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This study examined mainstreaming in music via a survey of a sample of Arizona music educators. Among the respondents (n = 107), the vast majority are or have been responsible for teaching students with disabilities, although most have received little or no training in special education. Emotionally/behaviorally disordered students are perceived as the most difficult to mainstream, and physically handicapped and speech-impaired students the least difficult. Among disabled students, "learning disabled" was the category most frequently encountered. In most schools, mainstreaming is the only music placement option, and regular music faculty members are the sole providers of music instruction for special learners. Musical ability is rarely the primary reason for mainstreaming students; few respondents have access to special education consultants or adequate time to individualize programs, and most respondents rarely or never participate in placement decisions. The respondents' goals for special learners in music center on student participation and classroom management, with little demarcation between musical and nonmusical goals or objectives. We concluded that effective mainstreaming in music, as implied by the Education for Handicapped Children Act of 1975 and recommended by the Music Educators National Conference, does not exist in Arizona.

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Music Mainstreaming: Practices in Arizona

The Education for Handicapped Children Act of 1975 (Public Law 94-142) mandates the least restrictive educational environments for all students. For many students with disabilities, this law implies mainstreaming, "a term used to describe the process of integrating exceptional children into the regular classroom" (Darrow, 1990).

P.L. 94-142 is almost two decades old, yet there is a paucity of research literature on music education for students with disabilities. Research does suggest that many music educators are involved in mainstreaming. Just over 10 years ago, some 63% of music educators responding to a nationwide survey reported involvement with disabled students (Gilbert & Asmus, 1981). Elementary teachers were more involved than secondary teachers. A survey of Iowa and Kansas

music educators in the late 1980s revealed that about half the respondents taught students with disabilities (Gfeller, Darrow, & Hedden, 1990).

Many educators believe that positive teacher attitudes may play an important role in the success of mainstreaming (Damer, 1979/1980). Generally, music educators express positive attitudes toward teaching disabled students (Damer, 1979/1980; Hawkins, 1991/1992; White, 1981/1982), but music educators and music education students react less positively when shown pictures or videotapes of realistic situations involving certain types of mainstreamed students (Gilbert & Stuart, 1977; Nelson, 1980). Furthermore, music educators express reluctance about mainstreaming moderately to severely disabled students, especially students who might adversely affect classroom management, take too much of the teacher's time and attention away from other students, demand major changes in teaching methods, require extraordinary teaching skills, or require extensive classroom support services (Hawkins, 1991/1992). Music educators in two studies opined that they were asked to teach too many mainstreamed students (Atterbury, 1986; Gilbert & Asmus, 1981), and 61% of music educators believe that students with disabilities hinder the learning of nondisabled students (Gfeller, Darrow, & Hedden, 1990). These findings correspond with those from studies of elementary classroom and secondary subject-specialist teachers (Hawkins, 1991/1992).

Individual music educators' opinions vary widely on the effectiveness of mainstreaming in music (Gfeller, Darrow, & Hedden, 1990). Some music educators believe that students with disabilities would be better served in separate classes (Atterbury, 1990). Music educators' attitudes toward mainstreaming, however, are not predictable by the teacher's sex, age, years of teaching experience, education level, experience with disabled students, or course work and other training in special education (Gfeller, Darrow, & Hedden, 1990; White, 1981/1982). Teaching area (i.e., choral, general, instrumental) was not predictive of attitudes in the Gfeller, Darrow, and Hedden study (1990), but other studies have shown instrumental teachers to be more favorable toward mainstreaming than are choral teachers (Damer, 1979/1980; White, 1981/1982), and elementary teachers more favorable than secondary teachers (White, 1981/1982).

Objectives for mainstreamed students should be of primary interest to teachers, yet little research has been conducted on the subject. One study found "a general lack of consensus" on musical objectives for mainstreamed students. The same study reported a higher perceived level of instructional support for achieving objectives for the disabled among instrumental than among choral or general music teachers (Gfeller, Darrow, & Hedden, 1990).

Researchers have examined specific aspects of music educators' involvement with disabled students. In various studies, relatively few music teacher respondents reported being actively engaged in the

development of mainstreamed students' Individual Educational Programs, often called IEPs (Aterbury, 1986; Gavin, 1983/1984; Gfeller, Darrow, & Hedden, 1990), although general music educators reported much higher levels of involvement than ensemble teachers (Gilbert & Asmus, 1981). Music educators also have expressed concern over the procedures used in their schools for valuing disabled students (Gavin, 1983/1984; Gilbert & Asmus, 1981). These findings conflict with recommendations made by the Music Educators National Conference (MENC, 1986), which call for music educator involvement in mainstreaming placement decisions. According to MENC, placement decisions should include consideration of musical achievement, access to consultants in special education, and adequate teacher preparation time.

