



**The development of a support programme
for foundation phase teachers to
facilitate listening and language for numeracy**

by

Anna Maria Wium

In partial fulfilment of the requirements for the degree

D.Phil. Communication Pathology

in the

Department Communication Pathology and Audiology

in the

Faculty of Humanities
University of Pretoria

Supervisor

Prof. Dr. Brenda Louw

Co-supervisor

Prof. Dr. Irma Eloff

Pretoria

February 2010



“...you know, we teachers have never done stories, songs and rhymes in class. We thought all of that in the RNCS - it was for nothing. I feel our children ...their minds were caged in. We have since opened the screws, and the children came flying out like... birds!”

(Participant in a semi-rural context)

Acknowledgements

I wish to thank the following institution and organizations for their financial support of the research:

- The University of Pretoria, for a study grant
- The Shuttleworth Foundation, for the development of the support programme
- The Kellogg Foundation for the Dissertation Award, which included support by the Advanced Education and Development (AED) Trust with Prof. L. Mbigi.

God, in his infinite mercy lifted me up and placed me on the shoulders of giants so that I could reach what I could only dream. I wish to express my sincere gratitude to the following people on whose shoulders I could stand in the completion of this thesis:

- Professors Brenda Louw and Irma Eloff, for their guidance and support, for being my mentors, and for believing in me
- The Department Communication Pathology, University of Pretoria, for providing support and the infrastructure to the project
- Kommunika, Centre for Early Intervention, Department Communication Pathology, University of Pretoria, with dr. Elsie Naudé, who gave me the scope and encouragement to do the work, and Ms. Lynette Meyer, who assisted me in the research
- The Faculty of Education, University of Pretoria, for inviting me to attend the programme for Masters and Ph.D. students, and exposed me to experts in the field of research
- The Department of Statistics, University of Pretoria, in particular Mrs. Rina Owen and Prof. Chris Smit, for their guidance
- The teachers who participated in this study, who provided me with a new understanding of my work, and who enriched me
- Mr. Herman Tesner, for editing and advice
- The academic information service (AIS) at the University of Pretoria, in particular Ms. Elsa Coetzer who was my subject advisor, and Ms. Annemarie Bezuidenhout and Mr. David Mahlangu who were always willing to go to great lengths in meeting my needs at interlibrary requests
- Ms. Tharina Hansmeyer, for her meticulous editing of the manuscript and her dedication
- In memoriam, Mrs. Catherine Hlongwane, for her immense support and help throughout the period of fieldwork and writing of the thesis, and I am saddened that she could not see the completion of the work
- My parents, family and friends, for their encouragement, prayers and support
- My children, Lizemarie, Jolene and Daniel, for their love and patience, and for being the light of my life
- My husband, Dr. Danie Wium, for his love, support and help, particularly for his help with the data analyses and technical care of the manuscript.



Abstract

TITLE: The development of a support programme for foundation phase teachers to facilitate listening and language for numeracy

NAME: Anna Maria Wium

PROMOTER: Prof. B. Louw, Head of the Department Communication Pathology and Audiology

CO-PROMOTER: Prof. I. Eloff, Dean of the Faculty of Education

DEPARTMENT: Communication Pathology and Audiology, University of Pretoria

DEGREE: D.Phil. Communication Pathology

Various assessments and international studies have shown that learners in South African schools experience challenges and perform poorly with respect to literacy and numeracy. To become competitive in the global arena, there is an urgent need to raise the standards of education.

Language is required for all learning, including numeracy and mathematics. Many young learners in South Africa struggle to develop adequate language skills because of an inherent pathology and/or barriers in their learning environment. Learners who do not develop adequate listening and language skills during their early years are most likely to experience difficulty in acquiring literacy and numeracy skills, resulting in poor academic progress. By supporting learners to overcome their developmental delays as early as in the foundation phase, future learning problems may be prevented. To raise education standards, teachers need to heighten their attempts to facilitate literacy and numeracy in the foundation phase.



Teachers currently have to adapt to a new national curriculum statement (NCS) that is based on an outcomes-based education (OBE) approach (Department of Education, 1997:16). Many teachers, especially those in black townships and other previously disadvantaged areas, find this difficult as they have not been sufficiently trained or are not adequately qualified. Educational changes have necessitated the need for high quality staff development and support.

