



Building a Teacher's Toolbox
Volume 2, Issue 2

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I had the privilege of attending the New Staff Workshop on Saturday, January 9th in Concord. What a fantastic group of people! It was a pleasure to meet the new staff that will be part of New Hampshire Adult Education. I also have the added joy of adding ten more people to my mailing list for the newsletter!

In this newsletter, you will find information on three different topics. There are two articles on "universal design", an article on Temple Grandin, a noted doctor of animal science who has autism, and lastly, a quick survey based on key points that were highlighted at the New Staff workshop that were discussed among the participants there. These ideas, based on the survey results, will be addressed in future newsletters.

Universal design was terminology that I encountered during my training for the "Learning to Achieve" modules. It is a term in which educators must be aware of because, in essence, it "levels the playing field" for all students within your class, not just the students that have a learning disability or those that you suspect may have a learning disability. In creating a classroom based on "universal design" or UD, you are allowing all students to learn to the highest capability because you are addressing the learning styles of a variety of people by shaping your class to fit the needs of all students, not just those students who may have a learning disability. For example, if you know that a student would benefit from a word bank, then provide it for all students. If you know that music is strength for some of your students, than offer a lesson plan alternative tapping into this strength. If you have tried graphic organizers and it worked for some students, give it a try again for the entire class. It is a way in which you are allowing "curb cuts" in the classroom to address a student's strength in learning and for the student to be able to access the curriculum with success.

The reason for including the article on Temple Grandin is that there is an HBO home movie about her premiering on February 6th at 8pm. Below is a link that will lead you to the HBO website and also about the movie.

<http://www.hbo.com/movies?cmpid=s6>

Pages 2-4: First article on Universal Design

Pages 5-9: Second article on Universal Design

Page 10-15: Temple Grandin

Page 16: Key points survey noted at the New Staff workshop

I also invite you to visit the Adult Education website, which is

<http://www.nhadulted.org/>

There is so much information on the website pertaining to adult education. Peruse it if you have the time. There is information on the GED, ESOL, Adult Basic Education, Adult Learner Services, (which is the tutorial program), Adult High School, and a link exclusively for Adult Educators in New Hampshire.

What is Universal Design for Learning?

In today's schools, the mix of students is more diverse than ever. Educators are challenged to teach all kinds of learners to high standards, yet a single classroom may include students who struggle to learn for any number of reasons, such as the following:

- Learning disabilities such as dyslexia
- English language barriers
- Emotional or behavioral problems
- Lack of interest or engagement
- Sensory and physical disabilities

Teachers want their students to succeed, but a one-size-fits-all approach to education simply does not work. How can teachers respond to individual differences?

Universal Design for Learning, or UDL, provides a blueprint for creating flexible goals, methods, materials, and assessments that accommodate learner differences.

"Universal" does not imply a single optimal solution for everyone. Instead, it is meant to underscore the need for multiple approaches to meet the needs of diverse learners.

UDL mirrors the universal design movement in architecture and product development. Think of speakerphones, curb cuts, and close-captioned television—all universally designed to accommodate a wide variety of users, including those with disabilities.

Embedded features that help those with disabilities eventually benefit everyone. UDL uses technology's power and flexibility to make education more inclusive and effective for all.

Recent research in neuroscience shows that each brain processes information differently. The way we learn is as individual as DNA or fingerprints. In its research, the Center for Applied Special Technology, or CAST, has identified three primary brain networks and the roles they play in learning.



Recognition networks

Gathering facts. How we identify and categorize what we see, hear, and read. Identifying letters, words, or an author's style are recognition tasks—the "what" of learning.

Strategic networks

Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks—the "how" of learning.

Affective networks

How students are engaged and motivated. How they are challenged, excited, or interested. These are affective dimensions—the "why" of learning.

