

# Influences of Student Educational Labels, Behaviors, and Learning Characteristics as Perceived by Pennsylvania's Secondary Career and Technical Educators

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## Abstract

*A quasi-experimental design using student cases and non-random survey methods was used to investigate the influences of student educational labels, behaviors and learning characteristics as perceived by secondary career and technical education (CTE) instructors on occupational program expectations, modifications and accommodations, and postsecondary youth outcomes. 127 instructors completed a 5-point Likert-type rating scale for two assigned cases: a case study describing one student without a disability; and one identifying a student with a specified disability. The disability case studies represented a student with: a physical disability; learning disability; behavior disorder; mental retardation; or a visual impairment. Seven career and technical centers in central and eastern Pennsylvania participated in the study. Results indicated significant differences about expectations, accommodations, and outcomes when comparing students with disabilities to the student without a disability and varied perceptions by disability classifications. Implications for practice, future research, and training are discussed.*

Special educators, policy makers, families and advocates have a long-standing vested interest in secondary transition services and successful post-school outcomes for students with disabilities. Historically, employment and quality of life has been the centerpiece of successful postsecondary transition. There has been mixed review in the literature concerning postschool success for students with disabilities. Several researchers (Blackorby & Wagner, 1996; Harvey, 2002; National Organization on Disability (NOD), 2000; Shapiro & Lentz, 1991; Wagner, 1991) have concluded that postsecondary employment for individuals with disabilities is problematic given the legislative supports for persons with disabilities (i.e. Americans with Disabilities Act of 1990, P.L. 101-336; Carl D. Perkins Vocational and Technology Education Act of 1998, P.L. 105-332; Individuals with Disabilities Education Act of Amendments of 1997, P.L. 105-17). Despite legislation, individuals with disabilities compete at a disadvantage with their peers without disabilities concerning post-school employment (NOD, 2000).

Recent education reform efforts have focused on establishing high standards for all students (No Child Left Behind Act of 2001, P.L. 107-110). Global economics and competition, technical advances in the workplace, and higher skill demands in the labor force have prompted reform efforts (Ysseldyke, Algozzine, & Thurlow, 2000). Education and Labor at the national and state levels have fo-

cused efforts to promote a better skilled workforce. The legislative agenda in secondary special education and career and technical education (CTE) has mandated services to facilitate transition and workforce skills for students with special needs (Lynch, Smith & Rojewski, 1994).

Phelps and Hanley-Maxwell (1997) reported conflict in the literature concerning the relationship between secondary vocational training and improved postschool employment. Wagner (1991) concluded that vocational education provides students with disabilities relevant education, positive school experiences, limits dropout, and promotes success in postschool outcomes, including employment. Other researchers support CTE for students with disabilities (Baer, Flexer, Amstutz, Hoffman, Brothers, Stelzar, & Zachman, 2003; Harvey, 2001a; 2001b; 2002; Sarkees-Wircenski & Scott, 2003; Schalock, Holl, Elliott, & Ross, 1992). Career and technical education programs serve a diverse student population (NAVE, 2002). An approximate 38% of CTE occupational concentrators in 1998 were students with a disability ([http://www.ed.gov/offices/OUS/PES/NAVE/interim\\_report.pdf](http://www.ed.gov/offices/OUS/PES/NAVE/interim_report.pdf)). Special needs students enrolled in CTE present unique challenges to CTE instructors (Clark & Kolstoe, 1995; Rojewski, 1991). Workforce skills have changed with advances in technology requiring CTE to adapt curricula to reflect labor demands. Delivering occupational programming to meet the needs of all students has challenged CTE

(Kraska, 1996; Meers & Towne, 1997).

Researchers have reported a direct relationship between CTE instructors' attitudes, perceived instructional effectiveness in working with special needs students, and students' success in CTE (McDaniel, 1982; Rowjewski, Pollard, & Meers, 1990). The influence of student labels, teacher expectations, and attitude has been a topic of extensive research in the literature. Good (1987) reported that teacher expectations "can be affected significantly by information about test performance, performance on assignments, track or group placement, classroom conduct, physical appearance, race, socioeconomic status, ethnicity, sex, speech characteristics, and various diagnostic or special education labels" (p. 34). Gillung and Rucker (1977) found that teachers had lower expectations for students who were labeled with a disability than those with similar behaviors who were not labeled.

Career and technical educators' attitudes and expectations toward students with disabilities have been the subject of several recent studies. Kraska (1997) found that in Alabama trade and industrial educators did not differ concerning their attitudes toward special population students based on the teachers' age or years of experience. The author stated research was an essential element for the field to adequately serve this population. Other researchers have investigated student characteristics, educational labels, and perceived attitudes, effectiveness, and expectations of CTE educators (Custer & Panagos, 1996; Harvey, 1999; 2000; Trott & Holton, 1996).