Speech-language therapists (SLTs) working within a collaborative approach in the education context can support the learners who need to acquire listening and language skills, as well as the teachers who have to facilitate these skills.

This study developed a support programme for foundation phase teachers to facilitate listening and language for numeracy. The multifaceted programme consisted of training, mentoring, and practical components, which aimed at developing the participants' competence (foundational, practical, and reflective competence). The programme integrated the principles of adult learning within an OBE approach while taking culture and diversity into consideration. The programme was evaluated within a Logic Model framework.

The research made use of a concurrent, equal status triangulation design where triangulation was obtained by transforming QUAL data into QUAN data to be compared. In the QUAN strand, data were collected from 96 teacher participants (who were selected by using a convenience sampling method) by means of questionnaires, portfolio assignments, attendance registers, and financial statements. Qualitative data were collected from eight focus group discussions (using a nested design with 12 participants at a time) as well as a research diary, testimonials, and various correspondences.

The findings indicated that all the participants have gained knowledge, skills, and



confidence, but to varying degrees. Factors that affected the outcomes included aspects related to time, the choice of venue, age, prior support and qualifications, as well as motivation related to the context. Group learning was identified as a suitable strategy for teacher support in these contexts. Provided that specific factors are considered to increase effectiveness, the outcomes indicated that the programme could be used to support foundation phase teachers in these specific contexts.

Key words: Continued professional development, listening skills, language, programme evaluation, numeracy, mixed methods, adult learning, education, foundation phase teachers, OBE, curriculum.



Opsomming

TITEL:	The development of a support programme for foundation phase teachers to facilitate listening and language for numeracy
NAAM:	Anna Maria Wium
PROMOTOR:	Prof. Brenda Louw
MEDE-PROMOTOR:	Prof. Irma Eloff
DEPARTEMENT:	Kommunikasiepatologie en Oudiologie, Universiteit van Pretoria
GRAAD:	D.Phil. Kommunikasiepatologie

Talle internasionale studies het getoon dat leerders in Suid-Afrikaanse skole swak presteer in geletterdheid- en syfervaardigheidstoetse. Ten einde internasionaal kompetend te wees, is dit van kardinale belang om die onderwysstandaard te verhoog. Taal lê ten grondslag van alle geletterdheid, insluitende wiskundige geletterdheid en getalsbegrip. Onvoldoende luister- en taalvaardighede met skooltoetrede, kan tot swak skoolvordering lei. Aangesien leerders in lae sosio-ekonomiese omgewings dikwels 'n agterstand in hierdie vaardighede toon, is dit belangrik dat leerkragte in die grondslagfase spesifiek hierdie aspekte moet fasiliteer om enige ontwikkelingsagterstand in te haal. Menigte leerkragte, veral in voorheen agtergeblewe gemeenskappe, benodig ondersteuning in hierdie verband. Daar is egter 'n behoefte aan indiensopleidingsprogramme van goeie gehalte.

Siende dat taal- en luistervaardighede binne die spesialisgebied van spraak/taalterapeute val, is dit hulle rol om leerkragte te ondersteun met die fasilitering van sulke vaardighede vanuit 'n samewerkingsperspektief. Hierdie studie



het 'n ondersteuningsprogram vir grondslagfase-leerkragte ontwikkel vir die fasilitering van luister- en taalvaardighede, insluitend die taalvaardighede wat leerders benodig om getalsbegrip te ontwikkel.

Leerkragte is in werkswinkels opgelei, waarna hulle die geleentheid gebied is om die strategieë in hulle klaskamers te implementeer met die ondersteuning van 'n mentor. Die drie komponente het gesamentlik die leerkragte se vaardigheidsvlakke aangespreek deur hulle basiese vakkennis, vaardighede, asook die vermoë om oor hulle werk te besin, te ontwikkel. Die program is gebaseer op die beginsels vir volwassene- en uitkomsgebaseerde onderrig, en het ook die rol van kultuur en diversiteit in ag geneem. Die program is binne die raamwerk van die Logiese Model geëvalueer.

