

Curriculum Planning for All Learners: Applying Universal Design for Learning (UDL) to a High School Reading Comprehension Program

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ABSTRACT: The universal design for learning (UDL) principles provide a blueprint for designing a curriculum that addresses the diverse needs of all learners. The author provides an overview of UDL, connections to curriculum planning, and practical techniques that guide general and special education teachers in planning and implementing curriculum, using the planning for all learners (PAL) procedures. PAL is a 4-step process for designing and implementing a curriculum (goals, methods, materials, and assessments) that is accessible and effective for all learners. In this article, the author focuses on high school social studies content with a goal of supporting all students' understanding of the content by bringing together principles of UDL, the PAL process, and research-based reading comprehension strategies.

KEYWORDS: *accessibility, curriculum planning and instruction, reading comprehension, secondary school, universal design for learning*

IN THE FALL, high school teachers across the nation return to their classrooms with varied expectations and goals. Many are ready to meet the challenges of the new school year that include preparing all students for state-mandated achievement tests and ensuring that students make progress understanding course content. These teachers know the standards as defined by their state and local districts and recognize that they are accountable for all students' performance in reaching these standards. Students also approach the new year with diverse expectations. For instance, some are eager to get a fresh start this year and earn good grades. These "regular" students easily meet their teachers' expectations and the district standards.

Then there are "special" students who reluctantly enter the high school classroom, knowing that failure is the likely result again this year no matter how hard they try. These students encounter many obstacles during each school day, ranging from not being able to read the textbook to having insufficient background knowledge to understand the course content. Their day is filled with barriers that make learning difficult. They must change something about them-

selves to succeed—if only they knew what. These students keep a teacher up at night trying to adapt course content to meet their needs, figuring out how to encourage each one to try harder, or, in some cases, looking for an alternate route that may include both a different curriculum and a different classroom setting. None of these solutions best serves the diversity of today's student population. Rather, they place incredible burdens on teachers and students alike to adapt to an inflexible, barrier-filled curriculum. Educators do not seem to question whether the burden of adaptation should fall on the curriculum itself—that the curriculum, and not the students labeled "special," is what needs fixing.

Many regular students also struggle to succeed in a one-size-fits-all regular-education curriculum. However, recent brain research and theories of learning clearly indicate that each learner is special (i.e., unique), with varied abilities and qualities, and that the typical classroom represents a vast range of learner differences (Meyer & Rose, 2000; Rose & Meyer, 2002). In fact, categorizing students into two groups—regular and special—oversimplifies learner differences and fails to accurately represent the diversity of today's high school student population.

To ensure that all students have genuine opportunities to learn in standards-based settings, educators need to develop a new understanding of learner differences. Whereas learner differences have been traditionally defined as inherent strengths and weaknesses of students themselves (without regard for weaknesses in the curriculum itself, which

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has been regarded as static and infallible), the interaction between the learner and the educational curriculum must be considered (Meyer & Rose, 2005). In other words, in looking for ways to include all learners in high-quality, standards-based educational settings, educators and researchers should examine ways in which the curriculum presents barriers and supports to academic achievement by diverse learners and how the curriculum can be developed to include all learners from the outset.

One framework for addressing the diversity of all students and creating a flexible curriculum that supports access, participation, and progress for all learners is universal design for learning (UDL; Meyer & Rose, 2000; Rose & Meyer, 2002). As a framework for creating a flexible curriculum, which in standards-based settings includes instructional goals, methods, assessments, and materials, UDL takes advantage of innovative technologies to accommodate learner differences.

General and special education legislation (e.g., No Child Left Behind Act of 2001, the Individuals With Disabilities Education Act of 2004) recognizes the right of all learners to a high-quality standards-based education, and it holds schools responsible for student progress. Yet such laws do little to address the biggest impediment to improving student outcomes: the curriculum, which is often not flexible enough to enable teachers to meet the needs of diverse learners.