UDL principles help educators customize their teaching for individual differences in each of these three brain networks. A universally-designed curriculum offers the following:

Multiple means of representation to give learners various ways of acquiring information and knowledge

Multiple means of action and expression to provide learners alternatives for demonstrating what they know, and

Multiple means of engagement to tap into learners' interests, challenge them appropriately, and motivate them to learn

A. What is Universal Design?

The roots of universal design are found in accessible design of the physical environment. [The Center for Universal Design](#) at North Carolina State University is one example of this philosophy. By understanding the unique needs of individuals with disabilities and proactively designing homes, schools, workplaces, and community buildings to anticipate these human differences, universal design eliminates the need for making building modifications. For example, when accessible design principles are used, entry ways are designed with modest slopes rather than stairs. This simple design strategy is cost-effective to install as a building is being built and eliminates the unsightly wheel chair ramps that must be added to pre-existing buildings designed with a flight of stairs leading into the building.

A second arena in which universal design principles have been applied is the field of web page design. As the web grew in prominence, disability advocates quickly realized that this is another domain in which access for persons with disabilities would suffer if adequate design considerations were not made as web pages were designed. Again, the concept of proactive design emerged. A leading advocate for accessible web design is known as the [W3 consortium](#). Accessible web design is critical for individuals who are blind, have low vision, or have motor impairments that make online navigation difficult. However, application of UD principles to web design has the potential to improve the online experience for everyone.

Most recently, the concepts of universal design have evolved in a new direction. [CAST](#), or the Center for Applied Special Technology, has been spearheading a movement for Universal Design for Learning (UDL). That is, utilizing principles of universal design (proactively planning for differences, utilizing technology, and providing users with tools and options); CAST believes that it is possible to design teaching and learning environments with adequate supports to meet the needs of the entire range of learner differences. As students with disabilities spend a majority of their day in general education classrooms, it is increasingly important that access to the curriculum is provided. Indeed, as educational reform seeks to enable all students to achieve high standards, UD offers considerable potential for helping teachers address the increasing array of diversity found in the classroom.

Individually and collectively, the three traditions of universal design (UD in the physical environment, UD in the web environment, and UD in the teaching and learning environment) have emerged to capture the attention and imagination of policy makers, developers, researchers, teachers, and administrators. While the achievements to-date have been inspirational, much work remains to capture the potential. A national UDL Summit was held in November 2007 to define an agenda for scaling up an agenda that would help achieve the promise and potential of UDL ([UDL Summit Summary, 2007](#) [link to download pdf]).

B. The Application of UD to Learning

Rather than thinking about disability as a distinct group of learners, CAST suggests it is more helpful to think about learners on a continuum. Some students have more interests, skills, and abilities, and some have less. This is true at every grade level and with every topic in the curriculum. As a result, curriculum should be flexible to address differences proactively, rather than waiting for students to fail and then trying to remediate their academic performance. Advances in technology, learning theory, and brain research offer many exciting possibilities for designing learning environments which support learner differences.

C. Why is UD Important?

The potential of universal design has captured the imagination of researchers, developers, policymakers, [administrators](#), [\[link to download pdf\]](#) and teachers. UD is an emerging discipline based on the application of advances in learning theory, instructional design, educational technology, and assistive technology. As a result, a multi-disciplinary community has evolved to focus their attention on fundamentally rethinking interactive learning environments.

UD is an important framework for both research and practice. UD allows researcher to design learning environments and instructional materials that merge the best of what we know about instructional design and performance. UD is essential for teachers and administrators with diverse classrooms and limited time, energy, and resources to modify curricula to meet students' needs. UD is a potential solution to the relentless demand for curriculum modifications that occur when a "one-size fits all curriculum" fails to meet the instructional needs of the majority of students.

II. Interventions

A. What's the Relationship between UD and Differentiated Instruction?

In recent years, general education has been introduced to the concept of [differentiated instruction](#). Essentially, this philosophy recognizes that learner differences must be addressed when designing instruction and that one-size curriculum, instruction, and assessment meets very few students' needs.

Universal design is best known in the field of special education. The basic principles have been discussed above.

