Organizational Structure and Instructional Delivery: Using Technology in Special Education Teacher Preparation

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May 15, 2009
http://325t.wikispaces.com/
Universal design for learning (UDL) from the perspective of instructors preparing teachers.

Instructors teach UDL theory and practical applications by using examples of tools/activities that help implement UDL.

Pre-service/in-service teachers learn UDL by completing assignments that apply these tools (and instructional principles) to create “authentic” and project-based learning activities that represent application/implementation of UDL principles.
Universal Design for Learning

- The term “universal design” means a concept or philosophy for designing and delivering products and services that are usable by people with the widest possible range of functional capabilities, which include products and services that are directly usable (without requiring assistive technologies) and products and services that are made usable with assistive technologies. (U.S.C. § 3002)
UDL In Higher Education

- UDL was defined in educational policy by the Higher Education Opportunity Act (HEOA) (2008) and has been advocated in the reauthorization of the Elementary and Secondary Education Act, commonly known as No Child Left Behind (NCLB) (NASDE, 2009).
  - http://www.advocacyinstitute.org/UDL/HEOA.shtml
The term ‘universal design for learning’ means a scientifically valid framework for guiding educational practice that—(A) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and (B) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient. (U.S.C. § 1001).
Universal Design for Learning calls for ...

- *Multiple means of representation* (to give learners various ways of acquiring information and knowledge).
- *Multiple means of engagement* (to tap into learners' interests, offer appropriate challenges, and increase motivation).
- *Multiple means of expression* (to provide learners alternatives for demonstrating what they know).
“Flavors” of Universal Design for Learning via Technology (briefly):

- **Multiple means of representation**
  - Print, video, and digital versions of content; web-based info.
  - Text-to-speech, video clips, podcasts, hypertext

- **Multiple means of engagement**
  - Dynamic (e.g., manipulation of, selection of, or choices to interact with different versions of content/learning activities)
  - email/online discussion, video chat, “telementoring”

- **Multiple means of expression**
  - Word processing with word prediction, PPT, concept map
  - Augmentative communication, Video presentation, podcasts
Those of you who wish to examine the theoretical base, principles, and philosophy underlying Universal Design for Learning, should read:


Other information sources:


UDL Across a Program
Individuals with Asperger syndrome (AS)
- Visual learners
- Structure/predictability
- Social skill development
- Hidden Curriculum
- Organizing thoughts
- Conveying knowledge
- Comprehension

Purpose to illustrate what we attempt to do to expose teachers, develop skills, integrate UDL practices, etc.
That's sexual harassment.

TOM is cute.
I like him.

You are a sexist pig.

John and TOM are cute.
They have nice butts.

TOM called me a pig. He must think I'm fat.

You are a big jerk.

TOM at this point said to the author: "I don't think she's fat but I should not call her a pig. I need to tell her I'm sorry."
Representation – Social Skill
Going to the Barber Shop

- Microsoft’s Photostory –
  [http://www.microsoft.com](http://www.microsoft.com)
  - Pictures, graphics, images, etc.
  - Voice/Audio to a Story
  - Wizard Function
  - Original Soundtrack
  - Closed caption


Engagement – Social Skill
Classroom Context

- Virtual Reality
  - Animated Visual Supports for Social Skills (AViSSS)
    - Dynamic
    - Choices for paths
    - Crash and Burn Opportunities
    - Hallway*
    - Bathroom*
    - Classroom*

- E- Mentoring for Teachers
  - Master Teachers
  - Clinical Supervision
Expression – Social Skill
Social/Academic/Adaptive

- Sharing knowledge (social skills)
  - Organization
  - Structure
  - Visual
  - Multiple Modes to Convey Information/Thoughts

- Inspiration/InspireData – inspiration.com
- Comic Life – plasq.com
- Audacity – audacity.sourceforge.net
Digital Backpack

A backpack with tools necessary for completing an integrated project
“Backpack” contains...

- **Instructional Support Materials** - materials that provide context, content, or experiential-based support (e.g., lesson/project materials, podcasts, movies, readings)
- **Foundational Technology** - hardware/software that provide the general building block for a lesson/project (e.g., laptop, software suites, Internet)
- **Modular Technology** - hardware/software that provide specific student, curricular and/or instructional support (e.g., camera, camcorder, measuring devices, probes).
Example: NURFC Backpack

- **Project Example**: National Underground Railroad Freedom Center (NURFC), Apple Inc, and UC Digital Backpack Project.
  - Designed for students (grade 6–16) and teachers (Pre & In Service)
  - General Goals:
    - Provide an innovate learning experience that embeds both academic contents and technology standards.
    - Design around accessibility to all (roles, technology, etc.)
    - Encourage deep understanding in a short time period (approx 4 hours) that can be expanded as desired.

- **Status**: Initial data has been analyzed
# NURFC Backpack
## Quick UDL Breakdown

<table>
<thead>
<tr>
<th>Representation</th>
<th>Expression</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital project documents framing the project</td>
<td>Students design their own end product</td>
<td>Individual/team choice and interest</td>
</tr>
<tr>
<td>Video &amp; audio podcasts of exhibits</td>
<td>Various roles to express their understanding</td>
<td>Authentic project-based learning</td>
</tr>
<tr>
<td>Exhibit narratives (digital documents)</td>
<td>Provided for team and individual goal setting</td>
<td>Provides multiple tools for student use</td>
</tr>
<tr>
<td>Built in text-to-speech reader (mac)</td>
<td>Students manage instructional resources</td>
<td>Scaffolded for project competition (encourage on-task behavior)</td>
</tr>
<tr>
<td>Printed materials</td>
<td>Checkpoints for monitoring performance</td>
<td>Encourages communication, social skill development, and collaboration</td>
</tr>
<tr>
<td>Breaking the project down into phase</td>
<td>Encourages 21st Century skills</td>
<td></td>
</tr>
<tr>
<td>Design: materials designed for activating prior understanding, provide for flexibility in use.</td>
<td>Provides for deeper levels of understanding</td>
<td></td>
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</tbody>
</table>
Final Thoughts

- Please mark your calendars for OSEP’s Project Directors’ Conference where Jamie and Sean will continue this conversation with other colleagues in respect to this topic.
- We also hope to follow-up with projects in the near future to better understand how individual projects are and/or are planning to integrate the principles of UDL across their preparation efforts.
- We would also welcome follow-up with individual projects and our contact information can be found on the next slide.
Please Contact Us

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Thank You