A Framework for UDL Evaluating UDL Projects

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Note: This is a segment of a longer paper, *A Framework for Evaluation of Universal Design for Learning Projects: Addressing the Complexity* (Hughes, in process). That paper is not fully included here, but the most recent draft may be obtained from the author <u>IF</u> you are willing to provide feedback to the author in return.

The challenges represented in designing and implementing UDL, as well as the unique features of UDL, suggest that any evaluation of UDL implementation must account for the following categories of information:

1. Connection to the principles of UDL
2. Connection to theories of learning (especially, the brain research on which UDL is based)
3. Relation to larger fields of study
4. Well defined student outcomes
5. Well defined teacher outcomes
6. Well defined institutional outcomes

A framework for UDL evaluation cannot look at these as linear elements that can be developed in isolation from one another. Instead, the framework must allow each of these to inform the other in the development and implementation of the evaluation. Each of these elements generates a focus point with which to inform and shape the others. If each of these is a heading, each of the others are subheadings for every other category.

The first of the six elements above offers an example. In considering the ways in which the principles of UDL (multiple means of representation, expression, and engagement) are implemented, a UDL project needs to look at how those concepts connect to other theories of learning, how these elements relate to understandings of how the brain processes information, what specific student and teacher outcomes that the implementation seeks to make, and how the institution will support the implementation. Similar relationships exist for each of the six categories.

Tables 2a through 2f show how these relationships work in forming the basis of an evaluation's logic model. As these tables suggest, it is within the intersection of these topics that an evaluation can determine how a UDL implementation is effective for students, teachers, and institutions. Completing these tables will allow an evaluator to determine whether the project is truly meeting UDL aims and what impact the project will have on students, teachers, and institutions.

Table 2a Connection to the Principles of UDL

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to theories of learning (i.e., brain research)	How does the implementation provide evidence that the three UDL principles are being employed in a way to impact the three brain networks?		
Relation to larger fields of study	On which prior studies of UDL does this implementation rest?		
Well defined student outcomes	Do the measures of student learning assess whether students have benefited from having curricula and pedagogy that addresses each UDL principle?		
Well defined teacher outcomes	What are teachers' understanding of and ability to apply UDL principles at the beginning and end of the implementation?		
Well defined institutional outcomes	How does the institution see UDL principles as an extension and expression of its core mission?		

Table 2b Connection to theories of learning (i.e., brain research)

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to the principles of UDL	How does the implementation engage all three brain networks?		
Relation to larger fields of study	On which prior studies of neuroscience does this implementation rest?		
Well defined student outcomes	How do the measures of student learning assess which of the three brain networks that the implementation addresses?		
Well defined teacher outcomes	What are teachers' understanding of and ability to apply brain research at the beginning and end of the implementation?		
Well defined institutional outcomes	Is there an institutional effort to disseminate knowledge on brain research?		

Table 2c Relation to larger fields of study

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to the principles of UDL	What research supports how this implementation addresses each principle?		
Connection to theories of learning (i.e., brain research)	On which prior studies of cognition and learning does this implementation rest?		
Well defined student outcomes	What have prior studies suggested about what this project can expect students to learn within this implementation?		
Well defined teacher outcomes	What are teachers' understanding of key teaching and learning theories at the beginning and end of the implementation?		
Well defined institutional outcomes	Are members of the institution being encouraged and supported in finding connections between their expertise and UDL research?		

Table 2d Well defined student outcomes

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to the principles of UDL	How do the outcomes assess the impact of each principle on students?		
Connection to theories of learning (i.e., brain research)	What evidence does this implementation have of students' cognitive growth?		
Relation to larger fields of study	Are there standardized or normed measures that can gauge the effectiveness of this implementation on student learning?		
Well defined teacher outcomes	What are teachers' expectations for student learning at the beginning and end of the implementation?		
Well defined institutional outcomes	How will the institution incorporate UDL concepts into its student outcomes?		

Table 2e Well defined teacher outcomes

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to the principles of UDL	How do the outcomes assess the impact of each principle on teacher practice?		
Connection to theories of learning (i.e., brain research)	What evidence does this implementation have of teachers' cognitive growth?		
Relation to larger fields of study	Are there existing measures that can gauge the impact of this implementation on teacher practice?		
Well defined student outcomes	What are teachers' beginning student expectations and what are teachers' ending student expectations?		
Well defined institutional outcomes	How does the institution's professional development process support teachers' adoption of UDL?		

Table 2f Well defined institutional outcomes

Design Category	Specific Question	Application to Project	Instrument/Source of Information
Connection to the principles of UDL	Do the outcomes assess the impact of each principle on institutional practices?		
Connection to theories of learning (i.e., brain research)	What evidence does this implementation have of the institutions' cultural changes?		
Relation to larger fields of study	Are there existing measures that can gauge the effectiveness of this implementation on institutional change?		
Well defined student outcomes	What is the institutions' beginning student expectations and what is the institutions' ending student expectations?		
Well defined teacher outcomes	What are institutions' expectations for student learning at the beginning and end of the implementation?		

After completing these initial tables, the evaluator can use this as the starting point to assist the people who are creating the UDL implementation to develop any key questions, criteria, standards, protocols, and instruments that will yield useful information around the project's aims within this framework. By overlaying an evaluation process onto these six elements, the evaluator provides both formative and summative information which help shape a UDL project and determines its effectiveness

The paucity of large-scale UDL projects which would generate reliability and external validity measures in the literature, and the small scale of most UDL projects, demand an approach to any evaluation that will generate internal validity. Results must be triangulated through multiple instruments and multiple sources of data to provide details

that will look at all of the intended impacts of UDL. Therefore, such an evaluation will, by necessity, use a multi-dimensional approach to look at these six elements thoroughly.

For example, determining student learning outcomes requires using measures of student progress like curriculum-based measures (CBM); however, looking at CMB outcomes alone does not determine which activities within UDL projects generated the change in students' skills and whether the implementation could have even bigger impacts. In order to accomplish that more complex assessment, the evaluation needs to include both CMB and additional measures that assess students' experience. Observations of students in the learning process, interviews with students, and questionnaire data can all triangulate CMB data.

The questions of Tables 2a through 2f must be tied together through multiple measures that allow for such triangulation to support the internal validity of the results in meeting the complexity addressed by UDL.