Die empiriese ondersoek het van 'n gemengde ontwerp gebruik gemaak wat beide kwantitatiewe en kwalitatiewe metodes ingesluit het. Die kwantitatiewe been het 96 leerkragte op grond van hulle beskikbaarheid ingesluit en data is met vraelysopnames, portefeuljies, teenwoordigheidsregisters, en finansiële state ingesamel. Die kwantitatiewe data is uit agt fokusgroepbesprekings, inskrywings in 'n navorsingsdagboek, getuigskrifte, korrespondensie, en foto's verkry. Deur die kwalitatiewe data na kwantitatiewe data oor te skakel, kon die resultate van beide tipes navorsing vergelyk word. Met die integrasie van die twee perspektiewe was dit moontlik om die waarde van die program te bepaal en 'n begrip vir die navorsingsomgewing te ontwikkel.

Die resultate het getoon dat alhoewel al die deelnemers baat gevind het by die program en kennis, vaardighede, en selfvertroue ontwikkel het, sommige meer voordeel daaruit getrek het as ander. Dit dui daarop dat ondersteuning meer effektief kon wees indien opleiding vir spesifieke groepe ontwerp word. Die kompleksiteit van die navorsingsomgewing is uitgelig deur faktore te identifiseer wat



die uitkomst beïnvloed het, naamlik aspekte verbonde aan tyd, die keuse van die opleidingslokale, die deelnemers se ouderdomme, vorige opleiding en kwalifikasies, asook die konteks. Daar is bevind dat effektiewe leer veral in groepsverband plaasgevind het, asook deur die voltooiing van portefeuljes, en dit dus gepaste opleidingstrategieë was. Deur inagneming van die genoemde faktore tydens die ondersteuningsproses kan die effektiwiteit van die program verhoog word. Die studie het bevind dat die program geskik is vir die opleiding van grondslagfase-leerkrigte in hierdie spesifieke kontekste.

Sleutelwoorde: Voortdurende professionele ontwikkeling, luistervaardighede, taalvaardighede, getalsbegrip, grondslagfase-leerkrigte, portefeuljes, progamevaluasie, getalsbegrip, gemengde navorsingsmetodes, volwasse leer, onderwys, uitkomsgebaseerde onderwys, kurrikulum



Declaration

I, the undersigned, hereby declare that the work contained in this dissertation is my own original work and has not previously (in its entirety or in part) been submitted at any university for a degree.

Signature

Date: February 2010



Table of contents

Chapter 1	Need for and development of a support programme for foundation phase teachers.....	1-1
1.1	Introduction	1-2
1.2	Proposed professional development programme.....	1-16
1.3	Dimensions in the design of the research	1-19
1.4	Roadmap for the thesis	1-28
1.5	Summary and conclusions	1-37
Chapter 2	Continued professional development for teachers	2-1
2.1	Introduction	2-2
2.2	Policies related to continued professional development	2-3
2.3	Continued professional development in South Africa.....	2-8
2.4	Creating a supportive environment	2-13
2.5	Conclusion	2-29
2.6	Appendices	2-31
Chapter 3	Components of the support programme	3-1
3.1	Introduction	3-2
3.2	The training component	3-9
3.3	The mentoring component	3-31
3.4	The practical component.....	3-35
3.5	Conclusions	3-39
3.6	Appendices	3-40
Chapter 4	Programme evaluation	4-1
4.1	Introduction	4-2
4.2	Approaches and models in programme evaluation	4-6
4.3	Key aspects in programme evaluation	4-24
4.4	Conclusion	4-31
4.5	Appendix	4-31
Chapter 5	Research design and method	5-1
5.1	Introduction and framework for chapter	5-2
5.2	Phase 1: Formulation phase of the research	5-3
5.3	Planning and design phase of the research	5-9
5.4	Early development and pilot testing	5-32
5.5	Implementation and advanced development	5-47
5.6	Conclusions	5-79
5.7	Appendices	5-79
Chapter 6	Results and discussion of the input component	6-1
6.1	Introduction	6-2



6.2	Evaluation of the input component.....	6-3
6.3	Summary and conclusion.....	6-15
6.4	Appendix.....	6-16

Chapter 7 Results and discussion of the process component ... 7-1

7.1	Framework for the process component.....	7-2
7.2	Value of the workshop material.....	7-2
7.3	Training and support provided	7-9
7.4	Assessment methods.....	7-26
7.5	Factors impacting on the process component.....	7-36
7.6	Critical assessment, summary and conclusion	7-50

