

## Chapter One

### INTRODUCTION

#### 1.1 The research study

The principal aim of this study was to examine whether music can assist in the education of children who have learning difficulties. An impetus for the study was the perceived lack of recognition of the importance of music in special education in Australia. Because of the wide range of goals and definitions of music education, a general problem faced by educators and particularly music educators, is that of distinguishing between different areas of music education. For example, three distinct areas of music in relation to the person who is handicapped or disabled are recognised in the United States of America (USA), and were discussed at the International Music Therapy Congress, Heidelberg, in May, 1985. The three areas identified were (a) the teaching of a music instrument or skill, (b) music therapy, and (c) music in special education.

From the viewpoint of teaching and research in music education, it is important to distinguish between the primary goals of music in special education and the primary goals of music therapy (Duerksen, 1981; Thompson, 1982). The distinction made by Thompson (1982) is that the music educator primarily develops music behaviours in students with handicaps and that the music therapist primarily uses music in a functional way to change behaviours. In this study, the music educator in special education is seen as one who is concerned with developing the learning skills of

children in conjunction with their academic, cognitive and social development through music in an educative setting.

This chapter sets out to discuss the following: a historical perspective of music and special education, the learning difficulties of students associated with academic, cognitive and social development, the background to the research study, a statement of the concern of the research, and the study design. As well the overall organisation of the thesis will be summarised.

## **1.2 Historical perspective of music and special education**

Although music has been used to varying degrees over the past two centuries to educate children with handicaps (Graham, 1975), it is only in recent years that its potential application in special education has become generally recognised. A major impetus for a role of music in special education arose in Britain through the project *Music for Slow Learners*, begun in 1968. The children involved in the eight year long project, came from a variety of educational settings such as special classes attached to schools, special schools, schools for children with physical and multiple handicaps, residential schools, and hospital schools for children termed *subnormal*. The project *Music for Slow Learners*, set out "to examine the special contribution music can make to the education of slow learning children and to discover ways in which it can become a more meaningful experience in their lives" (Ward, 1976b, p. 43). Amongst the general conclusions realised through the project were that:

- a significant number of teachers believe that music was important and beneficial to slow learning children;

- almost all slow learning children, whatever their level of musical or general ability, can benefit from involvement in musical activity;

- there is a serious lack of provision of music in schools for slow learning children (Ward, 1976b, pp. 362-363).

In the USA, music in special education gained recognition with a session on music in special education in 1972 at a Music Educators National Conference (Graham, 1975). During the 1980s, music in special education had become recognised internationally. Today, the role of music in special education is discussed at annual international conferences such as Music Education for the Handicapped, and the Biennial International Society for Music Education Commission on Music Therapy and Music in Special Education, and papers are published from the proceedings.

In the Australian context, the first published work discussing the role of music in the education of young handicapped people appears to be an article in the Commonwealth Schools Commission Discussion Papers (Weidenbach, 1981). Few articles are written about music in special education in Australia, and music was not a curriculum area mentioned in the publication *Responding to Need: Special Education in the 1980s* (Rees & Irvine, 1981).

### **1.3 Students with learning difficulties**

The term *learning disabilities* is used in North America to refer to children who have problems with learning. In 1981 the National Joint Committee of Learning Disabilities (NJCLD) provided a definition in relation to the USA Public Law 94-142, *The Education of All Handicapped Children Act*, of 1975. This definition appeared to be in line with current USA research issues associated with

neuropsychological models supporting brain or neuro-dysfunction. The definition stated in part that learning disabilities were "disorders . . . intrinsic to the individual and presumed to be due to central nervous system dysfunction" (Myers & Hammill, 1982, p. 6). Recently, Hammill (1990) has endorsed the NJCLD definition by stating that it provides a "viable definitional umbrella" (p. 83).

In Australia, learning problems are viewed more as an issue of education than of politics. The term *learning difficulties* is used to define "those children and adolescents who are not achieving in one or more academic areas in school" (Ashman & Elkins, 1990, p. 145). Following an investigation into children with learning problems in literacy and numeracy, a Select Committee of the Australian House of Representatives in 1976 used the term *learning difficulties* in their report, on the basis that children experiencing learning problems in school were not necessarily disabled or impaired (Cadman, 1976). The National Health and Medical Research Council in 1990, preferred to use both the terms *learning difficulties* and *learning disabilities* in their report *Learning Difficulties in Children and Adolescents* - "*learning difficulties* as a generic term for problems with learning, and *learning disabilities* to refer to a small specific sub-group within the general field of learning difficulties" (Court, Grant, Long, Oberklaid & Sykes, 1990, p. 1). The smaller sub-group of learning disabilities referred to children and adolescents "who exhibit problems in developmental and academic skills significantly below expectation for their age and general ability" (Court *et al.*, 1990, p. 1).