Researchers have also found that music educators consider their own training inadequate for dealing with disabled students (Gfeller, Darrow, & Hedden, 1990; Nelson, 1980; Shehan, 1977), and that many music education students believe they lack the requisite personal qualities for such teaching (Cassidy & Sims, 1991). Finally, music educators consider emotionally and behaviorally disordered and hearing-impaired students the most difficult to mainstream. Speech-impaired and health-impaired students are considered the most difficult (Gfeller, Darrow, & Hedden, 1990).

The purpose of this study was to examine mainstreaming in music in the public schools of Arizona. The following research questions were posed: (1) What is the nature and extent of mainstreaming in Arizona's music classrooms? (2) What reasons do music educators cite for special learners being mainstreamed into their regular music classrooms? (3) What educational objectives do music educators expect to achieve with special learners? (4) Which indicators do music educators use to identify perceived successful mainstreaming, including perceived personal success? (5) Which variables predict perceived success in mainstreaming?

ETHOD

A questionnaire was developed following a thorough review of the research literature. A portion of the questionnaire requested demographic information on grade level and teaching area (i.e., band, chorus, general music, strings), highest degree obtained, amount and type of training in special education, years of teaching experience and extent of experience teaching special learners, types of students with disabilities taught at the time of the survey, and school policy on placing and teaching special learners in music classes. The bulk of the questionnaire explored the objectives and characteristics of mainstreaming in music, including instructional support. An additional section sought teachers' perceptions of the difficulties associated with integrating students with specific types of disabilities to their regular music classes. Two types of response modes were used to elicit the nondemographic data: a 5-point scale ranging

from "strongly agree" to "strongly disagree," and a 4-point scale ranging from "always" to "never." Items marked "not applicable" were excluded from the analysis.

After the questionnaire was drafted, a questionnaire used in a previous study (Gfeller, Darrow, & Hedden, 1990) was obtained from the authors. The questionnaire used in the present study was then altered slightly to permit direct comparisons of data between portions of the two studies. Consequently, some of the questions on the two questionnaires were identical, although the second questionnaire was somewhat longer. Sixteen music teachers from a single school district in Phoenix pilot-tested the questionnaire.

Following minor revisions, the questionnaires were mailed to a sample of Arizona music educators drawn from a list provided by the Arizona Music Educators Association (AMEA). The list, which included non-AMEA members, consisted of 1,619 names. After eliminating all duplicate names and those with no K-12 teaching responsibilities, 1,362 names remained. Every sixth name from the edited list was chosen ($n = 227$), beginning at random with the fourth name; this procedure is known as systematic sampling with a random start (Babbie, 1990).

There were 81 usable responses to the first mailing. A follow-up mailing 3 weeks later resulted in an additional 26 usable responses. In addition, 25 unusable responses were received due to errors (e.g., incorrect addresses, retirements) in the edited AMEA list. After correction for the 25 errors, the initial and follow-up response rates were 40% and 13%, respectively, for a total of 107 usable responses from 202 valid names (53%).

RESULTS

1. What is the nature and extent of mainstreaming in Arizona's music classrooms?

Demographic data paint a telling picture of mainstreaming in Arizona's music classrooms. Less than 6% of the respondents indicated that they had never had special learners mainstreamed into their classes. Most such respondents were secondary instrumental music teachers, and most had fewer than 5 years of teaching experience. Forty-two percent of all respondents indicated that all special learners in their schools are mainstreamed into music, and an additional 50% indicated that some are mainstreamed. At the time of the survey, 84% of the respondents were responsible for teaching special learners. Their teaching assignments most frequently included students with learning disabilities and emotional/behavioral disorders (Table 1).

More than 75% of respondents indicated that mainstreaming is the only music placement option for special students at their schools. Another 15% reported that special learners also receive music instruction in special classes taught by the music teacher. In total, 90% of those responding indicated that regular music faculty

members are the sole providers of music instruction to special learners in their schools.

