

CHAPTER 6

CONCLUSIONS

6.1 INTRODUCTION

The aim of this study was the validation of the refined play package, consisting of the measurement instrument (DMMI), as well as the package of play activities for the facilitation of communication-related behaviours. The research question to be answered was formulated: Does the DMMI measure the communication-related behaviours that it purports to measure, and does the package of treatment activities facilitate the communication-related behaviours that it purports to facilitate?

In an attempt to answer this question the first step was to establish a solid theoretical foundation about the development of communication-related behaviours as adaptive responses as the play package aims at measuring and facilitating these responses. With the proposed model for the development of adaptive communication behaviour as underpinning, the play package was scrutinised and subjected to various forms of investigation in order to establish its reliability and validity.

The following conclusions were reached and will be presented in terms of the reliability and validity measures.

6.2 CONCLUSIONS

6.2.1 Reliability

6.2.1.1 Intra-rater reliability

Based on the findings of a repeated scoring, by the researcher, of 20% of the video recordings after two weeks the null hypothesis, that there would be a difference between

the initial and repeated scores, was rejected. Consistency (intra-rater reliability) was thus established.

6.2.1.2 Inter-rater reliability

Inter-rater reliability was determined by comparing the scoring of the researcher and the scoring of 20% of the video recordings by two external raters. Once again the null hypothesis was rejected in that no significant difference was found between the scores of the researcher and the external raters, thus establishing inter-rater reliability.

The conclusion is that the DMMI is reliable for the measurement of communication-related behaviours.

The external raters also evaluated the consistency of the steps in the presentation followed during the intervention phase, by observing 20% of the video recordings made during the intervention phase. A 95% consistency was found, indicating that the activities were presented in similar fashion to all the children, across the intervention period. It could be concluded that the presentation of the activities were consistently presented to all the participants.

6.2.2 Validity

6.2.2.1 Face validity

Face validity was determined through a process of identifying the behavioural indicators reflecting the relevant constructs, to be measured and facilitated. These constructs and their behavioural indicators were scrutinised and evaluated by six experts in the field and by consensus, the DMMI and the play activities were judged to have face validity.

6.2.2.2 Content validity

During the pre-experimental phase a pilot study was conducted and six experts in the field evaluated the content of the DMMI and the play activities in terms of the nature and scope of the behaviours to be measured and facilitated. There was agreement between them and

the researcher that content validity had been established as the DMMI measured, and the play activities facilitated the behaviours being studied.

6.2.2.3 Validity according to outcomes

Validity of the outcomes of treatment was determined by measurement of performance during the pre-intervention, post-intervention and post-withdrawal phases, using four authentic measurement instruments. As the DMMI can be utilised for continual measurement, behaviour change was measured on a daily basis during the intervention phase. As significant change, indicative of improvement was found on three (the VMI was utilised as a countermeasure) of the measurement instruments validity was established. As one of the criteria for the evaluation of effectiveness of treatment is the validation of outcomes (Wolf, 1978), it can be concluded that the play package, presented as a whole, is valid and effective.

Although the aim of this research was to validate the play package as a whole, further analysis and interpretation of the data was carried out, which revealed that the separate activities contribute to a greater or lesser extent to the facilitation of behaviour development. However, as no definite pattern could be found in that a specific activity primarily facilitated the behaviours reflecting one, or some of the constructs, the conclusion is once again reached that the effectiveness of the programme lies in its presentation as a whole (Uys, 1997).

Another conclusion about the effectiveness of the play package was that, as there was no significant difference between the performance in the post-intervention period and post-withdrawal period, the behaviours were maintained – an indication that habituation of the adaptive responses took place.

6.2.2.4 Construct validity

The process of construct validation stretched throughout all the different phases of the research. During the conceptualisation phase the relevant abstract constructs were operationalised and observable behaviour indicators, reflecting the constructs were identified. Correspondence between the constructs and the behaviours was confirmed by

six experts in the field. Thus construct validity could be determined by measuring the development of behaviours reflecting the different constructs. In this process the validity of both the DMMI and the package of play activities was once again determined.

From a detailed analysis of the presentation sequence of the activities and the level of difficulty of the activities, no specific conclusions could be reached. It can, at this stage, only be concluded that numerous variables could have had an influence on these findings. However, the aim of the research was the validation of the effectiveness of the play package as a whole and not the individual components of the play package.

The gradual significant increase in the different behaviours reflecting on each construct leads to the conclusion that construct validity of the DMMI and the play package as a whole has been established.

6.2.2.5 Convergent validity

As the DMMI is a newly developed measurement instrument, its effectiveness had to be determined through a process of convergent validity – the checking of its accuracy against an accepted criterion, another authentic measurement instrument (Leedy, 1993), through a multi-trait, multi-measurement process. For this purpose The DMMI was checked against three other authentic measurement instruments, namely the TPBA and the SPS as comparable instruments, and the VMI as a countermeasure.

Taking the realistic limitations of construct definitions and tests (Brinberg & Kidder, 1982) into consideration, absolute agreement was not expected. In this case the DMMI measures performance components, while the TPBA measures performance skills, and the SPS symbolic play and language skills.

Despite these limitations, it is concluded that convergent validity has been established, as these test findings correlated significantly on most of the measures.

As the VMI was used as a countermeasure, it was expected that the intervention did not lead to higher performance scores on this instrument. Non-convergence between the DMMI and the VMI was thus found.