Differentiated instruction and universal design principles are highly compatible. Both seek to enhance student achievement by proactively designing learning environments and instructional materials in ways that allow all students to be successful. Learn more about the relationship between universal design for learning and differentiated instruction:

Differentiated Instruction and the Implications for UDL
http://www.cast.org/publications/ncac/ncac_diffinstructudl.html

B. Is UD just Another Form of Assistive Technology (AT)?

Many professionals in special education may think universal design is a specialized form of assistive technology. While the legal relationship between UD and AT has yet to be addressed, there are fundamental differences. AT is an intervention that is explored after a performance problem is identified. On the other hand, UD is proactive instructional design that seeks to build learning environments and instructional materials with supports (e.g., text that talks, language conversion, cognitive simplification, dictate responses rather than handwrite, alter font size, etc.) that enable all students to achieve the academic standards despite differences.

III. Using UD Principles to Design Classroom Instruction

A. Anticipating Differences

A fundamental characteristic of universal design involves anticipating differences. That is, understanding the full continuum of diversity, and the implications for teaching and learning. For example: given a unit on photosynthesis, how does a teacher plan for instruction when some of the students may be non-verbal, cognitively impaired, blind, deaf, struggling readers, reluctant writers, unmotivated, non-native English speakers, or gifted/talented. Rather than creating a single instructional plan (i.e., one size fits all curriculum), who do we plan a variety of learning activities to enable all students to achieve the given goals in the time allocated for instruction?

B. Getting Started: Tic-Tac-Toe

One method that I have found to be very helpful for enabling teachers to begin using principles of Universal Design for Learning principles in their own classroom involves Tic-Tac-Toe. Essentially, teachers create a menu of learning activities that involves selecting learning activities for diverse learners and ordering the various activities on a Tic-Tac-Toe grid. Then, students are responsible for selecting three (in a row) activities to complete their assignment. A valuable resource for teachers interested in getting started with instructional planning for diversity. Click [here](#) to access a resource page that offers a blank template and examples of planning grids that teachers have created.

C. Sample Instructional Units

Over the past few years I have taught pre-service and in-service professionals how to examine state curriculum standards and determine instructional priorities and outcomes. We then utilize principles of UD as we create learning environments that utilize digital curriculum, instructional and assistive technology tools to enable students to achieve high academic standards.

We are in the process of uploading a number of these UD units to the curriculum map below. Click on a link to obtain a downloadable pdf file of our 8-page UD instructional units. More units will be posted soon.

Grade Level	Subject Area	Subject Area
Early Childhood	(forthcoming)	
Elementary	Plants	ReadingComprehension
Middle School	Volcano	Zoo
High School	Wellness	

D. UD template

Download a Word file with a template for developing a unit of instruction using principles of universal design to enhance academic performance.

[UDtemplate8.doc](#)

IV. Professional Development

A. Monitoring New Developments in UD

Interested in learning more about universal design? Explore the following resources:

April 23, 2008: [CAST and Google announced](#) the release of CAST UDL Editions as part of World Book Day. To access the free online books directly, go to: <http://udleditions.cast.org/>. These books offer text to speech support, comprehension supports, and agents to assist students in understanding what they read. Users will be excited to see that many of the features found in the commercial product, [Thinking Reader](#), have been built into these free online books.

April 4, 2008: At the annual Council for Exceptional Children Conference, CAST released [UDL Guidelines 1.0](#) to facilitate the development of UDL standards. [A companion blog](#) allows the user community to comment and make suggestions for improving the standards.

In November 2007, a national UDL summit was held in Washington, DC to ascertain current developments in the field and to outline an agenda for research, development, and policy. Click [here](#) to download a PDF summary of the discussions.

