

## **Student Teachers' Confidence in Teaching Special Needs Students in Agricultural Education**

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### **Abstract**

The purpose of this study was to assess agricultural education student teachers' confidence levels with the Individuals with Disabilities Education Act, which recognizes disabling conditions and special education laws. The population was a census of student teachers from the American Association of Agricultural Education southern region. At the time, respondents were participating in a student teaching experience for teacher certification during the 2005 spring semester. Student teachers were fairly confident in providing the least restrictive environment and providing an appropriate and challenging education for all students in agricultural education classrooms and laboratories. They felt adequately confident in understanding special education laws and in developing individual education programs. Student teachers felt adequately confident teaching special needs students diagnosed as/with: learning disabled; mildly and mentally handicapped; attention deficit disorder; emotional/behavior disorder; and/or physical impairments. Overall mean scores showed the majority of student teachers felt marginally confident in teaching blind- or visually-impaired students. It is recommended that teacher educators create instructional units about disabling conditions and special education laws and introduce such units into teacher preparation courses.

Keywords: Confidence, IDEA, Special Needs, Student Teachers

**Introduction**

The education and accommodation of students with disabling conditions has become a common occurrence in agricultural education classrooms. Laws governing the education of all students require that every student’s needs and accommodations be met in academic settings that receive federal funds for educational purposes. Teachers and school administrators must be aware of student diversity and be committed to inclusion, providing a quality education for every student in the classroom. Such commitment may require supplemental aids and practices to meet the needs of special education students in the general education classroom.

Agricultural education programs offer popular courses that may interest students with disabling conditions. Because of incorporating students with disabling conditions into general education classrooms, agricultural education instructors routinely face multiple challenges while meeting the needs of special education students (Elbert & Baggett, 2003). Elbert and Baggett found that agricultural education teachers in Pennsylvania did not feel prepared in completing Individual Vocational Education Plans and Individual Education Plans. Elbert and Baggett noted that teachers needed additional training to become more knowledgeable about laws applying to special needs students. To support the need for additional teacher training, Johnson, Sharpe, & Stodden (2000) stated:

General education and special education teachers need information and skills on how to appropriately use accommodations in assessment and instructional situations. Improved teacher preparation at the pre-service and continuing education levels, promotion of collaborative teaching models, and other strategies are needed to address these issues. (p. 87)

Following a five-year study involving inclusion of students with disabling conditions in general education classrooms, researchers concluded that general education teachers were not prepared to teach students with special needs (Schumm & Vaughn, 1995). Many new and even experienced teachers lacked the skills necessary to be effective in meeting the needs of a wide variety of abilities in their classrooms (Cotton, 1994; Soodak, Podell, & Lehman, 1998). A lack of appropriate in-service training has caused many barriers to successful vocational teacher education (Cotton, 2000). Agricultural education is one form of vocational teacher education that could benefit from improved instruction and practice for inclusion techniques and strategies.

States in the southern region as defined by American Association of Agricultural Education (AAAE) have 876,685 students between the ages of 12 and 17, who were served under the Individuals with Disabilities Education Act (IDEA) during the 2000-2001 school year (U.S. Department of Education, 2003). The southern region served 32.7% of the total special needs student population in the United States. Of the 12 recognized disabilities, the majority ( $n = 522,387$ ) were students with specific learning disabilities. The second largest category ( $n = 129,920$ ) were students classified with mental retardation (Table 1).

Table 1  
*Number (in thousands) of Children ages 12-17 Served under IDEA Part B by Disability 2000-2001 School Year*

State	SLD	SL	MR	ED	MD	HI	OI	OHI	VI	A	DB	TBI	Total
AL	24.4	1.4	11.6	2.9	0.6	0.4	0.2	1.9	0.2	0.2	0.0	0.1	44.1
AR	13.9	1.0	6.7	0.3	0.5	0.3	0.1	2.8	0.1	0.2	0.0	0.1	26.0
FL	92.0	10.1	19.9	21.0	-	1.5	1.9	4.1	0.5	1.0	0.0	0.2	152.2