By addressing the diversity of learners at the point of curriculum development rather than as an afterthought or retrofit, UDL helps educators to develop curricula that truly leave no child behind while maintaining high expectations for all students, including those with disabilities. In this article, I describe the UDL framework and a process for applying the concepts of UDL to planning curriculum. In addition, I present a case story of a high school teacher who uses the UDL framework and curriculum planning process for designing lessons.

A Blueprint For Teaching Every Student: UDL

Drawing on advances in neuroscience and new insights into the nature of learning differences, *universal design for learning* (UDL) is an approach to designing curricula—including instructional goals, methods, materials, and assessments—that are flexible enough from the outset to accommodate learner differences (Meyer & Rose, 1998, 2000, 2005; Rose & Meyer, 2002). According to Rose and Meyer (2002), UDL is built on the premise that “barriers to learning occur in the interaction with the curriculum—they are not inherent solely in the capacity of the learner. Thus, when education fails, the curriculum, not the learner should take the responsibility for adaptation” (p. 20).

To better understand UDL, visualize an individual in a wheelchair as he or she approaches a street intersection. Before curb cuts, it was nearly impossible for this

individual to cross the street; however, with the universal design movement in architecture and the passage of the federal Americans With Disabilities Act in 1990, which mandated accessibility in public spaces for individuals with disabilities, curb cuts are typically built into new sidewalks. Of course, curb cuts improve access not only for individuals with disabilities but for others, such as those pushing baby carriages or pulling a wheeled bag. This is a hallmark of universal design: increasing flexibility and accessibility ultimately benefits everyone, including those whom the innovations were not explicitly intended to help.

Similarly, when a curriculum is universally designed to enable all kinds of learners to access and progress in the curriculum, all students—including those who do not have special needs per se—will benefit from having more flexible learning environments. UDL is a means of identifying and removing barriers in the curriculum while building scaffolds, supports, and alternatives that meet the learning needs of a wide range of students. Specifically, a UDL curriculum is characterized by the provision of:

1. multiple or flexible representations of information and concepts (the “what” of learning),
2. multiple or flexible options in expression and performance (the “how” of learning), and
3. multiple or flexible ways to engage learners in the curriculum (the “why” of learning; Rose & Meyer, 2002).

Bringing UDL into classrooms and educational practice may sound like a difficult task, and it is, if a classroom is guided by vaguely defined goals and equipped with only conventional instructional methods, traditional materials (e.g., textbooks and pencils), and inflexible options for demonstrating knowledge and understanding (e.g., written responses, either essay or multiple choice). For that reason, the UDL framework addresses the whole curriculum—goals, materials, methods, and assessments—to make it more accessible not only physically but also intellectually and emotionally (Hitchcock, Meyer, Rose, & Jackson, 2002; Jackson & Harper, 2005). In specific application, then, UDL calls for:

1. Defining goals that provide appropriate challenges for all students, ensuring that the means is not a part of the goal.
2. Using methods that are flexible and diverse enough to support and challenge all learners.
3. Using materials that are flexible and varied and take advantage of the digital media, such as digitized text, multimedia software, video recorders, tape recorders, and the Internet.
4. Using assessment techniques that are sufficiently flexible to provide ongoing, accurate information to inform instruction and determine student understanding and knowledge (Rose & Meyer, 2002).

As a relatively new framework, the literature on UDL is still evolving. Empirical studies documenting the impact of the UDL approach have focused primarily on literacy applications (Dalton, Pisha, Eagleton, Coyne, & Deysher, 2002; Proctor, Dalton, & Grisham, in press). Such studies have demonstrated positive outcomes for struggling readers using a UDL approach. In addition, the principles and practices of UDL are rooted in a number of research-proven educational approaches with which teachers may already be familiar. It draws on and extends aspects of differentiated instruction (Tomlinson, 1999), which teachers use to individualize criteria for student success, teaching methods, and means of student expression while monitoring student progress. UDL emphasizes teachers as coaches or guides (O'Donnell, 1998), learning as process (Graves, Cooke, & Laberge, 1983), and cooperative learning (Johnson & Johnson, 1986; Wood, Algozzine, & Avett, 1993). In these approaches, teachers support learning rather than impart knowledge, and students construct knowledge rather than passively receive it. UDL represents a shift in how educators look at learner differences. It emphasizes the need for a curriculum that can adapt to student needs rather than requiring learners to adapt to an inflexible curriculum (Meyer & Rose, 2005).

