A Reexamination of Implementation Practices in Montessori Early Childhood Education
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Introduction
Inconsistencies in Montessori implementation make it difficult to assess outcomes. While there is consensus on key components, it is unclear how reliably Montessori classrooms adhere to these criteria.

This study replicates an earlier investigation (Daoust, 2004) and uses cluster analysis to determine if similar groups of Montessori early childhood educators emerge. Specifically, we explored if a larger, more diverse sample of teachers showed greater fidelity.

Methods
In 2004 66 Montessori EC teachers were interviewed about their practices. Analysis revealed 4 subgroups:

Results
Confirmatory Factor Analysis
Confirmatory Factor Analysis (CFA) reported elsewhere revealed three constructs within the 18 practices items retained for analysis: Freedom, structure and curriculum (Murray, Chen, Dauost, & Amos, 2019). Composite scores were created for each of the three constructs.

Construct Definitions
Structure
Observation: used for daily lesson planning
Children give lessons to one another
Children’s activities recorded each day
3-hour uninterrupted work period
Lessons mostly given to individuals
Even spread across a 3 yr age span

Curriculum
Full set of Montessori materials is available
Older children do golden bead addition
Classroom books feature realistic stories
Children regularly prepare food
A polishing activity is available
Care for classroom plants
Walk on the line carrying objects
Garden in a designated area

Freedom
May choose to work alone or with others
Determine how long to work with an activity
Choose their work/activities
Decide where they will work

Cluster Plot
K-means cluster analysis was conducted on the three composite variables. The 4 cluster solutions choosing the 4 cluster solution because it yielded the best separation in the Principal Components cluster plot.

Cluster Analysis
K-means cluster analysis was conducted on the three composite variables. We examined 2, 3, 4 and 5 cluster solutions choosing the 4 cluster solution because it yielded the best separation in the Principal Components cluster plot.

Cluster 1
Regulated 20%
Structure
3.63
Curriculum
3.44
Freedom
3.19

Cluster 2
Freedom Focused 22%
Structure
3.12
Curriculum
3.87
Freedom
3.21

Cluster 3
Modified 10%
Structure
2.62
Curriculum
3.53
Freedom
3.64

Cluster 4
Classic 48%
Structure
3.65
Curriculum
3.74
Freedom
3.93

Note: Composite scores range from 1 to 4.

Discussion
Four distinct groups of Montessori early childhood educators emerged based on constructs of structure, curriculum and freedom. They show similarity within groups and differentiation between them.

Regulated: While implementing Montessori structure and curriculum elements at moderately high levels, this group reports lowest levels on freedom. Although some non-Montessori activities are reported and lessons are sometimes given at circle, it is less frequent than Freedom Focused and Modified clusters. Largest proportion of public schools are in this cluster.

Freedom Focused: Among the highest levels of freedom, this group shows lower degrees of curriculum and structure than Classic and Regulated clusters. More lessons are given at circle and non-Montessori activities are available, but work time is relatively long.

Modified: As the smallest group, these teachers are dramatically lower than other clusters on both structure and curriculum while being relatively high on freedom. A high percentage of them give lessons during circle and offer non-Montessori activities. Work times are shorter, fewer lessons are given and they acknowledge a higher degree of modifying Montessori practices.

Classic: The largest group reports the highest levels of implementation across structure, curriculum and freedom. They had the longest work times and largest proportion of small group lessons with much lower rates of giving lessons during circle time or offering non-Montessori activities. This group also has the smallest presence in public schools.

Future Directions
Additional data are being gathered to further validate the Teacher Questionnaire and similar analysis is planned for the elementary level. In addition, a Measure of Montessori Implementation observation tool is being piloted. Correlating the two instruments will further validate their use in future research.

References