

Purpose & Research Question

The purpose of this critical participatory action research study was to document Brooke's work (in collaboration with Diana) to address a perceived learning inequity in her primary classroom by co-developing and implementing a curriculum that is child-directed and focused on sound exploration and music learning.

Research Question: *How is a curriculum of music- and sound-based works developed, implemented and received in a Montessori classroom?*

Perceived Learning Inequity

The perceived inequity was the dominance of a visual- and tactile-approach to Montessori education that favored particular senses or ways of knowing the world. Such a dominance may negatively affect the development of other ways of knowing – specifically expression and understanding in and through sound. We sought to disrupt this inequity by designing, evaluating, modifying, and redesigning a series of shelf works that would be consistent with Montessori principles, selected and used according to the preference of the children, and would encourage learning in and through sound and music.



Participants

Two co-researchers: Brooke (classroom educator) and Diana (parent and music educator) and the children in Brooke's classroom

Method

1. Series of meetings to identify shared concern, public sphere, and ideas for action (Kemmis, McTaggart & Nixon, 2013)
2. Created shelf works
3. Brooke introduced the first work to the children and documented their interactions, each child's name, age, gender, dates of participation, and notes on the child's ability to follow and replicate, perceived interest in the material, completion of the work, accuracy, problems, and comments made by the child.
4. Diana completed in-class observations of the children's interactions with the materials.
5. We met again to analyze the data, make adjustments to the work, and determine implications for future works.
6. Consistent with the cyclical nature of CPAR, we repeated this process with each work we designed.
7. Maintained research journals to record our thoughts about how the curriculum was or was not meeting our goal.



Findings (Reception)

- Works were well-received by the children
 - Non-verbal indicators: smiles, surprised expressions, persistence, focus
 - Verbal indicators: Coded as enjoyment (fun/cool, like/love), pride in work
- All of the children explored the musical works, with particular children returning multiple times
- Signs of audiation
- Some disengagement with Work 2.
- Five comments pertaining to difficulty of Work 4
- Visible increase in confidence among older children in responding to a listening task

Accuracy analysis of Pitch, Directional Slide, Directional Slide with Ramp, Trombone Melody, and Dynamics Data (2018-2019 school year):

Perfect positive, significant ($p < .01$) correlation between scores on Directional Slide and Directional Slide with Ramp – not easier or harder to use the manipulative. No significant correlation between those tasks and others, indicating that different processes or challenges were likely involved between the tasks.

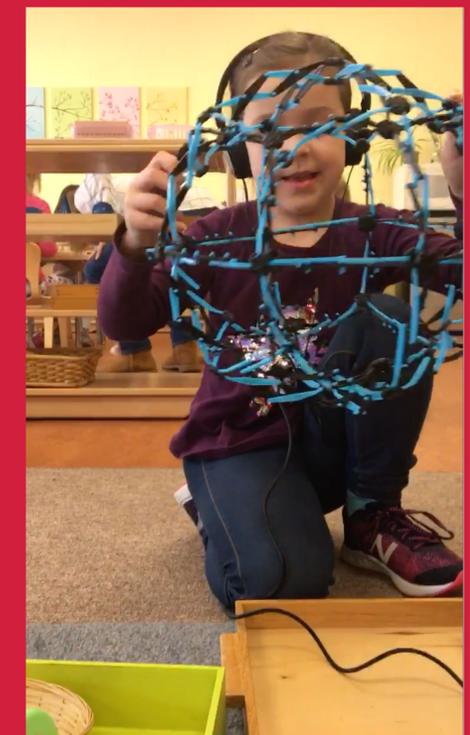
Age was a significant main effect with 5-year-olds ($M=2.43$) and 6-year-olds ($M=2.58$) significantly outperforming 3-year-olds ($M=1.38$).

Findings (Development and Implementation)

Cycle	Dates	Work and Select Conclusions
1	March 13 – August 23, 2017	Identification of shared concern, public sphere, creation of list of works and initial works
2	August 23, 2017 – December 6, 2017	Implementation of first work, Identification of technological issues, discussion regarding low volume on MP3 players, added verbal cues (start/stop) to recordings
3	December 6, 2017 – January 30, 2018	Implementation of second work, brainstorming possible solutions to technological problems, identifying possible partners to assist with creation of new device
4	January 30, 2018 – July 31, 2018	Identification and ordering of works for 2018-2019, note a need for headphone splitter and second pair to allow for multiple works to be used, creation of Hoberman Sphere work, creation of new device with technology partner
5	July 31 – October 15, 2018	Identification of need for retractable cord headphones, implementation of Work 1 of 2018, review of data collection processes
6	October 9, 2018 – January 10, 2019	Discussion regarding tempo of Kangaroo work, determine how to introduce work with embodied learning, identify a more tactile manipulative for slide work in order to sustain interest
7	January 10, 2019 – March 15, 2019	Revision of schedule of work implementation to respond to children's interest, discussion of initial research findings

Works

1. Pitch Height
2. Pitch Direction with 2-dimensional manipulative
3. Pitch Direction with 3-dimensional manipulative
4. Melodic Direction (Kangaroo)
5. Melodic Direction (Trombone melodies)
6. Dynamics



Looking ahead: Works on tempo, incorporating movement, affective response