GA	27.8	2.4	15.6	12.5	-	0.7	0.4	6.4	0.3	0.5	0.0	0.2	66.7
KY	12.6	1.3	9.9	3.6	1.1	0.3	0.2	3.3	0.2	0.2	0.0	0.1	32.9
LA	22.7	2.1	6.6	3.4	0.4	0.7	0.6	3.8	0.2	0.4	0.0	0.2	41.0
MS	17.4	1.3	3.5	0.4	0.2	0.3	0.8	-	0.1	0.1	0.0	0.1	24.2
NC	35.2	1.4	14.3	5.7	0.8	0.9	0.4	6.2	0.3	0.7	0.0	0.2	66.2
OK	25.6	1.1	4.4	2.5	0.7	0.4	0.2	1.6	0.2	0.2	0.0	0.1	37.0
SC	23.2	0.8	9.0	3.5	0.1	0.4	0.3	1.6	0.1	0.3	0.0	0.0	39.5
TN	31.5	3.3	8.5	2.4	0.7	0.6	0.4	4.9	0.4	0.3	0.0	0.1	53.2
TX	154.7	5.5	12.1	22.0	3.5	2.6	2.4	17.7	1.0	1.2	0.0	0.5	223.2
VA	41.3	2.1	7.8	8.4	1.1	0.6	0.3	7.5	0.2	0.6	0.0	0.2	70.0
Total	522.4	33.8	129.9	88.6	9.6	9.7	8.2	62.0	3.8	5.8	0.1	2.1	876.1

*Note.* SLD = *Specific Learning Disability*; SL = *Speech or Language*; MR = *Mental Retardation*; ED = *Emotional Disturbance*; MD = *Multiple Disabilities*; HI = *Hearing Impairments*; OI = *Orthopedic Impairments*; OHI = *Other Health Impairments*; VI = *Visual Impairments*; A = *Autism*; DB = *Deaf and Blindness*; TBI = *Traumatic Brain Injury*.

Considering the extraordinarily large number of students with special needs in the southern region who were served under the IDEA during the 2000-2001 academic year, and past literature citing teachers' apparent lack of preparedness for accommodating special needs students, it would be interesting to know current student teachers' confidence levels for teaching special needs students in agricultural classrooms and laboratories. Are current agricultural science student teachers in the AAAE southern region confident with the IDEA?

The purpose of this study was to assess agricultural education student teachers' confidence levels with the Individuals with Disabilities Education Act, which recognizes disabling conditions and special education laws. The objectives were to:

1. Describe pre-service agricultural education teachers in the AAAE southern region during the 2005 spring semester.
2. Describe agricultural education student teachers' confidence levels for teaching special needs students in agricultural education classrooms and laboratories.

## Methods

Selected methods used in this paper were part of a larger project (Agricultural education student teachers' confidence and knowledge: Teaching special needs students). Similarities in research design and demographics reported in this paper exist in another publication (Author, 2005), but are described in full detail below.

The population ( $N = 335$ ) for this descriptive study was a census of student teachers in the southern region of the AAAE. At the time, subjects were participating in a student teaching experience for teacher certification during the 2005 spring semester. The AAAE southern region includes 13 states and 40 academic institutions that offer teacher certification in agricultural education. Of those 13 states, 11 were represented in this study, including: Arkansas, Florida, Georgia, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

Of the 40 agricultural education programs in the AAAE southern region, 32 had one or more student teachers during the 2005 spring semester. Twenty-six universities chose to participate in this study. Student teacher coordinators were contacted by phone to explain the

project. Student teacher coordinators provided student teachers' e-mail addresses for this study. Three agricultural education program directors stated they were not allowed to release students' e-mail addresses, but agreed to send the survey e-mail notice to their student teachers. The researcher received valid e-mail addresses for 70% ( $n = 235$ ) of the population of interest, however all ( $N = 335$ ) student teachers were contacted (three program directors forwarded the survey notice from their own e-mail accounts).

One portion of the total instrument was designed to assess confidence levels related to teaching special needs students in agricultural education classrooms and laboratories. Instrument items allowed student teachers to rate their confidence levels for teaching students who had one or more of the recognized disabilities from the IDEA, including: learning disabled, mildly mentally handicapped, attention deficit disorder, deaf- or hearing-impaired, blind- or visually-impaired, emotional/behavior disorder, and physically impaired. Other questions focused on participants' confidence levels with special education laws, providing the least restrictive environment, participation in the Individual Education Program (IEP) development, and providing an appropriate and challenging curriculum for all students.

