

## CHAPTER 6

### CONCLUSIONS AND IMPLICATIONS

*“The field of educational audiology...is predicated on the search for increasingly effective strategies to support the academic and social success of learners with hearing impairment. To settle for less than the best is to shortchange learners with hearing impairment and to leave the challenge of the field unmet” (English, 1995: 220).*

#### 6.1 INTRODUCTION

Research in the field of audiology and communication pathology in Africa must satisfy the unique demands of the population, be socially justifiable, as well as relevant to the context (Hugo, 1998). The current research aims to fulfil these goals by providing a research base for a proposed educational audiology service delivery model. This model has practical implications for the educational audiologist, the teacher, as well as for children with hearing loss who are served within the South African context. In South Africa, a need for research that specifically aims to provide findings applicable to the changing context in the educational system, is required.

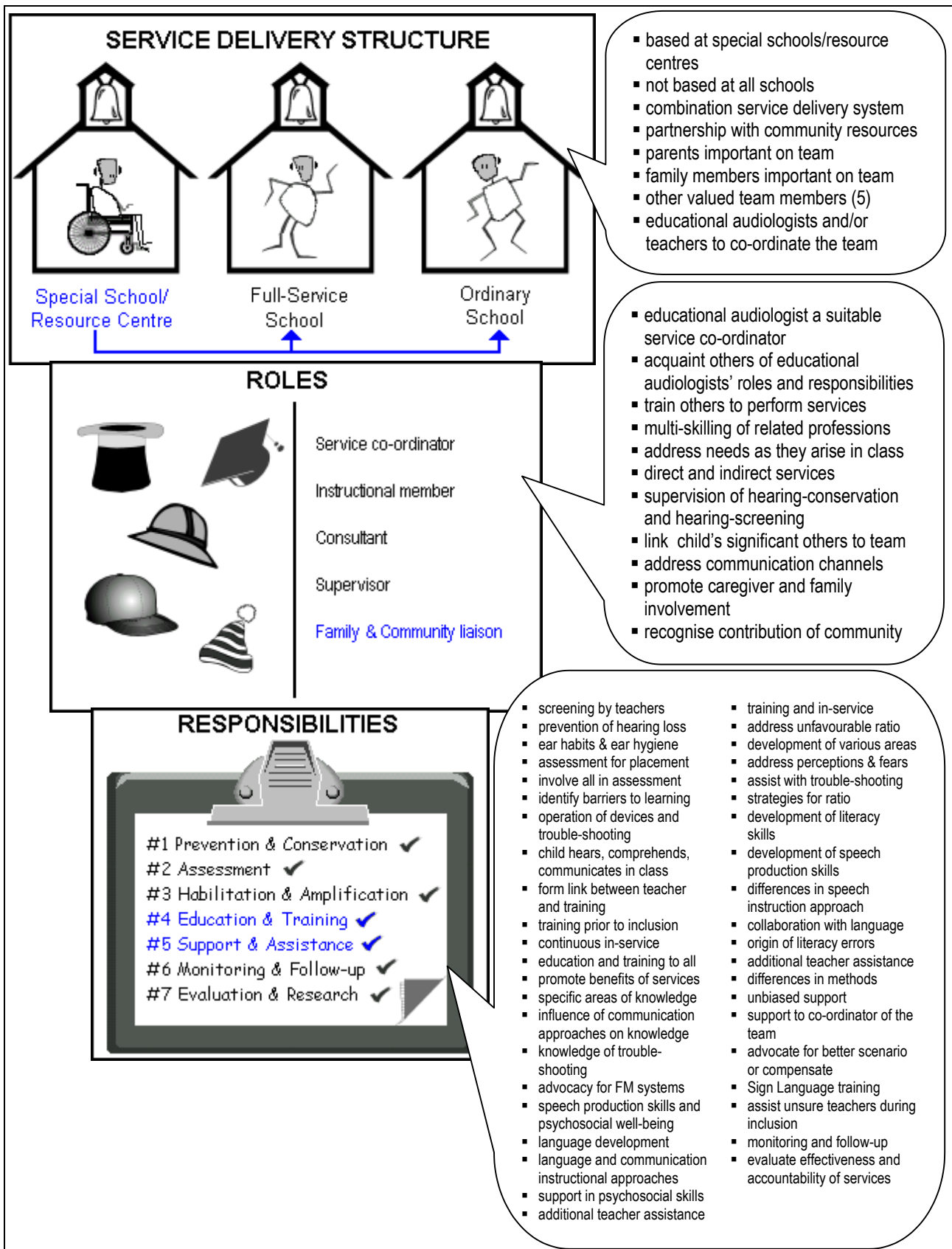
The development of an educational audiology service delivery model, even in the format of a working document for use within the inclusive educational system is essential in order to define structures for support. This in order to address the needs of teachers of children with hearing loss, as well as to benefit children with hearing loss.

