

# Including Special Needs Students in Ag Ed

By Kristin S. Stair and Gary E. Moore



This is a two-part article that looks at what agricultural education is doing to include students with special needs. The second part of the article, which will include the references, will be in the May issue of *Techniques* magazine.

## **SINCE THE PASSAGE OF THE INDIVIDUALS WITH DISABILITIES IN EDUCATION ACT (IDEA),**

the total population of students with special needs being served in schools has risen from 5 percent in 1976 to 8.6 percent in 2006. This accounts for an additional 3 million students requiring special education services (United States Department of Education, 2007). Within this population there is also a wide variety of different needs that fall under the spectrum of a disability [Table 1]. According to IDEA, a disability is defined as “having (i) hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (hereinafter referred to as ‘emotional disturbance’), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and (ii) who, by reason thereof, needs special education and related services.”

One of the greatest ramifications of the passage of this education legislation is the push toward creating classrooms where all students are educated together with a general education teacher. This practice is termed inclusion and has been designed to provide the most educational

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**THE TEACHERS WERE ASKED TO IDENTIFY HOW OFTEN THEY USED EACH STRATEGY AS WELL AS HOW EFFECTIVE THEY FOUND THOSE STRATEGIES TO BE WHEN USED IN THEIR CLASSROOMS.**

opportunities possible for students with disabilities (Salend and Garrick-Duhaney, 1999). While the move toward making all schools inclusive has been debated among education professionals, the greatest impact has been seen within the individual classroom. This change has provided numerous challenges for education and has led to an increased need for teachers who are trained in working with students with disabilities. In some instances, the general education teacher will be the primary source of education for these students (Logan, 1994).

Despite the fact that the number of students with disabilities in the general education classroom is increasing, many teachers feel that they are unprepared to address these students' needs. Roberts and Dyer (2003) identified the in-service needs of Florida agriculture education teachers; of the teachers surveyed, 43 percent identified a need for in-service on modifying lessons for students with special needs. A similar study found that Pennsylvania educators desired more training in evaluating learners with special needs, individual education programs (IEPs), inclusion practices and teaching strategies (Elbert and Baggett, 2003).

With the current trends in education, it is vitally important that teacher education programs be able to provide teachers with the skills they need to become successful within the classroom (Baggett and Chinoda, 2003 [as cited in Elbert and Baggett, 2003]). Many teachers are not specially trained to work with students with disabilities. This lack of training

can result in a decrease in job satisfaction and increased stress for teachers who feel escalating pressure to balance testing requirements, accountability, and the needs of all of their students (Lobosco and Newman, 1992). Educators are also challenged to address the numerous goals associated with teaching students with disabilities. These students need to not only be provided with a general education, but generally require increased assistance with earning a high school diploma, learning job skills, learning life skills and preparing to become full members of society, (McLeskey and Weller, 2000). The great emphasis to prepare these students for a career after high school has led to an increase in students with disabilities taking career and technical education (CTE) coursework, which allows students to gain a practical, hands-on education that will help them to become more successful upon entering the workforce (Harvey, 2001). The diversity of CTE programs also allows students to match their coursework to their interests and career goals. Increased participation in these courses for students is thought to be a result of the enhanced learning that occurs with the numerous hands-on activities that these classrooms provide (Gaona, 2004).

**Methodology**

The population of this study consisted of secondary agriculture teachers in the United States. A stratified random sampling technique was used to ensure equal participation within the study. The National Association for Agricultural Education (NAAE) divides the country into six different regions. From each of the six regions, a state was randomly selected. The states chosen to participate in the study were Washington, Texas, Iowa, Kentucky, Tennessee and Delaware. This resulted in a total population size of 2,610 teachers. A total sample size of 333 was selected based on sampling recommendations by Krejcie and Morgan (1970). Data was collected during the fall and spring

**Table 1:  
Disability Prevalence Distribution for Students Ages Six Through 21 Receiving Services Under IDEA During the Fall 2003.**

