

A Primer on Universal Design (UD) in Education

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The purpose of this web page is to provide a brief introduction to the applications of universal design in education (also known as: Universal Design for Learning). Links to additional resources are provided for teachers and administrators interested in more information.

Scroll down the page or click on the links in the interactive outline:

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- B. [The application of UD to learning \(UDL\)](#)
- C. [Why is UD important?](#)

II. Interventions

- A. [What's the relationship between UD and differentiated instruction?](#)
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<https://pantherfile.uwm.edu/edyburn/www/ud.html>



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THE FACTS FOR ADMINISTRATORS

1) What is Universal Design and Universal Design for Learning?

The term “universal design” refers to the movement within architecture and product development to create places or things that are accessible to as many people as possible, including those with disabilities.

Universal Design for Learning (UDL) is a framework and set of principles to provide ALL students equal opportunities to learn. Using UDL principles in the general education classroom makes curriculum and instruction accessible and engaging for all learners. Curriculum barriers are reduced; learning is supported; students gain knowledge, skills, and enthusiasm for learning; and their learning is validly assessed.

2) What are the benefits of UDL?

As any administrator knows, students come to school with a variety of needs, skills, talents, interests and diverse learning styles. For many learners, the typical curriculum is littered with barriers and roadblocks, while supports are relatively few.

UDL turns this scenario around and supports curriculum design that is responsive to today’s diverse school campuses. UDL improves educational outcomes for ALL students by ensuring meaningful access to the curriculum and accurate skill and knowledge assessment. In addition UDL complements existing school reform initiatives.

*This material was produced with the assistance of Center for Applied Special Technology (www.cast.org)

3) What are the principles of UDL?

- Provide access to quality professional development for staff on multiple and flexible methods of ***presentation*** to give students with diverse learning styles various ways of acquiring information and knowledge.
- Provide structures that support the use of multiple and flexible means of ***expression*** by staff to provide diverse students with alternatives for demonstrating what they have learned, and
- Provide staff opportunities to implement multiple and flexible means of ***engagement*** to tap into diverse learners' interests, challenge them appropriately, and motivate them to learn.

Using these three principles, UDL embeds flexibility into the components of the curriculum: goals, teaching methods, instructional materials and assessments.

4) Isn't UDL just for students with disabilities?

Absolutely not. UDL was first mentioned in regard to making instruction accessible for students with disabilities, but it is a format that gives ALL students the opportunity to learn. For example, video captioning is of great help to students with hearing impairments—and is also beneficial to students who are learning English, students who are struggling readers, students with attention deficits, and even students working in a noisy classroom.

5) In what ways does UDL provide access to the general education curriculum for all students?

Brain research tells us that learning requires interconnections. Using the principles of UDL embeds flexibility into key aspects of the general education curriculum: goals, teaching methods, instructional materials and assessments. UDL allows ALL learners to make interconnections and use their skills and interests to fully engage in the learning situation.

Increasing physical access and eliminating physical barriers to educational sites is an essential step in universal design but genuine learning requires much more than physical access—it requires cognitive (or intellectual) access, too.

For example, providing a digital text of a novel with built-in comprehension supports is one way to apply the principle of multiple means of presentation to instructional materials. A student who has difficulty reading printed text could use the text reader feature, while a student who needs help with reading comprehension could use imbedded vocabulary definitions, highlighted abstract literary concepts, foreign language translations, or animated coaches that assist with answering comprehension questions. For examples see <http://udleditions.cast.org>.

6) What is the role of the administrator in UDL implementation?

Administrators are in positions of authority that are critical to programmatic implementation within a school building. Administrators can strengthen learning engagement by:

- Designing schedules for instructional staff that promotes collaboration and utilizes educator expertise.
- Adopt principles of UDL within the school mission.
- Provide access to an array of professional development

opportunities that foster a deeper understanding of differentiated learning strategies for diverse students.

7) What legislation calls for the use of UDL?

The Individuals with Disabilities Education Act of 2004 and the Higher Education Opportunity Act of 2008 have provisions for Universal Design and Universal Design for Learning.

