Supporting Learner Diversity with Universal Design for Learning for the Intermediate Elementary Classroom

an interactive online learning environment course for elementary educators that helps teachers align UDL Principles with innovative technology tools

http://udlinelementary.weebly.com/

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Contents:

Introduction ......................................................... 3
Goals and Purpose .................................................. 3
Key Frameworks and Situated Learning Theories................. 3
Intentions and Positions .......................................... 5
Key Concepts and Contexts ...................................... 7
About the InterActivities ........................................... 9

User's Guide

Guide to Web Pages and InterActivities

Welcome.......................................................... 10
  Ideas behind UDL .................................................. 11
What is UDL? ......................................................... 12
  UDL Principle 1: Multiple means of representation ........... 14
  UDL Principle 2: Multiple means of action & expression ...... 16
    Using iMovie in a novel study page ........................ 16
  UDL Principle 3: Multiple means of engagement ............... 17
    Blogging and Engagement .................................. 18
Toolbox for educators ............................................. 19
Lesson planning .................................................... 26
  Videos .......................................................... 26
  Lesson plans .................................................... 27
  Lesson templates .............................................. 29
Assessment strategies .............................................. 31
  Plickers – a formative assessment tool ....................... 33
Conclusion ........................................................ 34
Verifications ......................................................... 34
References .......................................................... 35
Appendices .......................................................... 45
Assessment model for ETEC 510 Final Project Design ....... 45
Introduction, Goals and Purpose:

The biggest mistake of past centuries has been to treat all children as if they were variants of the same individual and thus to feel justified in teaching the same subjects in the same ways. - Howard Gardner (Gardner, Siegel & Shaughnessy, 1994, p. 564)

The purpose of our website is to create an interactive learning environment for elementary educators to support their professional development, as they increase their understanding of both Universal Design for Learning (UDL) principles combined with appropriate technology usage. By working through the interactivities within this website, educators will be better able to support a broad range of learners all the while utilizing differentiation strategies in their intermediate elementary classrooms. This interactive “teacher’s toolbox” has been designed as a functional and practical website containing examples of excellent existing UDL lessons and interactivities along with embedded and ever-changing spaces for educators to place their own successful lesson plans and interactivities that they develop. By completing this resource, educators will gain an understanding of UDL, how to implement a variety of UDL strategies, and experience being part of a professional learning community (PLC) interested in improving their teaching practice. This website could also potentially be used as a professional development certification in UDL among participating school districts in BC.

Key Frameworks and Situated Learning Theories

Piaget, Vygotsky and Constructivism

Differentiated instruction (DI) and UDL are based on the constructivist approach that grew from the work of psychologists, Jean Piaget and Lev Vygotsky, who both viewed learning as an active and interactive process of building knowledge. According to Piaget, learners construct knowledge through accommodations and assimilation, that is, they construct knowledge and a system for understanding the world, through an active engagement with the world (Stone & Reid, 1994). Vygotsky (1980) suggests that learning occurs through interactions
with others and that the “internalization of encounters with the world result in higher order thinking” (p. 90-91).

**Purposeful Activities**

The effect of these types of theories on modern pedagogy is to emphasize that teaching “with more purposeful activities, provides opportunities for students to construct their own knowledge while solving puzzles, replaces rote learning with meaningful lessons, substitutes direct instruction with incidental learning, and emphasizes the construction rather than the transmission of knowledge” (Null, 2004, p. 182).

**Differentiated Instruction**

As the learner constructs knowledge, different learners require different instruction. Differentiated instruction emphasizes the diversity of learners in modern classrooms (Tomlinson, 2000; Stanford & Reeves, 2009; Schumm & Vaughn, 1991).

**Emphasize Content, Process, Product**

Tomlinson (2000), for instance, identifies three areas that can be differentiated depending on the needs of individual children: content, process, and product. The teacher uses diagnostic assessment to identify the need to adjust approaches depending on student readiness, interest and learning style. In the differentiated classroom, the teacher structures instruction to highlight the most important learning outcomes and provides different paths to success depending on individual student needs.

**Universal Design for Learning**

The term *Universal Design for Learning* originated from an architectural movement concerned with ensuring universal access for persons with disabilities, called “Universal Design”. Universal access, it was discovered, “benefitted not only those with disabilities, but all users” (Hall, Strangman & Meyer, 2004, p. 6). The founders of UDL then “addressed the disabilities of schools rather than students” and “leveraged the flexibility of digital technology to design learning environments that from the outset offered options for diverse learners” (Meyer, Rose & Gordon, 2014, Ch. 1, para. 12).