Chapter 8 Results and discussion of the output component..... 8-1

8.1	Framework for the presentation of results.....	8-2
8.2	Evaluation of knowledge and skills	8-2
8.3	Factors which affected knowledge gains	8-19
8.4	Attitudes	8-28
8.5	Assessment, summary and conclusion	8-39

Chapter 9 Results and discussion of the outcomes component..... 9-1

9.1	Framework for the discussion of results.....	9-2
9.2	Implementation of strategies in the classroom	9-2
9.3	Benefits of the programme.....	9-12
9.4	Meeting initial training needs and learning objectives	9-15
9.5	Estimated cost-effectiveness of the CPD programme.....	9-16
9.6	Critical assessment, summary and conclusions.....	9-18
9.7	Appendix.....	9-21

Chapter 10 Conclusion and critical review 10-1

10.1	Synopsis of the study.....	10-2
10.2	Key findings, conclusions, implications and recommendations.....	10-3
10.3	Critical evaluation of the study and legitimization.....	10-27
10.4	Applications of the proposed programme	10-34
10.5	Recommendations for future research.....	10-35
10.6	Final comments.....	10-42

References 1



List of figures

Figure 1-1:	Outline of Chapter 1	1-1
Figure 1-2:	The effect of apartheid on education (1960-1994)	1-4
Figure 1-3:	Reasons for developing this specific CPD programme	1-5
Figure 1-4:	A model for a proposed CPD programme for foundation phase teachers	1-17
Figure 1-5:	Phases in the development of the CPD programme	1-18
Figure 1-6:	A framework of the dimensions in the research design	1-19
Figure 1-7:	Focus of the research	1-20
Figure 1-8:	The three frames of reference of the research	1-22
Figure 1-9:	The various lenses that steered the research	1-23
Figure 1-10:	A bird's eye view of the thesis	1-38
Figure 2-1:	Framework of Chapter 2	2-1
Figure 2-2:	Integration map of key factors to be considered in the development of this CPD programme	2-3
Figure 2-3:	The purpose of CPD	2-10
Figure 2-4:	Considerations in the creation of a supportive environment for CPD	2-14
Figure 2-5:	A multidimensional model for diversity training as applied to this programme	2-16
Figure 2-6:	Factors which can have an effect on learning	2-23
Figure 2-7:	Adult preferences related to the learning environment	2-24
Figure 3-1:	Outline of Chapter 3	3-1
Figure 3-2:	The relationship between listening, language, and numeracy	3-4
Figure 3-3:	The structure and form of knowledge (Bruner, 1966:14)	3-6
Figure 3-4:	The Lancaster model of learning (Binstead, 1980:21)	3-7
Figure 3-5:	Central auditory processing (psycholinguistic perspective)	3-11
Figure 3-6:	The link between language and literacy development	3-17
Figure 3-7:	The role of a theme in creating a meaningful context for language	3-19
Figure 3-8:	The language required for numeracy	3-26
Figure 3-9:	The DRLA model of learning	3-33
Figure 3-10:	Dichotomy of consciousness of competence	3-33
Figure 3-11:	The action research cycle as applied to the portfolio	3-38
Figure 4-1:	Outline of Chapter 4	4-1



Figure 4-2:	The various moments in programme evaluation	4-7
Figure 4-3:	Miller's pyramid model for evaluating CPD programmes	4-16
Figure 4-4:	Simile of a Logic Model applied to programme evaluation	4-19
Figure 4-5:	Focus areas within the Logic Model framework.	4-22
Figure 5-1:	Outline of Chapter 5	5-1
Figure 5-2:	Framework for conducting mixed methods research	5-2
Figure 5-3:	Purpose and rationale for mixing methods in this study	5-6
Figure 5-4:	Integration of models in the development and evaluation of this CPD programme	5-10
Figure 5-5:	The model for mixed methods research as superimposed on the model for the development of the programme	5-11
Figure 5-6:	Triangulation design (data transformation model)	5-13
Figure 5-7:	Ethical considerations in the research	5-17
Figure 5-8:	The sample size for the quantitative research	5-26
Figure 5-9:	Highest levels of education	5-30
Figure 5-10:	Household income levels (2001)	5-31
Figure 5-11:	Data collection procedure for each research unit	5-51
Figure 5-12:	Data collection in six research units over a two-year period	5-51
Figure 5-13:	Integration of data obtained from the two strands of the research	5-70
Figure 5-14:	Aspects related to the legitimization of the research	5-71
Figure 6-1:	Outline of the chapter	6-1
Figure 6-2:	Confidence of teachers in meeting the various aspects in the NCS	6-5
Figure 6-3:	Comparison of confidence levels in facilitating the NCS between the participants in the two contexts	6-6
Figure 6-4:	Modes of support required	6-7
Figure 6-5:	Various home languages in the two contexts and of the core group	6-13
Figure 6-6:	The language of learning and teaching in the two contexts and of the core group	6-13
Figure 7-1:	Outline of Chapter 7	7-1
Figure 7-2:	Gains in knowledge as indicated by questionnaires	7-28
Figure 8-1:	Outline of the chapter	8-1
Figure 8-2:	Skills gained from the training	8-6
Figure 8-3:	Perceptions of gains in knowledge and skills	8-10
Figure 8-4:	Cumulative ratio of participants in particular scores categories	8-13



