject or skill
- Increase the number of variables that must be considered; incorporate more facets
- Use or apply content/skills in situations not yet experienced
- Work with advanced resources ("Using the latest schematics of the Space Shuttle flight deck and real interviews with professionals at Jet Propulsion Laboratories in California, prepare a report that…")
- Add an unexpected element to the process or product ["What could prevent meiosis from creating four haploid nuclei (gametes) from a single haploid cell?"]
- Reframe a topic under a new theme ("Re-write the scene from the point of view of the antagonist," "Reenvision the country's involvement in war in terms of insect behavior," or, "Re-tell Goldilocks and the Three Bears so that it becomes a cautionary tale about McCarthyism.")
- Share the backstory to a concept—how it was developed
- Identify misconceptions within something
- Identify the bias or prejudice in something
- Deal with ambiguity and multiple meanings or steps
- Analyze the action or object
- Argue against something taken for granted or commonly accepted
- Synthesize (bring together) two or more unrelated concepts or objects to create something new ("How are grammar conventions like music?")
- Work with the ethical side of the subject ("At what point is the Federal government justified in subordinating an individual's rights in the pursuit of safeguarding its citizens?")
- Work with more abstract concepts and models (Wormeli, 2006, pp. 57–59)

Compacting the Curriculum

If some students demonstrate advanced readiness early in the unit of study, we have an obligation to not waste their time teaching these students skills and content they already understand. Instead, we shorten or compact the regular curriculum for these students into just a few days, making sure they've mastered the basic curriculum and double-checking subtle learnings. Then we do something different with these students, such as teaching them something more in depth, with more breadth, from a unique angle, or more complex than what we're teaching the rest of the class.

The Football and the Anchor: Teaching a Variety of Levels at the Same Time

Two structural sequences that allow teachers to meet a variety of needs in the same class period are the "football" and the "anchor."

The Football
In this three-part sequence, we first teach a general lesson to the whole class for the first ten to fifteen minutes. Everyone is gathered together and doing roughly the same thing. If you think of a side view of a football, this is the narrow point at one end of the ball. After the general lesson, we divide the class into groups according to readiness, interest, or learning profile and allow them to process the learning at their own pace or in their own way. For example, some students may be discussing one aspect of the general learning while others write or draw, or everyone's doing the same thing such as reading, but with text of differing levels of readability. This lasts for fifteen to thirty minutes. We circulate through the room, clarifying directions, providing feedback, assessing students, and answering questions. This middle section is wider, everyone expanding on the original learning, and so it is represented by the wider portion of the center of a football, the part of the football under the finger grips.

In the final portion of the lesson, we bring the class back together as a whole group and process what we've learned. This can take the form of a summarization, a question-and-answer session, a quick assessment to see how students are doing, or some other specific task that gets students to debrief with each other about what they learned. Once again, we've brought the whole group back together, finishing the football metaphor as it narrows to the opposite tip from where we started.

The Anchor
This structure doesn't get its metaphor from the physical design of a boat's anchor as the football structure gets from a football. Instead, it uses the role of an anchor—to keep something from drifting from its position.

In an anchor lesson, the teacher provides a task on which the whole class works autonomously to the teacher. This is the "anchor" that keeps the class in position, working on something substantive. It is not a babysitting activity. From this general task, the teacher pulls a small group of students to one side for quick mini-lessons, then sends them back into the anchor task and pulls out the next group. For example, while students are conducting lab experiments, the teacher may pull one small group out and review how to write proper lab conclusions. He administers a lab safety exam that another group missed yesterday; and with other students, he critiques their advanced, independent projects.

These mini-lesson pullouts can be as simple and informal as stopping by a student's desk to explain how to use a semicolon, or something as formal as teaching a small group of government students how to Shepardize* their point-of-law papers.

Flexible Grouping
Some students learn primarily through individual study, some learn primarily through small-group interactions, and some learn primarily through whole-class instruction, but many of us use only one or two of these approaches in our classrooms. We have to be good at all three. To break out of our self-imposed grouping ruts, ask yourself a few questions:

- Is this the only way students can be grouped?
- Why do I have the whole class doing the same thing here?
- Where in the lesson can I have students working in small groups?
- Is this grouping of students the best way to teach this section?
- If I group students this way, whose needs are not being met?
- I've been doing a lot of [insert type of grouping here] lately. Which type of grouping can I add to the mix?

Grouping possibilities are quite varied. We can put students in groups such as:

- Whole class
- Half the class and half the class

- Teams
- Small groups led by students
- Partners and triads
- Individual work
- One-on-one mentoring with an adult
- Temporary pullout groups to teach specific mini-lessons
- Centers or learning stations through which students rotate in small groups or individually—these are great for middle and high school classrooms!

There are many more differentiated instruction strategies worth exploring. They include:

- Making abstract concepts vivid, concrete experiences
- Using repetition
- Using temporary, homogeneous grouping
- Conducting error analysis with students
- Explaining the metaphor we use to teach concepts
- Breaking concepts down into smaller pieces
- Anticipating misconceptions and taking steps to prevent them
- Allowing for the fact that not all students will learn at the same pace as their classmates learn, and giving students every chance to demonstrate mastery, not just one chance
- Using graphic organizers
- Identifying exceptions to the rule and nuances in knowledge
- Allowing students to research beyond the topic and beyond the lesson
- Providing ample feedback to students
- Adjusting students' goals
- Working in small increments
- Focusing on specific skills
- Providing opportunities for students to think flexibly
- Asking students to work backward from the final solution to the original problem
- Modeling the processes we're teaching

Again, differentiation is just good teaching. It's way more than a passing fad, too. Read the works of educators from ancient Greece, Egypt, and other cultures; you'll find ample evidence of differentiation in order to maximize students' learning throughout the ages. In fact, it's a passing fad—one that pains all of us each time it happens—when we don't differentiate.

Yes, secondary teachers have hundreds of students, not just thirty as elementary teachers do, but they can still differentiate quite well in each class. If you're not already differentiating, begin. Give yourself three years, incorporating just one or two ideas per month. Talk someone else into joining you on the journey. Remember, differentiation is primarily a mind-set, so open yourself to the serious analysis of practice, collaborate with others, and focus on the big questions of education and society to find your motivation.

Will Rogers once said, "Even a man on the right track will get run over if he just stands there." It's true here, too. We have to remain dynamic in teaching, always learning, always trying. There are a whole lot of students counting on us to do the right thing every day. Students are in these grade levels only once—or so we hope. These years of learning better be the best experiences possible.

REFERENCES

Wormeli, Rick. (2006). *Fair isn't always equal: Assessment and grading in the differentiated classroom.* Portland, ME: Stenhouse.

**Shepardizing* is the term students and legal researchers use to determine the legal history of a court case, such as whether or not it's been cited as precedent in another court case or whether or not the ruling was ever appealed or overturned. *Shepard* refers to Frank

Shepard, who first created the compilations of court decisions in the 1870s.

One of the nation's first Nationally Board Certified Teachers and a twenty-three-year classroom veteran, Rick Wormeli is now a staff developer for schools here and abroad. He's the author of five books, including the best-selling Fair Isn't Always Equal: Assessment and Grading in the Differentiated Classroom and the forthcoming book, Differentiation from Scratch (working title), both from Stenhouse Publishers. He lives in Herndon, Virginia, with his wife and two children, one in middle school and one in high school. He can be reached at rwormeli@cox.net.