



An Explorational Study of Scientific Observation for Assessment via Dispositions and Dispositions in Action: A Survey of Montessori Teachers

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Background

Scientific observation for assessment (SOFA), using data obtained through scientific observation (SO) to assess formative and summative outcomes for the purpose of informing future interactions, was an early and integral aspect of the Montessori orientation to education.

- A principal characteristic of Montessori pedagogy is the directive to “follow the child as his leader” (Montessori, 1970, p. 7).

The researcher viewed SO as a teacher disposition and utilized dispositions in action (DIA) as a conceptual framework.

- Dr. Montessori used the idea of spiritual transformation which may be construed as the process overarching the development of all dispositions required by MTs.

Classroom observation is a responsibility of Montessori Teachers (MTs). Little is known about how MTs engage in SOFA. This study increased an understanding of SOFA in MT practice by exploring SO as a disposition and DIA among MTs with an AMI teacher credential for students ages 3-6 years in the United States.

Literature

Data-informed practice

- Evidence for the use of observation for assessment, i.e., to gather data, in the classroom as typical across PK-6 settings
- The professional development for data use of consumers at different levels within the education system remains a challenge
- Micro-process studies in education settings elucidate the concept of “data use practice”

Scientific Observation

- SO is applied in daily practice of PK-6 educators, primarily in the context of literacy, mathematics, and sciences
- SO is used habitually as an authentic method to collect data for analysis
- SO for assessment; considered normal in ECE and is an alternative in elementary education

Teacher Dispositions

- 30+ years developing tools to identify and infuse dispositions in preservice and professional development teacher preparation curriculum
- Evidence that dispositions may be developed over time
- Dispositions connected to action for at least 100 years in literature
- DIA framework

Research Questions

Primary question:

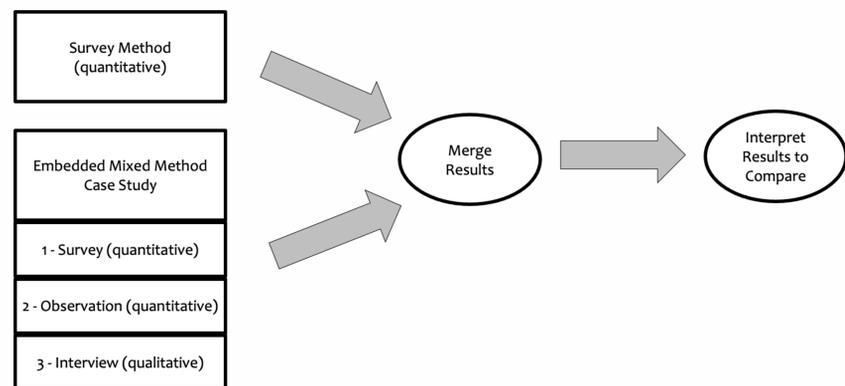
What do MTs with an AMI teacher credential for students ages 3-6 years in the United States report regarding the application of SOFA?

SOFA was viewed in light of SO as a disposition and DIA. Therefore, the following sub-questions guided this study:

1. What do MTs with an AMI teacher credential for students ages 3-6 years in the United States report regarding SO as a disposition?
2. What do MTs with an AMI teacher credential for students ages 3-6 years in the United States report regarding SO as a DIA?

Methodology

Phase 1: Data Collection and Analysis



Note. The number indicates the order in which data are collected; survey data viewed after 2 and 3 data collection complete. Adapted from Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, by J. W. Creswell, & J. D. Creswell, 2018, p. 218, SAGE Publications, Inc. Copyright 2018 by SAGE Publications, Inc.

Limitations

The novel conception of SO as a disposition and DIA.

- Conceptually dispositions and DIA are still subjective and have undergone limited empirical testing.
- The conceptual framework poses an additional limitation, in that participants respond to the framework directly and participants may have their responses limited because of this phenomenon.

Researcher bias

Researcher is...

- A parent whose children attended AMI-affiliated Montessori schools.
- An AMI certified teacher for children aged 3-6 years old with a master degree in early childhood education with a Montessori concentration with five years of experience working with children aged 3-6 years in Montessori classrooms.

Lack of generalizability due to the singular sample within the case study.

- Full-day of teacher observation with one teacher in one Montessori elementary school was completed.

Researcher avoided limitations...