This chapter contains the conclusions and recommendations of the study. A critical evaluation of this study is provided and appropriate recommendations are made regarding further research possibilities related to the study.

**The aim of the final chapter is to discuss the conclusions drawn from the theoretical and empirical research study as described in the previous chapters and to make recommendations that have practical implications for an educational audiology service delivery model.**

## **6.2 CONCLUSIONS AND CLINICAL IMPLICATIONS**

Theoretical models represent a formalisation of perspectives that might serve as a guide to develop hypotheses and scientific inquiry, as well as provide a basis for the planning of intervention strategies (Lloyd, Fuller & Arvidson, 1997). The proposed educational audiology service delivery model aims to accomplish the aforementioned. Literature on educational audiology, as well as findings from the empirical study were used to formulate an educational audiology service delivery model for use within the inclusive educational system in South Africa. A graphic representation of the model is provided in Figure 6.1.



**Figure 6.1: An educational audiology service delivery model for use within the inclusive educational system** [conceptualised from: ASHA (1993); EAA (2002b); EAA (2002d); Education White Paper no 6, (2001); English (1995); Johnson, Benson & Seaton (1997)].

Various recommendations regarding service delivery by the educational audiologist are depicted in Figure 6.1. The most important implications for service delivery in each of the sub-headings are discussed.

### **6.2.1 Service delivery structure**

The most important implications for the structure of service delivery, are:

#### **Service delivery system:**

- \* Educational audiologists should be based at central establishments such as special schools/resource centres and from there deliver services to full-service schools and ordinary schools as required.
- \* Education White Paper no 6 (2001) makes it clear that specialists, such as the educational audiologist, will not be based at all schools, but posted at a district level to be drawn upon by schools as required.
- \* A combination of the school-based and the contractual system can be implemented depending on financial resources available in order to compensate for the shortage of educational audiologists in the educational system.
- \* Educational audiologists should build partnerships with resources in the community, such as private audiologists and hearing aid technicians, in order to improve the quality of the service delivery system.

#### **Service delivery team:**

- \* Parents should always be included on the educational service delivery team of the child with hearing loss.
- \* Family members other than the parents should be recognised and encouraged to serve on the team of the child with hearing loss.
- \* Other valued members that should serve on the child's educational team include the educational audiologist, speech-language therapist, psychologist, social worker, and the occupational therapist.
- \* Educational audiologists and/or teachers are of the persons most suitable to co-ordinate the team of the child with hearing loss.

## 6.2.2 Roles of the educational audiologist

The roles of the educational audiologist may vary depending on the participation and availability of other support personnel within the educational system. The most prominent implications for the roles of the educational audiologist that were derived from this study, are:

### **Service co-ordinator:**

- \* Educational audiologists as specialists in the management of the school-going child with hearing loss, are suitable to serve as co-ordinators on the child's educational service delivery team.

### **Instructional member:**

- \* Educational audiologists should acquaint teachers and caregivers with the various roles and responsibilities of the educational audiologist.
- \* Educational audiologists should train personnel such as teachers to perform some of the duties of an educational audiologist in order to overcome the shortage of educational audiologists.
- \* Related professions should be multi-skilled in order to perform some of the responsibilities of the educational audiologist.

### **Consultant:**

- \* Educational audiologists should address the needs of teachers as they arise in the classroom.
- \* Educational audiologists should render direct services to the child with hearing loss, as well as indirect services to the teacher of the child with hearing loss.

### **Supervisor:**

- \* Hearing-conservation and hearing-screening programmes can be performed by teachers under the supervision of educational audiologists to overcome the shortage of educational audiologists.

### **Family and community liaison:**

The importance of recognising and involving the family and community of the child with hearing loss was highlighted throughout literature, during the empirical study, and in Education White Paper no 6 (2001).

