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Update: Applications of Research in Music Education 2010 28: 79 originally published online 9 March 2010
DOI: 10.1177/8755123310361683

MENC The National Association for MUSIC EDUCATION

Update
28(2) 79–85

DOI: 10.1177/8755123310361683
http://update.sagepub.com

Music Educators' Involvement in the Individual Education Program Process and Their Knowledge of Assistive Technology

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Abstract

In 1997, the Individuals With Disabilities Education Act of 1990 was amended to require that assistive technology be considered when preparing an individual education program (IEP). This study explored involvement of Midwestern music educators in the IEP development process as well as their knowledge and attitudes regarding use of assistive technology in teaching students with disabilities. Music educators reported that they continue to have a low level of self-reported involvement in educational planning for students with disabilities. Although music educators recognize the utility of assistive technology, their knowledge base remains limited. Music educators identified the need for better preparation to teach students with disabilities as well as improved interdisciplinary collaboration.

Keywords

assistive technology, IEP, IEP process, IDEA, attitude, music educator, disabilities

The Individuals With Disabilities Education Act of 1990 (IDEA) mandated free, appropriate public education in the least restrictive environment for children with disabilities. In 1997, IDEA was amended to require that assistive technology (AT) be considered when preparing an individual education program (IEP). Music education classrooms and ensembles are included within the scope of IDEA. AT is defined as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of children with disabilities" (IDEA, 1997). AT can be used to augment an individual's strengths, using abilities to counterbalance disabilities. AT can also provide an alternative means of performing a task to compensate for a disability or bypass it completely (Lewis, 1993). In addition, AT can be conceptualized as a cognitive prosthesis to replace an impaired ability or as a cognitive scaffold providing support to accomplish tasks more effectively, efficiently, and independently (Blackhurst, 1997; Cavalier, Ferretti, & Okolo, 1994). It may also serve as a leveraging agent, allowing students with disabilities to experience greater academic success and independence (B. R. Bryant & Seay, 1998; D. P. Bryant, Bryant, & Raskind, 1998; Raskind & Higgins, 1998). Moreover, AT serves as a conduit for students with disabilities to gain access to the general education curriculum (Puckett, 2004; Smith & Jones, 1999) and computer-based music instruction (Gregory, 2002). Studies have shown that music education programs serve diverse students with varying types and degrees of disabilities (Atterbury, 1986a; Frisque, Niebur, & Humphreys, 1994). A review of literature reveals two issues related to inclusion of students with disabilities: (a) level of involvement of music educators with students who have disabilities and (b) music educators' preparation and training.

Level of Involvement of Music Educators With Students Who Have Disabilities

A number of surveys have been conducted of general education teachers' attitudes about inclusion with respect to the student's disability (Avramidis & Norwich, 2002), the need for teacher collaboration (Soodak, Podell, & Lehman, 1998), and the positive impact of prior experience with students with disabilities on teacher attitudes

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(Wall, 2002). Unfortunately, there is limited knowledge and few recent studies of music educators' overall level of involvement with students with disabilities.

One early study that documented participation and need for information on how to individualize instruction was a nationwide survey of 789 music educators on mainstreaming students with disabilities into music classes (Gilbert & Asmus, 1981). In a later survey of music educators, 63% (84 out of 133) indicated that they had not been involved in the development of the IEP for any of the students with disabilities who they taught, and only 11% (15) indicated moderate involvement (Atterbury, 1986b). Furthermore, a survey of respondents from two different states (i.e., Iowa and Kansas) indicated that only 13% were involved in IEP programming (Gfeller, Darrow, & Hedden, 1988). In an interview study of 35 music educators (i.e., 17 general music, 13 instrumental music, and 5 vocal music), 26 indicated a critical need for collaboration between music and special educators (Darrow, 1999). One participant stated,

> I have never been included in any of these students' staffings. I would be happy to try to go if I even knew when they were. The lack of information we receive about some of these students is amazing. I think I could be a better teacher if I were aware of the students' strengths and what strategies have been successful in the past. (Darrow, 1999, p. 6)

Another study found that 72% (77 of 107) of music educators were "rarely" involved in making decisions regarding placement of students with disabilities (Frisque et al., 1994). Together, these studies indicate a history of little involvement by music educators in the IEP process during the 1980s and 1990s.