Disability	Percentage of students receiving services
Specific Learning Disabilities	47.4%
Speech or Language Impairments	18.7%
Mental Retardation	9.6%
Emotional Disturbance	8%
Other Health Impairments	7.5%
Other Disabilities Combined	8.8%
Autism	2.3%
Multiple Disabilities	2.2%
Hearing Impairments	1.2%
Developmental Delays	1.1%
Orthopedic Impairments	1.1%
Visual Impairments	0.4%
Traumatic Brain Injury	0.4%
Deaf-blindness	0.03%

*From "Twenty-Seventh Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, Parts B and C."*

semesters of the 2008-2009 school year. A total of 207 surveys were collected for a total response rate of 62 percent.

The instrument was divided into three parts. The first part of the instrument was based on earlier Delphi study research conducted by Richardson and Washburn (2006) that identified strategies employed by North Carolina agriculture teachers in serving students with mild to moderate learning disabilities. A total of 26 strategies were incorporated into section I of the instrument. The teachers were asked to identify how often they used each strategy as well as how effective they found those strategies to be when used in their classrooms. Section II of the survey instrument was a 12-question likert-type scale to determine teachers' levels of confidence related to specific areas of ag-

Table 2: Use and Effectiveness of Recommended Strategies by Agricultural Teachers

Recommended Practice	Use		Effectiveness	
	M	SD	M	SD
Emphasize hands-on skills or activities	4.42	0.79	9.40	1.68
Read a students' IEP and provide those modifications	4.29	0.89	8.38	2.28
Modify testing (open notebook tests for students with learning disabilities, separate location, more time, etc.)	4.10	0.94	8.56	2.04
Spend more time with them or watching them more closely during hands-on activities	4.09	0.84	8.94	1.62
Not penalizing spelling errors	4.08	1.23	8.52	2.30
Strategically assign partners or groups for work/projects	4.06	0.86	8.61	1.93
Give study guides for tests	3.93	1.08	8.04	2.22
Give students handouts that coordinate with lessons	3.88	0.87	8.26	1.83
Use of PowerPoint in class for notes or visuals	3.87	1.13	8.11	2.36
Use stories to illustrate a point in a lesson	3.86	1.08	8.28	2.35
Assign them tasks that focus on active learning rather than passive learning	3.85	0.83	8.55	1.84
Show videos and other visual media that relates to topics	3.84	0.87	8.30	1.91
Slow down to give more individualized instruction	3.72	0.87	8.19	1.90
Allow students with special needs to use a word bank for difficult vocabulary on tests (Plant identification tests, tool identification tests, etc.)	3.72	1.11	8.20	2.34
Keep special education teachers informed about what students should be learning in your class	3.66	1.07	7.54	2.47
Allow tests or assignments to be read aloud to the student	3.62	1.16	8.03	2.47
Provide shorter assignments	3.44	0.93	7.74	2.20
Ask special education teachers to provide an overview of students	3.41	1.30	7.19	3.10
Require students to keep a notebook that is graded and checked for accuracy	3.40	1.43	7.01	3.16
Give students a rubric for the grading of performance items	3.33	1.35	6.82	3.07
Give students copies of notes from the teacher or other students	3.29	1.02	7.04	2.41
Use oral exams or presentations	3.26	1.06	7.46	2.55
Give students "fill in the blank" note guides or note outlines	3.21	1.07	7.08	2.46
Focus on vocabulary that may be difficult for them to understand (creating a word wall, worksheet, etc)	3.04	1.10	6.82	2.77
Use a different rubric/scoring guide for students with special needs on the same assignment other students complete	2.91	1.37	6.38	3.27
Tutor students after school	2.54	1.00	6.53	3.27

Note. Use data is based on a five-point likert-type scale (1= Never, 2= Rarely, 3=Occasionally, 4= Often, 5= Regularly). Effectiveness data was ranked on a scale of one to 10 (1 = not effective and 10 = very effective).

riculture education. Teachers were asked to rate their responses to the statements on a scale of strongly disagree, disagree, agree, or strongly agree. The third part of the instrument was designed to collect basic demographic data and information about specific educational experiences.