Custer and Panagos (1996)

reported Missouri CTE teachers perceived themselves as less confident and less effective in working with students with disabilities than disadvantaged students. Students with physical disabilities were identified as most challenging. Harvey (1999, 2000) found central Pennsylvania CTE educators felt they were adequately qualified and did an adequate job in working with students with special needs. They felt less confident and effective in working with students with a disability compared to those classified as disadvantaged (Harvey, 2000). Students with mental retardation, emotional disabilities, deaf/hearing impairment, and blind/visual impairment were perceived as most challenging. Trott and Holton (1996) found that postsecondary instructors overall had accepting attitudes toward persons with disabilities, although there was a wide range of variability among respondents (p. 52). More research has been recommended to fully understand the relationship between teacher perceptions, attitudes, and expectations to best serve students with disabilities in CTE programs.

Several researchers have suggested using case studies instead of actual student data as valid research methodology for exploratory - descriptive purposes concerning attitudes and perceptions (Thurlow, Christenson, & Ysseldyke, 1983; Yin, 1984; Ysseldyke, J., & Thurlow, M., 1983). Kleinle (1988) used a case study approach to examine the perceptions of CTE administrators and instructors concerning instructional needs of special needs students in CTE programs in Pennsylvania. The author found a general lack of understanding by CTE educators concerning special needs students and an unwillingness to modify their

programs. Minner (1982) used case study methods to investigate the influence of educational labels and behavior descriptors on secondary CTE instructors. Case vignettes were developed using educational labels (learning disabled (LD), mentally retarded (MR), and nonlabeled) with student's academic and social characteristics and behavioral descriptors. Results indicated CTE educators were strongly influenced by the education labels of LD and MR. These students were viewed in more negative terms than the nonlabeled students. Students labeled MR had dramatic negative impact on CTE educators' attitudes.

Johnson, Stodden, Emanuel, Luecking, and Mack (2002) indicated that major challenges still face the field concerning secondary transition services. The authors stated that students with disabilities need to have access to a full complement of general education curricula options, including access to CTE. The *Twenty-third Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (U.S. DOE, 2001) supports this claim. Further research is warranted given the legislative mandates, public investment, and interest in outcomes for students with special needs.

## Purpose of the Study

The purpose of this study was to investigate CTE educators' attitudes and perceptions concerning students' educational labels, behaviors, and learning characteristics as they related to instructional expectations, program modifications and accommodations, and youth post-secondary outcomes. The study used student cases presented in a quasi-experimental design with nonrandom survey methods to explore differences among

CTE educators' perceptions and attitudes. Training students to meet the challenges of today's workforce is implied in the IDEA transition service requirements for students with disabilities and the mission of CTE. Teachers' attitudes toward and perceptions of students from diverse backgrounds and abilities has a direct relationship to student success. The following three research questions guided this investigation.

1. Are there differences between CTE educators' perceptions of program expectations of students in secondary CTE by disability label, and if so, what are they?
2. Are there differences between CTE educators' perceptions of program modifications/accommodations of students in secondary CTE by disability label, and if so, what are they?
3. Are there differences between CTE educators' perceptions of youth outcomes in secondary CTE by disability label, and if so, what are they?

## Methodology

### Population and Sample

The population for this investigation included all secondary level CTE educators in eastern and central Pennsylvania. Sites were selected randomly from those listed by the Pennsylvania Department of Education's *Pennsylvania Education Directory 2000*. Additional information from the Pennsylvania Department of Education, Bureau of Career and Technical Education's *Pennsylvania Area Vocational-Technical Schools 2000 Report* was used to identify CTE occupational programs and classifications of instructional programs (CIP). The secondary level CTE occupational program areas identified by the Pennsylvania Department of Education, Bureau of Career and Technical Education included: (a) Agriculture Education; (b) Business Education; (c) Health Occupations Education; (d) Marketing and Distributive Education; (e) Occupational Home Economics Education; (f) Trade and Industrial Education; and (g) Not Elsewhere Classified.

Seven schools were randomly selected for this investigation. The sites offered secondary CTE occupational programs in eastern and central Pennsylvania. Four schools were located in central Pennsylvania and three schools were from the east. Four of the seven selected sites were area vocational technical centers (AVTC), offering CTE as a regionalized program. Three sites were comprehensive high schools, offering both academic and CTE programming within the secondary 9-12 curriculum. A total of 127 CTE occupational instructors participated in the study. Forty-eight percent of respondents were from eastern Pennsylvania and 52% were from central Pennsylvania. Participation across all school sites was 77% (eastern 82%; central 74%). This presents individual site participation and percentages.