To address internal validity concerns, demographic data were gathered from all participants to determine if student teachers were similar. Demographic data gathered on student teachers consisted of age, gender, experience with a person of special needs outside of an academic setting, courses taken involving topics of teaching special needs students in the general education classroom, whether the student teacher had an IEP in high school, and their overall perception about whether they felt prepared to teach special needs students in agricultural education classrooms and laboratories.

The five-point (*Not Confident* = 1; *Marginally Confident* = 2; *Adequately Confident* = 3; *Fairly Confident* = 4; and *Very Confident* = 5) Likert-type instrument for confidence levels was pilot tested in January 2005 with a group of agricultural education students from two AAAS southern region universities. Students in the pilot test were in their junior year of their teacher education program. Students who participated in the pilot test were not participants in final data collection.

Pilot test data were analyzed using the Statistical Package of Social Sciences (SPSS). A Cronbach's alpha coefficient (Cronbach, 1951) was calculated for the 11 questions measuring student teachers' confidence levels for meeting the needs of special education students; a reliability coefficient of .92 was generated from the analyses. The instrument in this study was derived from a confidence assessment of vocational teachers' training needs for working with learners with special needs (Cotton, 2000).

All instrumentation and online design were created with Hypertext Markup Language. Data were collected in a secured Microsoft Access database and later transferred to SPSS for data analysis. The online method was chosen for questionnaire delivery, based on its ability to achieve fast response rates at minimal expense (Ladner, Wingenbach, & Raven, 2002), and for its suitability with college-level students (Kypri, Gallagher, & Cashell-Smith, 2004).

To encourage favorable response rates, respondents were offered a lottery incentive (\$100 gift certificate from Amazon.com). Student teachers who completed the survey and who consented (voluntarily provided valid e-mail addresses in the survey) to the incentive were entered into the lottery drawing. Dillman (2000) questioned the value of an economic exchange incentive "in which money serves as a precise measure of the worth of one's actions" (p. 14), however Singer (2000) and Porter and Whitcomb (2003) found lottery-type incentives increased response rates.

Data were collected during the 2005spring semester. The online survey was activated February 1, 2005. Weekly e-mail reminders were sent to non-respondents for six weeks. After six attempts, instruments were mailed to each university for non-responders to complete during their end-of-semester meetings. The total response rate was 83.28%; five instruments were deemed unusable, reducing the total response rate to 81.79%.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 12. Descriptive statistics were used to report the results. Mean scores for the confidence level scale were interpreted as *Not Confident* = 1.00 – 1.50; *Marginally Confident* = 1.51 – 2.50; *Adequately Confident* = 2.51 – 3.50; *Fairly Confident* = 3.51 – 4.50; and *Very Confident* = 4.51 – 5.00.

## Results

Valid responses ( $N = 274$ ) were received from student teachers at 26 schools, with the majority (90.1%) responding from Texas ( $n = 138$ ), Oklahoma ( $n = 29$ ), Kentucky ( $n = 28$ ), Georgia ( $n = 22$ ), North Carolina ( $n = 20$ ), and Florida ( $n = 10$ ) (Table 2). Respondents were described as female (53%), Caucasian (93%), and slightly older than 23. Most had or were receiving their Bachelors degree ( $n = 247$ ); 14 respondents had their Masters degrees. The majority ( $n = 159$ ) had taken courses involving special education issues. Over one-half (55.8%) had spent time with a special needs person outside an academic setting. Twenty-six (9.5%) student teachers had an Individual Education Program while enrolled in high school. Overall, 74.5% of the respondents felt prepared to teach special needs students in agricultural education classrooms and laboratories.