Music Educators' Preparation and Training

Music educators have indicated that they often do not feel adequately prepared to create adaptations for students with disabilities (Frisque et al., 1994; Gfeller et al., 1988; Gilbert & Asmus, 1981). Colwell and Thompson (2000) investigated the availability of special education courses for music education majors and reported that 74% of 171 colleges and universities had at least one course offering for music education majors. Of these programs, 86% (109) required an introductory special education course for music education majors. Even though there have been increased certification requirements for teacher candidates, there are still a number of programs that do not require special education coursework for a music education major. However, some music education methods faculty may integrate strategies for teaching students with disabilities in their music classes (Heller, 1995).

Absent from the literature are any empirical studies examining the music educator's knowledge or perceived importance of AT as a means to educate students with disabilities. Although previous studies provide some foundational information regarding the education of students with disabilities within music education programs as well as possible needs in training and professional development, there is a lack of current research concerning (a) music educators' level of involvement in the IEP process after recent amendments to IDEA requiring consideration of AT for students with disabilities and (b) music educators' knowledge and perceptions about a range of potential assistive technologies for students with disabilities.

The purpose of this study was to gather data from K–12 music educators regarding their involvement in the IEP process, their knowledge of AT devices that could be used in the music classroom, and their perceptions regarding the importance of AT for students with disabilities. This study examined the following research questions:

1. What is the self-reported involvement of music educators in the IEP process for students with disabilities?
2. What is the self-reported special education training of music educators, preservice and in service?
3. What is the self-reported knowledge of music educators about AT for use with students with disabilities in music settings?
4. What is the self-reported importance music educators place on AT in music settings?

Method

Development of Survey Instrument

Using multiple sources, the authors developed a pilot survey instrument from a content analysis of published research in music education for students with disabilities and the literature on AT (D. P. Bryant & Bryant, 2003) to ensure current language from both fields. In addition, demographic and content items were adapted from the following: a published AT survey (Thompson, Siegel, & Kouzoukas, 2000) and *The Survey Kit*, a series of books on how to conduct survey research (Fink, 2002). The survey instrument included sections on music education and IEP involvement, knowledge and perception of the importance of a range of assistive technologies, and various demographic items. Demographic items included gender, age, degree attained, music specialty, grade levels, years taught, number of preservice courses with content on students with disabilities, and number and

type of in-service activities with content on students with disabilities. Furthermore, a listing of student disability categories was included for respondents to check all that represent students whom they have taught. The categories were autism spectrum disorder, emotional or behavioral disorder, deaf or hard of hearing, mental retardation, learning disability, physical disability and/or health impairment, speech-language impairment, and visual impairment. The authors collaborated together on currently accepted descriptions of the categories of AT to generate examples of specific devices that related to the delivery of music education for students with varying disabilities (Watts, Thompson, & Wojcik, 2003). Within the field of AT, the authors chose four general categories of AT that have specific relevance to music education. These include (a) vision and reading aids, (b) computer and musical instrument aids, (c) communication aids, and (d) seating and positioning aids (see Figure 1).

A 5-point Likert-type scale was used to measure self-reported involvement in adapting music education goals and benchmarks for students with disabilities. Items ranged from a rating of 1, which represented no knowledge in this area, to a rating of 5, which represented competency in this area. Next, an a priori question (i.e., dichotomous yes–no question) focused on whether or not the music educator participated in four possible ways: (a) planning, (b) writing, (c) carrying out goals or benchmarks, and (d) progress updates for current students in special education. If the response was yes, then they were directed to rate the extent of their participation in these four IEP processes. The rating scale ranged from 1 (*no extent*) to 4 (*great extent*). If the response was no, they were to "check all that apply" from a list of seven possible reasons for noninvolvement. An open-ended "other" response option was provided for written comments. The next section of the survey directed respondents to rate (a) their knowledge of AT and (b) the perceived importance across four specific categories of AT. The knowledge rating scale spanned from 1 (*little knowledge*) to 5 (*much knowledge*); likewise, the importance scale ranged from 1 (*not important*) to 5 (*very important*) on a Likert-type scale.