### Instrumentation

The researchers developed the assessment instrument and the six case studies for this investigation with specific intent in mind. The *Student Characteristics and Career and Technical Education Instructional Expectations Assessment Survey* consisted of four sections. Section I explained the purpose of the research project. Section II asked demographics questions of respondents. Section III posed specific questions concerning student's involvement in CTE using three subsections: CTE Program Expectations (7 items), CTE Program Modifications/Accommodations (15 items), and CTE Program Outcomes (8 items). A 5-point Likert-type scale (1=strongly disagree with statement; 5=strongly agree with statement) was used to rate agreement with each survey item per section by case study. Section IV provided an open-ended comment section.

Table 1

Pennsylvania Career and Technical Education Participation by Region, Site Location, Frequency, and Percentage

Region	Site Location	Participation	
		<i>n</i>	%
PA Eastern Region	Site #1.	21	16.5
	Site #2.	19	15.0
	Site #3.	21	16.5
PA Central Region	Site #4.	13	10.2
	Site #5.	13	10.2
	Site #6.	13	10.2
	Site #7.	27	21.3
Total		127	100

Student cases were developed for a student without a disability (control case) and five students with specified disabilities (comparison cases). All cases included background information consisting of basic academic profiles (IQ scores, math and reading achievement levels, GPA on a 4.0 scale, and grade average on a 100 point scale) and narrative descriptors of the student, including disability classification and a statement of special needs. The student without a disability was an average to above-average student with average intelligence, GPA and grade level (GL) test scores. The disability cases included: a student with a physical disability (PD) (wheel-chair user with above average IQ, GPA, GL test scores); specific learning disability (LD) (average IQ, GPA, GL test score with low reading comprehension); behavior disorder (BD) (average IQ, and GL test scores, but low GPA and impulse control hyperactivity); mental retardation (MR) (sub-average academic and adaptive behavior skills, low IQ and GL test scores, modified grading for GPA); and a visual impairment (VI) (average IQ, GPA, GL test scores, legally blind limited sightedness).

The survey instrument and case study vignettes were sent to a jury panel of four university professors with expertise in special education and CTE for expert validation. Reviewer comments were used to revise the instrument and case studies. A pilot study was conducted with a career and technical center in central Pennsylvania. Researchers met with the CTE pilot group (n=15) after administration of the study to solicit feedback. Final edits were made to the instrument and cases based on pilot data. Reliability of the instrument was important in this case-based study.

Sylvia and Ysseldyke (1985) suggest a conservative minimum reliability coefficient of .60 for group data. A Cronbach's alpha internal consistency coefficient of .67 was obtained for this study. The nature of the study and the research design (student cases presented as quasi-experimental nonrandom surveys) influenced internal consistency reliability, yielding a minimal alpha level.

## Procedure

The researchers worked directly with the secondary CTE administrators during the Spring of 2001 to seek permission to conduct this study with all CTE occupational program instructors in their schools. The design features of this case-based research allowed for implementation during staff meetings and/or in-service sessions at each site. The researchers traveled to each site to conduct the study. Information was presented concerning the study, faculty questions were answered, and consent forms were signed by CTE instructors for their participation. Participation in the study was strictly voluntary. Study participants completed two case studies, the control case study - a student without a disability, and a preassigned case study for a student with a specified disability. Respondents completed the first case study and then completed the second preassigned disability case study. Study participation took approximately 45-50 minutes. Data were analyzed using both descriptive and inferential statistical procedures. Data are reported by frequency, percent, mean, and standard deviation in table format. Univariate analysis of variance (ANOVA) procedures were used to explore differences in perceived program expectations, modifications/accommoda-

tions, and outcomes. All significant effects ( $p < .05$ ) were followed up with Post-Hoc tests set at  $p < .05$ . Bonferroni tests were used because these multiple comparison procedures adjust for observed significance level based on the number of comparisons and adjust for experimentwise error.

## Results

The results of this study are presented by sections addressing data for study respondents' demographic information, respondents' perceptions of student cases concerning CTE program expectations, CTE program modifications and accommodations, and youth outcome expectations.

### Demographics and Education Levels of Participants

Respondents in this study were mostly male (67%). The majority of respondents were between 41 and 50 years old (44%). Thirty-one percent of the respondents held a 2-year associate degree and an additional 27% had earned a 4-year bachelor degree. Most respondents were relatively new to their current positions (43% holding their current position for five years or less). An interesting demographic was while the majority of respondents were older, most (45%) had been in education for ten years or less. The demographic findings indicate the majority of CTE instructors surveyed from eastern and central Pennsylvania were older and came to CTE with non-teaching career experiences.