Table 1
Percentages of Respondents Teaching Students with Specific Disabilities (n = 107)

Disability	%
Learning disabled	69
Emotionally/behaviorally disordered	55
Speech impaired	39
Physically handicapped	33
Hearing impaired	32
Visually mentally handicapped	29
Physically handicapped	22
Emotionally mentally handicapped	19
Not applicable	16
Multiply disabled	13
Autistic	8

Unfortunately, these music educators have had little formal training for this task. More than 40% of the respondents reported that they have received no training in special education, while the training of another 20% was limited to in-service and other types of workshops (Table 2). In addition, regularly scheduled in-service training sessions (at least once per year) at the respondents' schools are rare (10%), with 34% of the teachers receiving training upon request and 44% receiving none at all.

Table 2
Percentages of Respondents with Various Types of Training (n = 107)

Type of training	%
None	41
Workshops only (including in-service)	20
Portion of an education course only	10
Complete college course only	8
College course and workshop (including in-service)	4
Multiple college courses and workshops (including in-service)	7
Other	10
Total	100

2. What reasons do music educators cite for special learners being mainstreamed into their regular music classrooms?

Several reasons were cited for placing special learners in regular music classes, among them musical ability, the child's interest in participating, and socialization skills. After placement, the teacher and

student may work toward accomplishing any number of musical and nonmusical objectives in the classroom.

Although MENC recommends that students be mainstreamed into music on the basis of their musical ability, just over 3% of respondents in this study indicated that musical ability is the primary reason for mainstreaming students. Thirty-four percent noted that placement is based primarily on student interest, with 49% citing socialization as the primary reason for placement. Chi-square analysis of teaching area by primary reason for placement reveals that student interests and socialization concerns prevail in placement decisions for performance-oriented and general music classes, respectively (Table 3).

Table 3
Frequency Distribution of Primary Reasons for Mainstreaming by Teaching Area (n = 94)

	Band	Chorus	Gen. music	Strings	Combination
Musical ability	0	1	0	1	1
Interest	13	7	1	6	5
Socialization	4	2	24	0	16
Other	0	1	6	2	4

$$\chi^2 = 47.97, df = 12, p < .0001$$

Despite MENC's recommendation that music teachers be fully involved in the placement process, most music teachers have limited influence over which special learners are mainstreamed into their classes. Seventy-two percent of the respondents "rarely" or "never" participate in the placement process, and only 6% believe they have more influence than special education staff members, administrators, and others on the placement of special learners in music classes.

3. What educational objectives do music educators hope to achieve with special learners?

While strong trends are apparent in the reasons for placing special learners in music, we found little agreement among music educators on educational objectives for special students after the decision to mainstream has been made. Discussion about objectives for special learners often centers around musical versus nonmusical goals. We attempted to replicate the questionnaire subscale on goals developed by Gfeller, Darrow, and Hedden (1990), but the scales in both studies had low reliability (coefficient alphas). Therefore, factor analysis of all questionnaire items related to musical and nonmusical goals was used in the present study. The procedure revealed no significant clusters of responses that confirm a clear distinction between the two kinds of goals. Moreover, the absence of strong negative correlations between similar questions that explore the importance of musical versus nonmusical goals indicates that, at least in the minds of these music educators, the two kinds of goals

ne neither dichotomous nor mutually exclusive. Rather, the mix-
 re of weak positive and negative correlations suggests that these
 achers pursue musical and nonmusical goals and objectives sim-
 inuously (Table 4).

Table 4
Correlations of Responses to Items Regarding Musical and Nonmusical Goals and Objectives

Items	r	n
A. Nonmusical goals are more important than musical goals for the special learner.		
B. The primary objective with the special learner is to develop musical goals.	-.45	101
A. I am expected to work on nonmusical goals for special learners (i.e., motor development, social skills, emotional development, communication, perceptual skills) through music activities.		
B. I am expected to adapt regular music education goals and objectives for special learners.	.50	103
A. My primary objective with the special learner is development of musical skills and knowledge.		
B. My primary objective with the special learner is development of nonmusical goals (such as self-esteem, social behaviors, motor development).	.34	105

4. Which indicators do music educators use to identify perceived successful mainstreaming, including perceived personal success?

Nearly 62% of the respondents "agreed" or "strongly agreed" with the statement, "I feel successful in my teaching of special learners." In fact, only about 33% agreed or strongly agreed that special learners are effectively integrated into music classes in general. A relatively low correlation ($r = .39$) between individual music educators' expressed views of their own success in mainstreaming and their perception of how effectively special learners are integrated into music classes confirms the inconsistency.