Next, a pilot field test of the survey instrument was conducted with nine reviewers (i.e., faculty and graduate students) from a Midwestern university in the fields of music education and music therapy. The reviewers were apprised of the purpose of the survey and the intended audience. Also, they were given instructions to comment on (a) the readability of the items, (b) the content of the items, and (c) the clarity of the instructions for completing the survey. Based on their feedback, the survey instrument was revised. Approval for the survey, consent form, and cover letter was obtained from the university's institutional review board.

Participants

A membership roster of 1,416 music educators was obtained from a large Midwestern state affiliate of the National Association for Music Education. A total of 400 K–12 music educators representing all specialty areas (i.e., choral, band, strings, general) were then randomly chosen and stratified according to geographic location (i.e., metropolitan vs. nonmetropolitan) to ensure representation across the state. Each participant was assigned a number for record-keeping purposes only.

Procedures

A survey packet including a cover letter, the survey questionnaire, and a stamped return envelope was mailed to each participant at his or her school address. The cover letter described the purpose and the confidential and voluntary nature of the study and explained that there were no right or wrong answers to the survey questions. Respondents were assured anonymity through a blind tabulation of the responses. In addition, the cover letter provided contact information should any of the respondents have questions or concerns. A second wave of surveys was mailed 1 month later to the participants who had not responded to the first survey. On receipt of all of the participant responses, the survey data were entered into a statistical program for analysis, and the accuracy of data entry was verified by another researcher. Frequency counts, percentages, and cross-tabulations were calculated to summarize the responses and to describe the results.

Results

A total of 201 survey questionnaires were returned and deemed useable, 50.7% (102) from a metropolitan area and 49.3% (99) from nonmetropolitan areas. Five surveys were returned as undeliverable, and three others were unusable because of a lack of responses to a majority of items on one or more pages of the survey questionnaire. Excluding the undeliverable and unusable returns, the adjusted overall response rate was calculated to be 51.2% (201 out of 393).

Demographics

Demographic data indicated that 60 (29.8%) respondents were male and 141 (70.1%) were female, with a mean age of 40.8 years and a range of 22 years to 63 years (see Table 1). Approximately 51.8% (104) of music educators held advanced or specialist degrees, and 58.7% (118) of respondents had been teaching for 11 years or more. Most respondents (126 out of 201) indicated general music as one of their areas of music instruction (see Table 1).

Table 1. Demographic Information of Music Educators

Characteristic	*n*	%
Gender		
Female	141	70.1
Male	60	29.9
Total	201	100.0
Age		
M	40.8	
SD	10.9	
Min	22	
Max	63	
Degree		
Bachelor's	96	47.8
Master's	98	48.8
Specialist's	3	1.5
Doctorate	3	1.5
Missing data	1	0.5
Total	201	100.0
Years teaching		
1–5 years	49	24.4
6–10 years	34	16.9
11–15 years	32	15.9
> 15 years	86	42.8
Total	201	100.0
Areas of music instruction		
General music	126	
Strings	20	
Chorus	84	
Band	91	
Geographic location		
Metropolitan	102	50.7
Nonmetropolitan	99	49.3
Total	201	100.0

Note: *N* = 201. Respondents were allowed to report more than one area of music instruction.

Training and Staff Development

Each respondent was given the opportunity to indicate training and staff development in the past 5 years for education of students with disabilities. Reported training and staff development options were informal peer training, conferences, single-day workshops, college courses, and preconference sessions. The largest number of respondents (i.e., 82) indicated informal peer training as the manner in which they received additional training. However, 54 of the respondents indicated that they had not received training in the past 5 years (see Table 2). Learning disabilities and emotional or behavioral disorders were the special needs most commonly encountered by the music educators surveyed. These results are consistent with findings from Frisque et al. (1994).