- \* Educational audiologists should link the child's significant others to the educational team.
- \* Educational audiologists should address poor and inadequate communication channels which existed in the past between educational audiologists and the child's significant others.
- \* Educational audiologists should promote caregiver and family involvement.
- \* Educational audiologists should recognise the contribution that traditional healers, social service providers, church fraternities, and the Deaf Community can make to the success of the child's educational programme.

### **6.2.3 Responsibilities of the educational audiologist**

The foremost implications for the responsibilities of the educational audiologist, are:

#### **Prevention and conservation:**

- \* Educational audiologists should introduce hearing-screening programmes in schools and these should be conducted by teachers themselves in order to compensate for the shortage of educational audiologists.
- \* Educational audiologists should encourage the prevention of hearing loss especially due to otitis media which is one of the most prevalent diseases found among school-going children in South Africa (DEAFSA, 1996).
- \* Educational audiologists should advocate good ear habits and proper ear hygiene especially among children living in poverty.

#### **Assessment:**

- \* Regular assessment of learners' functional hearing abilities should be done in order to determine their need for support and to ultimately make appropriate placements in either special schools/resource centres, full-

service schools, or ordinary schools depending on their current level of educational support required.

- \* The caregivers, family, and community of the child with hearing loss should be involved during assessment procedures, in order to obtain a complete representation of the child's level of functioning across all contexts.
- \* Assessment should identify barriers to learning in order to improve the learning environment of the child with hearing loss and not be used to exclude children with hearing loss from full participation.

#### **Habilitation and amplification:**

- \* Teachers should be trained and assisted in order to operate classroom amplification devices and to trouble-shoot hearing aids.
- \* Educational audiologists should involve all members of the educational team, teachers, the child's caregivers, family, and community in order to render effective and accountable educational audiology services.
- \* Educational audiologists should employ strategies and modify the classroom environment to ensure that the child with hearing loss hears and comprehends all that is being said, as well as ensure that the child is able to communicate effectively with teachers and classmates in the inclusive classroom.

#### **Education and training:**

The importance of education and training was highlighted throughout literature, during the empirical study, and in Education White Paper no 6 (2001).

- \* Educational audiologists should form the link between the teacher and various methods of teacher training.
- \* Teacher training is required to develop the knowledge and skills of teachers prior to the inclusion of children with hearing loss.
- \* More adequate and appropriate continuous in-service training is necessary to keep teachers abreast with the latest practices relating to the inclusion of children with hearing loss.

- \* Educational audiologists should provide education and training to all support personnel, teachers, caregivers, family, and communities involved.
- \* Educational audiologists should continuously promote to teachers and other support personnel the benefits of receiving support from an educational audiologist when acquiring knowledge re the various aspects of hearing loss, the negative impact of a hearing loss on the various areas of development, and the maximising of residual hearing of the child with hearing loss.
- \* Educational audiologists should assist teachers to obtain knowledge in areas that participants did not indicate a need for support, but that literature indicated a lack of knowledge in. These areas being knowledge of the anatomy and physiology of the auditory mechanism, the process of communication, knowledge of the etiology of hearing loss, and the encouragement of continuous hearing aid use by children with hearing loss.
- \* In view of the aforementioned, educational audiologists should take cognisance of the influence of different communication instructional approaches on teachers' need for support regarding the acquisition of knowledge related to educational audiology. Teachers who mainly promote Sign Language may require less need for the acquisition of knowledge related to certain aspects of hearing loss and the maximising of residual hearing, because they generally focus on other aspects during the development of Sign Language skills.
- \* Educational audiologists should assist teachers in order to acquire knowledge on how to trouble-shoot hearing aids.
- \* Educational audiologists should inform teachers on the strategies to advocate the use of FM systems in the inclusive classroom.
- \* Educational audiologists should provide teachers with knowledge on how to address the negative impact of a hearing loss on the child's speech production skills as well as the impact on the psychosocial well-being of the child with hearing loss in an inclusive educational setting.
- \* Educational audiologists should especially provide training to teachers on how to address the negative impact of a hearing loss on the language development of the child with hearing loss.



