Making It Happen: Using Differentiated Instruction, Retrofit Framework, and Universal Design for Learning

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Abstract

When children of diverse disabilities and students with ELL rulings are included in traditional classrooms, regular education teachers face a dilemma: How to teach the standard curriculum and teach the new inclusion students? How do they teach students with different heritages and linguistic backgrounds? Differentiated Instruction (DI) is content, process, and product related to student learning. DI can be implemented through Retrofitting the curriculum or Universally Designing the curriculum for learning. This article operationalizes the terminology related to DI, Retrofit Framework, and Universal Design for Learning (UDL). A student vignette contrasts how the elements of Retrofit verses UDL come to life in the teaching-learning process. After reading the vignettes, the reader will determine which pathway could lead to more positive learning environment for learners with and without exceptionalities.

Differentiated Instruction

Differentiated Instruction is a teaching and learning philosophy that emphasizes students at the core. Because each student is different, Differentiated Instruction stresses that one style of teaching will not accommodate every student, especially when the teacher's style is a mismatch of the student's style (Levine, 2002). Differentiated Instruction allows teachers options of varying "learning activities, content demands, modes of assessment, and the classroom environment to meet the needs and support the growth of each child" (Thousand, Villa, & Nevin, 2007, p. 9). In other words, teachers vary Content, Process, and Product for each learner – from pre-kindergarten to college (Anderson, 2007).

A New Fad or the Same Old Show?

Actually, it is both: Differentiated Instruction has been in use for years with the gifted education crowd, but it has finally arrived in the regular education classroom. Carol Ann Tomlinson and Jay McTighe (2006) began building the concepts of Differentiated Instruction from use in gifted classrooms to use in all classrooms. After the 2001 No Child Left Behind Act and the 2004 Individuals with Disabilities Education Improvement Act, teachers faced a new diversity of students in their classrooms. Mainstreaming was out and Inclusion was in. Students with disabilities and students as English Language Learners (ELL) are required to be "full participants in rigorous academic and general education curriculum and assessment" (Thousand et al., 2007, p. 4). When children of diverse disabilities and students with ELL rulings are included in traditional classrooms, regular education teachers face a dilemma: How to teach the standard curriculum and teach the new inclusion students? How do they teach students with different heritages and linguistic backgrounds? DI may be the answer we have been looking for. Tomlinson, Callahan, and Lelli (1997) saw growth in low socio-economic primary students when their learning preferences are identified, taught to, and nurtured. Positive achievement gains were found over a four-year period as compared to other schools in the same district when DI was used (Tomlinson, 2005). Great teaching is for all children and Differentiated Instruction targets all children.

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Universal Design for Learning Framework: Ideas from Architecture Merge into Education

Universal Design for Learning Framework (UDL) carries the idea that teachers plan instruction for success of all students. Instead of waiting for a student to fail, to lag behind in progress, or to struggle, instruction is planned so that needs are met on the front end of the learning process (Rose & Meyer, 2006). Universal Design for Learning came from the ideas of architecture, not education (Friend & Bursuck, 2009). It is much easier to build a home or working space that is accessible and easily reachable than to adapt or retrofit an environment for living. When discussing classrooms, the concept that instructional materials, strategies, and assessment tools are developed with scaffolded learning tasks is likely to provide success opportunities for all learners (Hitchcock, Meyer, Rose, & Jackson, 2002). UDL provides an opportunity to diminish the required energies and time needed to create after-the-

fact adaptations and accommodations (Curry, 2003).

UDL is not new to education: the concept has been used in special education environments for a number of years; however, as general education teachers adapt to Response to Intervention (RtI) with utilization of the three-tiered approach to intervention (NJCLD, 2005), UDL is finding new supporters (Chambers, 2008). Teachers realize that diversity in instruction provides opportunities to plan for success for all participants. In contrast, some general education teachers respond to instructional needs rather than planning for success at the beginning through diversifying instruction in the planning stages. In UDL classrooms, teachers plan the highest achievement for all children including exceptionalities at both ends of the spectrum of learning as well as the group in the middle. Instruction is no longer blanketed teaching but planned for learner success instead of waiting for learner failure.

Retrofit Framework: Remodeling the House Plans to Meet Today's Needs – A Response to Students' Needs

Retrofitting, in contrast to UDL, is responding to a lack of student progress by using preexisting curriculum and strategies and considering slight differentiation of instruction (Meo, 2008). Traditionally, teachers use retrofit approach instead of UDL. In this form of Differentiated Instruction, curriculum is dominant. It is a reactive rather than a proactive approach. In architecture, designers retrofit an older home's doorways to be wheelchair accessible. Retrofitting tries to find a resolution after curriculum is planned and students are not experiencing success; it forces learners to fit into the existing program, even one that may be unworkable, out dated, or based on old laws (Elliott, 2003).