Respondents were asked what type of special needs training they had received in serving special needs students. Training was defined as recent university coursework, continuing education credits, or in-service training activities. Table 2 presents training expe-

riences by type, school site, and geographic region. The findings suggest training experiences varied. Only 38% of respondents had taken a university course in special needs within the last two years and 19% indicated having no university coursework in the area of special needs. Respondents varied in their training through continuing education credits in special needs. Approximately 22% had no training through continuing education, while 25% indicated having taken continuing education credits in the area of special needs within the last six months. A total of 67% indicated they had received in-service

training in special needs within the last year. Only 8% indicated having no in-service training concerning special needs.

### Career and Technical Program Expectations

Comparisons of Pennsylvania CTE participants by program expectation ratings are presented in Table 3. ANOVA procedures found significant effects ( $p < .05$ ) for all items in this section, with the exception of Item #6 "I would expect this student to perform occupational skills at 50-69%",  $F(5, 231) = 1.319$  (ns). Post-hoc tests ( $p < .05$ ) were used to identify significant differences between disability

cases and the control case (student without a disability).

Post-hoc tests revealed for item #1 ( $F(5, 253) = 13.417, p < .001$ ) that CTE instructors perceived that students with PD, BD, MR, and VI would have more difficulty fitting in socially compared to the student without a disability. Item #2 ( $F(5, 252) = 5.292, p < .001$ ) showed CTE instructors perceived the student with MR would have lower academic attainment compared to the student without a disability. Item #3 ( $F(5, 250) = 4.244, p < .001$ ) indicated that CTE instructors expected students with MR and VI to gain fewer occupational skill competencies

**Table 2**  
**Pennsylvania Career and Technical Education Participation by Site Location and Training Experience**

	PA Eastern Region								PA Central Region							
	Site #1.		Site #2.		Site #3.		Site #4.		Site #5.		Site #6.		Site #7.		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>University Coursework</i>																
None	7	5.6	3	2.4	4	3.2	1	0.8	2	1.6	1	0.8	6	4.8	24	19.0
Within 6 months	2	1.6	4	3.2	3	2.4	3	2.4	2	1.6			1	0.8	15	11.9
Within 1 year	5	4.0	4	3.2	1	0.8	2	1.6	2	1.6	3	2.4	1	0.8	18	14.3
Within 2 years			3	2.4	4	3.2	1	0.8	2	1.6	5	4.0	6	4.8	21	16.7
More than 2 years	7	5.6	5	4.0	9	7.1	5	4.0	5	4.0	4	3.2	13	10.3	48	38.1
Total	21	16.7	19	15.1	21	16.7	12	9.5	13	10.3	13	10.3	27	21.4	126	100
<i>Continuing Education Credits</i>																
None	5	4.0	3	2.4	8	6.5	2	1.6	3	2.4	2	1.6	4	3.2	27	21.8
Within 6 months	4	3.2	7	5.6	1	0.8	6	4.8	3	2.4	2	1.6	8	6.5	31	25.0
Within 1 year	4	3.2	5	4.0	4	3.2	1	0.8	4	3.2	4	3.2	2	1.6	24	19.4
Within 2 years	5	4.0	1	0.8	4	3.2	1	0.8	1	0.8	3	2.4	3	2.4	18	14.5
More that 2 years	2	1.6	2	1.6	4	3.2	2	1.6	2	1.6	2	1.6	10	8.1	24	19.4
Total	20	16.1	18	14.5	21	16.9	12	9.7	13	10.5	13	10.5	27	21.8	124	100
<i>In-Service Training</i>																
None	1	0.8			5	4.0			1	0.8	2	1.6	1	0.8	10	8.0
Within 6 months	4	3.2	16	12.8	1	0.8	1	0.8	4	3.2	3	2.4	16	12.8	45	36.0
Within 1 year	7	5.6	2	1.6	7	5.6	6	4.8	5	4.0	6	4.8	6	4.8	39	31.2
Within 2 years	6	4.8	1	0.8	5	4.0	2	1.6	2	1.6	1	0.8	1	0.8	18	14.4
More than 2 years	3	2.4			3	2.4	3	2.4	1	0.8	1	0.8	2	1.6	13	10.4
Total	21	16.8	19	15.2	21	16.8	12	9.6	13	10.4	13	10.4	26	20.8	125	100