**Neuroscience – The brain science behind UDL**

Another important theoretical foundation for UDL comes from research based in neuroscience. There are three neural networks that have been identified as crucial for learning: the affective network, related to learner engagement; the recognition network, related to perceiving information and turning into knowledge; and the strategic network that organizes and plans “purposeful action in the environment” (Meyer et al., 2014).

*Source: (Meyer et al., 2014, ch 3)*
New brain scan imaging technologies have given us greater understanding of diversity and how learning occurs in the brain (Kendal, 2000). These tools allow us to see the brain as it learns, giving us the understanding and a sound research base indicating the need for flexibility and choice in learning environments.

Corresponding with these neural networks are the UDL guidelines for instruction that should “provide multiple means of engagement,” multiple means of “representation,” and multiple means of “action and expression” (CAST, 2011). Or as it is succinctly phrased in *Universal Design for Learning: Theory and Practice*, “to learn we need to care about what we are learning and want to learn it; we need to take in and build knowledge; and we need to develop skill and fluency in our actions” (Meyer et al., 2014, ch. 3, para. 23).

**UDL Combined with Technology**

The relationship between UDL and digital technology is essential for differentiated instruction. While assistive software was crucial to the development of the theory, digital technology in general has made individualization of curricula, consistent with UDL guidelines, more practical. As well, the National Center on Universal Design for Learning points out that the learning of technology is a goal in itself, considering how pervasive it has become. However, the adaptation of curricula according to UDL principles should not be identified as exclusively the domain of digital technology (CAST, 2014).

**Intentions and Positions**

**Differentiated instruction**

Diversity is the norm in all classrooms and we believe that the educational learning environment best serves the needs of its members when it is designed from the onset to serve the majority of its learners (Tomlinson, 2011; Rose, David, & Meyer, 2002). This resource supports differentiation of instruction in the design-learning environment, regardless of the content area.

**Supporting all students, including those with specific disabilities**

Students who struggle with learning disabilities, visual impairments, and processing are well served in an environment structured by the principles of UDL (Katz, 2012; Rose et al., 2002). UDL guidelines offer strategies for teachers on how to differentiate across the
curriculum and all students can benefit from using the principles of UDL. Access to technology tools within teaching environments has made it much easier to offer choices to all learners about how to represent their understanding of concepts regardless of ability or educational level.

UDL builds in the support for all students, so those who need it can choose it without the stigma of a disability. “A person who appears learning disabled in a print-bound, text-based environment may look extraordinarily skilled in a graphics or video-based environment” (Rose et al., 2002, p.6). Research supports the concept that when accessibility is increased, specifically relating to typically content-heavy text, all students, not just those for whom assistive technology was originally intended, will benefit (Rose et al., 2002; Hehir, Thomas & Katzman, 2012; Katz, 2012).

The big idea – it’s not about the mastering content but mastering learning

A fundamental change occurring in education is the understanding of the importance of learning goals. The ultimate educational goal will no longer be about the mastery of content, as content is available everywhere, but the mastery of learning. The emphasis of expert learning will be a vital skill to 21st century students. These students will know their own strengths and weaknesses, know the kinds of media adaptation strategies and technologies to overcome their weaknesses and to extend their strengths, and be the kind of group members that participate and collaborate with peers and colleagues (Rose et al., 2002; Mouza & Lavigne, 2013; Kalantzis & Cope, 2010). We must aim to develop students who are critical thinkers that can read, write and speak effectively. To develop these higher order skills, students need to take part in complex meaningful projects that require sustained engagement, collaboration, research, and management of resources (Darling-Hammond, 2008).

Teacher as designer

None of these changes can be achieved without a transformation of the teaching profession. If we are to have a new learner, we need new teachers, and the new teacher will be a designer of learning environments (Kalantis & Cope, 2010). New technology changes everything; it is both a gain and a loss; a blessing and a burden. (Postman, 1992). It is not always clear who may benefit most at the onset of a new technology. Teachers and students are both struggling with the fact that traditional classroom settings are not the ideal learning spaces for today’s students. Our students are now considered to be digital natives, having been born with technology and access to information at their fingertips, while many educators are digital immigrants, finding the technology a steep learning curve. (Baytak, Tarman, & Ayas, 2011). Students have evolved beyond simply being digital natives to being part of what is now termed Generation P, or a participatory learning culture, that is quite used to producing online content as part of everyday life. Kalantzis and Cope (2010) believe teachers today must adapt toward and begin to nurture this new type of participatory learner. Teachers will need the support and professional development to create an environment of inquiry, where the principles of UDL support the use of technology to increase a student’s understanding about
themselves as learners and citizens. A lack of infrastructure also may impede this, as technology has appeared in classrooms, but not truly been integrated to increase learning (Puentadura, 2002; Rose et al., 2002).

