

## CHAPTER 5

# SUMMARY, CONCLUSIONS AND RESEARCH IMPLICATIONS

### 5.1. INTRODUCTION

This chapter provides a summary of the results obtained as well as conclusions. This is followed by a critical evaluation of the study as well as recommendations for future research.

### 5.2. SUMMARY OF RESULTS AND CONCLUSIONS

The study compared two symbol systems, namely Blissymbols and CyberGlyphs, in terms of the ease of learning and recognition. Two homogenous groups of Northern Sotho-speaking children were taught a total of 80 symbols each – 40 Blissymbols and 40 CyberGlyphs. After the training the subjects were requested to match the correct symbol with the appropriate concept. They were tested on the number of symbols they could remember after training, as well as after the revision sessions. The subjects were tested again after a seven-day withdrawal period, and again after a 30-day withdrawal period to determine how many symbols were recognised.

In the present study the learnability and memory retention of the CyberGlyphs were higher than for Blissymbols. Comparisons were made on the performance in the different word categories to investigate the impact of different word categories on the ease of learnability and recognition.

When the individual word categories were analysed, the performance in all the word categories for Glyphs was better than the performance for Bliss. This correlated with the higher iconicity ratings given by five raters for nouns and verbs in Glyphs. Even

though adjectives had a higher iconicity rating for Bliss than Glyphs, the performance for Glyphs were still better in this particular word category. Again the performance for Glyphs was better for pronouns and prepositions even though it was rated equally in terms of iconicity. This reiterates the question already asked by other researchers whether iconicity alone could be a predictor of learnability. The role of complexity and semantic transparency/translucency should be included in the investigation of learnability and recognition. Cultural influences on these characteristics are critical for a meaningful interpretation of the results. Furthermore, the cultural differences between the raters used for the iconicity rating and the subjects could have influenced the way in which the symbols were rated and the way in which the raters perceived the symbols.

### 5.3. CRITICAL EVALUATION OF THE STUDY & RECOMMENDATIONS FOR FUTURE RESEARCH

- The research focused primarily on learnability and recognition of the symbols. However, generalisation of the symbols was not in the scope of this study. The generalisation of the symbols might give an indication of whether Bliss has a more logical symbol composition than Glyphs, as it has a more refined rule-based structure than Glyphs.
- During the preparation of the training material it was found that a number of the CyberGlyphs symbols were not contained in the dictionary. This led to the development of new symbols by the researcher. Because the existing rules for Glyphs seem to be more inclined towards the compilation of syntactic structure, the researcher had to follow the logic presented in the Glyphs manual for the creation of new symbols. Future research could focus on the generation of new, standardized CyberGlyph symbols.

- Northern Sotho-speaking children were used in the study. Children from a more literate background might have responded differently to the symbol systems. The effect of cultural differences that might influence the ease of learning and recall and recognition of GSS should be investigated. It seems that geometric shapes might be easier to learn for certain groups, whilst hand-drawn symbols might facilitate learning in others.
- An initial investigation was made in terms of iconicity ratings. The different cultural levels of the iconicity raters and the subjects could have given a limited reflection on how the subjects perceived the iconicity of the symbols. Iconicity ratings could be made by children as opposed to adults to investigate any differences in perception of the symbols. The raters could also be of the same cultural group as the subjects used in the study.
- The number of symbols in each word category was not equal. A larger number of the more iconic symbols (nouns and verbs) were used compared to the smaller number of less iconic symbols (prepositions or pronouns). The difference in performance between different word categories could be investigated in more detail.
- The different word categories were analysed in terms of iconicity ratings. Investigating the complexity of the symbols as well, might have provided more insight into the discrepancy between performance and iconicity ratings. The issue of semantic transparency/translucency of the symbols of Glyphs and Bliss could be investigated further to provide more insight into the effect it has on learning and recall or recognition of symbol sets or systems.
- A group of non-disabled children were used in the study. It might be useful to investigate the way in which a group of persons with LNFS learn and retain the two different symbol systems. It might even be of value to ask Bliss users to evaluate CyberGlyphs in terms of learnability, retention (recall and recognition) and generalisation.



#### 5.4. SUMMARY

This chapter summarised the results discussed in Chapter 4 and the interpretations made. The implications of the differences found in the learnability and recognition of two different symbol systems were discussed in the critical evaluation of the study. Recommendations for future research were made.

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