8) What is being done to promote the implementation of UDL ?

The National UDL Task Force works to incorporate the principles of UDL into federal policy and practice initiatives and to promote UDL in the school environment.

Language recommended by the Task Force was incorporated into the Higher Education Opportunity Act of 2008. In addition, the Task Force has recommended UDL legislative language for the reauthorization of the Elementary and Secondary Education Act and will make recommendations for the reauthorization of the Individuals with Disabilities Education Act. The Task Force also seeks increased dissemination of information about UDL by the U.S. Department of Education and other federal agencies. See the UDL Toolkit at <http://www.osepideasthatwork.org/udl/>

The National UDL Task Force is comprised of more than thirty national education and disability organizations. For a complete listing of Task Force members, visit our website at www.udl4allstudents.org.

9) Where can I find more information?

We welcome your support-come join us in our efforts. Visit our website at www.udl4allstudents.org or contact Ricki Sabia at rsabia@ndss.org.

Valuing Academic Diversity: Tools for Every Classroom

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Recent school reform efforts have helped educators understand that there are struggling students in every classroom. Given the limits of time, energy, and resources, teachers understand that only a finite number of technology tools can be integrated into the classroom. As a result, one important technology integration strategy focuses on identifying a core set of technologies that support learning. If you were challenged to defining no more than 10 technology tools that could be provided in every classroom to support struggling students, what would you recommend?

Teacher Planning

I believe one of the ways to help teachers meet the needs of diverse students is to increase the instructional resources they have at their fingertips. Toward this end, I believe every teacher should have a set of 3-10 web bookmarks that they can use to support any instructional topic.

42explore	http://42explore.com/
Internet4Classrooms	http://www.internet4classrooms.com/
netTrekker	http://www.nettrekker.com/

Organization and Memory

Perhaps you know some students who have difficulty remembering things and staying organized. Since no one organizational system works for everyone, it is important for students explore a variety of tools until they find one that they like and works for them.

Backpack	http://www.backpackit.com/
Memo to Me	http://www.memotome.com/
Zoho Notebook	http://notebook.zoho.com/

Reading Materials: Tiered

Why is it that there is only one version of every reading assignment? Tiered reading materials offer similar information at different reading/interest levels.

Ben's Guide to US Government	http://bensguide.gpo.gov/
Star Child	http://starchild.gsfc.nasa.gov/
Windows to the Universe	http://www.windows.ucar.edu

Reading Materials: Personal Interest

Struggling readers have learned that they don't like to read. What if we could reverse this perspective by putting students in charge of creating their own reading materials?

Google News	http://news.google.com/
My Yahoo	http://my.yahoo.com
Page Flakes	http://www.pageflakes.com/

Reading: Audio Support

A variety of strategies can be used to provide audio support for struggling readers: Talking web browsers, text to speech software, and text-to-MP3 audio files.

Browse Aloud	http://www.browsealoud.com/
Read Please	http://www.readplease.com/
VozMe	http://www.vozme.com
WebAnywhere	http://webanywhere.cs.washington.edu/

Vocabulary Support

Vocabulary development is at the center of all learning. How do we help students gain new words and concepts?

VisuWords	http://www.visuwords.com
Voycabulary	http://www.voycabulary.com/

Writing: Brainstorming

Graphic organizers are valuable tools for helping students develop their ideas before they begin writing.

Inspiration	http://inspiration.com/Inspiration
Kidspiration	http://inspiration.com/Kidspiration
Eduplace	http://www.eduplace.com/graphicorganizer/

Writing: Drafting

Provide supports that guide the process of creating a first draft.

Draft:Builder	http://www.donjohnston.com/
iDictate	http://www.idictate.com
Fracture Fairy Tales	http://www.readwritethink.org/materials/fairytales/

Writing: Collaborative

Increasingly professionals are expected to collaboratively work on projects. What does this mean for teaching about the writing process?