**Table 3**  
**Comparison of Pennsylvania Career and Technical Education Participants by Program Expectations Ratings**

Career and Technical Program Expectations		Non-Disabled		Physical Disability		Learning Disability		Behavior Disorder		Mental Retardation		Visual Impairment		df	F
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
Item #	This student will/I would expect this student to:														
1	fit socially with others	4.02	.87	3.45	.99	4.00	.76	2.97	.94	2.58	1.22	3.37	1.10	253	13.417***
2	have similar academic attainment compared to others	3.23	1.20	3.24	1.24	3.64	.85	3.00	.96	2.00	.82	3.30	1.06	252	5.292***
3	gain occupational skill competencies at the same level as others	3.30	2.10	3.24	1.21	3.41	.91	3.07	1.09	1.79	1.03	2.27	1.26	250	4.244***
4	perform occupational skills at 85-100%	4.49	.75	3.59	1.38	3.62	1.32	2.46	1.23	1.61	1.20	2.57	1.67	247	38.252***
5	perform occupational skills at 70-84%	2.92	1.19	2.78	1.34	3.27	1.49	3.15	1.59	2.11	1.45	2.37	1.22	236	2.781*
6	perform occupational skills at 50-69%	1.87	1.10	1.93	1.07	2.00	1.18	2.27	.96	2.28	1.07	2.30	1.21	235	1.319
7	perform occupational skills at 50% or below	1.46	.97	2.04	1.34	1.71	1.23	1.92	.93	2.74	1.33	2.80	1.58	236	8.983***

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

compared to the student without a disability. Item #4 ( $F(5, 247) = 38.252, p < .001$ ) indicated that CTE instructors perceived all students with a disability (PD, LD, BD, MR, VI) would have lower performance (85-100% level) compared to the student without a disability in occupational skills. Item #5 ( $F(5, 236) = 2.781, p < .05$ ) indicated that CTE instructors perceived students with MR would have lower performance (70-84% level) compared to the student without a disability. Item #7 ( $F(5, 236) = 8.983, p < .001$ ) showed that respondents felt students with MR and VI would perform occupational skills <50% compared to the student without a disability.

### Career and Technical Program Modifications/ Accommodations

Data presented in Table 4 represents comparisons of Pennsylvania CTE participants by program modifications and accommodation ratings. Each of the fifteen items in this section had significant effects at the  $p < .001$  level.

Post-hoc tests for item #1 ( $F(5, 252) = 35.887, p < .001$ ) indicated CTE teachers perceived that all students with a disability would need modifications/accommodations in CTE compared to the student without a disability. Item #2 ( $F(5, 252) = 17.630, p < .001$ ) revealed that CTE instructors perceived students with BD or MR would more likely need a behavior management plan compared to the student without a disability. Item #3 ( $F(5, 252) = 17.222, p < .001$ ) indicated that CTE instructors felt that students with BD, MR, and VI would need more assistance in peer relations to fully participate in CTE compared to the student without disabilities. Item #4 ( $F(5, 252) = 70.770, p < .001$ ) found CTE instructors perceived students with LD, BD, MR, and VI would need reading modifications/accommodations more than the student without a disability. Item #5 ( $F(5, 253) = 31.431, p < .001$ ) indicated CTE instructors felt students with a BD, MR, and VI would more likely need math assistance compared to the student without a disability.

Post-hoc comparisons for item #6 ( $F(5, 253) = 69.390, p < .001$ ) revealed CTE instructors perceived all students with a disability would most likely need text and assignment modifications/accommodations compared to the student without a disability. Item #7 ( $F(5, 253) = 70.938, p < .001$ ) found that CTE instructors felt students with a LD, BD, MR, and VI would more likely need test and quiz modifications or accommodations compared to the student without a disability. Item #8 ( $F(5, 253) = 49.183, p < .001$ ) indicated CTE instructors perceived all students with a disability would need classroom modifications/accommodations to fully participate in CTE. Item #9 ( $F(5, 253) = 57.680, p < .001$ ) indicated CTE instructors felt students with PD, MR, and VI would need work station modifications/accommodations more than the student without a disability to fully participate. Item #10 ( $F(5, 251) = 11.126, p < .001$ ) indicated students with PD, BD, MR, and VI would need occupational task modifications/ac-

Table 4

## Comparison of Pennsylvania Career and Technical Education Participants by Program Modifications and Accommodations Ratings