[Using Flexible Technologies to Meet the Needs of Diverse Students: What Teachers Can Do](#)

Here's a new (2005) book by the folks at CAST:
[The Universally Designed Classroom: Accessible Curriculum and Digital Technologies](#)

Some readers may be interested in learning a great deal more about universal design for learning. The following book can be purchased in print form, or accessed (free!) online: 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/>

<https://pantherfile.uwm.edu/edyburn/www/ud.html>

Temple Grandin

From Wikipedia, the free encyclopedia

Temple Grandin

Born	August 29, 1947 (age 62) Boston, Massachusetts, USA
Residence	United States
Citizenship	United States
Nationality	United States
Ethnicity	Swedish American
Fields	Animal Science
Institutions	Colorado State University Franklin Pierce College Arizona State University University of Illinois at Urbana-Champaign
Alma mater	
Known for	published works and work with the livestock industry

Temple Grandin (born August 29, 1947) is a [Doctor](#) of [Animal Science](#) at [Colorado State University](#), bestselling author, and consultant to the [livestock](#) industry in animal behavior. As a person with [high-functioning autism](#), Grandin is also widely noted for her work in autism advocacy and is the inventor of the [Hug machine](#) designed to calm hypersensitive persons.

Early life and education

Grandin was born in [Boston, Massachusetts](#), to Richard Grandin and Eustacia Cutler. She was diagnosed as [autistic](#) in 1950. Having been labeled and diagnosed with [brain damage](#) at age two, she was placed in a structured [nursery school](#) with what she considers to have been good teachers. Grandin's mother spoke to a doctor who suggested [speech therapy](#), and she hired a nanny who spent hours playing turn-based games with Grandin and her sister.



At age four, Grandin began talking, and she began making progress. She considers herself lucky to have had supportive mentors from [primary school](#) onwards. However, Grandin has said that [middle school](#) and [high school](#) were the worst parts of her life. She was the "nerdy kid", the one whom everyone teased and picked on. She would be walking down the street and people would say "tape recorder", because she would repeat things over and over again. Grandin states that "I could laugh about it now, but back then it really hurt".

After graduating from [Hampshire Country School](#), a boarding school for gifted children in [Rindge, New Hampshire](#) in the 1960s, Grandin went on to college. She received her bachelor's degree in [psychology](#) from [Franklin Pierce College](#) (also located in Rindge) in 1970, her master's degree in [animal science](#) from [Arizona State University](#) in 1975, and her Ph.D. in animal science from the [University of Illinois at Urbana-Champaign](#) in 1989.

Career, celebrity, advocacy

Grandin became well known after being described by [Oliver Sacks](#) in the title narrative of his book *An Anthropologist on Mars*; the title is derived from Grandin's description of how she feels around [neurotypical](#) people. Grandin has also been featured on major television programs, such as ABC's *Primetime Live*, the *Today Show*, and *Larry King Live*, and written up in *Time* magazine, *People* magazine, *Forbes*, and *The New York Times*.^[1] She was the subject of the *Horizon* documentary "The Woman Who Thinks Like A Cow," first broadcast by the BBC on June 8, 2006 and *Nick News* in the spring of 2006.^[2] She has also been a subject in the series *First Person* by [Errol Morris](#). She is the focus of a semi-biographical [HBO](#) film, currently titled *Temple Grandin Thinking in Pictures*, starring [Claire Danes](#) as Grandin. The film is due for release in 2010.^{[3][4]}

On November 1, 2009 Grandin was featured on a 3-hour interview on [C-SPAN](#) called "In Depth". This interview will be available for view on the C-SPAN website.^[5]

Based on personal experience, Grandin advocates early intervention to address autism, and supportive teachers who can direct fixations of the autistic child in fruitful directions. She has described her [hypersensitivity](#) to noise and other sensory stimuli. She claims she is a primarily visual thinker^[6] and has said that language is her second language. Temple attributes her success as a humane livestock facility designer to her ability to recall detail, which is a characteristic of her visual memory. Grandin compares her memory to full-length movies in her head that can be replayed at will, allowing her to notice small details that would otherwise be overlooked. She is also able to view her memories using slightly different contexts by changing the positions of the lighting and shadows. Her insight into the minds of cattle has taught her to value the changes in details to which animals are particularly sensitive, and to use her visualization skills to design thoughtful and humane animal-handling equipment. She was named a fellow of the [American Society of Agricultural and Biological Engineers](#) in 2009.^[7]

I think using animals for food is an ethical thing to do, but we've got to do it right. We've got to give those animals a decent life and we've got to give them a painless death. We owe the animal respect.