Google Docs	http://docs.google.com
Zoho Writer	http://writer.zoho.com/

Interactives (Learning Objects, Widgets)

Many struggling students do not produce their best work on paper and pencil tasks. Interactives can be superior to traditional learning materials because of the immediate feedback and support that is provided.

Interactivate	http://www.shodor.org/interactivate/activities/
Thinkfinity	http://www.thinkfinity.org
Virtual Math Manipulatives	http://nlvm.usu.edu/

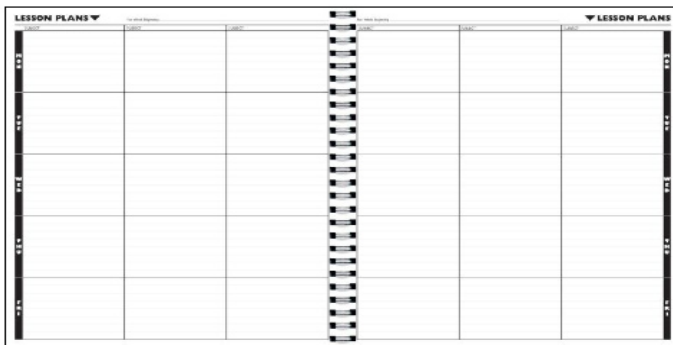
Teacher Planning Tools

By Dave Edyburn

Prior to the 1990s and the adoption of standards-based instruction, teachers were relatively free to select the topics of their curriculum and design instruction and assessments as they saw fit. Since that time, the starting point for planning instruction is anchored on state and district curriculum standards.

For the most part, instructional planning is still a solitary activity. While the research literature provides some insights about planning structures and the impact of teacher thinking relative to designing challenging instruction, inadequate attention has been devoted to individualizing instruction within group instructional settings (Schumm, Vaughn, Haager, McDowell, Rothlein, & Samuell, 1995; Yinger, 1980; Zahorik, 1975).

For generations, the core tool for teacher instructional planning has been the spiral-bound planbook. The purpose of this article is to highlight new tools that have the potential to facilitate the work of teachers to plan instruction for diverse students.



Theories and Frameworks

Recent advances in the field of cognitive science research have led to important new understandings about the nature of learning. As a result, the latest scientific evidence is increasingly being applied to the design of learning environments in order to maximize the conditions that promote stu-

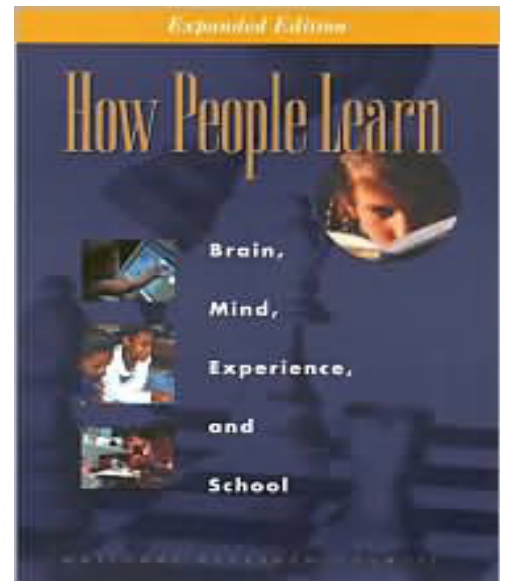
dent learning. Since research has found that how teachers think about teaching and learning has a significant impact on the way they design classroom instruction, a number of books have been developed for teachers interested in learning more about how the learning sciences can be applied to their classroom. A short reading list provides a starting point for learning about the latest theories and frameworks that will inform instructional planning.

How People Learn

This book provides an accessible introduction to cognitive psychology research and the application of recent research findings.

This work has had a significant impact on federal education policy as it seeks to move the knowledge base about learning from speculation to a discipline firmly grounded in science. The book provides a clear emphasis that education must move beyond knowledge as memorization and

focus on the development of thinking and problem solving skills. However, a notable shortcoming of this authoritative review is the lack of attention to learning differences associated with disabilities.



