

Nail-Chiwetalu, B. J. (1991). *The effects of translucency and complexity on the learnability of Blissymbols by students with mental retardation*. Unpublished doctoral dissertation, Purdue University, West Lafayette. Lyle L. Lloyd (Advisor): 148 pages of text, 106 references, 15 appendices, 7 tables, and 8 figures.

This study investigated the influence of two symbol features, translucency and complexity, and two learner factors, chronological age and receptive vocabulary age (as measured by the PPVT-R), on the receptive identification of Blissymbols by 8-18 year olds with moderate mental retardation. Translucency was defined as the degree to which a symbol visually represented its referent when both symbol and referent were provided. Complexity, in this study, was defined as the number of strokes combined to create the symbol.

Forty symbols were selected based upon their appropriateness for children with mental retardation and with the constraint that they fall equally into four orthogonal conditions of translucency (low and high) and complexity (low and high). Each symbol was randomly assigned to a 3x3 inch location on one of a pair of 9 x 12 inch displays of 20 locations each. A different pair of displays was used for each of four learning blocks which consisted of 40 trials per block. Each display pair contained a different randomization of symbol locations. One pair of these displays was randomly selected for each child to be used in a retention block. The children were seen individually and asked to point to each symbol on the display as its name was spoken in random order by the experimenter. The children returned one week later to determine how many of the 40 symbols could be recalled in one block of trials.

Data were analyzed separately for learner and retention scores by a Repeated Measures Analysis of Variance. A greater number of symbols were learned and retained in the high translucency condition, regardless of the level of complexity. In the low translucency condition, high complexity appeared to aid in both learning and retention of the symbols.

Pearson Product-Moment Correlation Coefficients were obtained for the learning factors of chronological age and PPVT-R each with learning and retention scores. Significant positive correlations were found for chronological age with retention scores, and PPVT-R scores with both learning and retention scores. The significance of these findings and directions for future research were discussed.