Planning For All Learners: Connecting UDL To Curriculum Planning

Planning curriculum that supports all learners is a challenge given the diversity of high school classrooms and the mandate that all learners make adequate progress in the general education curriculum. In response to this challenge, the Center for Applied Special Technology (CAST; 2004) developed *planning for all learners* (PAL), a process for developing curricula that addresses the diversity of today's classrooms. Although the PAL process can be applied to varied content areas, in this article, I focus on applying these methods to support the development of high school students' reading vocabulary and reading comprehension.

Reading comprehension is a prerequisite skill for academic success in all areas of the curriculum and a significant challenge for many students, even at the high school level. As reported from the results of the 2002 National Assessment of Education Progress, 26% of 8th grade students in the United States performed below basic reading level, and an identical percent performed below basic competency at 12th grade (U.S. Department of Education, 2003). It is clear that too many students, not only those categorized as special, are struggling readers, are ill-equipped to deal with differing types of material, and are equally unprepared for the complexity of the material they will encounter (Snow, 2002). To improve results, students must alter how they read, implementing a new set of reading comprehension skills and strategies (Taylor, Pearson, Perterson, & Rodriguez 2001; Wilson & Rupley, 1997). This is most difficult

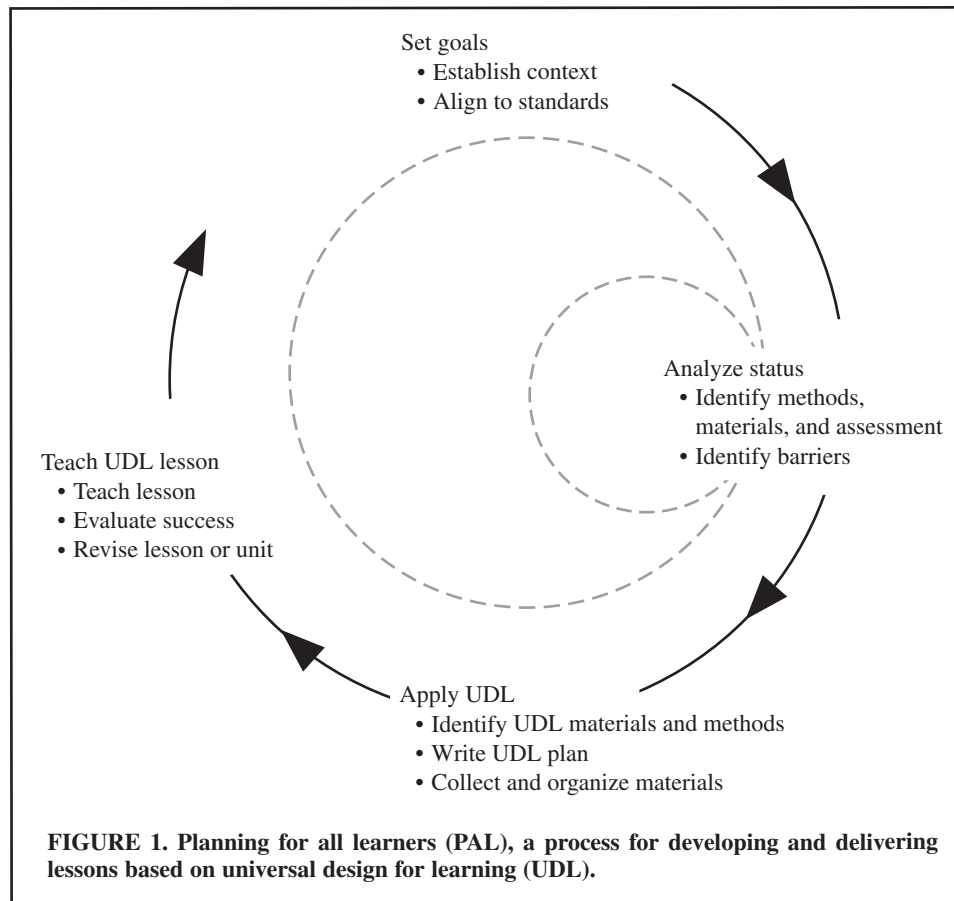
for students because comprehension-strategy instruction is largely absent in high school classrooms (Pressley, 1998), and students are expected to understand and apply what they are assigned to read. If high school content educators continue to expect that their students have the required skills for understanding their content and if they continue to teach content in the same manner with limited attention to comprehension-strategy instruction, they will continue to get the same results. In CAST's work with high school teachers, we found that using the PAL process to design a curriculum that is guided by the UDL principles and drawn from research-based reading comprehension practices is effective in reducing learning barriers and building on all learners' strengths.