- \* Educational audiologists should help teachers acquire knowledge about the various language and communication instructional approaches available to the child with hearing loss.
- \* Educational audiologists should promote the importance of receiving support from professionals such as the educational audiologist in order to develop the child's psychosocial well-being in the inclusive setting.
- \* Teachers without qualifications higher than a teaching diploma, without specialised training in hearing loss, with an unfavourable teacher/learner ratio in the classroom, and who have had infrequent in-service training, all require additional assistance with the acquisition of knowledge relating to educational audiology.
- \* Educational audiologists should inform educational authorities and teachers on the importance of teachers receiving specialised training in hearing loss as well as more frequent in-service training to teachers of children with hearing loss.
- \* Educational audiologists should train teachers to address the challenges of managing the child with hearing loss in a classroom with an unfavourable teacher/learner ratio.
- \* Educational audiologists should promote the benefits of receiving support from an educational audiologist in order to develop the language, communication, literacy skills, and academic achievement of the child with hearing loss.
- \* Educational audiologists should address teachers' negative perceptions regarding inclusion and their fears of change by means of information exchange and training.

**Support and assistance:**

This responsibility was emphasised throughout literature and also during the empirical study.

- \* Educational audiologists should provide classroom assistance to teachers with the trouble-shooting of hearing aids.
- \* Educational audiologists should provide teachers with strategies in order to effectively manage the child with hearing loss in a classroom with an unfavourable teacher/learner ratio.

- \* Teachers should be informed on the valuable contribution that the educational audiologist can make regarding the development of the literacy skills of the child with hearing loss.
- \* Educational audiologists should assist teachers in the development of speech production skills of the child with hearing loss.
- \* Educational audiologist should help teachers to apply the most suited speech instructional approach for each child with hearing loss.
- \* Teachers and educational audiologists should work more closely when developing the language skills of the child with hearing loss.
- \* Educational audiologists should (together with remedial teachers) enable teachers to identify the origin of literacy errors.
- \* Teachers without qualifications higher than a teaching diploma, without specialised training in hearing loss, with an unfavourable teacher/learner ratio in the classroom, and who have had infrequent in-service training, all require additional support and assistance in the development of language skills, speech production skills, communication skills, literacy skills, and academic achievement of the child with hearing loss.
- \* Educational audiologists should be aware of differences in methods of speech instruction and Sign Language instruction and determine teachers' unique needs regarding support before embarking on assistance in these areas of development.
- \* Educational audiologists should assure teachers of their unbiased support regardless of the communication instructional approach followed by the teacher.
- \* Educational audiologists should provide support and assistance to teachers and/or other personnel that are serving as team co-ordinators of children with hearing loss.
- \* Educational audiologists should help teachers advocate for smaller numbers of learners per classroom and to increase the number of teachers/assistants in order to provide intensive individual attention. Alternatively, if this cannot be achieved, educational audiologists should provide support to overcome these negative circumstances which affect the educational development of the child with hearing loss.

- \* Educational audiologists should assist teachers to advocate for more intensive Sign Language training for teachers in order to ensure skilful instruction via the medium of Sign Language in the classroom.
- \* Educational audiologists should assist teachers who are unsure of the benefits of inclusion to appropriately manage the child with hearing loss in the inclusive educational setting in order to develop the child's full potential.

**Monitoring and follow-up:**

- \* Continuous monitoring and following-up services are a necessity and form part of a learner-centred approach which complies with guidelines stipulated by the directorate for inclusion (Department of Education, 2002).

**Evaluation and research:**

- \* The evaluation of the effectiveness and accountability of educational audiology services should be an on-going responsibility of educational audiologists, especially because the inclusive educational system is still in the early stages of implementation and therefore unforeseen challenges may present itself over time.

**6.2.4 General implications for an educational audiology service delivery model**

South Africa consists of a unique combination of developed and developing components, and this limits the relevance of service delivery models applied in developed countries such as the USA and European countries (Fair & Louw, 1999). Adaptations to the service delivery model should be made to overcome specific South African problems and issues, such as: overcrowded classrooms and limited staff resources (Department of Education, 1996), the lack of parental involvement (Penn & Reagan, 1995), the absence of adequate financial resources (Steyn, 2000), increasing poverty (Statistics SA, 2001c), the rising HIV/AIDS pandemic (Matkin, Diefendorf & Erenberg, 1998), and challenges associated with diversity in culture and language (Viljoen & Molefe, 2001).

Another concern which arises is, the lack of legislation for compulsory specialised teacher-training courses for teachers of children with hearing loss. Although the inclusive educational system proposes new training programmes for all teachers (Education White Paper no 6, 2001) the content of these programmes should be carefully scrutinised, considering the findings of a recent study among South African teachers of children with hearing loss (Pottas, 1998). This study indicated a definite lack of knowledge of the teachers with regard to audiological aspects in spite of their in-service training. It becomes clear that teachers require further training and professional support in order to deliver appropriate and effective services to children with hearing loss in the inclusive educational system.