Key Concepts and Contexts

The British Columbia curriculum

Using appropriate technology to support differentiated learning styles within the elementary classroom combined with principles of UDL, can benefit all learners and ultimately contribute to increased student success. Additionally, we believe that a static “one-size-fits-all” curriculum can be a barrier to student learning. From this initial starting point, we begin with an examination of the proposed changes to the British Columbia Ministry of Education Curriculum.

The BC Ministry of Education (2010) initially embarked on a process intended to help transform education in BC to better meet the needs of all learners. With input from quality educational researchers and from current practicing teachers, the new BC Curriculum proposes to allow educators greater freedom and teaching autonomy to create a learning environment in which students will be able to showcase their learning based on their individual needs and differentiated learning paths. The most recent BC Education Plan (2015), continues to cite the research emphasizing that no two students learn the same way, or at the same pace, and that effective learning is far more than just memorizing information – rather it is about getting students to apply their knowledge in real-world settings. The new curriculum will increasingly emphasize key concepts, deeper knowledge, and more meaningful understanding of subject matter and will also reflect the core competencies and skills that students need to succeed in the 21st century. The Ministry of Education in British Columbia has been active in the promotion of UDL as an environment within which to achieve these competencies. In collaboration with Special Education Technology British Columbia (SET BC) over the past few years, a number of UDL projects have been funded in school districts across BC. The ministry has a core belief that a UDL curriculum is designed from the outset to be accessible to the widest possible range of students.

Because the proposed BC curriculum (BC, 2015) strives to address needs of the full range of students, reaching across socioeconomic, and geographic divides; our project for middle-year students will support teachers in offering more student choice and allowing students to explore areas of passion, as well as providing opportunities to apply foundational skills from the formative early primary years to inquiry- and project-based learning that will link their learning to the wider community. BC’s proposed curriculum is based upon cross-curricular competencies intended to facilitate “whole child development – intellectually, personally, and socially,” through teaching skills within the areas of critical thinking, creative thinking and reflective thinking through increased personal, social and communication
competencies, placing emphasis upon addressing “Big Ideas” in subject areas and allowing for broad interpretation by professional educators within the classrooms.

**An interdisciplinary and collaborative approach**

We propose that educators embrace a model of interdisciplinary integration that can best be achieved via a team-based, collaborative approach, providing students with problem-based learning opportunities and connections between varying disciplines across the curriculum. An interdisciplinary context helps students to think critically while developing the skills needed to evaluate the materials used in their learning (Sandwell, 2003).

The New London Group (1996) coined the term “multiliteracies” to address a need for literacy learning across a broad spectrum of skills and knowledge while connecting to available technologies and new communications media. O’Rourke (2001) also addresses the need to engage students through a multiliteracies approach, so that students are able to draw upon knowledge and contexts from many disciplines, as well as on multiple communication modalities. Preparing students for a future where they are able to critically think in many contexts also shapes their direction of technology use and social relationships with each other rather than society being shaped by the technology itself.

**Students as media producers**

In a world where students outside the classroom are often media producers as well as consumers (Kafai, 1995), educators work with students and find that out-of-school experiences greatly impact the way that their students learn within the classroom walls. Student interest is highly relevant and valuable as a means to understand the world in a personally meaningful manner (Papert, 1993; Shively, 2014). Dewey argued that interest-driven experiences engage people in deep, purposeful activities exhibiting one’s power (Dewey, 1913, 1916, 1938, as cited by Shively, 2014). Education in more recent years drifted away from Dewey’s interest-based approach instead providing a more standardized delivery model. The pendulum today swings back to the premise that educational pedagogy should support the individual learner’s needs. In fact, Glass, Meyer and Rose (2013) advocate for a curricular reform designed from the outset to embrace and enhance the natural variability of learners.

**Using a problem-solving, project-based learning model**

Our proposed learning environment and educator toolbox for middle year students will be supported by technology that is useful to a diverse set of learners. Maker, Sonmi and Muammar (as cited by Newton and Newton, 2014) describe a problem-solving, project-based model in the classroom that supports creativity and emphasizes students’ freedom of choice. In this model, students:

- set their own goals and decide how to meet them
- have opportunities to openly discuss possibilities
- experience the challenge of creating something
● have opportunities to work alone or with peers
● help to define expectations of the outcome

We will endeavour to provide technological tools that guide creative teaching methods supporting these types of student learning opportunities.