The PAL process (see Figure 1) provides teachers with practical steps that can be used in planning curricula that improve learning outcomes for all students. Before the actual PAL process begins, a PAL team is identified; the teams should include regular and special education teachers and other specialists who focus on the foundation of instruction—the curriculum. One member of the team is appointed team facilitator and is responsible for setting up regularly scheduled meetings, checking in with others to respond to questions, supporting the PAL process, and setting the agenda. Throughout the PAL process, each team member draws from his or her educational expertise and experiences to design a curriculum that ensures that all learners gain knowledge, skills, and enthusiasm for learning. Collaboration is a key ingredient among the team members, with all focusing on developing a flexible curriculum that supports all learners' achievement of identified goals.

Once the PAL team is identified and a facilitator is selected, the team formally begins the four-step PAL process that is based on the principles and concepts of UDL (Meyer & Rose, 2000; Rose & Meyer, 2002), proven professional development strategies (Darling-Hammond, 1999; Guskey, 2002), and effective teaching practices. Online resources and templates are available to the team to support the PAL process; however, once the team is familiar with the four-step process, it may not be necessary to use these resources.

Step 1: Set Goals

Setting goals that provide appropriate challenges for all students is the PAL team's first responsibility. Although it seems obvious, the team needs to understand what they want all students to learn and the aspects of the goals that must be held constant for all students. It is essential that the means for achieving the goal is separate from the goal itself. In setting goals, the team (a) establishes a context, providing background information regarding the content and topic for the lesson or unit, or (b) aligns goals to local content and state standards to ensure that all students have access to high quality curricula. The UDL Goal Setter (see Appendix A)



is an online resource that provides a tutorial and starter tool to help educators design clear goals (CAST, 2007a).

Step 2: Analyze Current Status of Curriculum and Classroom

The PAL team collects baseline information about currently used instructional methods, assessments, and materials and an understanding of the diverse nature of the students in the specific classroom. It is important that the team not focus on individual student profiles when designing lessons but rather understand that each classroom of students is diverse. In addition, this baseline information is necessary for identifying existing barriers in the curriculum that prevent access, participation, and progress for all learners. Identifying curricular barriers is a critical element of the PAL process because it is the role of the team to reduce and, if possible, eliminate barriers in the curriculum to ensure that all learners have the opportunity to succeed in the general education curriculum. To analyze current status, the team (a) identifies currently used methods, assessment, and materials to achieve goals, using the Lesson Analysis Template (CAST, 2007b); (b) develops and refines the class profile on the basis of diversity in the classroom, using the UDL Class Profile Maker (CAST, 2007c); and (c) identi-

fies existing barriers in the curriculum that prevent access, participation, and progress, using the Curriculum Barriers with Assessment Form (CAST, 2007d).