To learn more: Bransford, J.D., Brown, A.L., & Cocking, R.R. (1999). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press. Available online at: <http://www.nap.edu/html/howpeople1/>

Brain-based Learning

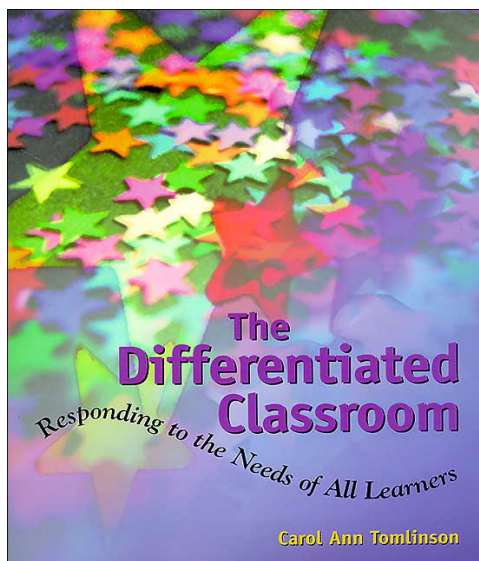
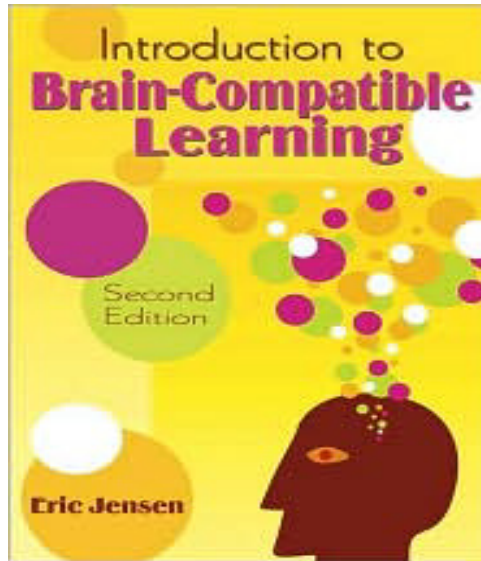
Author Eric Jensen believes an adequate research base exists on which to begin utilizing the knowledge base in the classroom. In this book he describes the key features of brain-based teaching and the most recent research on how

the brain learns. Readers will learn about the parts of the brain, what constitutes solid brain research, the differences between boys' and girls' brains, and what types of activities can build retention.

To learn more: Jensen, E. (2007). *Introduction to brain-compatible learning*. Thousand Oaks, CA: Corwin Press.

Differentiated Instruction

Differentiated instruction is an instructional model that celebrates learner differences. Teachers begin their planning by recognizing that students are individuals and come to the classroom with a variety of backgrounds, interests, skills, and learning styles. Instruction is designed to maximize



student choice as a means of engaging diverse students.

To learn more: Tomlinson, C.A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: ASCD.