**Student inquiry – creative and critical thinking skills**

Throughout Maker et al’s model outlined by Newton and Newton (2014), teachers support creative thinking processes by using probing questions, encouraging justification and explanation. Our toolbox will help teachers embrace this approach to design a learner-centric environment that fits into the new BC curriculum with a strong focus on UDL principles that support the diversity of students’ needs encountered into today’s upper intermediate elementary classrooms.

**InterActivities – Interactive learning with the learner at the centre**

As we strive to meet the needs of many different learners, we need to provide a variety of tools for our teachers to use. This includes meeting the needs of students with learning disabilities and those from different cultural backgrounds. It is a challenge for teachers to create diverse classrooms so the architecture we have developed for this project is based upon a website designed to meet the needs of as many learners as possible. It will be effective for teachers with specific instruction to connect to the curriculum and not just the technology. Using the guidelines of UDL, our interactive toolbox offers multiple ways to display information, scaffolding, and comprehension by providing students, through their teachers, with options.

The site focuses on the elementary panel, be interactive and collaborative. One challenge for teachers is the time to plan lessons, especially with technology in which they are unfamiliar. Therefore, this toolkit provides teachers with the opportunity to get started and to take risks just as we ask our students to do.

On the next page, you’ll find the complete User’s Guide which will guide user of this interactive website through the [UDLinelementary.weebly.com](http://UDLinelementary.weebly.com) website.
User’s Guide:
How to use this interactive website

Welcome page

The welcome page outlines the interactive nature of the website and explains how to use the resource. It also allows users to work through the activities on the site to receive badge completion that can serve as a professional development certification in UDL in participating BC school districts. Users of this website are encouraged to complete three out of five of the Badge InterActivities to receive certification upon completion.

Educators will look for the Badge InterActivities on each page of the Curriculum Guide highlighted in blue and marked with a Badge as follows:

All other InterActivities will be highlighted in green (see below):

InterActivity
Ideas behind UDL page

This page outlines the learning theories upon which UDL is based.

**InterActivity: Watch these 3 videos on this page to enhance your understanding of Piaget and Vygotsky**

Piaget and Vygotsky in 90 seconds: [http://youtu.be/yY-SXM8f0qU](http://youtu.be/yY-SXM8f0qU)


UDL in the Classroom page

UDL in the Classroom is an area where teachers can thoroughly learn about the principles of Universal Design for Learning and how to incorporate these principles into the foundation of their classroom curriculum. Starting from the research on the brain that neuroscience has discovered through PET scan imaging, this first main page provides opportunities to view videos on learning and the brain, and an intro to UDL as well as to complete a formative assessment on your own teaching style. Information is presented in video, audio and text, and reinforces the research by both Dr. David Rose at CAST as well as Dr. Carol Ann Tomlinson. The theory of multiple intelligences and the work by Howard Gardner supports a multiple intelligence self-assessment from the Edutopia website that teachers can use themselves and with their students as they plan for individual differences.

InterActivity - Watch this video for a concise overview to find out about Universal Design for Learning! Time 4:37
Consider the ways that you create your learning environment, in how you present your ideas and information, in how students express their comprehension, and in how students are engaged with the content.

InterActivity - Try this quiz to self-assess your teaching methods

Take the multiple intelligences self-assessment and tell us about it on this Padlet

This quiz asks 24 questions and will take less than five minutes to complete and add your own ideas about how it can be used in the classroom on this interactive padlet.
UDL Principle 1 page
The UDL Principle 1 page outlines ways for learners to demonstrate multiple means of representation.

InterActivity - Explore the UDL Principles in greater detail and try new tech tools!
Visit this site http://www.udlcenter.org/aboutudl/udlguidelines/principle1 for an in-depth look.

On the right side of this page you’ll find some new technology tools to assist you in implementation of UDL Principles. On this page, you’ll also find links to Kurzweil, a free text-to-speech app “Speak-It”, and a simplified English dictionary which are all great examples that you may wish to try in your classroom. Examples of technology tools can be explored with the links and continued on our Tool page.

InterActivity: Watch this video about an inspiring teacher!
One example found on this page is the video about Grade 7 teacher, John Lussier, from the Sunshine Coast in B.C. He shares multiple ways for his students to access text in his classroom, through traditional paper form, in a digital text to speech format through Kurzweil software, use of iSpeech and Speak Selection accessibility features as well as audio.
InterActivity: Ask yourself what are the three principles of UDL?

Each page also incorporates audio, text and video links to see real teachers implementing the principles of UDL in their classrooms across British Columbia. The UDL Guidelines 2.0 are available for teachers to explore and offer examples of how to provide multiple means of representation, expression and ways to engage students in their learning.
The UDL Principle 2 page provides extensive detail into how to provide students with opportunities for multiple means of action and expression.