Table 2  
*Demographics of Respondents (N = 274)*

Variable	Category	$f^a$	%
States	Texas	138	50.4
	Oklahoma	29	10.6
	Kentucky	28	10.2
	Georgia	22	8.0
	North Carolina	20	7.3
	Florida	10	3.6
	Tennessee	8	2.9
	Virginia	8	2.9
	Arkansas	7	2.6
	South Carolina	2	.7
	Mississippi	2	.7
Gender	Female	144	52.6
	Male	128	46.7
Race	Caucasian	256	93.4
	Hispanic	12	4.4
	African American	2	.7
	Multi-racial	1	.4
Education	BS	217	79.2
	BS + 10 hours	30	10.9

	MS	14	5.1
	MS + 10 hours	3	1.1
If a special needs course was taken in college, was it:	Required	154	56.2
	None taken	93	33.9
	An elective	5	1.8
Have you spent time with a special needs' person outside an academic setting?	Yes	153	55.8
	No	113	41.2
Did you have an IEP in secondary education?	No	231	84.3
	Yes	26	9.5
Do you feel prepared to teach special needs students?	Yes	204	74.5
	No	61	22.3

Note. <sup>a</sup>Frequencies may not equal 274 because of missing data.

Overall, student teachers' confidence levels for teaching students with disabling conditions and following special education laws were rated as "fair" for three areas (providing appropriate and challenging curriculum for all, attention deficit disorder, and learning disabled) (Table 3). They felt "adequately" confident in seven other areas and only "marginally" confident for teaching blind- or visually-impaired students.

Table 3  
*Descriptive Statistics for Student Teachers' Confidence Levels in Teaching Students with Disabling Conditions and Following Special Education Laws (N = 274)*

Criterion	M	SD	Confidence Level <sup>a</sup>
Providing appropriate and challenging curriculum for all	3.72	.96	Fair
Attention deficit disorder	3.65	.91	Fair
Learning disabled	3.51	.89	Fair
Physically impaired	3.47	1.03	Adequate
Providing least restrictive environment	3.46	.97	Adequate
Individual education program development	3.39	1.05	Adequate
Mildly mentally handicapped	3.11	.97	Adequate
Emotional/behavior disorder	3.08	1.01	Adequate
Understanding special education laws	2.99	1.06	Adequate
Deaf- or hearing-impaired	2.53	1.12	Adequate
Blind- or visually-impaired	2.29	1.07	Marginal

Note. <sup>a</sup>Interpretations were based on the ranges: *Not Confident* = 1.00 – 1.50; *Marginally Confident* = 1.51 – 2.50; *Adequately Confident* = 2.51 – 3.50; *Fairly Confident* = 3.51 – 4.50; and *Very Confident* = 4.51 – 5.00.

Closer examination of student teachers' confidence levels for each of the disabling conditions revealed interesting results. In the three areas that student teachers' rated themselves as being fairly confident, providing an appropriate and challenging curriculum for all students, was rated highest ( $M = 3.72$ ,  $SD = .96$ ) (Table 4). Most ( $n = 112$ ) student teachers felt fairly confident in this area. Confidence levels ( $M = 3.65$ ,  $SD = .91$ ) for teaching attention deficit disorder students were rated by most ( $n = 116$ ) as being fairly confident. Confidence levels ( $M =$



3.51,  $SD = .89$ ) for teaching students with learning disabilities in agricultural education classrooms and laboratories were rated by most ( $n = 125$ ) as being fairly confident (Table 4).

Table 4  
*Student Teachers' Confidence Levels in Teaching Students with Disabling Conditions and Following Special Education Laws (N = 274)*

Criterion	$f^a$				
	NC	MC	AC	FC	VC
Providing appropriate and challenging curriculum for all	3	29	70	112	60
Attention deficit disorder	3	25	85	116	45
Learning disabled	3	37	82	125	27
Physically impaired	10	37	86	99	41
Providing least restrictive environment	8	39	78	116	32
Individual education program development	11	45	83	97	37
Mildly mentally handicapped	12	59	113	71	19
Emotional/behavior disorder	17	58	104	76	18
Understanding special education laws	22	71	92	69	19
Deaf- or hearing-impaired	54	91	71	45	12
Blind- or visually-impaired	75	90	69	34	6

Note. <sup>a</sup>Frequencies may not equal 274 because of missing data. Scale: NC = *Not Confident*; MC = *Marginally Confident*; AC = *Adequately Confident*; FC = *Fairly Confident*; and VC = *Very Confident*.

