Evaluating an Assessment Tool for Montessori Fidelity: Preliminary Findings II
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Introduction
Despite an increase in Montessori research in recent years, rigorous evidence of the method's effectiveness is still extremely limited. Robust research is needed to establish a strong evidence base for the method. A high quality, efficient fidelity instrument would potentially improve the quality of future Montessori research.

Background
To draw conclusions Montessori researchers must establish the authenticity of the environments they study. Doing so is essential given research showing higher fidelity programs are associated with better student outcomes. Montessori fidelity in research typically is established using in-person observations. For most projects, a less labor-intensive method would be valuable. While Montessori organizations agree on the essential elements for successful programs, no widely accepted instrument exists for assessing these elements. This questionnaire represents the first step in creating such an instrument.

The purpose of this study was to examine the suitability of an instrument. To draw conclusions Montessori researchers must establish the authenticity of the environments they study. Doing so is essential given research showing higher fidelity programs are associated with better student outcomes.

Research Questions
1. How consistent are teachers' reported practices with items deemed both critical as well as detrimental by Montessori experts to high fidelity implementation?
2. Is there expert consensus on most practices? If not, how consistent are teachers' practices with items lacking expert consensus?

Methods

Participants

<table>
<thead>
<tr>
<th>Methods</th>
<th>Early Childhood</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert Panelists</td>
<td>N = 30</td>
<td>N = 33</td>
</tr>
<tr>
<td>Montessori Teachers</td>
<td>N = 134</td>
<td>N = 117</td>
</tr>
<tr>
<td>AMS Credentialed</td>
<td>67%</td>
<td>77%</td>
</tr>
<tr>
<td>AMI Credentialed</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>MA or above</td>
<td>45%</td>
<td>93%</td>
</tr>
<tr>
<td>Public School</td>
<td>26%</td>
<td>53%</td>
</tr>
</tbody>
</table>

Procedure
Montessori expert panelist electronically sorted survey items into 5 categories: Critical, Very important, Nice to have, Not important/possibly detrimental, Detrimental. Survey participants completed the Teacher Questionnaire of Classroom Practices (TQ) and their responses were ranked according to perceived importance. Teacher responses were then compared to those of Montessori expert panelists.

Instrument
1. Survey Questions: Based on Montessori/Montessori expert writings and prior Montessori research
2. Feedback from experienced psychometricians
3. Items: 39 EC, 48 EL rated on a 4-pt Likert scale
4. Administered through Qualtrics survey platform; 15-20 minutes to complete

Results

Practices Deem Critical to High Fidelity Montessori

<table>
<thead>
<tr>
<th>Practices</th>
<th>Early Childhood</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Year Mixed-Age Grouping</td>
<td>Strongly agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Observation For Planning</td>
<td>Strongly agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>3-Hour Work Period</td>
<td>Strongly agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Critical, Very important Lead Teacher*</td>
<td>Strongly agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

*Reported

Practices Deem Detrimental to High Fidelity Montessori

<table>
<thead>
<tr>
<th>Practices</th>
<th>Early Childhood</th>
<th>Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privileges Withheld</td>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Use of Workbooksheets</td>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Materials Introduced at Circle</td>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Good Behavior Pointed Out</td>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>All Children Attend Circle</td>
<td>Strongly disagree</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>

Note: The early childhood item “28-35 children in each classroom” lacked expert consensus across all 5 levels (ranging from critical to detrimental), and was not included as an agreement question in the survey. Instead, teachers were asked for their class size. The average class size was 22 children (sd=5.210), with 88% indicating there were less than 28 children typically in their classrooms.

Discussion
Teachers participating in this pilot study reported a range of agreement on questions about their classroom practices deemed both critical and detrimental to high fidelity Montessori. By the panel of experts selected for this project. Of the critical practices, the 3-hour work period was least consistent for both age groups. Of the practices considered detrimental, all EC children attending circle time and elementary children completing required work before choosing their own showed least consistency.

In the areas where experts lacked consensus, teacher practices were fairly consistent at the early childhood level. At the elementary level, however, teachers were also inconsistent in their practices except in the area of implementing problem solving strategies to address off-task behavior. Lack of expert consensus on the number of children per classroom and the small percentage of teachers (13%) who reported meeting this goal suggests that there are either obstacles to implementation or disagreement on the benefits of this practice.

Future Directions
This instrument is currently being pilot tested with another group of teachers after revisions based on initial Rasch analysis. Continued analysis with experts in the field and psychometricians from the national research working group and KU Center for Montessori Research at KU planned before designing a final version for use in research and evaluation projects.

References

Contact: Angela K. Murray, PhD at akmurray@ku.edu

Note:
- *Practices experts classified into 4 categories

1. 3-Hour Work Period
2. Observation For Planning
3. Grade Level Reading Groups
4. Subject Emphasized Each Day
5. Materials Introduced at Circle
6. Full Set of Materials Available
7. May Combine Sensorial
8. All Children Decide Where to Work
9. Children Decide Where to Work
10. Children Decide Workplaces
11. Work With Others or Alone
12. Work Before Choosing
13. Follow-Ups for Every Lesson
14. Children are Given Due Dates
15. Problem Solving for Off-Task
16. Small Groups “Go Out”