Career and Technical Program Modifications and Accommodations	Non-Disabled		Physical Disability		Learning Disability		Behavior Disorder		Mental Retardation		Visual Impairment			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
<i>Item #</i>	<i>This student would need/I would need assistance from:</i>													
1	4.18	1.13	2.32	1.39	2.64	1.26	2.72	1.31	2.11	1.37	1.53	1.07	252	35.887***
2	2.10	1.23	2.07	.96	2.64	1.43	4.21	.82	3.26	1.15	2.72	1.28	252	17.630***
3	2.08	1.03	2.38	1.27	2.64	1.18	3.90	.86	3.47	1.31	3.07	1.26	252	17.222***
4	1.65	.89	1.41	.68	3.95	1.25	3.28	1.31	4.47	.77	4.23	1.22	252	70.770***
5	1.74	1.04	1.45	.63	2.36	1.22	2.90	1.32	4.47	.77	3.20	1.37	253	31.431***
6	1.68	.90	1.59	.95	3.64	.95	3.14	1.25	4.37	.76	4.37	1.00	253	69.390***
7	1.68	.95	1.45	.74	3.91	1.02	3.07	1.22	4.32	.95	4.37	1.00	253	70.938***
8	1.65	.85	3.83	1.23	2.86	1.28	2.93	1.36	3.32	1.29	4.43	.94	253	49.183***
9	1.66	.91	4.14	1.19	2.05	1.13	2.76	1.30	3.37	1.30	4.53	.82	253	57.680***
10	1.74	.93	3.34	1.54	2.41	1.10	2.70	1.10	4.00	1.11	4.47	.94	251	44.426***
11	1.68	.98	3.38	1.29	1.95	1.29	2.76	1.38	3.63	1.21	4.03	1.10	253	32.846***
12	1.85	1.04	3.10	1.14	2.32	1.29	3.17	1.34	3.63	1.12	4.03	1.10	253	27.086***
13	1.74	.94	3.21	1.15	3.73	1.08	3.90	.77	4.53	.77	4.27	1.01	253	69.620***
14	1.58	.86	3.00	1.20	2.59	1.22	3.17	1.17	3.79	1.18	3.87	1.14	253	39.835***
15	1.42	.82	2.14	1.46	1.77	1.11	2.61	1.42	3.11	1.37	2.80	1.21	252	15.943***

commodations more than the student without a disability to fully participate in CTE.

The next series of questions sought to find which students required what professional educator assistance to fully participate in CTE as perceived by CTE instructors. Post-hoc tests for item #11 ( $F(5, 253) = 32.846, p < .001$ ) indicated that CTE instructors more likely felt they would need assistance from building administrators in successfully meeting the needs of students with PD, BD, MR, and VI. Item #12 ( $F(5, 253) = 27.086, p < .001$ ) revealed CTE instructors perceived they would need assistance from guidance counselors for students with PD, BD, MR, and VI in successfully meeting student needs. Item #13 ( $F(5, 253) = 69.620, p < .001$ ) indicated that CTE instructors felt they would need assistance from their vocational learning

support staff in meeting the needs of all students with disabilities in CTE programs compared to the student without a disability. Item #14 ( $F(5, 253) = 39.835, p < .001$ ) indicated CTE instructors perceived that a higher level of assistance would be needed from special education staff in meeting the needs of students with MR and VI to successfully participate in CTE compared to the student without a disability. Item #15 ( $F(5, 252) = 15.943, p < .001$ ) asked respondents if they felt the student would not be successful in CTE even with program modifications and accommodations.

### Career and Technical Education Youth Outcomes

Table 5 presents comparison data for Pennsylvania CTE participants' comparisons by CTE youth outcomes ratings. ANOVA procedures identified signifi-

cant effects ( $p < .05$ ) for each item, with the exception of item #7 "This student has the potential to be employed in a targeted specific entry-level position within the occupational trade area,"  $F(5, 248) = 0.828$  (ns).

Post-hoc tests for item #1 ( $F(5, 248) = 33.947, p < .001$ ) revealed that CTE instructors perceived students with LD, BD, and MR would be less likely to attend a 4-year college or university compared to the student without a disability. Item #2 ( $F(5, 248) = 23.784, p < .001$ ) indicated CTE instructors perceived the student with MR would be less likely to attend a 2-year junior or community college compared to the student without a disability. Item #3 ( $F(5, 248) = 12.666, p < .001$ ) indicated that CTE instructors felt the student with MR would be less likely to attend a technical trade school compared to the student with-

**Table 5**  
Comparison of Pennsylvania Career and Technical Education Participants by CTE Youth Outcomes Ratings

Career and Technical Program Outcomes		Non-Disabled		Physical Disability		Learning Disability		Behavior Disorder		Mental Retardation		Visual Impairment		df	F
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
Item #	This student has the potential to:														
1	attend a 4-year college/university	4.20	.94	4.71	.53	3.14	1.25	3.11	1.03	1.56	.92	3.93	1.08	248	33.947***
2	attend a 2-year junior college/community college	4.35	.95	4.68	.55	3.77	1.15	3.57	1.00	1.94	1.21	4.03	.96	248	23.784***
3	attend a technical/trade school	4.46	.84	4.29	.90	4.14	.99	3.89	.74	2.72	1.36	3.80	1.06	248	12.666***
4	be employed in the full range of employment in the occupational area	4.34	.87	3.11	1.52	3.82	1.14	3.54	.96	1.83	1.15	2.53	1.48	248	27.377***
5	be employed in specific areas of employment in the occupational area	4.24	.93	3.96	1.10	4.23	.81	3.82	.77	3.17	1.25	3.93	1.14	248	4.491***
6	be employed in a targeted cluster of jobs within the occupational area	4.06	1.08	3.71	1.21	4.14	.83	3.67	.78	3.00	1.24	3.80	1.24	247	3.654**
7	be employed in a targeted specific entry-level position in the occupational area	3.76	1.31	3.79	1.13	4.23	.75	3.75	.89	3.50	1.15	3.77	1.25	248	0.828
8	does not have the potential to be employed in the occupational area.	1.60	1.13	1.82	1.28	1.55	.86	2.14	1.04	2.22	1.22	2.20	1.10	248	2.807*