The data also seem to indicate that music educators do not consider MENC recommendations for mainstreaming to be important criteria in their evaluation of their own success in mainstreaming. Although most respondents seem to believe that their mainstreaming efforts are highly successful, only small percentages of their programs comply with the MENC (1986) recommendations: that music educators be involved in the placement process (8%), have regular access to consultants in special education (12%), have adequate preparation time to individualize programs for each special learner (6%), and that students be mainstreamed on the basis of musical

achievement (3%). No respondent with special learner responsibilities at the time of the survey met more than two of the four criteria. Because individual variables failed to satisfactorily describe the perceived success of the mainstreaming process in music, principal component factor analysis was used to identify a much stronger composite scale of perceived success. The resulting composite variable, perceived success of mainstreaming, is a five-item weighted scale with an eigenvalue of 2.37. All items correlate at .60 or higher with the composite variable (Table 5). The reliability (coefficient alpha) for this scale is .93.

Table 5
Factor Pattern for Perceived Success of Mainstreaming

Factor	Value
Goal should be to mainstream all special learners	.73
Most special learners are effectively integrated	.72
Special learners slow down regular class progress	-.61
I feel successful in my teaching of special learners	.61
Special learners are best served in self-contained classes	-.60
Eigenvalue = 2.37	

5. Which variables predict perceived success in mainstreaming?

Of all the variables examined, only two seem to predict individual music educators' perceived personal success in mainstreaming. Not surprisingly, the strongest predictor variable is the respondents' perceived ability of music educators to mainstream, which accounts for almost 14% of the variance. Respondents who checked "strongly agree" for this item were significantly more positive about their own success than those who checked "strongly disagree" (ANOVA: sum of squares = 6.42, $df = 4$, $F = 3.66$, $p < .009$; Scheffé, $p < .02$). Teaching area is also a significant predictor of perceived personal success in mainstreaming, but it accounts for only 6% of the variance. Teachers with combined assignments feel significantly more successful than do their colleagues in general music or performance (band, choir, strings) only (ANOVA: sum of squares = 2.98, $df = 2$, $F = 3.39$, $p < .039$; Scheffé, $p < .001$).

The number of years of teaching experience (high, medium, low) does not predict perceived success (ANOVA, $p > .05$). Interestingly, the correlation between teaching experience and experience in teaching special learners is low ($r = .37$), perhaps because mainstreaming in music has been widespread in Arizona for fewer years than some teachers have been teaching. Notably absent from the list of significant predictors of perceived success is preservice or in-service training in teaching students with disabilities. It is likely that the scanty preservice and in-service training of most music educators has a negligible effect on their mainstreaming practice when compared to their general knowledge and skill in music and pedagogy. High-

quality, sustained training may have a greater effect on mainstreaming practice.

The results of this study confirm previous research findings that students with certain disabilities are more difficult for teachers to mainstream than others. Two-tailed paired *t*-tests reveal that emotionally/behaviorally disordered students are perceived as significantly more difficult to mainstream than multiply disabled, trainable or educable mentally handicapped, learning disabled, visually handicapped, hearing-impaired, or speech-impaired students ($p < .001$). Physically handicapped and speech-impaired students were each significantly easier to mainstream than students with five of the nine disabilities ($p < .005$). The perceived difficulty of mainstreaming students with specific disabilities, however, did not significantly affect teachers' perception of their overall success in mainstreaming (ANOVA, $p > .05$).

DISCUSSION

This study reports only on the responses of Arizona music teachers who were willing to complete the questionnaire. These individuals may differ in significant ways from the nonrespondents or from those who were not part of the original sample. Furthermore, questions can lead people to form new opinions about specific issues. Nevertheless, the results of this study present a sobering view of the practice of mainstreaming special learners into regular music classes in Arizona. More than 94% of the responding music educators have been called upon to teach special learners, yet 40% have received no training for the task, and most training received by the others was and remains inadequate. These teachers also affirmed that they lack sufficient preparation time (89%) and resources (69%) to individualize instruction for mainstreamed students in music.

Furthermore, of music educators responding, 72% rarely if ever participate in the decision to place students in their classes. Moreover, simple involvement in placement decisions does not resolve the dilemma faced by 90% of the respondents who teach in schools where the decision not to mainstream a student into music class, even for valid reasons, is tantamount to denying that student access to music instruction at school.