InterActivity: Visit this site to explore Principle 2 in-depth!

On this page, you'll also have the opportunity to listen to an audio clip about how the brain works.

On the right hand side of this page, you'll find four links to examples of tech tools you can use to support learning through Multiple means of action and expression. These include: Explain EveryThing, a short video on using SketchNote for note taking, and a link to iMovie for video production, as well as a Stop Motion application for creating simple animated videos.

Badge InterActivity #2: Try something new! This link will take you to a page that suggests multiple ways of using iMovie to express learning while studying a novel. The intention is to provide some simple ideas for you to try, then have you share the results. Use this Padlet for educators to share your experience with iMovie after you have tried it out.
Principle 3 page

The UDL Principle 3 page explores options for giving educators multiple ways to engage with their learning and with the content.

InterActivity: Visit this link! On this page, you’ll find a link to explore Principle 3 in-depth.
http://www.udlcenter.org/aboutudl/udlguidelines/principle3

InterActivity - Listen to this audio! Dr. David Rose speaks about how the affective networks of the brain allow us to engage.
http://udlonline.cast.org/page/module1/l152

InterActivity - Try This! Use iBooks Author to engage students

As teachers explore these interactive pages, they will have opportunities to think about and plan how to use these ideas in their learning environments.

Badge Interactivity #3: Try Something New - Blogging!

By clicking on the Blue and Green icon, you will be taken to a page that helps you explore the advantages of using blogging as part of your language arts program. This page has links to Kidblog, a well-established educational blogging service, a video of blogging used in the classroom, and an article about planning for student engagement. There is a Padlet on this page for educators to share their experience with blogging.
InterActivity: Try This! Sign up for a Free Twitter Account

Using Twitter is an extremely powerful professional education resource for teachers. At the end of this section there is a link to the CAST UDL twitter feed.

Follow this Twitter Feed by following @CAST_UDL and searching the hashtag #UDL:

https://twitter.com/CAST_UDL
UDL Toolbox for Educators page

The UDL Toolbox for Educators section of the website provides teachers with numerous resources to assist in addressing some of the obstacles of differentiated instruction and learning.

InterActivity: Try this! Watch an introductory video:

Watch this! Today’s classrooms may include learners who struggle for a variety of reasons. View the video “Diversity of Learners” to learn more - http://lessonbuilder.cast.org/window.php?src=videos

Teachers can view this 55 second video introduction about learner diversity to help increase understanding about learners who struggle. Find the video at:

When educators first begin to use computers for their struggling students, one of the first barriers encountered may simply that the students are not able to access online information. There are several free tools available to anyone that improve accessibility and some even include portable applications (apps.) that a student can store on a flash drive and come with tools that support writing, reading and planning as well as ways to assist with sensory, cognitive or physical difficulties.

**InterActivity: Try this! Visit the UDL Resource Access site**

Visit [http://www.udlresource.com/access.html](http://www.udlresource.com/access.html) to find excellent tools to improve access.

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Become more familiar with ways to improve online access. For example, click on **Vision Support**. There, you will find many tools such as a virtual magnifying glass, font size and colour changers, high contrast text editors and floating toolbars. Experiment to find a tool that suits your students.

**InterActivity: Try this! Visit the UDL Resource Principle 1 Representation site.**

You'll find it at the following link: [http://www.udlresource.com/representation.html](http://www.udlresource.com/representation.html)
The first principle of UDL gives students a number of ways to demonstrate their proficiency of learning. At this site, you’ll find links to extensive audio book libraries, simplified kid-friendly dictionaries, free educational videos, and several databases of student appropriate infographics. By clicking on the infographic links, you’ll find many ways to support your learners visually.

**InterActivity: Try this! Visit the UDL Resource Principle 2 Action and Expression site:**

You’ll find this page at: [http://www.udlresource.com/expression.html](http://www.udlresource.com/expression.html)
The second UDL principle is to provide students with multiple options of expression or to show what they know. By clicking on the “Options for Artistic Expression” link, you’ll find an extensive listing of tools that help students demonstrate their learning by using technology tools such as Glogster, StoryBird, ThingLink, Prezi and so many more!

**UDL Principle 2: Multiple Means of Action and Expression**

**Options for Learners**

Click on a link below to open a page that lists free tools, with details about each option.

- **Options for Artistic Expression**

- **Options for Mindmapping**

- **Options for Multimedia Creation**

- **Options for Doing Math Onscreen**

**InterActivity: Try this! Visit the UDL Resource Principle 3 to learn more about engaging students**

**Engagement Page**

This link will take you there: [http://www.udlresource.com/engagement.html](http://www.udlresource.com/engagement.html)

The third principle of UDL seeks to actively engage students, help them self-regulate and provide ways to sustain learning efforts. Technology aligned with this principle will give you the tools that will support new delivery methods of curriculum and can make learning more meaningful for students.