Table 2. Recent Training and Staff Development Received by Music Educators in the Education of Students With Disabilities

Type	Number of Respondents
Informal peer training	82
Conferences	74
Single-day workshops	69
College courses	18
Preconferences	4

Note: *N* = 200. Missing data for one respondent. Respondents were allowed to check all that apply. Recent training indicated within past 5 years.

Table 3. Frequency of Reasons for Not Participating in Individual Education Program (IEP) Development

Reasons	Frequency
Not invited	79
Not told of IEP time	36
Not necessary to attend	35
Schedule conflict	19
Told I didn't have to go	18
Other[a]	16
Too busy	7
Not interested	2

Note: Respondents (*N* = 201) were allowed to check more than one reason.
a. Open-ended responses from respondent.

Involvement With IEP Development

The first research question addressed respondents' involvement in IEP development. The substantial majority of respondents, 85.6% (172), indicated that their role as a music teacher included adapting music education goals and objectives for students with disabilities. However, when asked to rate their level of knowledge and skill, only 9.0% (i.e., 18 teachers out of 199) rated their skills in this area as being competent.

Even though their role includes the expectation for adapting goals and objectives, more than half of the respondents, 63.2% (127), stated they did not participate in IEP development (e.g., planning, writing, carrying out goals or benchmarks, reporting progress updates). The most frequently cited reasons given for their lack of involvement in the IEP included either not being invited to attend the IEP meeting or not being informed of the particular IEP meeting time (see Table 3).

Through an open-ended response option, music educators could indicate "other" as a reason for not participating in the IEP. Here, some respondents explained that schedules and logistics kept them from being able to

participate in the IEP development: "IEPs are done all on one day—subs would be required," "I send in written comments on how students progress in my classroom," "I speak personally with the special education people about my special kids," and "Informal meetings used for adaptations." Others seem to be left out of the process entirely: "Not allowed to participate in IEP process."

However, 36.8% (74) indicated that they were involved in the IEP development. Using a rating scale, teachers characterized the extent of their participation in the IEP development within four targeted areas (i.e., planning, writing, carrying out goals or benchmarks, and reporting progress updates). Of those 74 music educators who were involved, 64.9% (48) indicated they carried out goals or benchmarks and reported progress updates to the special education team. However, 87.9% (65) of respondents indicated that they had little or no experience in the writing of the IEP, and 83.8% (62) indicated they had little or no involvement in planning the IEP. Therefore, their role could be characterized as secondary in nature when the development of a student's IEP is formulated.

Perception of AT Knowledge and Importance

The third and fourth research questions addressed respondents' knowledge and perceived importance of AT in relation to students with disabilities in music education programs. The first general category of AT on the survey was vision and reading aids. This included software screen readers, Braille devices, and screen magnifiers. Most of the music educators (69.2%) indicated they had little knowledge about vision and reading AT. Yet more than a third of the respondents (38.3%) indicated that vision or reading aids are "important to very important" in relationship to the music education of students with disabilities.

The second general category of AT was computer and musical instrument aids such as a variety of adaptive keyboards, pointing devices, touch screens, and alternative MIDI instruments. More than half of the respondents, 60.2% (121), indicated little knowledge of devices from the computer or musical aids category and only 2.0% (4) reported much knowledge. Yet more than a third of the respondents, 36.3% (73), indicated computer and musical instrument aids are "important to very important."

The third general category on the survey was communication aids, including products such as communication boards, note-taking devices, amplification devices, and software with visual cues. Exactly 51.2% (103) of respondents rated themselves as having little knowledge of devices in the communication aids category, with only 1.0% (2) of music educators having much knowledge, although 49.8% (110) of respondents indicated that communication aids were "important to very important."

The fourth general category of AT was seating and positioning aids. Adaptive seating, wheelchair modifications, and mounting devices to hold instruments would be included in this category, as would hardware that improves posture or provides physical stability or support. More than half of the respondents, 52.7% (106), reported having little knowledge of seating and positioning aids. Only 2.5% (5) music educators indicated much knowledge in this category. Furthermore, a majority of respondents, 52.3% (107), indicated that seating and positioning was "important to very important."

