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Title: A Parallel Mixed-Methods Exploration of Inclusion Strategies Being Used by Middle School Math and Science Teachers for Included Students With Autism

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Abstract: General education teachers are seeing an increase of students with disabilities being included. A major contributing factor to this is that students with disabilities are required to be in least restrictive environments and given access to the general curriculum in the major subjects like math and science as mandated by federal legislation (Individuals with Disabilities Education Act, 2004; No Child Left Behind, 2001). This parallel mixed methods design study (Newman, Newman, & Newman, 2011) investigated inclusion strategies with classroom observations, teacher interviews, and archival document reviews. The focus was on nine middle school teachers, six of whom were math and science teachers, in inclusive classrooms and the curriculum modifications/ instructional accommodations they were using for their students with autism.

Introduction

Public Education is guided by federal legislation such as Individual with Disabilities Education Act (IDEA, 2004) and No Child Left Behind (NCLB, 2001). IDEA (2004) requires that students with disabilities be placed in least restricted environments (LREs), while NCLB (2001) requires that they be given access to the general curriculum and state mandated assessments in the major subjects of math, reading, writing, and science. As a result of both federal mandates, an increasing number of students with autism are being educated in the general education classroom.

This study investigated curriculum modifications, instructional accommodations and explored: (a) the use of curriculum modifications and instructional accommodations by general education teachers for middle school students with autism in the general education classroom, and the extent to which they are derived from the students' IEPs, and (b) where general education teachers reported learning about the curriculum modifications and instructional accommodations they used to provide access to the general curriculum.

Literature Review

Federal mandates and public interest in providing access to the general curriculum for students with disabilities exist, and much is being done to make this a reality for all students. However, it is clear that there is inadequate research conducted on this topic. Furthermore, there are different interpretations of what access to the general curriculum actually means for students with disabilities (Browder, Wakeman, & Floweres 2006; Dymond, Renzaglia, Gilson, & Slagor, 2007; Newman, 2006).

Studies that addressed the issues of general curriculum access and curriculum modifications and/or instructional accommodations mostly center on students with significant

cognitive disabilities (Dymond et al., 2007; McDonell, Mathot-Buckner, Thorson, & Fister, 2001; Soukup, Wehmeyer, Bashinski, & Boviard, 2007; Wehmeyer, Lattin, Lapp-Rincker, & Agran, 2003). To date there has been only one study located which reported on the use of curriculum modifications and instructional accommodations for students with autism (Newman, 2007). As a result it is not clear what is being done to provide general curriculum access for middle school students with autism, who in general are included at lower rates than their elementary school peers (United States Department of Education Office of Special Education and Rehabilitative Services [U.S.D.E. OSERS], 2005). Furthermore, no research has been conducted with general education teachers to determine where they learned about curriculum modifications and instructional accommodations for students with autism.

Methods

There is limited research on general curriculum access specifically related to curriculum modifications and instructional accommodations that middle school students with autism receive in general education classrooms. The majority of research on access to the general curriculum focuses on the meaning of general curriculum access, and on the social/behavioral aspects of inclusion for students with autism, not the curriculum modifications and instructional accommodations that are currently in use in the general education classroom.

Research Design

This study used a parallel mixed methods design approach (Newman, Newman, & Newman, 2011) with a predominant emphasis on the qualitative portion. For the objectives of this study, since the major portion of this research consisted of the qualitative component, the term *coding category* is used in place of the term meta-inference. The quantitative data was subsumed into the coding categories and discussed within the context of the themes.

Using the parallel mixed methods design allowed this researcher to collect data from both a qualitative and a quantitative perspective (Newman et al., 2011). As part of the qualitative piece of the study the naturalistic approach allowed the researcher to obtain a contextual description of what was being studied by actually being in the researched environment (Bogdan & Biklen, 2007). For the quantitative portion of the study, a nominal measurement (Hinkle, Wiersma, & Jurs, 2003) was used through the aid of a checklist of curriculum modifications and instructional accommodations to enhance documentation of classroom observation field notes.

Results

Participants for this study included a total of 9 general education teachers of middle school students with autism, with three teachers in each subject including English, math, and science. Based on the qualitative research techniques of observation, participant interviews, and document reviews, the use of curriculum modifications and instructional accommodations for middle school students with autism was explored.

It was oftentimes evident that participants felt they were providing instructional accommodations for all of their students, not just those with IEPs. Implementation of IEP instructional accommodations by participants was evidenced by participant interviews and classroom observations. Fourteen of the 24 instructional accommodations mentioned in middle school students with autism's IEPs were either noted in classroom observations or discussed in participant interviews. Another six instructional accommodations from the IEPs were neither mentioned nor observed, and four instructional accommodations from the IEPs were deemed not applicable to observations due to an unobservable component.

Discussion and Conclusions

This study was built on the research conducted by Wehmeyer et al. (2003) and Soukup et al. (2007) of elementary and middle school students with cognitive disabilities to reveal what curriculum modifications and instructional accommodations were being used to provide access to the general curriculum for middle school students with autism. The research model this study implemented uncovered the instructional accommodations that were being offered to provide “access to the general curriculum for middle school students with autism,” which up until this time had been unidentified.

In total out of 24 instructional accommodations from the reviewed IEPs, 18 had been either discussed in participant interviews or documented in participant observations. It is safe to say that the majority of participants are implementing instructional accommodations for their middle school students with fidelity and are even willing to offer them more than what is required by the IEP based on classroom observations. Findings from this study indicated that participants teaching middle school students with autism in the major subjects of English, math, and science are providing instructional accommodations for the most part in compliance with the IEP mandates. Additionally, many participants are providing more instructional accommodations than are required by the IEP.

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