To find some of the very latest ways to engage students, visit the Engaging Software Options link, where you will find resources to help your students learning coding through the use of programs like Scratch, or discover links for programs like Lego Digital Designer, or 3D modeling software programs such as Trimble Sketchup.
**InterActivity: Try this!** Visit the UDL Centre Implementation Page to find very specific teacher friendly examples and resources that address nearly any learner's requirements:

The link is: [http://www.udlcenter.org/implementation/examples](http://www.udlcenter.org/implementation/examples)

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**Teacher-Friendly Examples and Resources**

The National Center on Universal Design for Learning provides teacher-friendly examples and resources that support the UDL Guidelines. Please visit the following website to find numerous ways to implement UDL into lessons. This site contains embedded accessibility features that support text to speech by simply highlighting the text to be read aloud.

[http://www.udlcenter.org/implementation/examples](http://www.udlcenter.org/implementation/examples)
InterActivity: Try this! Visit the UDL Tech Tool Kit Wikispase

Here’s where you’ll find it: http://udltechtoolkit.wikispaces.com/

Simply select your area of interest - literacy, math, collaboration, or graphic organizers, and you will find a comprehensive assortment of technology tools that support a UDL designed learning environment. Try selecting “Literacy Tools”, at the bottom of the literacy page and you will find options specific to the middle years curriculum under “Resources for grades 6-12.”

Resources for grades 6 - 12

- **Newsela** - Innovative way to build reading comprehension with relevant, daily news, non-fiction. Can adapt to multiple lexie levels. Awesome!
- **Actively Learn** - Embed notes, questions and videos into reading, students think, write and collaborate. Awesome tool! Discover what other teachers have created or create your own.
- **Curriculet** - Embed notes, questions, annotations into a reading assignment.
- **Shmoop** - Guides to about 200 classic school novels – Intro (includes a Why Should I care section) Summary, Themes, Quotes, Characters, Analysis, Questions, Photos, Quizzes, Best of the Web, Write Essay and Teaching. Includes a step-by-step essay writing tool. Includes ads but the site is so rich, we can overlook them.
- **60 Second Recap** - (has ads) video recaps of classic literature read in middle and high schools. (ie. Boowolf, 1984, Adventures of Huck Finn, Lord of the Flies)
- **“Text Compacto”** - When text needs to be summarized, use this online tool. Great for cognitive rescaling.
- **TLDR** - Too long, didn't read. a summarizing tool that is a Chrome extension
- **Planet eBooks** - Free classic literature to download (middle school and up)
- **Poetry Foundation** - Free resource to find poetry by category, by name, by title, by author, or by first line. It's digital, attach a voice and it's now accessible!
**InterActivity: Try this! Visit the Cast Learning Tools website**

This site can be found at:

http://www.cast.org/our-work/learning-tools.html#.VQyIGDmCiEk

One UDL technology tool to try at this site is to design your own e-Books with the UDL Book Building tool. This is just one of the many tools that help you develop materials that not only meet the current curricular objectives but build-in accessibility for the wide range learners you encounter in every classroom.

**InterActivity: Try this! Visit the UDL Resource - iOS Apps page**


**InterActivity: Try this! Download the following article from Apple Aligning Apple Tools with UDL Principles**

You’ll find it at the following link:


Check out the table on page 22 which specifically outlines alignment of Apple product features to CAST’s UDL Principles. This is an easy way to find existing tools that may already be on your current devices and that will help your students!
Lesson planning page

The lesson planning page home page below is the introductory page to the sample lesson plans, videos, and lesson plan template pages.

Clicking on the links included allows for quick access to the desired sub-page:

**Video page**

Just like students, not all teachers learn the same; therefore videos will provide some visual examples of teachers using UDL strategies in their classrooms. Below is the video page.
This page contains a variety of videos demonstrating teachers using UDL in different subject areas as well as school-wide approaches to UDL. To view one of the videos, click on the picture beside the supportive text. The video will appear in a new window which you may choose to bookmark. When finished, close the window to return back to the UDL video page. To go back to the main planning page, click on the box at the bottom right hand corner of the page.

**Lesson Plan page**

The lesson plan page reinforces the principles of UDL and provides links to a number of sample lesson plans. Before going to these examples, teachers may wish to familiarize themselves with “The Four Components in UDL Curricular Design” by clicking on the pyramid on this page.
The sample lesson plans have been selected in a variety of subject areas to demonstrate how UDL can be implemented throughout the curriculum. To view any of these lesson plans, click on the picture beside the area of interest. Some of these lessons were chosen as exemplars with the Patins Project pilot.

