

DISTANCE LEARNING and ADOLESCENT DUAL LANGUAGE LEARNING

COVID 19

Currently, the raging debate among educators and families centers around when and how to open schools given the unprecedented public health challenges facing the education community throughout the United States. Sensing a financial opportunity, major education technology companies, are rushing to fill the distance-learning void without a thorough understanding how students, any age and demographic background, learn. What is considered innovative 'teaching and learning' by online content providers is not necessarily advantageous for students, particularly dual language learners, if education research regarding how the brain develops languages, processes information acquires knowledge and comprehends is overlooked or ignored.

RESEARCH

Empirical language and cognitive neuroscience findings indicate that instruction which primarily utilizes "technology or 'screen time' has ZERO cognitive impact on learning; while cognition increases 700% with in-person, face-to-face interaction in children 6 mos. to 8 yrs. old. (1). In fact, researchers examining how children's television programming influences cognition, discovered that only four kids' programs, Sesame Street, Clifford, Dora and Blues Clues have a positive impact on learning. (2)

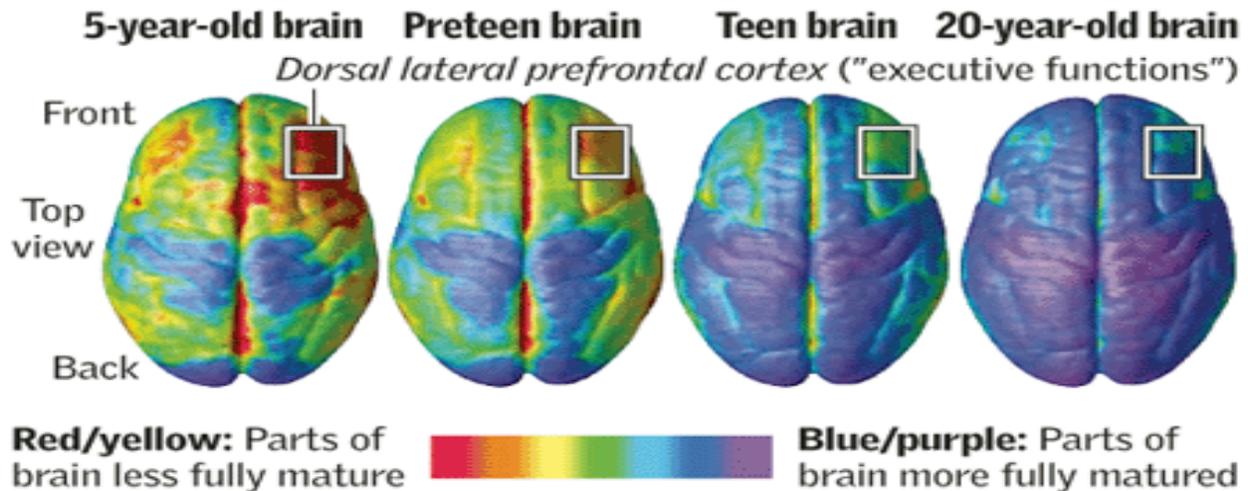
Adolescent learners encounter a similar predicament. Students, ages 11-17, are in the throes of fundamental cognitive and emotional change as they enter an important neurological phase that prepares them for adulthood. This age group thrives on social interaction with adults, peers, siblings and other family members. Dual language learners in particular depend on face-to-face, small and whole group visual, aural, oral and kinesthetic stimulation to not only develop complex multiple language skills but also comprehend language nuances and its meaning within varied contexts. Highly verbal, interactive academic information-sharing hubs enhance all aspects of learning and provide an opportunity to simulate and model real world situations which better prepare students for college and workforce success.

Neuroscience and Adolescent Learners

The onset of puberty ushers in a new or second phase of brain development that is often unpredictable and chaotic for adolescent learners. During this period, the brain is busy restructuring or 'pruning' its neural connectors in preparation for future complicated cognitive demands. At the same time rapid 'neural pruning' is underway, increased hormonal activity catapults young learners into unknown emotional and behavioral territory often leaving them feeling confused and vulnerable. Because the area of the brain, the pre-frontal cortex, which oversees self-control, planning, inhibiting risk behavior, problem-solving, multi-tasking, decision-making, and self and social awareness, is still maturing, learners have a heightened biological and neurological need to acquire these skills within clearly defined peer to peer and group social settings.