Step 3: Apply UDL to Lesson or Unit Development

The PAL team, equipped with clearly defined curriculum goals and an understanding of currently used methods, assessments, materials, class profile, and potential barriers in the curriculum, applies the three core principles of UDL to the lesson or unit development. At this stage of the PAL process, the team (a) identifies methods, assessment, and materials that align with the UDL principles and lesson goals, addresses the diversity of the classroom, and eliminates potential barriers using the UDL Solutions Finder as a guide (CAST, 2007e); (b) writes a UDL lesson or unit plan using the UDL Lesson Planning Form (CAST, 2007f); and (c) collects and organizes materials that support the UDL lesson in preparation for teaching the lesson.

Step 4: Teach the UDL Lesson or Unit

To complete the PAL process, the UDL lesson or unit is taught to the class. It is recommended that the lesson is taught by a team of regular and special education teachers. The UDL lesson is planned to minimize curriculum barriers, realize

the promise each student brings to learning, rely on effective teaching practices, and apply challenges appropriately for each learner. In this way, the lesson will engage more students and help each student make progress. If the lesson was successful for all students, the team begins the PAL process on a different lesson. If the lesson needs revising, the team revisits the PAL process and proceeds to refine the lesson to reduce barriers and make it accessible for all learners. It is important to note that no lesson works for all students and that the “universal” in UDL does not mean that one size fits all.

Connecting UDL to Classroom Practice

UDL is the framework for creating flexible goals, methods, materials, and assessments that accommodate learner differences. The PAL process, developed as an educator application of UDL, is a set of steps for designing curricula (goals, methods, materials, and assessments). From CAST’s work with 12 high school content teachers and special educators, the following composite case story was developed to represent an 18-month professional development project designed to improve students’ understanding of core curriculum content by bringing together principles of UDL (Hitchcock et al., 2002; Rose & Meyer, 2002), the PAL process, and research-based reading comprehension practices (Beck, McKeown, & Kucan, 2002; Palincsar & Brown, 1986; Pressley, 1998; Snow, 2002; Taylor et al., 2001; Wilson et al., 1997).

Meet Mr. Allen and His Class

Mr. Allen, a ninth grade social studies teacher, is concerned that his third-period world history students show little interest in class and have difficulty understanding the class textbook. Many of his students perform poorly on the end-of-the-chapter questions, and few students participate in class discussions. Mr. Allen has a heterogeneous class of 27 students—14 girls and 13 boys. His students represent diverse backgrounds, skills, experiences, and interests. He has 5 students who have identified disabilities and have an individualized education plan (IEP) and 11 students for whom English is not the primary language at home. He is increasingly aware that 9 students are struggling readers. Some students have jobs after school and some play after-school sports. Although Mr. Allen has the advantage of coteaching with a special educator—Ms. Jones—they face the challenge of figuring out how to teach the lessons so that all students reach the social studies goals and are interested in learning the world history content.

Mr. Allen volunteered to participate in the CAST project with the hope of learning new strategies for reaching all his students. He understood that the project focus was on improving reading comprehension skills for high school students by applying UDL and research-based practices to his content, and he admitted that he was neither familiar

with UDL nor did he expect to have to teach reading skills to high school students. As he told one interviewer,

I have my degree in history and a master’s degree in education. I’ve never had an official reading course of any kind and even some of the terminology I’ve sometimes heard during my work with CAST, I’m like, ‘I don’t know what that means.’ It’s not something that’s in my discipline. (teacher interview, 2005)

Mr. Allen was not unlike the other teachers in the CAST project in that they had limited or no understanding of UDL before the start of their work together and limited experiences in using research-based reading comprehension strategies with their students. This was true of both the regular education and special education teachers.