The results of this study give little indication of music educators' views on what special learners should learn in a regular music class. It is apparent, however, that practicing music educators' objectives for special learners do not fall into dichotomous categories of musical and nonmusical objectives. It is also evident that student achievement of either musical or nonmusical objectives, as measured by this survey, is not a critical factor in music educators' assessment of their personal success in teaching mainstreamed students.

The items in the scale of perceived success (Table 5) suggest that music educators value having special learners in their classes as long as the learning environment for the other students is not adversely

affected. Music educators seem sensitive to the importance of maintaining the educational momentum of the music class while mainstreaming, as prescribed in P.L. 94-142. Full compliance with P.L. 94-142, however, also requires adequate educational support for the special learner in the regular classroom, which implies clear educational objectives and implementation of MENC's recommendations for mainstreaming. Music educators do not seem to include these latter recommendations among their criteria for evaluating the success of the mainstreaming process, or, as noted earlier, for evaluating their own success as teachers of special learners.

One explanation for the lack of consensus on objectives may be that many music educators have succumbed to the practical difficulties of mainstreaming and do not have clear goals for special learners. It is also possible that teachers of mainstreamed students have cohesive goals and objectives, implicit or explicit, for their students that are not addressed in the literature. Regardless, in the absence of clearly articulated educational goals and objectives for mainstreamed students, it is not surprising that the most statistically sound scale of perceived success in this study consists of questionnaire items that focus on general participation and classroom concerns rather than on specific objectives, whether they be musical or nonmusical. In any case, the success of mainstreaming efforts will continue to be difficult, if not impossible, to judge as long as the goals and objectives of mainstreaming special learners into music classes remain unclear in theory or in practice.

CONCLUSIONS

Mainstreaming learners with special needs into regular music classrooms and ensembles is a challenging task. Nevertheless, music educators with little or no familiarity with the knowledge base on special learners are asked to teach the majority of special learners in regular music classes, often without the benefit of extra preparation time or adequate resources. Under these conditions, it should be no surprise that this study indicates that effective mainstreaming, as described in *The School Music Program: Description and Standards* (MENC, 1986), does not exist in Arizona.

Nevertheless, 84% of Arizona music educators continue to teach the special learners who are placed in their classes, and over 94% have done so at some point in their careers. They seem to have developed their own criteria for successful mainstreaming, criteria centered on participation and class management issues. These modified criteria may fall short of the ideals proposed by P.L. 94-142 and MENC, but they are attainable given the limited time, resources, and expertise available to most music programs. Investigators in future studies might use both quantitative and qualitative techniques to explore suitable music education goals and appropriate measures of success in the teaching of special learners, with special attention given to the distinction between the goals of

music therapy and music education.

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The purpose of this study was to investigate the effects of unison singing versus individual singing on the vocal pitch accuracy of children in Grades 1, 2, 3, and 5, as well as to observe the effects of gender and maturation on children's singing ability. Subjects (N = 241) were asked to sing a simple children's song both individually and as a member of a small group consisting of children's voices only. Responses were recorded on separate channels of a multichannel tape recorder and subsequently scored for pitch and melodic interval accuracy. Results indicated that singing in unison and singing individually did have an effect on the children's vocal accuracy. Children at each grade level studied sang more accurately when singing in unison with their peers than when singing individually. Both group and individual scores improved with each successive grade level; however, the difference in scores between group and individual singing was much greater for children in Grade 5 than for the other three grade levels. Results also indicated that in each of the grade levels and for each of the singing conditions, girls sang more accurately than did boys.

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Unison versus Individual Singing and Elementary Students' Vocal Pitch Accuracy

Of all the activities through which children learn music, singing is probably the most commonly accepted and widely used practice in today's elementary music classrooms. A large body of research describes characteristics of children's singing ability. With regard to age, there has been general agreement among researchers that singing accuracy improves with maturity (Geringer, 1983; Goetze, 1985/1986; Gould, 1969; Green, 1990). With regard to gender, however, conflicting evidence has been reported. Some researchers have reported no significant differences between boys' and girls' singing ability (Apfelstadt, 1984; Clayton, 1986; Smale, 1987/1988), whereas others have found that girls sing more accurately than boys (Goetze, 1985/1986; Goetze & Horii, 1989; Jordan-DeCarbo, 1982).

Typically, singing in the regular elementary and general music classroom is a group activity used to achieve extramusical and musi-

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