

Building the Bridge Between Neuroscience and Education for Pre-Service and In-Service Teachers to Promote Inclusion for Students With Disabilities

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Background

- Prior to 1975, children with disabilities were excluded from attending public schools. Parents' options were limited: they could either educate their children at home or pay to send them to an institution.

89%

of teachers felt they lacked training to implement inclusion successfully (Hwang & Evans, 2011)

40%

of teachers believe that integrating students with disabilities into the general education environment is realistic (Shady et al., 2013)

4th

Maryland is ranked fourth-highest in the nation for nonpublic separate special education school placements ("Inclusive Education in Maryland," 2003)

- Definitions of inclusion and school-based inclusion practices vary greatly among the states.
- Teachers' lack of knowledge and skills can exclude students from learning.
- Teachers and pre-service teachers are hesitant about providing a successful inclusive experience.
- Teacher preparation programs and school districts are not preparing general education teachers to teach students with disabilities.

Poor-quality teacher prep programs and a lack of meaningful in-service trainings for teachers in the neuroscience of learning and the learner



Teachers unable to meet the needs of students with disabilities in the inclusive environment



Students with disabilities are moved to a more restrictive environment

The Promise of Neuroscience

The field of neuroeducation involves scientists, psychologists and educators coming together to apply research on learning and development in order to improve teaching methods and curricula.

Incorporating the neuroscience of learning and the learner into the field of education will greatly "enhance [teachers'] understanding of how students learn, how this learning can be optimally fostered, and how research may be brought to bear on educational problems" (Ansari et al., 2011).

With neuroeducation:

- Collaborative partnerships form among experts in neuropsychology and education.
- The findings of neuroscience make teaching practices more effective.
- Neuromyths are demystified.
- Teachers are more successful and feel more skilled in their profession when they understand how the brain works.
- Improved educational outcomes are reported for students.

Improving Teacher Preparation and In-Service Programs

- School systems are responsible for adhering to federal and state laws and regulations, and for improving instruction for students with disabilities.

"The best teachers never assume they have arrived, but constantly strive to refine their practice" (Whitaker et al., 2007).

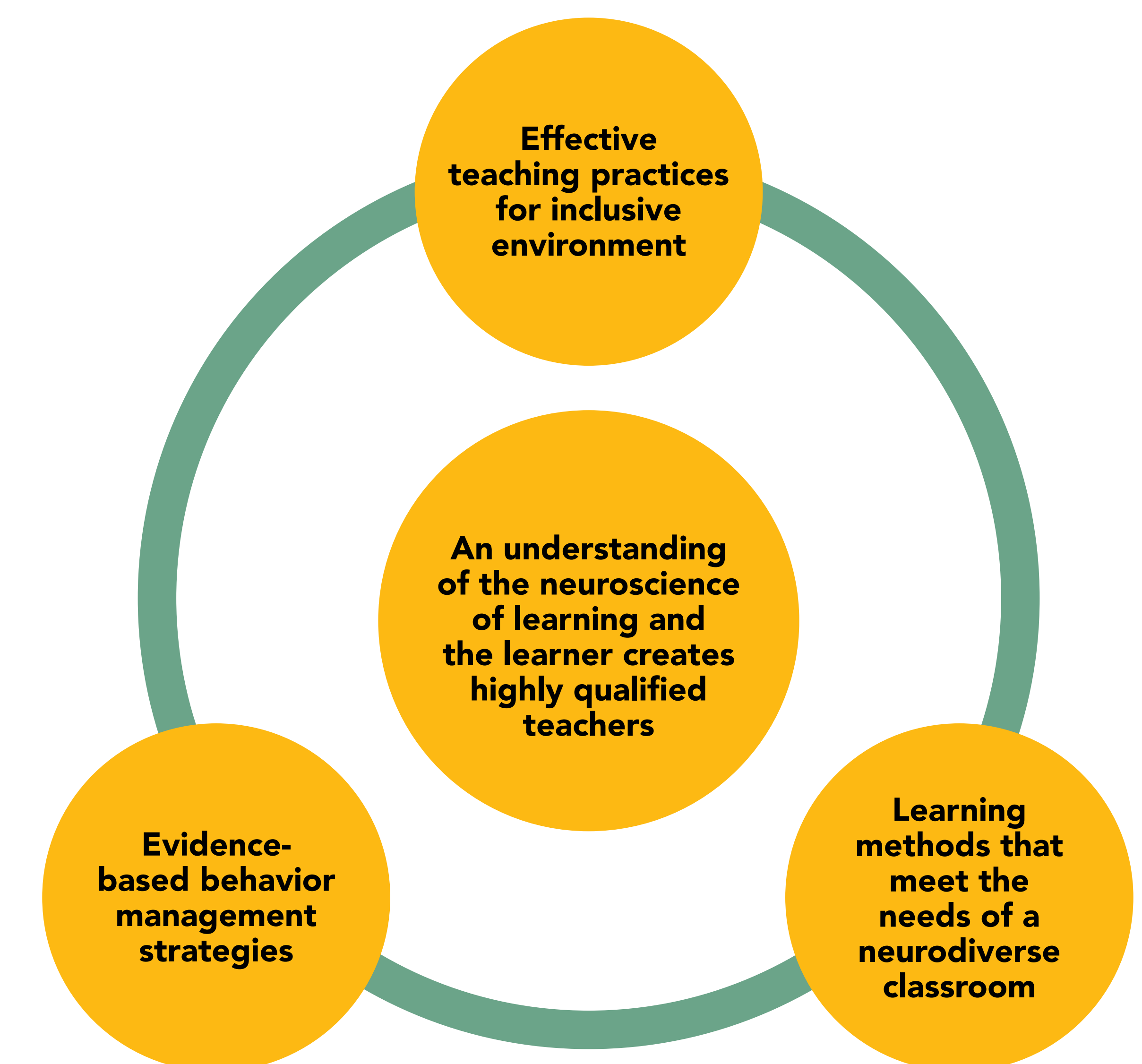
- Reforms in educational policy are critical for the implementation of effective inclusive practices.
- Restructuring teacher preparation programs and providing quality professional development and consultative support to in-service educators will provide educators with the knowledge and skillset needed to promote inclusive practices.