In this study, the term *learning difficulties* will be used on the basis that the research for the study was conducted in a special education setting, and was concerned with children who had not been assessed as having minimal brain dysfunction but as

experiencing difficulties and delays associated with academic learning (see Chapter Four, Table 4.1). A national survey of special education by the Schools Commission in Australia found that some 11% of children in regular schools had learning difficulties (Andrews, Elkins, Berry & Burge, 1979).

A recent publication by the Australian Bureau of Statistics (ABS) (1990), *Disability and Handicap Australia, 1988*, provided data on the numbers and basic demographic characteristics of disabled and handicapped people in Australia from the *Survey of Disabled and Aged Persons, 1988* (ABS, 1989). In the ABS (1990) publication, a disabled person was defined as:

A person who had one, or more than one impairment or a disability which had lasted, or was likely to last, for six months or more.

A handicapped person was in turn defined as a disabled person aged 5 years of age and over who was further identified as being limited to some degree in his/her ability to perform certain tasks in relation to one or more . . . five areas (ABS, 1990, p. 1).

Schooling was one of the five areas listed. The definition of a schooling limitation included the clause "attended special classes in an ordinary school" (ABS, 1990, p. 42). Such a clause focuses on the special education population of concern to this study, namely, students aged from approximately five to nine years attending a Junior Assessment Class (JAC) in the Australian Capital Territory (ACT). Special education settings for children in Australia range from special schools for children who are physically, emotionally or intellectually-disabled, to centres attached to ordinary<sup>1</sup> schools such as a Learning Centre (LC), and a JAC for students experiencing

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<sup>1</sup> The term ordinary is used in this thesis to be consistent with the use of the term by the Australian Bureau of Statistics

difficulties in learning, to help within the ordinary classroom for students with learning difficulties by a special needs teacher.

In Australia in 1988, there were a total of 67,800 handicapped persons aged five to nine years, 1,600 of whom were in the ACT (see Appendix A, ABS Table 3). Of these 1,600 children, 200 with a schooling limitation were in special classes such as a JAC, attached to government schools in the ACT (see Appendix A, ABS Table 21a). Throughout Australia, there were 3,000 children with schooling limitations in special classes attached to government schools (see Appendix A, ABS Table 21b). There also were 200 children in the age group of five to nine years in ordinary classes in ordinary schools in the ACT who were classified with a condition such as mental retardation, mental degeneration due to brain damage, *slow at learning* [italics added], and specific delays in development (see Appendix A, ABS Table 22a). Australia-wide, children in ordinary classes classified with these conditions totalled 2,700 (see Appendix A, ABS Table 22b). Such figures would indicate that in Australia, there is a proportion of five to nine-year-old children identified as slow at learning in ordinary classes in ordinary schools in addition to those already identified for special classes.

### 1.3.1 Academic difficulties

A common characteristic of children with learning difficulties is their slowness to learn. The term *slow learner* encompasses a wide range of children with varying abilities and learning skills. Problems with learning skills pertaining to attention, listening, comprehension, memory and problem solving often are associated with the slow learner. Studies have linked poor academic performance to these children (Keogh, Major-Kingsley, Omori-

Gordon & Reid, 1982; Kirk & Elkins, 1975; Norman & Zigmond, 1980). The areas of literacy and numeracy in particular, appear to be those where most children with learning difficulties encounter academic problems. While learning difficulties associated with numeracy recently have become of concern to researchers, reading has been identified as the area in which the majority of learning difficulties occur (Ashman & Elkins, 1990; Berry & Kirk, 1980). The Schools Commission Survey of Special Education in Australia (Andrews *et al.*, 1979) found that the majority of children with learning difficulties in regular primary schools had problems with reading.