Retrofitting is often seen as a first step to meeting the needs of a learner who is not reaching her full potential for success. Retrofitting is usually used before the UDL approach is fully embraced by the school culture. It is for teachers in the beginning stages of attempting to differentiate instruction. Retrofitting is for every learner in the environment, but it is often used only for learners identified as having a specified exceptionality.

Universal Design for Learning Framework and Retrofitting: Contrasting Approaches to Teaching and Learning

Universal Design for Learning requires teachers to focus on plans for success. UDL embraces all learners by gathering facts and designing instruction based on requirements and interests. Retrofitting is planning based on the content to be covered, the processes of measurable outcomes or the products showing mastery. In this form of Differentiated Instruction, changes in teaching are considered only after learner success is not immediately evident. Retrofit first considers content, process, and product demands, then gathers particulars about learners, considers any discrepancy found, and uses Differentiated Instruction to attend to discrepancies between facts grouped about the learner and the content, process, and product demands of the classroom (Thousand et al., 2007).

An Illustration in Fifth Grade

Using a team of teachers, including a fifth grade language arts/social studies teacher, a fifth grade math/science teacher, and a student, Emily, we will show the usefulness of a Retrofit approach and the power of the Universal Design for Learning. Emily's strengths in learning include a wide variety of personal experiences in traveling with her

family, lots of background knowledge from her family environment, and a speaking strength all her own. Her weaknesses include difficulties thinking about abstract concepts, especially mathematical concepts, some impulsiveness, and illegible handwriting. In Emily's fifth grade classes, content demands include content area testing by the state in math, language arts, science, and social studies, and a newly implemented district-wide curriculum whereby there is little time for hands-on learning or re-teaching due to the pacing of the scope and sequence. Emily's teachers are unsure how to effectively teach science and math using manipulatives, so they use textbooks and workbooks for readings and assignments. Following teacher lectures, students take turns reading up and down the rows in round-robin style.

In the fifth grade classroom, process demands include teacher lectures, oral reading, and individual responses to the questions at the end of the chapters. Product output by students include textbook and curriculum-based tests, worksheets, chapter questions, mathematical answer keys, and homework used as guided practice often covering new material which was not discussed in class instead of independent practice of mastered content.

Discrepancies between Emily's performance in the subjects and demands of the classroom include difficulties with round robin style reading because she is not in the correct place in the text. Spatial disorientation occurs for her because of a lack of fluency from all readers. Emily becomes confused with the various lines and bubbles in the math answer key. She shows a lack of math mastery where mastery actually exists. Home-work is problematic because miscues are made and there is no feedback; she learns to do the activities wrong. Emily is able to follow a set of directions to complete mathematical computations or to memorize facts, but because Emily's math is taught in abstract forms with few visual displays or manipulatives for assistance, she cannot grasp underlying concepts. She begins to fail math due to a lack of basic foundational understandings. She is frustrated and has math anxiety when prior to this time, she was successful and math was easy.

During teacher lectures, Emily pays attention and is able to follow the instructional delivery; however, any notes taken are unusable because of her arduous attempts at handwriting. Until now she has been able to maintain above average grades, but as the content becomes increasingly difficult, she begins to get behind in her class work. At this point, many discrepancies exist between Emily's learning weaknesses and the content, the processes, and the products of her learning environment, and these weaknesses grow stronger due to the nature and culture of her classroom situation.

Instruction is no longer blanketed teaching but planned for learner success instead of waiting for learner failure.

Retrofitting Emily's Content, Process, and Products for Success

Emily thinks in a global, and not analytical, style and her school is oriented toward linear delivery and assessment of knowledge. There is a strong disconnect between how Emily thinks and learns and how she is taught at school. Emily is beginning to fail math and her other subjects are showing decreasing grades. Her teachers decide it is time to help. To retrofit content, process, and products for Emily, the teachers determine her strengths

and weaknesses. Once this has been done, several steps can be made to help Emily.

Instead of using bubbled-in answer keys, teachers allow Emily to try writing on the exam; if her answers are unreadable, she will dictate answers to a student recorder. Learning keyboarding skills and having access to a computer will solve many of Emily's handwriting problems. If by fifth grade handwriting continues to be a laborious task, the student should transition to a laptop or keyboard for assignments.