While the primary purpose of this website is to provide resources using technology, we wanted to provide teachers with ideas for using UDL in a low technology classroom as well, so by clicking on the PDF file (as demonstrated below) teachers can receive examples for using UDL if there is little to no technology available in the classroom.

For teachers who have little to no access to technology, this document will provide Non-Technology/Low Technology ways to support UDL: [http://www.setlbc.org/Download/LearningCentre/Access/Networks_of_Learning_2010.pdf](http://www.setlbc.org/Download/LearningCentre/Access/Networks_of_Learning_2010.pdf)

To gain access to a wide variety of resources, teachers may wish to join the CAST UDL Exchange by clicking the link outlined below. This site provides sample lessons as well as video tutorials, and will assist you in creating your own UDL lesson plans. Once you have created your own free account, you click on Build, type in the name of your new lesson and use the pencil to the right of each heading to add information and be guided through the process of creating a new UDL lesson plan.
Badge InterActivity #4: Share - Upload your own lesson plans to this Padlet!

Because this website is designed for sharing of information we wanted to have places within the site for teachers to upload their own examples and/or lesson plans. The padlet on this page is for that exact reason. To add your own information to the padlet, follow the instructions below:

1. Double click anywhere you want on the brown space and a new window will appear on the board.

2. Clicking on the link icon will allow you to paste the URL of anything from the internet. Type in a title and some details to assist visitors as to what you have added to the padlet. The link should be pasted within the new box that appeared and click add. Your link has now been added.

3. The upload icon allows users to upload one of their own files.

4. The last icon will enable the user to take a picture with their webcam.

Lesson Plan Templates page

The last subpage within Lesson Planning is the Lesson Plan Templates. This page goes on to further enforce using UDL when planning lessons and the first activity gives teachers the opportunity to compare two lessons in order to determine the differences.
The next section of this page provides a number of lesson plan templates for teachers to choose from when designing their own UDL lessons.

Scrolling further down the page takes you to a number of links to test out how well your own lesson plans, as well as others, meet the UDL guidelines. Taking the time to do this will give teachers more confidence when planning their own lessons. When using the CAST link, you must have an account or you can sign up for a free account at this time. To use the other links, click on the photo beside the text or the text buttons.

Assessment Strategies page
The assessment page was designed to give educators strategies on various types of assessment that correlate to the principles of UDL.
The page is designed to be interactive for users and begins with a video introducing UDL and assessment in the classroom.

**InterActivity: Assess Your Own Use of UDL Strategies**

From there, an embedded formative assessment survey asks users to self-assess their current use of UDL assessment strategies in the classroom.

UDL pushes us to think about the ways in which we can support students so that we can target and address the actual learning goals. - Dr. Robert Mislevy
Once users have completed the survey they will be aware of how assessment plays a role in UDL principles. Assessment, like all activities in the UDL classroom, should be flexible and responsive to student learning. Educators should use the information gathered from assessments to inform future teaching strategies for their students. Because UDL provides options and alternatives to students in how they demonstrate their learning and understanding, using assessment tools that can accommodate the various options is necessary. The assessment page gives further explanation to the types of assessment imperative in a UDL classroom as well as rubric templates and samples for educators to use in the classroom. In the Assessment for Learning section, there is a link for users to access over 60 Formative Assessment Strategies in both formal and informal environments. In the Assessment of Learning section, users have access to links that will help them with performance assessments, portfolios and other comprehensive assessment tools. Lastly, there is an extensive section dedicated to rubrics where users have access to links that provide subject based rubric exemplars as well as a list of technology rubric samples and a rubric creator.
Badge InterActivity #5: Try Plickers as a Formative Assessment Tool!

Users are then given the option to try a formative assessment tool called Plickers. By clicking on this icon you will be directed to a page that instructs how to implement the Plickers app in the classroom and share your results with other users in the UDL community.
Conclusion page

Complete 3 of the 5 Badge InterActivities:

Do This! Fill out the completion form on the conclusion page in order to earn a UDL professional development badge.

Overall, this interactive website will meet the needs of various learning styles, provide teachers with tools to make engaging lessons, and allow for opportunities for flexible expression of learning.