- Inquiry and reflection on preconceived notions was carried out in notes as well as through conversations with others who shared similar interests in Montessori and SOFA.
- The intentional mixed methods research design allowed for simultaneous collection of quantitative and qualitative data to reduce researcher bias.
- The small sample size may be mitigated by the data from the national survey allowing for generalization to the broader population.

Findings

Montessori teachers with an AMI teacher credential for students ages 3-6 in the United States reported the application of SOFA existed with some degree of predefined aims and objectives.

Montessori teachers with an AMI teacher credential for students ages 3-6 in the United States reported the application of SOFA was related to...

- system challenges for developing and sustaining SO procedures.
- collegial dissemination when time and organizational constraints permitted.

Montessori teachers with an AMI teacher credential for students ages 3-6 in the United States reported they understood the importance of SOFA for teacher practice in a Montessori classroom for children ages 3-6 years but aspects of SO DIA were not evident.

Implications for Practice

Researcher recommends...

Montessori Teachers:

- incorporate observation aims and objectives by child to their lesson planning routine. Incorporating formative and summative assessments alongside plans for new material lessons into lesson planning will require a routine review of the child's records and notes be established. This exercise will support continued development of SOFA and will provide the educators with documented evidence of student progress.
- engage in practitioner action research to assess structures and systems in place in their classrooms that support or prevent SO as a DIA.

Montessori school leaders:

- prioritize SOFA as essential to the MTs' daily practice.
- develop expectations for the application of SOFA and actively engage MTs regarding student data and assessments and monitor the MTs SO DIA using the observation protocol and rubric.
- provide weekly scheduled time for observation and assessment data sharing across teacher teams; organizing data sharing teams at grade level, and, when preparing for children transitioning to new classrooms, data sharing teams should cut across grade levels.
- support professional reflective practice of MTs by implementing the instrumentation and three-pronged approach: survey, teacher observation and interview to assess the application of SOFA locally.

Montessori teacher preparation programs:

- develop pre-service MTs' ability to use work curves skillfully using situated learning techniques. Pre-service MTs should practice using observation notes and work curves to make assessments and complete lesson plans to support students in reaching stated aims and objectives of the curriculum.
- implement explicit training on the dissemination of qualitative and quantitative data collected for formative and summative assessments developed in relation to observation aims and objectives to colleagues, school leaders, other professionals and parents. Data dissemination exercises should be connected to professional practice.
- deliver professional development on SOFA that supports practitioners with developing a systematic approach to note-taking, identifying observation aims and objectives, practicing self-awareness by coding for date, location, mood, time, and weather in effort to minimize personal bias, establishing classroom procedures for SOFA in support of recording of observations throughout the day, sharing observations and assessments and asking colleagues to confirm. Montessori school leaders work with MTs to identify systems that serve as impediments to MTs in developing and sustaining SO procedures.

Community of Practice:

- develop an extended crosswalk connecting structural components of SO related to documentation to an existing crosswalk which aligns the Montessori curriculum to national standards to provide a framework for MTs and Montessori school leaders to develop procedures which support the SO DIA.

Recommendations for Research



A qualitative study - conducted with:

- MTs in public and private Montessori elementary schools to understand how MTs connect SO to predefined aims and objectives in the curriculum.
- Montessori school leaders regarding systems which impede the development and sustaining of SO procedures and how constituents address obstacles to support high quality Montessori pedagogical practice, particularly SOFA.
- MTs in public and private Montessori elementary schools to understand what MTs report as organizational constraints on dissemination of assessment data.

National survey data - comparative analysis of demographic categories such as:

- years of experience and level of education may provide insights regarding the application of SOFA using the novice-expert paradigm.
- years of experience parsed by type of Montessori school to examine whether dissemination constraints vary by years of experience or type of school.

A longitudinal study - conducted with:

- MT trainees regarding the influence of training on the development SO as disposition and DIA.

A content analysis - to examine:

- the dissemination of narrative assessment data within school settings between MTs for students ages 3-6 within a district.

A mixed methods study - to examine:

- the efficacy of MTs' regarding the application of SOFA using Albert Bandura's efficacy theory to inform MT preparation programs.
- SOFA in public Montessori schools via the lens of the “diffusion of innovation” theory by Everett Rogers.

Follow-up

- Given the exploratory nature of the study a validation of the survey tool using quantitative methods.
- Using the study protocol, a mixed methods case study to examine the range of SO DIA in Montessori classrooms (both public and private).

References

Montessori, M. (1970). How it all happened. AMI Communications, 2/3, 2–7.
Reference list available upon request.