Session 3
Building on What We Know:
Cognitive Processing

Reading Response

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As I plan to teach students from diverse backgrounds living in urban areas in the East Bay in and near Oakland, California, identifying their strengths, preferences, prior knowledge and experiences will be essential for engaging them. The primarily black and hispanic students at the urban Oakland school where I volunteer have already questioned the ability of any white person to identify with their problems, especially one who, like me, grew up in a homogeneously white rural area in the midwest.

Several of the students have also been diagnosed with learning disabilities. Mainstreaming these students has stimulated the development of compassion, patience and instructional skills among their student colleagues with more, even exceptional, abilities. Still, as these disabilities have only been partially addressed by the small and dedicated staff at this private school, students with disabilities frequently disrupt learning for everyone.

As a volunteer interacting with the students twice a week both in class and in an after school program, I have made limited progress in identifying student strengths and preferences and have been totally reliant on brief casual conversations with teachers and longer conversations with the school's special education consultant to identify their prior knowledge and experiences. To succeed with students like these, and to better support all students in their classes, I need to systematically identify the strengths, preferences, prior knowledge and experiences these students bring to my classroom - not another teacher's classroom with a different teaching style and a different subject.

I agree with the reading that "it is important for teachers to have skills and tools for observing and cataloging the kinds of tasks with which students seem to have difficulty, as well as those with which they have greater success, as a guide to curriculum planning and instructional adaptations." I was unable to find one tool, a general checklist for common signs of learning disabilities at different ages referred to in the now 13-year old Darling-Hammond program. [Darling-Hammond, 2003] Rather I found many

specialized checklists for individual diseases. (Understood Team, 2016) The checklists are still issued by NCLD (National Center for Learning Disabilities) as the report indicated, but as part of the on-line resource Understood.org. In 2014 NCLD and 14 other organizations founded Understood.org, which NCLD operates.

Although the general theories and methods for improving cognitive processing presented by Darling-Hammond's program will help me address students with learning issues identified by an Understood.org checklist, I am concerned that more specialized approaches will be needed as well. In the schools I plan to serve, I expect only limited support in diagnosing learning disabilities from specialized education teachers and school psychologists. Even if adequate help is available for diagnosis, I may still find my classrooms are more welcoming to all if I adopt my instructional methods to better support students with their specific disabilities, which could include ADHD (Attention-Deficit Hyperactivity Disorder), dyslexia, dyscalculia, dysgraphia, dyspraxia, executive functioning issues, auditory processing disorder …. (Understood Team, 2016).

As I recognize that my rural midwestern culture made major contributions to my strengths, preferences, knowledge and experiences that allowed my teachers to engage me, I need to become familiar with the cultures of my students. I hope that Session 6, The Classroom Mosaic, will provide formal tools for accessing these traits of students.

My informal tools for characterizing student preferences and experiences work well for most individual students but are too time consuming to apply to large numbers of students. These tools including asking students, teachers and parents about unique cultural icons (folk tales, foods, heroes, holidays, stars, attitudes [toward achievers, equitable treatment, government officials, police, military, and civic leaders]) and affirmative action and goals. My informal tools are less useful when the students are young and the parents speak a language which no one other than their children speak in the school, such as Amharic, a common language in Ethiopia. In this case, my tools provide primarily a single child's view of cultural preferences and attitudes which emerge from the shared experiences of generations.

Session 3 makes it clear that cognitive processing requires communication of both facts and concepts. Communication requires engagement. Integrated projects engage more than disjointed exercises and make meaning more meaningful and the transfer of understanding and proficiency more likely to students of any ability. This view of engagement is consistent with the views of Dr. Darling-Hammond and the many studies she cites that "the more learning is meaningful to the individual, the greater the likelihood of its acquisition, retrieval and later use."

I was encouraged to see that the two videos featured integrated projects that spanned the K - 12 range, one for first grade and the other for high school. Like these lessons, my engineering projects, for example building a thermal treatment facility for radioactive and hazardous waste, all integrated multisensory input from a variety of academic disciplines and trades and provided multisensory input that was "visual, aural, kinesthetic, linguistic, mathematical, social, role play and simulation."

In the first video segment, Ms. Fe MacLean's first grade class also provided an integrated lesson closely connected to the world outside the school, the museum trip. Like an engineering project, their animal habitat project allowed them to first predict what their end product, the animal's habitat in the zoo, would be like, and then update and verify their prediction during their visit. Her lesson also used multi-sensory input, including visual, aural, linguistic, social and simulation (the habitat book and animal environments in the zoo).

In the third video segment, Ms. Sandie Gillman and Ms. Kris Hall Neustadter, inspired me with their connection of learning algebra to the historical experience of wagon trains on the Oberlin Trail. I have long been frustrated by the dry, disjointed drills that have long characterized math books and classes. Here, like engineering projects, was a project, predicting logistical requirements of a wagon train, that had a strong connection to the real world - not just the historical world of the Oberlin trail, but also to today's logistical operations of the U.S. Army in the Middle East, especially water supply. For me, this was the first evidence that math books could be as tightly connected to the real world, and potentially as engaging, as today's best classroom science books are.

In summary, teachers can support student understanding by organizing the learning into multi-disciplinary projects that closely tie learning activities to real world applications. Such projects can be meaningful to more students by providing them with a social context providing "more opportunities to share tasks, receive guidance from others, and perform for an audience.

References

Darling-Hammond et al. (2003). *The Learning Classroom: Theory Into Practice*. Detroit: Annenberg Media.

The Understood Team (accessed May 2016). Signs and Symptoms of Learning and Attention Issues, website.