Verifications

The purpose of our project is to create an online learning environment that supports diversity of learners in elementary school based on the principles of UDL. The website will
provide teachers with online professional development. In order to achieve this, we will incorporate various constructivist practices to allow for a cognitive presence to develop critical thinking skills, a social presence that allows for collaborative learning, and a teaching presence in the design of the website (Anderson, 2008). This will encourage teachers to take advantage of knowledge, growth and discovery, in their own subject area and within the scholarly community of other educators. In order to validate that our goal in educating teachers in assistive technology will be effective we will implement both formative and summative evaluations.

Our formative evaluation will assess the value of the information we provide while the program activities are in progress. For this evaluation we will embed a pre-survey on the website to determine teachers' background knowledge of UDL. The results will eventually help with the analysis and/or modification of learning material and the design’s effectiveness. Our summative evaluation will be the method of assessing the value of our learning environment at the end of the learning activities. The focus will be whether teachers achieved the learning outcomes stated in our proposal. A completion of course form is embedded on the final page that teachers will fill out in order to achieve a badge accreditation. Those who complete the form will also be sent a survey based on our assessment rubric (Appendix) to give anonymous feedback regarding the website’s stated objectives and goals, content design, collaborative learning opportunities, and technology usage. Our proposed activities will be designed to give data that is significant in obtaining user feedback and will be carefully executed to ensure the data is accurate and valid.
References

AdamDeleidi. (2015, January 5). UDL at SBA. [Video file]. Retrieved from
  https://www.youtube.com/watch?v=aMVM71aUN94


CAST. (2010, January 6). UDL at a glance. [Video file]. Retrieved from https://www.youtube.com/watch?v=bDvKnY0g6e4


CURRICULUM GUIDE: SUPPORTING LEARNER DIVERSITY WITH UDL


Retrieved from https://www.youtube.com/watch?v=iuZPL_1s9kU


http://caroltomlinson.com/presentations/Amherst_secondary.ppt


https://www.youtube.com/watch?v=I92QkPdvYRI


http://iris.peabody.vanderbilt.edu/udl/

Universal Design for Learning Lesson Plans. (n.d.). Retrieved February 25, 2015, from

http://www.patinsproject.com/UDLLessons/udlteam.html

UDL Lesson Plan Templates. (n.d.). Retrieved February 10, 2015, from


http://udltechttoolkit.wikispaces.com


<table>
<thead>
<tr>
<th>Goals and Organization</th>
<th>Exemplary</th>
<th>Proficient</th>
<th>Working Towards</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Goals and objectives are easily located within the course</td>
<td>• Goals and objectives are located within the course syllabus or the individual</td>
<td>• Goals and objectives are not easily located within the course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Course is well-organized and easy to navigate. Users can clearly understand all components and structure of the course.</td>
<td>• Course is organized and navigable. Users can understand the key components and structure of the course</td>
<td>• Much of the course is under construction, with some key components identified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Presentation</td>
<td>• Content is made available or “chunked” in manageable segments (i.e., presented in distinct learning units)</td>
<td>• Some content segments are overly large (or possibly too small) for the specified objectives</td>
<td>• Content is not “chunked” into manageable segments</td>
<td></td>
</tr>
<tr>
<td>• Navigation is intuitive</td>
<td>• Navigation is only occasionally intuitive, thus the flow of content is sometimes not easily determined</td>
<td>• Navigation is not intuitive and the flow of content is unclear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Content is enhanced with visual and auditory elements</td>
<td>• Few or no visual and/or auditory elements are used to enhance the content</td>
<td>• No visual or auditory elements are used to enhance the content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology Use</td>
<td>• Course uses a variety of technology tools to appropriately facilitate communication and learning.</td>
<td>• Course uses some technology tools to facilitate communication and learning.</td>
<td>• Course uses limited technology tools to facilitate communication and learning.</td>
<td></td>
</tr>
<tr>
<td>• A variety of multimedia elements and/or learning objects are used and are relevant to student learning throughout the</td>
<td>• Multimedia elements and/or learning objects are used and are relevant to student learning</td>
<td>• Multimedia elements and/or learning objects are limited or non-existent.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner Engagement</td>
<td>Course design includes guidance for learners to work with content in meaningful ways. Course provides multiple visual, textual, kinesthetic and/or auditory activities to enhance student learning. Course provides multiple activities that help students develop critical thinking and problem-solving skills.</td>
<td>Guidance is provided, but could be improved with greater detail or depth. Course provides some visual, textual, kinesthetic and/or auditory activities to enhance student learning. Course provides some activities to help students develop critical thinking and skills or problem-solving skills.</td>
<td>Content is provided but it is not clear what students are expected to do with it. Course provides few visual, textual, kinesthetic and/or auditory activities to enhance student learning. Course provides limited or no activities to help students develop critical thinking and/or problem solving.</td>
<td></td>
</tr>
</tbody>
</table>