Recommendations for Teacher Preparation Programs

- Improve regulations to strengthen teacher preparation programs.
- Create programs that have specialized accreditation and rigorous exit requirements.
- Move away from specialization and compartmentalization to more universal teaching approaches that close the general education and special education divide (Robinson & West, 2015).
- Promote the inclusion of students with disabilities as a common and achievable mindset and educational practice.
- Restructure coursework using a conceptual framework that provides intensive instruction in neuroscience and brain development in order to prepare pre-service teachers.

Recommendations for In-Service Programs for Educators

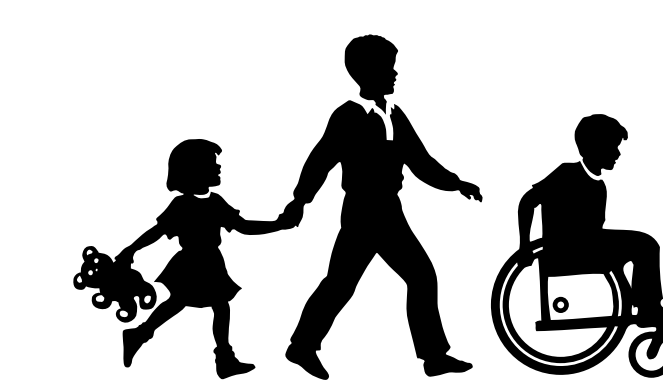
- Develop focus groups tasked with brainstorming ways to bridge neuroscience and education.
- Make use of web-based professional development services.
- Encourage expert teachers to serve as model teachers and coaches.
- Offer Maryland State Department of Education credits for continuing education coursework.
- Hire education consultants from local institutions such as the Center for Innovation and Leadership in Special Education (CILSE) at Kennedy Krieger Institute.
- Use evaluation and accountability systems when implementing inclusive practices.
- Make cutting-edge research and resources more accessible to educators through blogs and infographics.



- Start a journal club among district resource staff members who support teachers.
- Form collaborative partnerships among professionals who develop and deliver in-service professional development opportunities.
- Replicate successful programs like CILSE that incorporate the neuroscience of learning and the learner, principles of behavior change, educational law, research methods, and evidence-based practice.

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