Other areas where there is a recognised problem are spoken language and listening (Sonnenschein, 1982; Whitehurst & Sonnenschein, 1981). Difficulties experienced by children in oral language and listening can attenuate their intellectual and social development (Ashman & Elkins, 1990). The acquisition of listening skills in children is generally assumed to develop automatically, and the teaching of listening skills to children, especially to those with learning disabilities, has been largely neglected (Robinson & Smith, 1981). The lack of appropriate attentive listening skills in children experiencing learning difficulties thus has implications not only for academic areas such as literacy and numeracy, but also for their cognitive and social development.

### 1.3.2 Cognitive difficulties

In the past, learning difficulties have been associated with brain dysfunction (Myklebust, 1968), and problems with perceptual modes such as visual, aural and motor (Hallahan & Cruikshank, 1973; Kephart, 1960). Recently, however, Coles (1989) has

suggested that very few children with learning disabilities have neurological dysfunction. Coles (1989) argues that most research in the learning disability field has been concerned with "studying the 'products' of learning; very little attention has been given to the processes that brought about these products" (p. 270).

Traditional components of cognition include attention, comprehension, memory and problem solving (Flavell, 1977). Listening also is identified with components of cognition (Alley & Deschler, 1979; Anderson & Lynch, 1988; Barbara, 1958; Barker, 1971; Floyd, 1985; Robinson, 1983, 1989; Robinson & Smith, 1981; Smith & Robinson, 1986; Wolvin & Coakley, 1985). Studies of these components of cognition have demonstrated that children with learning difficulties can exhibit problems in cognitive processing areas such as in attention (Tarver & Hallahan, 1974), comprehension (Kotsonis & Patterson, 1980; Wong, 1979, 1980; Wong & Jones, 1982), memory (Bauer, 1977; Campione & Brown, 1977; Dawson, Hallahan, Reeve & Ball, 1980), problem solving (Spekman, 1981; Maker, 1981) and in listening (Alley & Deschler, 1979; Bauer, 1977; Bryan, Donahue & Pearl, 1981; Forster & Doyle, 1989; Kotsonis & Patterson, 1980; Robinson, 1983, 1989; Robinson & Smith, 1981; Smith & Robinson, 1986; Spekman, 1981). Other studies have indicated that children with cognitive-related learning problems can acquire an inappropriate or no strategy for a particular learning task; these children are described as inactive learners (Torgesson, 1977, 1982; Wong, 1980).

Metacognition, and the employment of strategies in cognitive processing such as in comprehension, memory, and problem solving can be seen as a possible way of influencing children's learning. Results from various studies indicate that although children do possess the strategies to use in a particular task such as a memory



game (Brown *et al.*, 1983), they may not know what strategies to use (Flavell & Wellman, 1977) or may apply an inappropriate task strategy (Wong, 1987).

The results of metacognitive research have been examined in relation to students with learning difficulties and learning disabilities (Ashman & Conway, 1989; Campione, 1987; Wong, 1987). An important finding by Wong (1987) has been an apparent developing awareness of the concept of metacognition amongst teachers of students with learning disabilities. This awareness has provided these teachers with a possible means for teaching metacognitive skills such as planning, monitoring and evaluating, to students with learning disabilities to help them become "autonomous and active learners" (Wong, 1987, p. 191).

### 1.3.3 Social difficulties

Students with learning difficulties often lack appropriate skills for social interaction (Bryan, Donahue & Pearl, 1981; Morris & McReynolds, 1986). These students appear to have difficulty in interacting with their peers, adults, and in many instances with their teachers. In addition, they often have a poor self-concept, especially in relation to academic learning, and see themselves as "dumb" and unable to learn. This can result in the students having little confidence and motivation in attempting academic tasks in case they experience further failure.

A contemporary component of cognition is social cognition (Flavell, 1977). The basic cognitive processes such as attention, memory, comprehension and problem solving have been linked to social cognition and to interactions between people (Flavell, 1985). Studies with children have shown that cognitive processes and

related strategies, develop through social interaction (Doise, 1985; Doise & Mackie, 1981; Paris & Lindauer, 1982). Cognitive development in children also has been linked to social interaction during childhood (Bruner & Sherwood, 1981; Sylva, Roy & Painter, 1980; Vygotsky, 1978).