Of the teachers who responded, the majority of respondents (63.3 percent) were male. Teachers' ages ranged from 22 to 63 with a mean of 39.12 and a standard deviation of 11.91. Years of teaching experience ranged from one year to 36 years. The mean number of years teaching was 14.21 with a standard deviation of 10.72. Teachers were asked their current level of education, and 52.8 percent responded that their current level of education was a bachelor's degree. Additionally, 45.7 percent currently have their master's degree and 1 percent had received a specialist or sixth-year certificate. One teacher had earned a doctorate (0.5 percent). The majority of teachers were traditionally certified (91.6 percent) while only 8.4 percent were licensed through an alternate certification or lateral entry program.

The remaining demographic information related to teachers' educational or personal experience when working with students in special education. A total of 58.8 percent of teachers reported that they had taken at least one class that contained a unit of instruction dedicated to teaching students with special needs, and 41.2 percent had taken a whole course related to special education. Of the respondents, 73.9 percent had completed in-service through their school, school system, professional organization or teacher conference related specifically to working with students with special needs, with a mean of 19.95 contact hours. A total of 58.3 percent of respondents had a close friend or family member identified as a person with a disability.

### What Strategies Are We Using?

Of the 26 strategies, most of the practices recommended by Richardson and

Washburn were identified as being used by teachers when working with students with disabilities in their programs. Of the 26 practices, eight were identified as being used “often” to “regularly” (4.0 – 5.0), 18 were identified as being used “occasionally” to “often” (3.0 – 4.0) and only two were identified as being used “rarely” to “occasionally” (2.0 – 3.0). No strategies were identified by teachers as strategies that they “never” to “rarely” use (1.0 – 2.0) [Table 2].

In regards to effectiveness, respondents ranked each strategy on a scale of 1-10 with one being not effective and 10 being very effective. Teachers ranked “emphasizing hands-on skills” as being the most effective strategy when working with students with disabilities (M=9.40). They also identified spending more time with them or watching them more closely during hands-on activities (M=8.94), strategically assigning partners or groups for work/projects (M = 8.61), modifying testing (M= 8.56), assigning tasks that focus on active learning rather than passive learning (M = 8.55), and not penalizing spelling errors (M=8.52) as the most effective practices.

The least effective strategies identified were using different rubric/scoring guides for students with special needs on the same assignment other students complete (M=6.38), tutoring after school (M=6.53), giving students a rubric for the grading of performance items (M=6.82), and focusing on vocabulary that may be difficult for students to understand (M=6.82).

The results from part one of the instrument suggest that teachers are: providing hands-on opportunities for students, reading students’ IEPs, modifying testing, spending more time with students and watching them more closely during hands-on activities, not penalizing spelling errors and strategically assigning partners or groups. Because of the nature of agriculture courses it is expected that teachers are using a large amount of hands-on learning activities in their

classes. This makes agriculture education and other CTE courses an ideal environment for the success of students with special needs (Phillips and Domody, 1993).

While teachers are using these recommended strategies, they are less likely to use specific differentiated instruction strategies such as separate rubrics, provide opportunities for guided notes or outline, and focus on essential vocabulary. The lack of regular emphasis on vocabulary may be especially detrimental to students because agriculture contains unique vocabulary that is essential to content area knowledge. Students with learning disabilities may have additional problems with vocabulary acquisition and may need additional educational support (Bryant, Goodwin, Bryant and Higgins, 2003).

These findings may suggest that

teachers are using quality educational practices, though they may not be aware of the benefits of using specific educational practices within their classroom that are highly recommended for students with special needs. On average, all of the strategies were being used as part of a teacher’s instructional practices, though some may only be used a few times each semester. **I**

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