Project Goals

The primary goal of CAST’s project work with the 12 participating teachers was to provide the teachers with strategies for designing curriculum to meet the needs of their diverse classrooms. Although the focus of this work was on the implementation of the PAL process for curriculum planning, the CAST members also provided the project participants with a foundation in the principles of UDL and empirically validated reading instructional practices, including the reciprocal teaching methods (Palincsar & Brown, 1986), robust vocabulary instruction (Beck et al., 2002), and use of concept maps to improve comprehension (Strangman, Hall, & Meyer, 2003). Although these research-validated reading comprehension strategies were key elements in achieving the overarching goal of increasing students’ understanding of core curriculum content, in this article, I focus on participant experiences with the PAL process.

Identifying the PAL Team

Mr. Allen and Ms. Jones, a special educator and coteacher in high school social studies and English classes, made up the core PAL team. Mr. Allen was primarily responsible for the core curriculum content, and Ms. Jones was responsible for reinforcing needed skills for students who were falling behind. Ms. Jones took on the role of team facilitator, and she not only maintained momentum, scheduled meetings, and set the agenda, she also invited other specialists to PAL meetings on an as-needed basis. In contrast to Mr. Allen and Ms. Jones’ team composition, other project participants formed PAL teams that included department faculty with participation from special education support staff and library media specialists. During the project work, it was observed that the Allen–Jones team found it easier to collaborate and engage in the PAL process on a regular basis, given that they had common planning time.

Step 1: Set Goals

Although Mr. Allen and Ms. Jones supported each other’s efforts in the classroom, they usually worked on different

goals for different students. For example, Mr. Allen typically aligned his curriculum goals to the local and state standards, and Ms. Jones noted that she focused on organizational skills regardless of the content. Given their working relationship and the clear line of responsibilities, it was first necessary to encourage Mr. Allen and Ms. Jones to work together as a curriculum planning team and to jointly identify the social studies goals that they wanted all students to achieve. Using the UDL Goal Setter and understanding that it was important to define goals that separated the means from the goal, the Allen-Jones team identified a social studies goal: "All students will understand the causes and impact of the Industrial Revolution and be able to demonstrate this understanding" (teacher interview, 2005).

Step 2: Analyze Current Status of Curriculum and Classroom

In teaching a lesson that focused on the defined goal of understanding the causes and impact of the Industrial Revolution, Mr. Allen typically used a text book as the primary resource, and he usually presented information about this topic in lecture format, followed by class discussions. In contrast, Ms. Jones either worked on organizational and study skills with those students on IEPs or spent time simplifying the presented concepts. Understanding of new content for students not identified as having special needs was generally measured by multiple-choice or essay tests at the end of a unit. In contrast, Ms. Jones typically designed new tests to measure her students' knowledge of the content and often gave her students these tests in a separate setting.

Students in Mr. Allen's class represent a broad diversity of strengths, challenges, preferences, needs, abilities, and experiences. Given the traditional methods, materials, and assessments that he used, it is obvious that there are many barriers that prevent all of Mr. Allen's students from achieving his social studies goal. Mr. Allen and Ms. Jones used the Curriculum Barriers with Assessment Form as a guide to identifying existent barriers. They realized that the textbook was a barrier not only for the students with decoding problems but also for English language learners. In addition, they noted that some typically achieving students were not successful on the multiple-choice tests even though they contributed to class discussions. They also found that for some students, writing cohesive sentences in response to an essay test was a barrier, and for many students, the class discussion was conducive to discussion. Overall, Mr. Allen and Ms. Jones as a PAL team began to understand that it was important to identify potential barriers and then eliminate them to increase opportunities for all learners.

Step 3: Apply UDL to Lesson or Unit Development

With clear social studies goals, an understanding of potential and real curriculum barriers, and recognition of

the class diversity, Mr. Allen and Ms. Jones as a PAL team were prepared to identify methods, materials, and assessments that would lead to successful learning outcomes for all students. The following sections present some highlights from the work with Mr. Allen and Ms. Jones.