6.3 VALIDATION OF THE PLAY PACKAGE

The main aim of this research was the validation of the play package, consisting of the measurement instrument and package of treatment activities as a whole. It is evident from the research findings and the above conclusions that reliability and validity have been established.

The research question can now be answered in that it has demonstrated that the DMMI measures the behaviours that it claims to measure, and the package of play activities facilitates the development of the communication-related behaviours that it claims to facilitate.

6.4 CRITICAL REVIEW OF THE RESEARCH

Since all research results are determined by the theoretical foundations and the methodology (Leedy, 1993), a critical review of the whole research process is necessary.

- A review of the literature from the fields of psychology, occupational therapy, psycholinguistics and speech-language pathology led to the development of a model for the development of adaptive communication behaviour. As this model identifies the four different domains of development as adaptation, it serves as a foundation for viewing childhood development holistically. The advantage of this view is that fragmentation is eliminated and a transdisciplinary approach advocated.
- The operationalisation of abstract constructs and the identification of behaviour referents contribute to research and intervention in that observation of behaviour is measurable.
- Bagnato *et al.* (1997) stress the importance of the development of corresponding measurement instruments and treatment programmes. This was done in this research in the development of the DMMI and the package of treatment activities.

- Numerous problems were, however, experienced in the selection of the sample for the experimental research. Although the sampling was criterion-based, it was once again not possible to select a homogeneous group, as the disabled population is heterogeneous. Logistical problems presented in that parents had to give their informed consent (which some withheld) and the experiment had to be fitted into one school term during summer. Furthermore, a large sample could not be included as each participant had to be treated each day during school hours in the intervention period. For the same logistical reasons a control group was not included in this study. This would have strengthened the research, as the influence of maturation could have been controlled.
- The implementation of different measurement instruments for determining convergent validity presented strengths and weaknesses. Multi-trait and multi-measurement strengthen the collection of reliable and valid data, but in this field measurement instruments differ and all of them have limitations. The DMMI and TPBA measure all the domains, while the SPS does not. Furthermore, the DMMI measures performance components, while the TPBA measures performance skills. A positive point, however, is that there were significant correlations between these measurements, which strengthens the findings.
- Another positive aspect is that the DMMI can be used for daily measurements. This contributes to clinical practice as small increments in improvement can be observed and communicated to parents in a transdisciplinary, community-based intervention approach.
- The research design further strengthened the reliability of the data collection procedures in that it rigorously controlled the influence of extraneous variables, but as the researcher, who had established a warm therapeutic relationship with the participants, was the only observer, the Hawthorne effect (Leedy, 1981) cannot be ruled out. The fact that two external observers rated the video recordings did, however, minimise this possibility.

- During all the different phases of the research intra-rater and inter-rater reliability, as well as face, content, construct and convergent validity were determined. This is regarded as a strength, as the efficacy of the play package could thus be established.
- It can be concluded that a valid and reliable play package has been developed, which can be used by caregivers and even parents in a community-based transdisciplinary approach.

6.5 RECOMMENDATIONS FOR FURTHER RESEARCH AND SERVICE DELIVERY

All research is cyclical and in this case further research questions arose which also need to be investigated.

- Although valuable information was gathered in the qualitative analysis of single-case and small group research data, it should be supported by replication of the research to collect more data about more subjects. Replication of this research is recommended.
- In this methodology the play activities during the intervention phase were presented in a set sequence. The question arose whether the sequence could have had an effect on the gains in behaviours. A valuable research contribution would be to change the sequence of presentation in order to determine the influence of the different components (activities) of the play package.
- As the play package is based on the normal developmental sequence, its effectiveness should be investigated when it is applied to other populations, such as the hearing impaired, the physically disabled, the severely disabled and even as enrichment for the environmentally disadvantaged.

- As it will be a major contribution to community-based service delivery it would be interesting to study whether this play package could be applied to small groups, instead of individually.
- As this play package was developed for transdisciplinary use it would be interesting to evaluate the outcomes when it is applied by the different transdisciplinary team members as well as other non-professionals, such as parents and caregivers.
- Although not strictly a research recommendation, a handbook, guidelines for the use of the DMMI and the play activities, as well as a video recording for training should be developed for this play package.
- Within a community-based transdisciplinary approach, effective service can be provided for many more disabled and disadvantaged children, especially in communities where professional services are not available.
- The play package provides a holistic treatment programme that can be implemented by transdisciplinary team members. This eliminates fragmentation of services as provided by specialist professionals.
- A training programme for non-professionals will have to be developed and presented.
- As the DMMI can be used to measure behaviour on a daily basis any changes can be reported and monitored, increasing the possibility for more accurate feedback and more scientific report writing.

6.6 CONCLUSION

Numerous recommendations have been put forward to improve service delivery in Third World countries. Price and Bochner propose that programmes should be based on behaviour modification, the enhancement of communication and training of caregivers (parents) through video recording teaching. They agree that “parents can be trained to take

the main facilitation role” (1991: 251). Furthermore, they state that communication cannot be taught, but should be facilitated, on condition that the programme style and steps are flexible enough to cater for individual differences.

It is anticipated that this play package satisfies these prescriptions to better the future of many disabled and disadvantaged children.

6.7 SUMMARY

In this chapter the conclusions are presented and defended, followed by an answer to the research question about the validity and efficacy of the measurement instrument and the treatment activities of the play package as a whole.

From the evaluation of the research it is evident that although valuable contributions were made, especially with regard to the implications for service delivery, there are still a number of issues that should be addressed in future research.