Judgment last to develop

The area of the brain that controls "executive functions" — including weighing long-term consequences and controlling impulses — is among the last to fully mature. Brain development from childhood to adulthood:



(3) McKnight, Michael at 4 Directions Seminar 2020

CHALLENGE

Years of neuro-education research highlight and reinforce the universality of brain formation pertaining to language, cognition and social-emotional development for most learners. Of course, there are anomalies as no one instructional approach is appropriate for every student. However, certain scientific evidence-based and empirical core principles do apply when reimagining and designing an effective 'brain-based' education delivery system for all students. Specifically, adolescent dual language learners need additional support, focused attention and adherence to core neuro-processing cognitive and linguistic principles, especially during cataclysmic change.

Core Principles for Adolescent Dual Language Learning

Core principles, based on education neuroscience findings, which identify 'How the Adolescent Brain Learns' include the following characteristics:

CORE PRINCIPLES FOR ADOLESCENT DLL INSTRUCTION

- ▶ Inclusion
- ▶ Interaction
- ▶ Intellectual Risk Taking
- ▶ Encouragement
- ▶ Exploration
- ▶ Acceptance
- ▶ Safe Learning Environment
- ▶ Private Feedback
- ▶ Opportunity to Make Mistakes
- ▶ Diversity
- ▶ Stability
- ▶ Predictability
- ▶ High Expectations
- ▶ Ownership
- ▶ Student Choice
- ▶ Free Expression
- ▶ Modeling
- ▶ Quality Communication
- ▶ Social –Emotional Support
- ▶ Equity

These fundamental core principles are foundational to building a positive, productive instructional environment for DLLs, regardless of circumstance. At the same time, DLLs benefit from other key factors integrated into the teaching and learning process.

KEY INSTRUCTIONAL FACTORS

ED NEURO INSTRUCTIONAL STRATEGIES

- ▶ Direct, Explicit Instruction
- ▶ Social Interaction
- ▶ Highly Verbal, Communicative Lessons
- ▶ Teach the Process of Learning
- ▶ Release the Process: I DO – WE DO – YOU DO
- ▶ Organize Multi-Level Learning Groups
- ▶ Establish Clear Goals
- ▶ Assess and Monitor Progress
- ▶ Engage Families in the Learning Process
- ▶ Focus on Language, Culture, Experiences to Inform Academic Content Instruction
- ▶ Use Technology as a Supplement to teach how to learn, not what a student needs to know
- ▶ Use Multi-Modal tools for oral, aural, visual, writing and kinesthetic learning
- ▶ Focus on student 'zone of proximal development'
- ▶ Transition to 'competency-based learning' not seat time
- ▶ Use Technology sparingly

SOLUTIONS

Given the unpredictable health crisis, the education community and tech companies which offer online distance learning solutions is faced with a dilemma. How can DLL neurological, developmental and linguistic needs be met, using only online learning programs as the primary instructional tools? Frankly, they cannot. As Dr. Pat Kuhl states, “in-person social emotional interaction is the ‘gateway to learning’”. (4) Clearly, technology cannot replace the expertise, talent and creativity of well-informed educators who organize instruction based on research. However, if teachers are required to use technology as the primary source of instruction then how to balance technology and human interaction for best possible results needs examination.

First and fore-most educators need time, support and the freedom to analyze and explore how the essential education research principles and strategies can be operationalized within more restrictive academic settings, especially if instruction is delivered primarily using social media, online communication systems and web-based academic programs. Integrating the social-emotional aspects of learning with academic content and language forms the basis of learning success for DLLs. Knowing this, then families of all backgrounds, become essential and valuable partners in designing new education delivery systems. Soliciting, parents, siblings and primary care-givers to provide DLL adolescents intentional, social-emotional interaction at home while teachers guide language and content instruction using computer-based programs in non-traditional settings affords the learner an instructional balance which can produce positive results.

We know there is no easy solution which mitigates all the challenges facing Middle School dual language learners during such an intense educational crisis. Online, distance learning alone is not the answer. However, thoughtfully applying the core learning neuro- principles to an instructional approach that relies on technology yet balances in-person interaction may unveil new and exciting educational opportunities. Educators, families, students and tech companies, together, must find a way!

Teach How the Brain Learns!

References

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3. McKnight, M., at 4 Directions Seminar 2020.
4. Kuhl, P., Nation at Hope, Aspen Institute Conference, Jan 2019.