What We Know About What We Do

THE EVIDENCE BEHIND MONTESSORI PRACTICE

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Borgman, C., Shenk-Evans, W., Monnier, D., Kadambi, V., & Lillard, A.S. (2024). What we know about what we do: The evidence behind Montessori practice. The Montessori Public Policy Initiative. https://montessoriadvocacy.org/white-

As part of MPPI's 2015 inaugural efforts to establish a unified voice for Montessori policy advocacy, the MPPI Council developed the foundational MPPI Montessori Essentials. This concise list outlines the core elements that define a high-fidelity Montessori program, providing a clear framework for policymakers to understand what Montessori is, and why Montessori advocates call for specific reforms that promote the growth and accessibility of high-quality Montessori education.

The Montessori Essentials were created in collaboration with MPPI's founding organizations, the American Montessori Society and the Association Montessori Internationale – USA, Montessori pedagogical standard bearers.

To further the impact of the Essentials, MPPI has partnered with UVA's Montessori Science Program to release the following series of literature reviews. These reviews compile and evaluate the evidence from wide bodies of educational, developmental, and psychological research to establish what is known about specific elements of Montessori practice. In doing so, they provide evidence in support of the MPPI Montessori Essentials and offer specific policy recommendations that align with current data, reinforcing the case for high-fidelity Montessori education. These user-friendly one-pagers can be used individually or combined into a longer publication titled *What We Know About What We Do: The Evidence Behind Montessori Practice.*

Assessment

Montessori Practice

In fully implemented Montessori classrooms, children's development is assessed on a broad and holistic range of measures including general wellbeing, academic progress, physical and social-emotional development, and executive function.[1, 2] This is accomplished through a diverse toolkit of ongoing, embedded, formative assessment practices involving rigorous teacher observation, work sample evaluation, detailed record keeping, and other formative measures. Information gleaned from these sources is then applied, in real time, to adapt individualized instruction to each student's needs.[3] Standardized tests, when implemented, should be minimally disruptive to classrooms, and contextualized as just one data source amongst multiple measures of learning and development.[4]

What the Research Says

This approach to assessment is thoroughly aligned with a robust body of research highlighting the effectiveness of assessment *for* learning (AfL), in contrast to assessment *of* learning. Here, researchers critique the strong contemporary emphasis on the summative and evaluative functions of assessment, and the ineffectiveness of tools and practices designed for those functions to serve more crucial needs—namely, the improvement of teaching and learning. **These researchers insist a shift is needed towards assessment designed first and foremost to *advance,* rather than simply *evaluate,* learning.**

AfL is embedded in, and integrated with, daily classroom activities. As a result, instruction becomes contingent upon, and *immediately* adaptive to, the developing understandings and current learning needs of individual students. Five key strategies of AfL have been identified by researchers, all of which are core elements of Montessori practice. They are:

- communicating clear pathways to competency,
- providing learning tasks that produce evidence of understanding,
- using specific, actionable feedback to advance learning,
- leveraging peers as instructional resources, and
- fostering student ownership of learning.[5]

When implemented in this way, assessment serves a truly "formative" purpose and can provide *substantial* educational benefits. In fact, a seminal review of over 250 studies found that ongoing, embedded, formative classroom assessment provides unprecedented benefits to student achievement, roughly doubling the typical student's year-over-year growth.[6, 7] Furthermore, the greatest benefits from AfL strategies have been found amongst historically marginalized and special needs students.[8]

The two broad goals of the academic testing and accountability movement have been to improve academic achievement overall, and to eliminate outcome inequities for students from historically marginalized and low-income populations.[9] However, prevailing accountability-based assessment practices, which focus primarily on measuring and documenting academic achievement, have been shown to "limit, and even reduce, student learning."[10] More than two decades of federally mandated standardized testing have rendered little to no evidence of advancing the policy goals stated above.[11, 12]

With regards to improving student outcomes overall, evidence is evenly mixed. Some researchers cite a notable positive correlation between the enactment of accountability measures and student test performance[13, 14, 15] while others find only a weak relationship exclusive to some subject

areas, grade-levels, and student subgroups.[16] Still others identify data discrepancies pronounced enough to prevent the drawing of conclusions.[17] Findings are clear, however, regarding the second goal of equalizing student outcomes across racial and socio-economic groups. Unfortunately, studies consistently reveal that accountability measures have not succeeded in narrowing learning gaps between black and white students and may even have widened them.[10, 11, 12]

> "Researchers insist a shift is needed towards assessment designed first and foremost to advance, rather than just evaluate, learning."

Of further concern is research that highlights the many *unintended,* negative impacts of accountability-centered assessment. Studies have found that in response to testing pressures, teachers make observable and often substantial modifications to their practice. These include narrowing the curriculum to focus on tested subjects, reducing the complexity and challenge of instructional activities, increasing teacher-led activities while decreasing student-lead, small-group, and collaborative work, and reallocating instructional time to explicit test preparation.[18] All of these modifications run contrary to recommendations for best instructional practice, and all have been documented within public Montessori schools.[19, 20, 21] They are also known to occur disproportionately within high poverty schools which experience increased levels of accountability pressure.[22]

To illustrate, public Montessori schools are generally required to adhere to state and district mandates that specify the format, content, and administration schedule of academic standardized tests. No existing standardized tools are well aligned with the Montessori model, and the resulting friction forces instructional and curricular modifications that are contrary to both research and pedagogy. For instance:

- The Montessori curriculum is broad and exploratory, allowing ample opportunity for student inquiry and interest to guide learning (see "Student Autonomy and Choice"), but is vulnerable to narrowing in response to the tightly focused content of tests.
- Montessori children remain in the same mixed-age classrooms for three years, meeting benchmarks for knowledge and skills across that period, but at paces individualized according to student needs (see "Mixed-Age Classrooms"). Tested standards, in contrast, are rigidly linear and grade level based, which discourages the differentiated instruction supported by research and theory.
- Montessori learning prior to about 4th grade takes place largely through hands-on work with manipulative materials, a modality that, when carefully designed and implemented, can lead to strong conceptual understanding and transfer.[23] But research shows that, in response to external pressures, teachers may shift instruction away from the materials to better align classroom activities with the format of standardized tests.[14, 17]

In conclusion, high fidelity, publicly funded Montessori programming is a potential equity strategy that provides access to evidence-based, developmentally appropriate learning experiences for students from historically marginalized backgrounds. In fact, most public school Montessori programs are Title I schools, and the majority of children they serve are low-income and/or racially minoritized.[24] Current policy, though, requires that those learning experiences be assessed predominantly via tools that may document learning, but do not facilitate it. As a result, those Montessori classrooms most likely to enroll underserved children experience increased pressure to alter instruction in ways that dilute the beneficial impacts of the approach.

Recommendation

Because assessment mandates vary greatly between states and districts, there is no one-size-fits-all policy adjustment that will satisfy the needs of all parties. **Therefore, we recommend that policymakers collaborate closely with Montessori school leaders (as well as with MPPI and state Montessori advocates) to co-author flexible, adaptable solutions to existing frictions between policy and practice.** Such solutions should enable Montessori schools to prioritize their daily classroom strategies of ongoing, embedded, formative assessment, and to contextualize standardized test scores as just one data source within a holistic portfolio of child outcomes. Examples could include (but are not limited to): establishment of benchmark schedules aligned with the Montessori 3-year cycle; collaboration between school and district administration to align curriculum, standards, and assessments; or the co-development of "look fors" that help observers recognize assessment practices embedded within Montessori instruction.

ENDNOTES

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