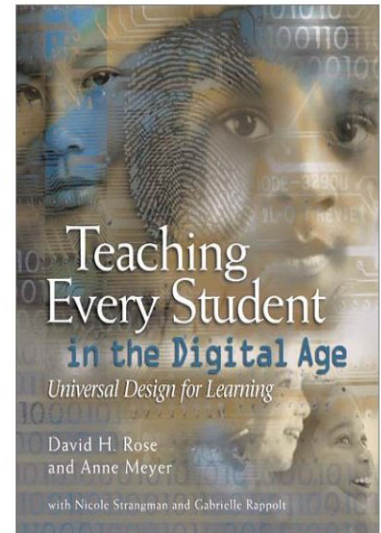
Universal Design for Learning

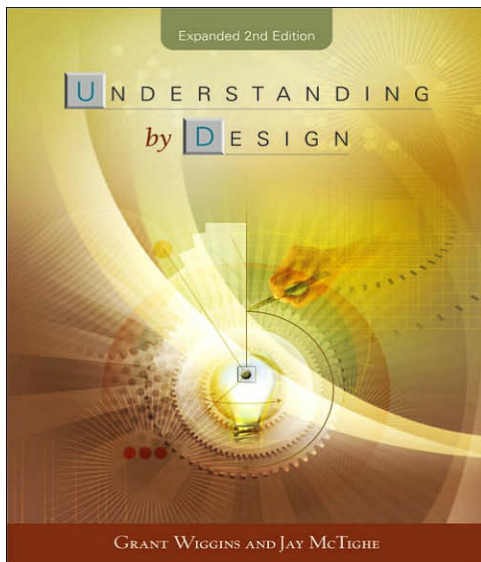
When designing classroom instruction, students with special needs are often forgotten. We expect all students will read the textbook, forgetting about students who are blind, have a learning disability, or who's primary language is not English. Universal Design for Learning advocates seek to create curriculum, instruction, and assessment materials that are flexible and usable by the widest range of functional capabilities. Designing instruction the provides multiple means of representation and multiple means of expression, allows diverse learners with opportunities for accessing, and most importantly, engaging in learning.

To learn more: Rose, D., & Meyer, A. (2002). *Teaching every student in the digital age*. Alexandria, VA: ASCD. Available online at: <http://www.cast.org/teachingeverystudent/ideas/tes/>

Understanding by Design

Understanding by Design supporters advocate an instructional design methodology known as backwards design. Begin by determining what you want students to understand. Then, use standards and big ideas to create meaningful learning activities that will produce the desired understandings and insight.





To learn more: Wiggins, G., & McTighe, J. (2005). *Understanding by design* (2nd ed.). Alexandria, VA: ASCD.

Tools

A new generation of planning tools has emerged to support the expectations associated with helping all students achieve high academic standards. Five practical tools are highlighted below that offer valuable possibilities for facilitating and improving teacher lesson planning.

The Planning Pyramid

The Planning Pyramid is a research-based teacher planning intervention. Teachers are asked

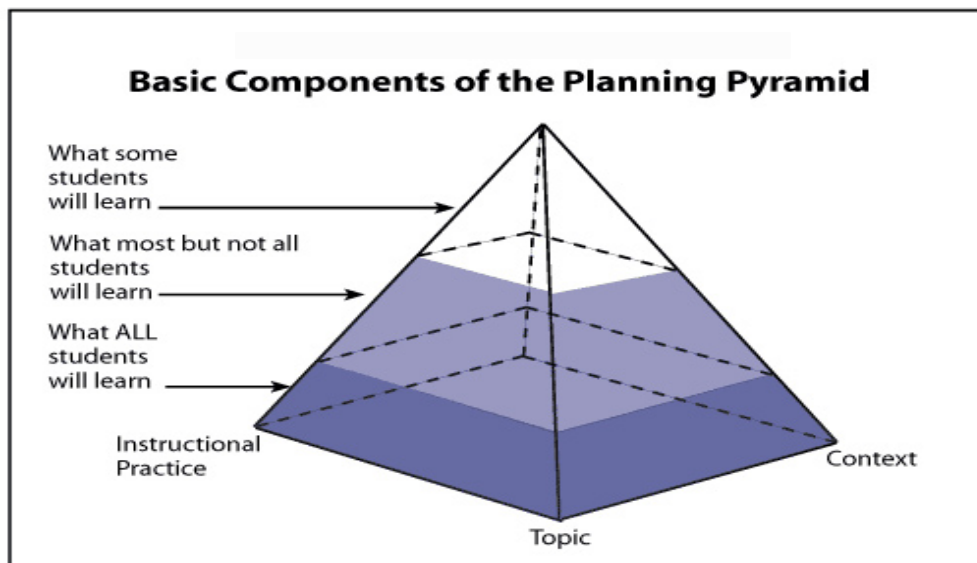
to analyze their curriculum and determine learning goals and outcomes relative to three levels: what must all students know, what will most students know, and what will some students know. The purpose is not to track students into one of the three levels but to allow students to engage at a level of skill and relevance that is appropriate for their interests and abilities. The article includes a reproducible lesson planning form.

To learn more: Schumm, J.S., Vaughn, S., & Harris, J. (1997). Pyramid power for collaborative planning. *Teaching Exceptional Children*, 29(6), 62-66.