Grandin's interest in animal welfare began with designs for sweeping curved corrals, intended to reduce stress in animals being led to slaughter.

Grandin is considered a philosophical leader of both the [animal welfare](#) and [autism advocacy](#) movements. Both movements commonly cite her work regarding animal welfare, [neurology](#), and philosophy. She knows all too well the anxiety of feeling threatened by everything in her surroundings, and of being dismissed and feared, which motivates her in her quest to promote humane livestock handling processes. Her business website has entire sections on how to improve standards in [slaughter](#) plants and livestock farms. In 2004 she won a "Proggy" award, in the "visionary" category, from [People for the Ethical Treatment of Animals](#).^[8]

One of her most important essays about animal welfare is "Animals are not Things,"^[9] in which she posits that animals are technically property in our society, but the law ultimately gives them ethical protections or rights. She uses a screwdriver metaphor: a person can legally smash or grind up a screwdriver but a person cannot legally [torture](#) an animal.

As a proponent of [neurodiversity](#), Grandin has expressed that she would not support a cure of the entirety of the autistic spectrum.^[10]

Personal life

Grandin says "the part of other people that has emotional relationships is not part of me" and she has neither married nor had children. She lives alone in [Fort Collins, Colorado](#). Beyond her work in animal science and welfare and autism rights, her interests include horse riding, science fiction, movies, and biochemistry. She describes socializing with others as "boring" and has no interest in reading or watching entertainment about emotional issues or relationships.

She has noted in her autobiographical works that autism affects every aspect of her life. She has to wear comfortable clothes to counteract her [sensory integration dysfunction](#) and has structured her lifestyle to avoid sensory overload. She regularly takes [anti-depressants](#)

and uses a squeeze-box ([hug machine](#)) that she invented at the age of 18 as a form of stress relief therapy.

Despite this anxiety, she has stated that, "If I could snap my fingers and become nonautistic I would not do so. Autism is part of who I am."

Quotations of Temple Grandin



[Lists of miscellaneous information](#) should be avoided. Please [relocate](#) any relevant information into appropriate sections or articles. *(December 2009)*

Autism is an extremely variable disorder.

Children between the ages of five to ten years are even more variable. They are going to vary from very high functioning, capable of doing normal school work, to nonverbal who have all kinds of neurological problems.

I can remember the frustration of not being able to talk. I knew what I wanted to say, but I could not get the words out, so I would just scream.

If by some magic, autism had been eradicated from the face of the earth, then men would still be socializing in front of a wood fire at the entrance to a cave.

See also

- [Controversies in autism](#)
- [Sociological and cultural aspects of autism](#)
- [Wendy Jacob](#)
- [Net Koene](#) Temple Grandin's ideas and linguistics
- [Beautiful Minds](#): A Voyage Into the Brain, a documentary produced in 2006 by colourFIELD tell-a-vision, a German company

References

Bibliography

- *Emergence: Labeled Autistic* (with Margaret Scariano, 1986, updated 1991), [ISBN 0-446-67182-7](#)
- *The Learning Style of People with Autism: An Autobiography* (1995). In *Teaching Children with Autism : Strategies to Enhance Communication and Socializaion*, Kathleen Ann Quill, [ISBN 0-8273-6269-2](#)
- Grandin, Temple (1996). *Thinking in pictures : and Other Reports from My Life with Autism*. Vintage. [ISBN 0-679-77289-8](#).