Method. In CAST's PAL project that is guided by UDL principles, we pointed out to the teams that no one method is effective for reaching all learners. Therefore, no matter how engaging Mr. Allen's lecture might be for some students, it will not work for others. Consequently, CAST members reinforced that it is important to provide multiple representations and multiple formats for learning new ideas and concepts. Mr. Allen and Ms. Jones decided to begin the new unit on the Industrial Revolution with a brainstorm activity, using Inspiration software (Strangman, Hall, & Meyer, 2003) to activate students' background knowledge (Strangman, Hall, & Meyer, 2004). Both practices (i.e., the use of concept maps and activating prior knowledge) have been shown to have positive impact on improving student learning (Strangman et al., 2003, 2004). In addition, Mr. Allen and Ms. Jones incorporated their new understandings of the core concepts of reciprocal teaching strategies (Palincsar & Brown, 1986) and robust vocabulary instruction (Beck, McKeown, & Kucan, 2002) into their lessons. Mr. Allen immediately saw the benefit of applying the reciprocal teaching strategies of clarification, prediction, summarization, and questioning to his content.

Materials. Realizing that the textbook was a barrier for some of his students, Mr. Allen saw the benefit of scanning sections of the text so that it could be read by the computer for students with decoding problems. He also realized that he needed additional materials that were more engaging for his students. Therefore, the PAL team began searching the Internet for relevant materials, knowing that the computer could read anything in digital form. Both teachers were pleased with their planning process because they saw how alternative representations of the information would benefit not only students with disabilities but also English language learners and students who needed options to keep them engaged. They also found low-tech strategies, such as using strategy stickies in a book to help students pause and think about what they were reading, and high-tech strategies, such as using Microsoft Word's insert text or audio comment features, to be effective in providing varied means of supporting understanding (see Appendix B).

Assessment. Mr. Allen and Ms. Jones understood the need to offer options in assessing students' understanding of the causes and impact of Industrial Revolution. In addition to multiple-choice and essay tests, students were given choices for demonstrating understanding; these included

performing an enactment with a team, developing a multimedia presentation, writing a book for another grade level, writing a poem, or conducting a research project. They realized that one method of assessment is not appropriate for all students, and they found that when they provided choices, more students were interested in demonstrating their new understanding.

Step 4: Teach the UDL Lesson or Unit

Mr. Allen and Ms. Jones jointly taught the PAL lessons, focusing on understanding and impact of the Industrial Revolution. If all students demonstrated understanding of the concepts, they began the PAL process again for a new lesson. If students had difficulties, Mr. Allen and Ms. Jones revisited the lesson and revised it as needed.

Project Highlights

Mr. Allen was not atypical of the other project participants in that there were several noted changes in his practice as a result of his new understandings. For instance, in the initial focus-group session, Mr. Allen noted that he typically tended to blame students' lack of preparation, background, or personal limitations for their failing in his classes. By the end of the project, Mr. Allen and his peers realized that the inherent barriers in their curriculum were the problem and that the curriculum needed to be designed to eliminate barriers and increase options for learning (see Appendix C).

Another relevant finding is the benefit of joint-curriculum planning when the regular education teacher and special education teacher focus on the curriculum. This was clearly evident in the work of Mr. Allen and Ms. Jones as they came to appreciate their unique contributions to the process of planning a curriculum. In addition, the change in understanding and the use of research-based practices in classroom instruction were noticeable across all participants. By the final focus group, Mr. Allen and his peers had adopted language that reflected the concepts they had learned to support students' reading for meaning during the project. More important than their adoption of the program's language, however, was their growing adoption of UDL principles and effective strategies in their teaching.

Summary

By incorporating the three principles of UDL into curriculum planning, teachers increase their ability to customize their curricula (goals, methods, materials, and assessment) to meet the needs of the diverse learners in their classes. Similarly, to support students' understanding of content, it is recommended that teachers explicitly teach and apply effective comprehension strategies within the context of teaching the content and that the methods of instruction be guided by the UDL principles.