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

out a disability. Item #4 ( $F(5, 248) = 27.377, p < .001$ ) indicated CTE instructors perceived that students with a PD, MR, and VI would be less likely to find employment in the full-range of positions within the occupational trade area compared to the student without a disability. Item # 5 ( $F(5, 248) = 4.491, p < .001$ ) indicated CTE instructors believed that the student with MR would be less likely to find employment in specific areas within the occupational trade area compared to the student without a disability. Item #6 ( $F(5, 247) = 3.354, p < .01$ ) indicated that CTE instructors felt the student with MR would be less likely to be employed in a cluster of jobs within the occupational trade area compared to the student without a disability. Item #8 ( $F(5, 248) = 2.807, p < .05$ ) indicated that CTE instructors perceived the students with MR and VI would be significantly less employable compared to the student without a disability.

## Discussion

This study investigated the perceptions and attitudes of secondary CTE instructors in central and eastern Pennsylvania concerning student educational labels, behaviors, and learning characteristics as they related to instructional expectations, program modifications and accommodations, and postsecondary CTE youth outcomes. The investigation used a quasi-experimental design utilizing student cases and nonrandom survey methods with ANOVA procedures and Post-hoc tests to explore differences among CTE educators' ratings. The researchers wanted to identify perceptions and attitudes that influenced instructional expectations concerning various students enrolled in CTE. Baseline data were established for the

student without a disability (control case) and comparisons were made using five student cases with various disabilities and learning characteristics. The results of this study should be viewed with consideration to sampling limitations, design feature limitations, and analysis decisions. The sample was limited to 127 secondary CTE educators from 7 school sites in central and eastern Pennsylvania. The results are based on specified behavior and learning characteristics and educational labels presented in the student cases. Caution should be used in generalizing results of this research beyond the limitations outlined and the population from which the sample was drawn.

An important feature of this research contributing to the literature is attention to the on-going effort to assist students with disabilities in accessing the general curriculum (i.e. CTE) to meeting the transition mandate of the IDEA. The findings reported verify that CTE instructors' attitudes and perceptions of students remain contributing factors in students' success as reported by researchers more than a decade ago (McDaniel, 1982; Rowjewski, Pollard, & Meers, 1990). This study also verifies that there is still an on-going need for personnel preparation and training concerning special needs learners in the area of CTE. Issues concerning perceived student expectations, program accommodations and modifications, and youth outcomes continue to be problematic for youth with disabilities and a challenge to the field. The data suggests that CTE educators are receiving some level of in-service training at the local education agency (LEA) level and that university coursework and continuing education credits in special needs are less fre-

quently used by respondents. An emphasis on promoting proactive and sustainable special needs training to facilitate best-practices at all levels (LEA, university, continuing education) should be on-going.

The results of this study indicate CTE educators' program expectations for students with disabilities were significantly lower compared to those identified for the student without a disability (control case). The findings confirm those reported by Minner (1982) regarding the negative impact of a disability label. Socialization, academic attainment, and learning occupational skill competencies for the student with MR were significant concerns perceived by CTE instructors. The student identified with BD was also perceived to have socialization difficulty compared to others. Overall occupational skill performance was perceived to be more likely for the student without a disability compared to students identified with a disability, regardless of disability classification. Students with MR or VI were generally perceived by CTE instructors to be most challenged in their ability to perform occupational skill competencies. These findings support those reported by Harvey (2000), although these finding stated here are based on the specific case studies utilized in this research project.

The study revealed that CTE instructors perceived that program modifications and accommodations were needed by all students identified with a disability to fully participate in CTE, regardless of disability type and learning characteristics. Need for a behavior management plan and assistance with peer relationships were identified for students with BD or MR. Academic modifications and accommodations for reading,

math, assignments, and test and quizzes were identified for students with MR, VI, or BD. The student with LD was perceived to need modifications and accommodations in reading, text readings and assignments, and test and quizzes. Classroom and workstation modifications and accommodations, along with occupational task modifications, were perceived as most needed by students with VI, MR, BD, or a physical disability. These findings are support to those reported by Custer and Panagos (1996).