Discussion

This study confirms two disconcerting practices in the fields of music and special education. First, in more than 20 years there has been little improvement in the involvement of music educators in the IEP development process. Previous surveys beginning in 1981 (Atterbury, 1986b; Frisque et al., 1994; Gfeller et al., 1988; Gilbert & Asmus, 1981; White, 1981-1982) confirm that music educators were not included in the development of students' IEPs and yet they were expected to adapt for children with disabilities in their music programs. According to the IDEA mandate, students must have access to the general education curriculum, and that includes music education. Music educators should consider their responsibility that all children have equal access to the music curriculum. The present study confirms that the majority of music educators still are not involved in developing the IEP for students with disabilities.

Second, experienced music educators are not knowledgeable about current use of AT as a means to educate students with disabilities. Furthermore, current music educators indicate that AT is important even though they have little knowledge about AT devices and adaptive equipment.

In the present study, respondents rated themselves on their level of knowledge and skills in adapting music education goals and objectives for students with disabilities. Perhaps the most disconcerting finding was that 91% (181) of respondents indicated they were not competent in adapting instruction for students with disabilities.

Music educators in this study reported teaching a wide range of students with disabilities. Yet very few were aware of the range of categories of AT even though the use of AT may increase success of students with disabilities in music classes and ensembles. Two categories that music educators know more about are the general categories of communication aids and seating or positioning

aids. A possible explanation for the higher level of knowledge of these devices is that teachers more frequently have students with disabilities coming to music classes with these types of devices. Another explanation for familiarity with these devices could be that many music teachers see these devices routinely advertised in familiar music catalogs.

As for the remaining general categories, vision and reading aids and computer and musical instrument aids, more than half of music educators reported that they have little knowledge of these devices. Lack of knowledge about AT is a significant barrier to music educators' involvement in the educational programming and services for students with disabilities.

Recommendations

It is recommended that systemic change take place in the IEP development process. Music educators can be proactive by communicating with special educators and expressing interest in being involved in future IEP development meetings (e.g., through email, through staff development activities, or at times when annual IEP updates occur). Another recommendation is that special educators begin to facilitate a dialogue with music educators, viewing them as partners in the IEP team. It is important for music educators to give special educators IEP recommendations regarding the most appropriate music instruction class and least restrictive environment for each particular student. Special educators need to know the types of technology that already exist in music educators' classrooms. Special educators also need to know and understand what activities and tasks occur in music classes and ensemble rehearsals to help the music educator with adaptations, instructional technology, and AT decisions. If paraprofessionals are available to support a student in the regular and special education classrooms, then they should receive training on AT, attend music classes with the child, and help support the child in learning music.

If AT is recommended in the IEP, special educators need to make music educators aware of this educational need. For instance, children with visual impairments can access music technology software including notation and sequencing programs. If music educators are included in the IEP development, they can advocate for students with visual impairments to have options such as Braille translators that interface with these notation and sequencing software programs.

Music teachers may become more knowledgeable and skilled through a series of staff development activities with follow-up support, Web-based modules and resources, and university course offerings in AT. In addition, there needs to be more offerings at state and national conferences on using AT for children with disabilities. The findings of this survey demonstrated that music educators had very little knowledge about AT. Informal training and staff development activities were reported by respondents in this survey as a means of accessing information about educating students with disabilities.

Special educators need support from music educators as well. Because one of the roles of special educators is to collaborate with families in developing and implementing educational programming, they can facilitate the bridge among music educators, related service providers (e.g., speech pathologists, physical therapists, music therapists), and families of students with disabilities so that children's needs are being met by skilled, informed professionals.

Through collaboration, music educators and special educators can develop strategies for meeting the musical needs of children with disabilities. First and foremost, it is imperative that music educators be asked to be included in any IEP meeting for a student they teach. Second, they should have opportunities to acquire the knowledge and skills to support students who use AT. Practical outcomes of this collaborative dialogue may result in more active and supported participation by students with disabilities in music education classes and ensembles.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Financial Disclosure/Funding

The authors received no financial support for the research and/or authorship of this article.

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