Literature Review

Montessori discussed the term “normalization” in many of her works. By her definition, normalization occurs when a “normal child is one who is precociously intelligent, who has learned to overcome himself and to live in peace, and who prefers a disciplined task to futile idleness” (Montessori, 1966, p.148). Normalization is defined by terms such as willing compliance, independence, and self-discipline (Olaf, 2006). Montessorians know that a normalized child can concentrate and work constructively (Lillard, 2007). However, the terms used in describing normalization are not easily translated into observable, measurable behaviors or terms (Cooper, Hines, & Hoy, 2007). While this is not an issue for seasoned Montessorians, it can be challenging to recognize and document for new teachers, parents, and researchers who are not trained in Montessori.

Method and Procedure

Participants were 10 teachers from early childhood classrooms at a public Montessori school. In October the teachers participated in a training session on the definition and stages of normalization as well as the process for data collection. During the presentation, teachers had the opportunity to ask questions and discuss normalization. Normalization Checklist on each of the 7-12 children in their classrooms who were new to a Montessori environment. Each teacher was assigned a code to each of his or her new children – the room number and the child’s number in the alphabetical list. The code blinded the data such that only the teachers knew the ratings of a specific child. The completed forms were collected by the school office. Research assistants entered the data from the completed forms.

Results

The results of the CFA support construct validity. Low loadings on a CFA mean the items share less variance with the overall construct. In this case, anywhere from 64% to 65% of the variance in the items is explained by the construct. Content validity was addressed previously through a review by Early Childhood Montessorians. Establishing validity is an on-going process and we will continue studying the validity of the instruments results.

Discussion and Implications

To help the reader, we will discuss our findings and implications of the results by research question.

1. Patterns of responses on the instrument differentiate between children who are considered normalized and those who are not.

Implications: Since all items are behavioral, teachers are observing and recording behavior data that translates into what we consider normalization. If the items differentiate, an outside research may be able to use this instrument to understand normalization in Montessori.

2. All of the items show strong reliability. This means changes in the rating on the items is connected to change in a latent variable – we call the latent variable normalization.

Implications: With higher loading, it is assumed the instrument is performing in a pattern manner; if a student receives a 3 for using works correctly, he or she probably received a 3 for works independently.

3. The results of the CFA support construct validity. Low loadings on a CFA mean the items share less variance with the overall construct. In this case, anywhere from 64% to 65% of the variance in the items is explained by the construct. Content validity was addressed previously through a review by Early Childhood Montessorians. Establishing validity is an on-going process and we will continue studying the validity of the instruments results.

Implications: All evidence collected thus far supports the use of these results for differentiating between students who have normalized and those who have not.

4. The teachers’ assessment of normalization – a yes or no item – is predicted by the latent variable from the normalization checklist. Relationship between the two is strong indicating teacher assessment is often in agreement with the results of the instrument.

Implications: These results support the concurrent validity of results from the instrument. Since a normalization measure does not exist, we used expert opinion to determine this relationship. The relationship holds even when data are analyzed through person-centered procedures.

Future research will include repeating this study with other samples, continuing to collect data from the current participants, and conducting interrater reliability analysis.

Selected References


Results – Mixture Model Continued

Results: CFA and SEM

The CFA was used to predict normalization at time one. This timepoint was selected because it contained the least amount of missing data and would provide the most accurate estimate of the relationship between the measure of normalization and the teachers’ ratings of normalization for first year students. As with the CFA, WLSMV was used as a estimator (Muthén & Muthén, 2012). The model fit the data with some limitations. For example, the CFA validation results were a better fit. Sample statistics for the model are below.

Results: Mixture Model

Models with more than three classes did not converge. Based on the interpretability of the results and indices, a two-class model was selected as the best fit. Sample statistics for the model are below.

Selected References