Career and technical educators perceived they would need assistance from other education professionals in meeting the needs of students with disabilities to fully participate in CTE. Results revealed CTE instructors would need support for students with PD, MR, BD, or VI. These findings are consistent with those reported by Custer and Panagos (1996) and Harvey (2000). Assistance from the vocational learning support personnel was identified for all students with a disability in order for CTE instructors to assist them in fully participating in CTE.

There were significant differences perceived by CTE instructors concerning youth outcomes for students with disabilities compared to the student without a disability. The student with MR was perceived as more limited in post school options compared to others. The student with VI was perceived to have limitations in attending a technical school, access to a full-range of employment, and general employability in the occupational trade area. The student with BD was perceived as having more challenges in attending a 4-year college/university, 2-year junior college or community college, and access to a full-range of employment compared to the student with-

out a disability. The student with LD was perceived as less likely to attend a 4-year college or university compared to the student without a disability. Respondents perceived the student with a physical disability would have more challenges in accessing a full-range of employment in the occupational trade area compared to the student without a disability.

Concerns with CTE instructors' perceptions, attitudes and expectations regarding students with disabilities enrolled in CTE remain despite more than a decade of research and interventions. The findings reported from this study are consistent with research claims that the presence of a disability results in lower student expectations compared to students with no disability label (Good, 1987; Gillung & Rucker, 1977; Minner, 1982). Several researchers (Clark & Kolstoe, 1995; Kleinle, 1988; Kraska, 1996; Meers & Towne, 1997; Rowewski, 1991) have identified the curricular and instructional challenges faced by CTE instructors in serving special needs student enrolled in occupational programs. This study verifies those challenges and supports the importance of appropriate programming and support services, along with training for CTE instructors to better serve students with special needs. Progress has been made concerning CTE instructors' identification and willingness to seek support from other professionals to meet the needs of special needs students. Clearly there is a need for on-going support and training. This study supports the need for more research as suggested by researchers (Kraska, 1996; Trott & Holton, 1996) to better understand perceptions and attitudes of CTE instructors concerning postsecondary expectations for students with special needs.

## Recommendations

Based on the findings of this research study, the following recommendations are suggested.

1. CTE instructors need to take full advantage of training opportunities available to them concerning special needs students. CTE administrators should consider an on-going professional development program that provides in-service training to CTE professionals concerning special needs students.
2. Higher education institutions offering workforce development programs and special education should develop partnerships in offering both coursework and in-service training with research efforts to validate the efficacy of these efforts to CTE professionals.
3. Policymakers and practitioners at the local level should develop a broad-based network of support for CTE educators that will facilitate direct and indirect support systems for students with disabilities enrolled in secondary CTE. This support structure should be articulated in the transition services section mandated in the student's Individualized Education Program (IEP).
4. Continued research is needed concerning perceptions and attitudes of CTE instructors concerning expectations for students with special needs enrolled in secondary occupational programs if CTE and special education are to fully meet the mandates put forth in the IDEA97 and Carl D. Perkins Act of 1998.
5. Research has explicitly stated CTE is beneficial for students with disabilities. Educators must work together with families to collaboratively

support students with disabilities' attainment of occupational skills to maximize labor market advantage for successful transition from school to post school adult life.

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## Notes From The Field

Marilyn Fayram, Guest Columnist

Someone once said, "Parental love is the only one that leads to separation." How true this is for those of us who have tried to or have successfully "separated" from our children through their leaving home for college, a job or to set up a new household. We are obviously proud that they can stand on their own, but sad to see them go. We are also fearful. I remember when my daughter got her driver's license; I thought it a wonderful thing that someone else was certifying her as being competent to drive alone. She was objectively a terrific driver but as her parent, I could not let go of my anxieties long enough to certify that she was "perfectly competent." How could she be since I had known her when she could do virtually nothing-

that is as my baby? For parents of a child with a disability this issue can be even more profound. From the beginning, these parents have been their child's strongest advocates. They have persisted in the face of others who said that their precious child "could not", "should not", "wasn't able." They have heard about reducing expectations. "Really, you need to look at reality." Ah, but they were! They knew exactly how their child was. They lived with them every day and even through their rose colored glasses they were able to see what others could not because they knew the "material" so well.

So what happens to these knowledgeable parents when they come face-to-face with the big transition from high school

to postsecondary education? The law says that they are no longer able to get any information about their students. They can no longer be advocates in the same way. It is not even a two-way street. It is a one-way street and information is more than likely funneled through the student. We want our sons and daughters to be able to advocate for themselves. We want them to carry on when we are no longer physically present and we want to continue to support them.

The law makes it difficult for all parents. When my daughter was in her sophomore year in college, she needed to see the doctor. Now, it was my insurance that paid the doctor bills and as things usually go, there were some problems with the