It can be argued that if students with learning difficulties experience inappropriate and negative social relationships with people, this will influence their learning and lead to low academic expectations and learning motivation. There is evidence for example, that teachers, parents and peers are more likely to have negative attitudes towards children with learning disabilities (Bryan, Donahue & Pearl, 1981). Relationships between these children and their peers were assessed in a study by Bryan *et al.* (1981). They found that the communication strategies of the children were more likely to be submissive during peer interactions, with older children participating in more off-task behaviour than their regular-achieving peers. However, similarities between the two groups also have been noted (Spekman, 1981). Children with learning disabilities appeared to perform as well as their peers in following directions and in answering questions when interaction was led by a normally-achieving peer.

The effects of co-operative learning on low-achieving primary school children also have been examined (Yager, Johnson & Johnson, 1985). This study found that low-achieving students benefited more from structured oral interaction involving listening tasks within co-operative learning groups than from working individually. This would suggest that situations can be constructed to ensure that co-operative learning takes place within the learning environment of a group of students with learning difficulties.

#### 1.4 Background to the present study

A lack of musical experiences by the children in a LC and a JAC attached to a ordinary primary school in the ACT, was the major incentive for this researcher in 1980, to introduce a program of music activities based on singing, the playing of musical instruments, listening, movement and creativity. These children were identified as slow learners and aged from five to fourteen years. Prior to this time, musical experiences for these children had been mostly negative or non-existent. The once-a-week singing time with children in the ordinary school had been a frustrating experience for the younger JAC children. Most of the children were not participating in these sessions with the ordinary classes and often could not sing the notes or even say the words of the songs. Music was not included in the class timetable for the older children in the LC due to their behaviour problems.

The music program (Bygrave, 1984) initiated with the children in the LC, was aimed at developing and extending through a wide range of musical activities, their auditory, visual, motor, and social skills. A key element in the program was enjoyment and an emphasis on the children learning about themselves and others. The children particularly enjoyed a musical activity involving chime bars that incorporated language, mathematical and motor skills. As their skills in rhythm and beat developed through, for example, understanding the concepts of  $2/4$ ,  $3/4$ , and  $4/4$  time, they would compose rhythm patterns both on paper and on a set of chime bars with a partner or in a group, using chord combinations of, for example, C Major using the chord of C-E-G. This activity often became a whole-class effort with groups of children contributing to the composition of a tune on the classroom chalkboard. Eventually,

the children wrote their own words to their tunes, and dramatised their songs incorporating musical percussion instruments for side effects, to perform before other classes in the school.

Initially, the children in the JAC had to overcome negative experiences associated with music in a school setting. The emphasis behind all of the musical activities carried out with these children was on having fun as various musical skills were learnt. A musical theme built around the sea provided many enjoyable learning experiences. The children learnt to listen, chant, play on percussion instruments, move and create different patterns of beat acting as commanders, captains and sailors "aboard ship". A folk song, "Little Fish" (Fahey, 1977), besides being a favourite song with the children provided various movement, the playing of percussion instruments, and creative activities. Many language opportunities such as discussions about the sea, water and fishing, also were initiated through these musical activities. These led to investigations in the school library, to class projects and to further readings related to the sea.

In 1984, children in a special school for mildly to profoundly intellectually and physically handicapped students in the ACT, also were introduced by the researcher to a program of musical activities and experiences similar to the one initiated with the children in the JAC and LC. These children ranged in age from three to sixteen years. Appropriate adaptations and extensions to compensate for the more varying intellectual and physical disabilities of the children were incorporated into the program. The activity of bell ringing, for example, was adapted so that physically-handicapped children also could participate.

It appeared that in each of the special education settings (LC, JAC and special school) the development of the children improved

through their participation in a music program. Development, in this context, meant the apparent acquisition of academic, cognitive, psychomotor, affective, and social skills (Bygrave, 1985, 1989).

In order to substantiate the view from these personal observations that music can have a positive influence on the development of children, and to justify the inclusion of music in a special education curriculum, music was identified as a possible 'tool' for use with some of the major approaches to learning disabilities in the field of special education (Bygrave, 1989). This exercise served to illustrate how music could fit comfortably alongside many special education programs. Various approaches used in special education programs such as perceptual-motor, multi-sensory, language-development-related, developmental and behavioural were discussed in association with music activities (Bygrave, 1989). It was shown that music could be used in different approaches to learning. For example, music could be used to learn a sequence, as a possible means for assessment, and in developmental programs.