Furthermore, a limited number of audiologists are currently practising in South Africa (Pottas, 1998). Of these audiologists, not all are specialised in the audiological and educational management of the school-going child with hearing loss. The graduate training courses of audiologists should include specialisation in the field of educational audiology and equip students with the skills to identify and address teachers' needs in the inclusive educational system. Multi-skilling of related professions like speech-language therapy also presents a possible solution to the shortage in educational audiologists and provides opportunity for the use of support personnel to improve educational audiology service delivery to children with hearing loss (Johnson, 1999).

### **6.3 CRITICAL EVALUATION OF THE STUDY**

It is necessary to justify the conclusions and gain perspective regarding the clinical implications of the empirical data obtained. A need to reflect on the positive and negative aspects of the study therefore exists.

The main criticism of this study is that teachers were asked to suggest challenges foreseen and areas of support required in the inclusive educational system, although they have had very limited or even no exposure to the

inclusion of children with hearing loss. However, the suggestions of teachers provided valuable insight into the anticipated challenges, perceptions, fears, and needs of teachers regarding the inclusion of children with hearing loss.

The significance of this study is that it is the first study of its kind in South Africa to explore the needs of teachers of children with hearing loss within the inclusive educational context regarding educational audiology services. This study provides baseline information and guidelines with respect to the needs of teachers regarding the inclusion of the child with hearing loss in South Africa. Based on the study, recommendations for an educational audiology service delivery model could be proposed.

Furthermore, the study explored the services rendered by an *educational audiologist* in South Africa. The field of educational audiology is a relatively new area of expertise in South Africa, and the services of an educational audiologist is often not distinguished from those rendered by a clinical audiologist or a speech-language therapist. Therefore, research in this aspect proved valuable in order to obtain a baseline of information regarding service delivery by the educational audiologist in South Africa.

#### **6.4 RECOMMENDATIONS FOR FURTHER RESEARCH**

This current research was undertaken in the early stages of the implementation of the inclusive educational system in South Africa. Therefore, the scope of research may change once the educational system has been firmly established and new challenges have been encountered by teachers and children with hearing loss. The following recommendations are made for further research possibilities:

- \* More specific adaptations to the curriculum, teaching materials, and classroom environment in order to accommodate children with hearing loss, should be investigated. The current guidelines on implementation of inclusion practices in South Africa, to date, provide conceptual clarity, but

lack specific detail regarding the practical implications of inclusion of children with hearing loss (Department of Education, 2002; Education White Paper no 6, 2001).

- \* The effectiveness of educational audiology services within the inclusive educational system should be determined once structures for service delivery are in place. The evaluation of the service delivery system must be an on-going responsibility of the educational audiologist to ensure the efficacy of services within the educational system (EAA, 2002b). Furthermore, ongoing research into best practices in audiological and educational management of children with hearing loss is of the utmost importance to render accountable services in accordance with current trends (ASHA, 1993).
- \* The need for specialisation in the field of educational audiology in South Africa, should be explored. Currently in South Africa, the services of speech-language therapists and audiologists are intermingled. Therefore, it should be determined whether separate specialisation in the field of educational audiology is required in order to maximally benefit the school-going child with hearing loss.

## 6.5 CONCLUSION

Educational audiologists in the inclusive educational system, therefore should meet the challenges of addressing the needs of teachers of children with hearing loss within the framework of a South African educational audiology service delivery model to ultimately benefit the child with hearing loss.

Only by working together as a team, the successful inclusion of children with hearing loss can be achieved in South Africa. This is emphasised by the directorate of inclusion who abides by the principle of *tirisano* (Department of Education, 2002: 126):

*“...Tirisano, means ‘working together’, we are committing ourselves to exploring effective and efficient ways of bringing together our resources to benefit the learners - all learners”.*

And as part of this team, the role of the educational audiologist and his/her services to children with hearing loss, should be recognised:

*“Audiologists, as professionals who are experts in the management of hearing in an educational setting, can have an enormous impact on the future of children with all types and degrees of hearing problems. Indeed, thorough and insightful audiologic management can make the difference between one child with hearing loss becoming an independent, contributing citizen and another child living life on the fringe” (Flexer, 1993: 204).*