Figure 8-5:	Indication of levels of understanding of information according to portfolio assignments	8-15
Figure 8-6:	Gains compared to post-workshop scores	8-16
Figure 8-7:	Questionnaire scores compared to portfolio scores	8-17
Figure 8-8:	Gains in questionnaire scores compared to portfolio scores	8-18
Figure 8-9:	Aspects that had an effect on the acquisition of knowledge and skills	8-19
Figure 8-10:	Aspects related to negative attitudes in completion of assignments	8-31
Figure 8-11:	Comparison of expectations of participants and outcomes	8-34
Figure 8-12:	Comparison of assignment scores with self-evaluation of competence	8-37
Figure 8-13:	The output component in relation to the entire programme	8-40
Figure 9-1:	Outline of Chapter 9	9-1
Figure 9-2:	The role of enjoyment in the programme	9-14
Figure 10-1:	Outline of Chapter 10	10-1



List of tables

Table 1-1:	Difference between 'programme evaluation' and 'programme effectiveness'	1-33
Table 1-2:	Layout of the thesis	1-36
Table 2-1:	Reasons for adult learning and implications for this programme	2-27
Table 3-1:	The four language systems that children have to acquire	3-21
Table 3-2:	Emergent numeracy skills with required matching vocabulary	3-25
Table 4-1:	The structural framework of the Logic Model	4-23
Table 4-2:	Predicting factors in programme evaluation	4-25
Table 4-3:	Stages in programme evaluation	4-28
Table 5-1:	Sub-aims of the research and aspects assessed	5-4
Table 5-2:	The research questions within the Logic Model framework and relevant data sources	5-7
Table 5-3:	Quantitative data collection methods and type of data required	5-14
Table 5-4:	Qualitative data collection methods and the type of data required	5-15
Table 5-5:	Considerations in the selection of the sample	5-21
Table 5-6:	A comparison of the age distribution of the participants in both the contexts	5-23
Table 5-7:	Years of teaching experience across the two groups	5-24
Table 5-8:	Highest qualifications of the participants	5-24
Table 5-9:	List of institutions where participants received training	5-25
Table 5-10:	Distribution of grade levels taught	5-25
Table 5-11:	Tools used to collect quantitative data in the evaluation of the CPD programme:	5-33
Table 5-12:	Tools used to collect qualitative data in the evaluation of the CPD	5-38
Table 5-13:	Description of the pilot study	5-44
Table 5-14:	Outcomes of the pilot study	5-46
Table 5-15:	Time line and data collection schedule during the two years of implementation	5-47
Table 5-16:	Statistical analysis implemented to answer research questions	5-62
Table 6-1:	Questions posed to evaluate the input component of the programme	6-4
Table 6-2:	Comparison between the two contexts with regard to previous support	6-7