Adequate confidence levels resulted in seven IDEA areas. Confidence levels ( $M = 3.47$ ,  $SD = 1.03$ ) for teaching physically impaired students in agricultural education classrooms and laboratories were rated as being fairly confident by 99 student teachers (Table 4). Confidence levels ( $M = 3.46$ ,  $SD = .97$ ) for providing the least restrictive environment for all students were as being fairly confident 116 respondents. Participating in student individual education program development received confidence levels ( $M = 3.39$ ,  $SD = 1.05$ ) that were considered as fairly confident, by a majority ( $n = 97$ ) of respondents. Confidence levels ( $M = 3.11$ ,  $SD = .97$ ) for teaching mildly and mentally handicapped students in agricultural education classrooms and laboratories were rated as adequately confident by 113 student teachers. Confidence ( $M = 3.08$ ,  $SD = 1.01$ ) in teaching emotional/behavior disorder students in agricultural education classrooms and laboratories were rated by the majority ( $n = 104$ ) as adequately confident (Table 4). Student teacher's confidence levels ( $M = 2.99$ ,  $SD = 1.06$ ) in understanding special education law were rated by most ( $n = 92$ ) as being adequately confident. Finally, confidence levels ( $M = 2.53$ ,  $SD = 1.12$ ) in teaching deaf- or hearing-impaired students in agricultural education classrooms and laboratories were rated by the majority ( $n = 91$ ) of respondents as being marginally confident.

Only one IDEA area, teaching blind- or visually-impaired students in agricultural education classrooms and laboratories, resulted in respondents' overall ratings as being marginally confident ( $M = 2.29$ ,  $SD = 1.07$ ). Most ( $n = 90$ ) respondents felt they were marginally confident in this area (Table 4).

## Conclusions

Overall, student teachers felt adequately confident teaching special needs students diagnosed as/with: learning disabled; mildly and mentally handicapped; attention deficit disorder; emotional/behavior disorder; and/or physical impairments. Student teachers felt fairly confident in providing the least restrictive environment and providing an appropriate and challenging education for all students in agricultural education classrooms and laboratories. They felt adequately confident in understanding special education laws and in developing individual education programs. But, student teachers only felt marginally confident in teaching blind- or visually-impaired students.

What are the ramifications of not being confident in teaching special needs students in agricultural education classrooms and laboratories? Given the large numbers of students with special needs in the AAEE southern region states, the consequences of not being fairly or very confident, coupled with the likelihood that those students will be in agricultural education programs are tremendous. Equally distressing was the result that 75% of the respondents indicated they felt “prepared to teach and meet the needs of special needs students,” yet when analyzed in detail, they were only “adequately or fairly” confident for 10 of the 11 IDEA areas. The results of this study indicate that many pre-service teachers in the AAEE southern region could benefit from increased study and awareness of the IDEA, either in their teacher preparation programs and/or through in-service workshops after they begin their teaching careers.

Agricultural teacher educators must prepare future agricultural science teachers, not only in the art and science of teaching agriculture, but also in the knowledge and understanding of special education laws and in developing individual education programs. If not, agricultural science teachers will suffer the same inadequacies that general education teachers have in teaching students with disabling conditions (Cotton, 1994; Schumm & Vaughn, 1995; Soodak, Podell, & Lehman, 1998). Cotton’s (2000) suggestion that a lack of appropriate in-service training has caused many barriers to successful vocational teacher education program should not have to be relearned; *now* is the time to remedy this lacking issue in agriculture teacher preparation programs.

Based on the findings, the authors recommend replicating this study with populations outside the limited geographical scope of this project. Additionally, teacher educators should create instructional units based on disabling conditions and special education laws and introduce those units in their teacher preparation courses. Perhaps a collaborative approach between AAEE, National FFA, and the U.S. Departments of Agriculture, Labor, and Education could produce a standardized curriculum that fulfills this educational need. Future testing situations could reveal if confidence levels increased after experiencing the curriculum.

More studies are needed to identify the specific number of special education students served in agricultural education classrooms and laboratories nationwide. Teacher educators should provide in-service training about disabling conditions and special education laws to current teachers at state agricultural education teacher conferences. At a minimum, one-half day workshops on these topics would be welcomed additions to agricultural education conferences at the regional and national levels, and/or held in conjunction with the National FFA Convention. Finally, the very least teacher educators could do to better prepare student teachers for teaching and accommodating special needs students is to create an assignment requiring student teachers to observe and evaluate a special needs student during classroom visitations, preferably before beginning the student teaching experience.



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