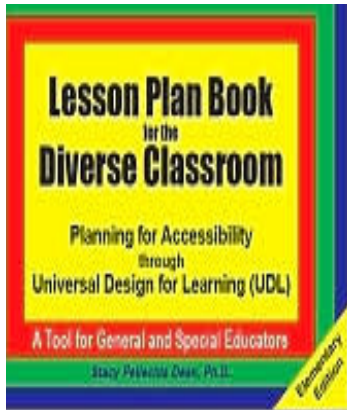
The Co-Teaching Lesson Plan Book

Lisa Dieker created a unique lesson plan book: one that is designed to be shared by two teachers. The Co-Teaching Lesson Plan Book facilitates teacher planning of academic and behavioral adaptations as required by IDEA. General education teachers complete the left page outlining the lesson goals, activities, and assessment procedures and special education teachers complete the right page by identifying adaptations and other interventions to support the success of all students. Weekly strategies and monthly notes from the author offer just-in-time professional development about co-teaching.

To learn more: Dieker, L. (2006). *The Co-Teaching Lesson Plan Book* (3rd ed.). Whitefish Bay, WI: Knowledge by Design, Inc.



Lesson Planning for Diverse Students



Stacy Dean applies the principles of universal design for learning (UDL) in the creation of her lesson plan book. She believes that UDL offers many possibilities for creating access to the curriculum for diverse learners. She encourages special and general education teachers to plan collaboratively.

To learn more: Dean, S.P. (2007). *Lesson plan book for the diverse classroom*. Port Chester, NY: National Professional Resources.

Tic-Tac-Toe Differentiated Instruction

One of the challenges associated with differentiating instruction centers on classroom management. That is, how does a teacher create learning activities that are tiered in difficulty, or allow students the option of choosing different activities to complete? Using a tic-tac-toe template, teachers focus their instructional planning around the identification of nine activities that they find acceptable for students to complete as a measure of demonstrating what they know and understand. Once created, the tic-tac-toe assignment is easy to administer. Students are directed to select any three-in-a-row activities to complete.

To learn more, visit: <http://www.uwm.edu/~edyburn/tictactoe.html>

Google Docs

Google has created an online word processing environment that is noteworthy for several reasons. First, it allows the user to access the files from any computer. Second, access privileges can be created to allow multiple users to create and edit a document. This means that co-teachers could create and store their lesson plans in Google Docs and work on them at home or school and that each teacher has full access to the latest version of their plans.

To learn more, visit: <http://docs.google.com>

Specialized Search Tools

Historically, teachers have relied on local resources to support classroom instruction. However, with classroom connections to the World Wide Web, the resource base for supporting diverse learners is essentially limitless. Such possibilities also require that teachers have a solid base to begin their searches. The following Web sites are valuable resources for teachers when planning instruction for diverse learners. Begin by entering a key concept and then browse for materials that will engage students with different skill and interest levels.

4 Teachers

<http://4teachers.org/>

42Explore: Thematic Pathfinders

<http://42explore.com/>

Blue Web'n

<http://www.kn.pacbell.com/wired/bluewebn/>

Cool Spots 4 Kids

<http://www.4kids.org/coolspots/>

Eduscapes

<http://eduscapes.com/>

Kathy Schrock's Guide for Educators

<http://school.discovery.com/schrockguide/>

TrackStar

<http://trackstar.hprtec.org>

Concluding Thoughts

Despite all the rhetoric associated with educational reform, little attention has focused on increasing teacher planning time. Clearly collaborative teaching requires more time for planning instruction. Likewise, if educators are truly committed to supporting diverse learners, there is an urgent need to locate flexible digital tools that expand the resources available in a local school. In my work on instructional design, I have found the mnemonic ABD to be a useful guiding principle: Access By Design or Accommodations By Default.

References

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- Yinger, R.J. (1980). A study of teacher planning. *Elementary School Journal*, 80(3), 107-127.
- Zahorik, J.A. (1975). Teachers' planning models. *Educational Leadership*, 33(2), 134-139.