Table 6-3:	Convergence of inferences with regard to training needs	6-8
Table 6-4:	Convergence of inferences with regard to the prevailing factors	6-15
Table 7-1:	Research questions to validate the process component	7-2
Table 7-2:	Usefulness of the material	7-3
Table 7-3:	Relevance of the material to the NCS	7-4
Table 7-4:	Convergence of results with regard to the usefulness and relevance of the programme	7-5
Table 7-5:	Corroboration of results related to new or confirmatory information	7-7
Table 7-6:	Feedback by participants after each workshop	7-11
Table 7-7:	External evaluation of the programme	7-12
Table 7-8:	Participants' perceptions about the workshops	7-12
Table 7-9:	The submission rate of portfolio assignments	7-17
Table 7-10:	Corroboration of results re portfolio assignments	7-17
Table 7-11:	Value of the training support materials	7-20
Table 7-12:	Comparison of participants' perception of the trainer's skills between the two contexts	7-25
Table 7-13:	Convergence of inferences with regard to trainer's skills	7-25
Table 7-14:	Maximum number of questionnaires completed compared with attendance per workshop	7-27
Table 7-15:	Comparison of questionnaires completed across contexts	7-27
Table 7-16:	Convergence of inferences with regard to the portfolio as assessment procedure	7-34
Table 7-17:	Attendance and attrition of workshops	7-39
Table 7-18:	Convergence of QUAL and QUAN results with regards to attendance	7-40
Table 7-19:	Comparison of the results between the two contexts	7-46
Table 7-20:	Convergence of inferences with regard to pace of training	7-47
Table 7-21:	Comparison of two options for training venues	7-50
Table 8-1:	Research question in the output component	8-2
Table 8-2:	Ratio of participants with scores above indicated levels	8-12
Table 8-3:	Corroboration of results re knowledge gains	8-18
Table 8-4:	Ratio of participants with prior training	8-21
Table 8-5:	Impact of prior training on knowledge gains	8-21
Table 8-6:	Convergence of results re prior knowledge	8-23
Table 8-7:	Impact of years of experience on knowledge acquisition	8-25



Table 8-8:	The effect of the participants' age on knowledge acquisition	8-25
Table 8-9:	Impact of age and qualification on portfolio score	8-26
Table 8-10:	Impact of number of workshops attended	8-26
Table 8-11:	Impact of qualification and number of attendances on knowledge gains	8-27
Table 8-12:	Submission of assignments in all schools	8-33
Table 8-13:	Convergence of results in terms of willingness to participate and motivation	8-35
Table 8-14:	Convergence of results with regard to confidence	8-38
Table 9-1:	Research questions by means of which the outcomes of the programme were evaluated	9-2
Table 9-2:	Summary of the results obtained in the outcomes component	9-15
Table 9-3:	Training needs of the participants	9-15
Table 9-4:	Learning objectives for the training	9-16
Table 9-5:	Summary of cost for each of the four options per training unit	9-17
Table 9-6:	Summary of the evaluation of the CPD programme	9-20
Table 10-1:	The participants' training needs	10-5
Table 10-2:	Prevailing factors that impacted on the programme	10-6
Table 10-3:	The value of the training material	10-9
Table 10-4:	The value of the training approach	10-10
Table 10-5:	Value of the assessment methods used	10-13
Table 10-6:	Factors which impacted on the process and outcomes	10-15
Table 10-7:	Gains made from the training	10-17
Table 10-8:	Implementation of strategies in the classroom	10-22
Table 10-9:	Benefits to the learners	10-24
Table 10-10:	Training objectives met	10-25
Table 10-11:	Cost-effectiveness of the programme	10-26
Table 10-12:	Critical evaluation of the study	10-29
Table 10-13:	Phases in the application of the programme	10-35



List of abbreviations

AS	Assessment standard
BICS	Basic interpersonal communication skills
CALP	Cognitive academic language proficiency
CPD	Continued professional development
ECD	Early childhood development
ELoLT	English as language of learning and teaching
GDE	Gauteng Department of Education
ITOL	Training and occupational learning
INSET	In-service education training
L1	First language (mother tongue)
LO	Learning outcomes
LoLT	Language of learning and teaching
Low SES	Low socio-economic schools
LSE	Learning support educators
NCS	National Curriculum Statement
NGO	Non-governmental organization
NLBs	National Language Bodies
NQF	National Qualification Framework
OBE	Outcomes-based education
PanSALB	Pan South African Language Board
PIRLS	Progress in International Reading Literacy Study
PRESET	Pre-service education training
RNCS	Revised National Curriculum Statement
ROI	Return on investment
SACE	South African Council of Educators
SAQA	South African Qualifications Authority
SLT	Speech-language therapist
TIMSS	Third International Mathematics and Science Study