- *Developing Talents : Careers for Individuals with Asperger Syndrome and High-Functioning Autism* (2004). [ISBN 1-931282-56-0](#)
- *Animals in Translation : Using the Mysteries of Autism to Decode Animal Behavior* (with [Catherine Johnson](#), 2005), [ISBN 0-7432-4769-8](#)
- *The Unwritten Rules of Social Relationships: Decoding Social Mysteries Through the Unique Perspectives of Autism* (with [Sean Barron](#), 2005), [ISBN 1-932565-06-X](#)
- *The Way I See It: A Personal Look At Autism And Aspergers* (2009)
- Grandin, Temple (2009). *Animals Make Us Human: Creating the Best life for Animals* (with [Catherine Johnson](#)). Houghton Mifflin Harcourt. [ISBN 978-0151014897](#).

Footnotes

1. [^ "Dr. Temple Grandin"](#). Templegrandin.com. <http://www.templegrandin.com/templehome.html>. Retrieved 2009-08-09.
2. [^ "Science & Nature - Horizon"](#). BBC. <http://www.bbc.co.uk/sn/tvradio/programmes/horizon/index.shtml>. Retrieved 2009-08-09.
3. [^ *Temple Grandin Thinking in Pictures \(2009\)*, \[IMDB.com\]\(#\)](#).
4. [^ *Grandin Talks About Her Upcoming HBO Biopic*](#)^[*dead link*]
5. [^ *C-SPAN website*](#)
6. [^ Grandin T](#) (2009). "How does visual thinking work in the mind of a person with autism? A personal account". *Philos Trans R Soc Lond B Biol Sci* **364** (1522): 1437–42. doi:10.1098/rstb.2008.0297. PMID 19528028.
7. [^ "<http://www.asabe.org/awards/fellow/active.html>"](#). American Society of Agricultural and Biological Engineers. <http://www.asabe.org/awards/fellow/active.html>. Retrieved 2009-09-11.
8. [^ "*2004 PETA Proggy Awards*"](#). PETA. 2004-09-30. <http://www.peta.org/feat/proggy/2004/winners.html#visionary>. Retrieved 2009-08-09.
9. [^ "*Animals are not things*"](#). <http://www.grandin.com/welfare/animals.are.not.things.html>. Retrieved 2009-07-06.
10. [^ "*Interview with Temple Grandin*"](#). [Wrong Planet](#). <http://www.wrongplanet.net/article295.html>.

External links

- [Grandin.com](#) - Temple Grandin's commercial page
- [TempleGrandin.com](#) - 'Temple Grandin, PhD'
- [BBC Documentary on Temple Grandin](#)
- [Audio Interview to Temple Grandin on the Leonard Lopate Show \(WNYC\)](#)
- [Untitled Temple Grandin Project](#) - HBO Film at IMDB.com
- [Profile on VOA News](#)

- [NPR Fresh Air audio interview by Terri Gross of Temple Grandin on 'The Best Life for Animals' 2009-01-05](#)
- [A free podcast with Temple Grandin talking about the contents of latest book](#)
- [Dr. Temple Grandin, Animal Handling Inventions](#)
- http://www.brainyquote.com/quotes/authors/t/temple_grandin.html

Retrieved from "http://en.wikipedia.org/wiki/Temple_Grandin"

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http://en.wikipedia.org/wiki/Temple_Grandin

Survey about topics of interest to new staff

Please check off all that apply to you. Please send the email back to me so I can see how I may best address the needs of all of the readers of “Building a Teacher’s Toolbox”.

- Multi-level classes
- Varying abilities of learners
- Multiple intelligences
- ESOL and literacy
- Beginning readers
- Characteristics of adult learner
- Technology in the classroom
- Fear of technology seen with the older students
- Reasons to persist in schooling and meeting goals
- Classroom management with mixed aged classes
- Rubrics
- Structure and expectations of the class
- Seriousness of class and the students’ education
- Modeling
- Scaffolding
- Writer workshop
- Cloze activities
- Differentiated instruction
- List of accommodations not needed for GED testing approval
- Speaking and listening activities for ESOL
- Whole language vs. phonics
- Making connections to the “real world” as to the material learned in class
- Specific learning disabilities
- Other disabilities
- Information from the “Learning to Achieve” modules
- Other information you would like covered?