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APPENDIX A

The Universal Design for Learning (UDL) Goal Setter

Growing diversity in today's classrooms increases the need for teachers to individualize instruction. At the same time, heightened concern about student achievement mandates that teachers meet specific local, state, and national standards. These two factors—learning standards and student diversity—seem to pose conflicting priorities. How can teachers set goals that address standards while supporting the unique propensities of each learner?

The key is to design a goal that represents the true purpose of the learning activity. This sounds obvious, but many goals are actually stated in a way that confuses means and ends. Only when the essential learning purpose is clear can instructors determine the educational focus for all learners. At the same time, a clear goal enables us to determine which alternative pathways and scaffolds can be used to meet diverse learning needs while keeping the learning challenge where it belongs.

The UDL Goal Setter can help you achieve this. It has two parts:

1. The UDL Goal Setter Tutorial walks you through the process of analyzing learning standards and benchmarks through the lens of UDL. Using a selected set of standards and benchmarks, the tutorial helps you learn to analyze what is essential to a goal and what can be changed to support different learners.
2. The UDL Goal Setter Tool supports you in refining your own goals for use in the classroom.

To access the UDL Goal Setter Tutorial and Tool, visit <http://www.cast.org/teachingeverystudent/tools/udlgoalsetter.cfm>.

APPENDIX B

Additional Resources For Understanding and Applying Universal Design for Learning (UDL)

General information

What is UDL?

For text: <http://www.cast.org/research/udl/index.html>

For video: <http://lessonbuilder.cast.org/window.php?src=videos>

Frequently asked questions

<http://www.cast.org/research/faq/index.html>

UDL resources

<http://www.k8accesscenter.org/index.php/category/universal-design>

Books

Teaching Every Student in the Digital Age: Universal Design for Learning (2002).

By David H. Rose and Anne Meyer. Alexandria, VA: Association for Supervision and Curriculum Development.

For full-text digital edition: <http://www.cast.org/teachingeverystudent/ideas/tes>

For audio (MP3) overview: <http://www.cast.org/audio/TESpodcast.mp3>

For multiresource Web site: <http://www.cast.org/teachingeverystudent>

The Universally Designed Classroom: Accessible Curriculum and Digital Technologies (2005). Edited by David H. Rose, Anne Meyer, and Chuck Hitchcock. Cambridge, MA: Harvard Education Press.

A Practical Reader in Universal Design for Learning (2006). Edited by David H. Rose and Anne Meyer. Cambridge, MA: Harvard Education Press.

Teacher resources and professional development

UDL Tool kits: This free online resource helps educators create UDL-based lessons, apply UDL principles in classrooms, or train others in UDL.

http://www.cast.org/teachingeverystudent/toolkits/tk_introduction.cfm?tk_id=61

UDL Lesson Builder: This free online resource helps educators create UDL-based lessons.

<http://lessonbuilder.cast.org>

UDL Book Builder: This free online resource helps educators develop digital books with rich learning supports.

<http://bookbuilder.cast.org>

UDL training: Some Web sites provide information on UDL professional development.

CAST: <http://www.cast.org/pd/index.html>

Harvard University: <http://www.gse.harvard.edu/ppe/k12/programs/ude.html>

Don Johnston, Inc.: http://www.donjohnston.com/prof_services/UDL.html

Learning Through Listening Web site: Recording for the Blind and Dyslexic (RFB&D) and CAST present teacher resources with a special emphasis on lesson plans and audio resources.

<http://www.learningthroughlistening.org>

APPENDIX C
Universal Design for Learning (UDL) Planning for All Learners Checklist

Question	Yes or No?
Did you identify clear goals that separated the means from the goal?	
Did you eliminate barriers from the methods, materials, and assessments?	
Did you plan or design your lesson thinking about multiple means of representing the concepts and new ideas?	
Did you plan or design your lesson thinking about multiple ways to express and support student understanding?	
Did you plan or design your lesson thinking about multiple ways to engage your students?	

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