Various cognitive learning theories also were examined in considering music as an activity for the development of cognitive processes (Bygrave, 1985). In the past, music usually had been associated with the affective and psychomotor domains of learning. Recent reviews of the literature however, suggest an increased interest in associating music with cognition. Music has been proposed as cognition (Serafine, 1983b, 1988) and as a cognitive skill (Sloboda, 1985). It appeared reasonable, therefore, to initiate an investigation into whether music would develop the cognitive processing skills in children with learning difficulties.

## 1.5 Statement of the problem

Children with learning difficulties have inadequate listening skills. Through the teaching of listening skills to these children, cognitive processing skills also should develop. Cognitive processing skills are interpreted as how the child learns to attend, to listen, to comprehend, to memorise and to solve problems. In exploring this concern, music can be considered as a possible 'tool' for teaching these skills.

A rationale for a study concerned with the development of listening skills, using music, in students with learning difficulties, is that participation in a music program can assist auditory discrimination skills. It is through auditory skills that students learn to recognise, discern, differentiate and analyse sound. These skills, which are necessary for children to be able to listen, speak, communicate and read, can be developed through musical activities. The exploration of concepts of sounds such as high, low, loud, soft, short and long sounds, for example, can lead to an improvement in childrens' ability to listen and respond.

Musical activities also can assist other modalities of learning incorporating the visual, tactile and kinaesthetic modes. Visual discrimination skills, developed through using the visual representation of sound such as musical concepts and associated words, musical signs and notation, can extend language knowledge. The tactile and kinaesthetic modes of learning emphasised in musical activities, provide a further reinforcement of aural and visual skills. Through tactile awareness such as playing a percussion instrument, or through kinaesthetic motion such as rhythmic movement, the ability to feel beat and rhythm patterns of sound

can be developed, thus adding a further dimension to the aural and visual concept of sound (Bygrave, 1985, 1990b).

A fundamental question in relation to music, to the development of cognitive skills, and to children experiencing learning difficulties is addressed in this study, namely, whether listening skills of children in special education settings such as a JAC, improve through participation in a music program.

## **1.6 The research study design**

The experimental design of the research study was derived from models presented by Campbell and Stanley (1963), and from discussions with research advisors. An experimental design which appeared applicable to the study, was one involving "naturally assembled collectives such as classrooms" (Campbell & Stanley, 1963, p. 217) in experimental and control groups. A decision to implement two programs was made following discussions with research advisors after conducting a pilot study. In order to introduce a comparative aspect to the study it was decided that two programs, a music program and a story-telling program, would be randomly assigned to four JACs in the ACT. In one JAC, a music program would be implemented, in another a story-telling program, and in the third a combination of a music program and a story-telling program. The fourth JAC would act as a control group. A group of younger children aged from four to five years in a class of a special school in New South Wales (NSW) would act as a contrast group. A study discussed by Hays (1963) was similar in experimental design in that it examined the effects of two treatments and a combination of these, on subjects randomly assigned to treatment and control groups.

## **1.7 Summary**

This study then, is concerned with the development of listening skills in children being taught in a JAC. These children, aged from five to nine years, previously had been identified as having problems with academic, cognitive and social skills in learning tasks. In particular their cognitive processing skills associated with attention, comprehension, memory, problem solving, and listening were often undeveloped, inadequate, or poorly applied. The subject of this study, which arose out of personal observations, practice and study in the field of music and special education, was to investigate whether the listening skills of the children could develop through participation in a music program. The experimental design of the study involved the implementation of a music program, a story-telling program and a combination of a music program and a story-telling program in JACs in the ACT. A control group and a contrast group also were incorporated into the design. Data for the study were collected through a variety of procedures and instruments during a twenty three week intervention period.

## **1.8 Organisation of the remainder of the thesis**

In Chapter Two, the literature pertinent to a theoretical background of this study is reviewed. Chapter Three describes the experimental methodology relevant to the study and the methods used are detailed in Chapter Four. The implementation of a music program, a story-telling program, and a combination of both these programs, are reported in Chapter Five. Case studies, representative of those students who participated in the programs, are discussed in



Chapter Six. Results from the observational data are presented in Chapter Seven and from the experimental data in Chapter Eight. These results are discussed in Chapter Nine. Finally, conclusions are drawn in Chapter Ten in relation to the study, with implications derived for the development of cognitive processing skills through a music program with children who have learning difficulties.