During lectures, teachers should supply a form of guided notes whereby the student is able to be attentive and an active listener. A double-column format could be used. In this form, teachers require students to write down class notes on the left and notes and or questions on the right. Double-column notes enable chunking of information, making it more retrievable for application. For Emily, visual formats of lectures help organize words into a systematic and organized style. Giving Emily a designated space and a certain number of words per space helps her keep track of the lecture and to retain information for testing.

Emily uses graphic organizers such as the Frayer Model and the Word Map for learning. By using these instruments, Emily sees connections between words and the linear development of content. When Emily can form the connections independently, she is well on the way to success in typical school environments of linear teaching and learning.

Emily must have math manipulatives including place cubes, counting rods, and geometric shapes. Teaching Emily foundational skills with manipulatives helps her catch up to her peers who have mastered these concepts. She needs homework that helps her review and practice what was learned and does not introduce new content.

Emily's teachers used Differentiated Instruction via Retrofitting when they allowed her to write directly on tests. Emily's parents provided a laptop and a wireless printer that could be used at school. Because the pressure of handwriting accurately and legibly was decreased, there was improvement in her handwriting when she had to write something. By designing graphic organizers for lectures, the teachers eliminated unnecessary content from daily teaching, and in doing so, helped all students to recognize importance and value in what was being taught. By using graphic organizers for learning and assessments, Emily understands the content and makes final products which show her mastery of the material. Her use of manipulatives in math builds understanding in areas that have been lacking due to abstractness of the content. Retrofitting teaching and learning for Emily helped her to succeed in her fifth grade class.

Universally Designing Learning in Emily's Classroom for All Students' Success

Planning for a UDL classroom is quite different from that of a Retrofitted classroom. From the onset, differing processes and products are considered when preparing for multi-leveled students and their learning. If Emily was in a UDL classroom, her teachers would allow varied tasks for acquiring knowledge, process, and outputs or products, of knowledge. For example, she would discuss, question, or research content delivered by teachers in all of learning areas including language arts, mathematics, science, and social studies. Exploration of content in a UDL classroom includes processes of time line manipulations, performances, presentations, technology utilization, demonstrations, and experiments. Manipulatives are used frequently and graphic organizers are a part of every subject. Teach-

ers' roles in UDL classrooms are facilitators of student learning. Emily's role is both knowledge producer and receiver. She is allowed to choose tasks based on her strengths and these choices provide greater success. She is challenged to stretch herself in learning in styles that are not as personally comfortable but are needed for school success, including note taking during mini-lectures by the teacher or other students.

The teacher is responsible for varied instructional formats including ten minute mini-lecture, station teaching or centers, and partner reading; these formats allow opportunities to provide background information necessary for students' learning. For Emily, smaller chunks of information with more discussion and questions in the setting allow more comfort in the teaching and learning environment.

> **In a UDL classroom, teachers would allow varied tasks for acquiring knowledge, process, and outputs or products, of knowledge.**

Emily shows mastery of content by the processes of demonstrations including exhibits, power points, class newspapers, interviews, portfolios, completed checklists, teaching lessons to peers and to younger students in cross age tutoring, classroom museums, and other outcomes. When state tests or assessments must be given, the class reverts to rows of desks and traditional methodology of student isolation. The students are aware that mandated tests must be completed, but all of the students, Emily included, look forward to returning to their UDL classroom setting.

A UDL classroom values learning how to learn with a variety of assessments, collegiality, open-ended activities, multiple learning modes, connection and different teaching styles. These variations allow Emily to succeed in attempts at learning and plan for a va-riety of differences. When differentiating through UDL, teachers experience many bi-products of this unique learning environment (Tomlinson & McTighe, 2006). Attending to teacher-student relationships contributes to student excitement and a new energy for learning; these relationships build a context for learning. In addition to the powerful benefits of teaching and learning to understand and appreciate one another, positive teacher–student relationships are critical to students' intrinsic motivation to learn. A learner's conviction that he or she is valued by a teacher becomes a potent invitation to take the risk implicit in the learning process. Focusing on students' backgrounds and needs builds bridges that connect learners, important content, and assessment. Spotlighting students' preferences in learning allows for academic growth and students are motivated. Focusing on student learning profiles enables efficiency of learning.

Conclusion

In all classrooms, teachers must ask, "Can I afford to sacrifice student trust, growth, motivation, or success in learning?" A high level of learning for each student is the teacher's goal so these student attributes are imperatives. Teachers should agree on what is best for their students: Retrofitting or Universal Design for Learning. They must determine what is most important for student achievement and make pathways to success.

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