Indiana Career and Technical Instructors' Perceptions of Program Expectations for Students With and Without Disabilities

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Abstract

This study investigated the relationship between demographic variables of secondary Indiana career and technical education (CTE) instructors and program expectations for students with and without disabilities participating in CTE. Respondents' gender, age, level of education, years in current position, years in education, and training in special needs (i.e., university coursework, in-service training) are reported. A survey research design using student case studies and non-random survey methods were used to explore instructors' perceptions of students' social integration, academic and occupational skill attainment, and postsecondary occupational employability. Significant differences were found regarding students' social fit, academic attainment, occupational skills competencies, and employment potential in the occupational area by respondents' demographic variables. Teacher training and future research efforts are discussed.

There are several differing views concerning what secondary level transition planning for students with disabilities should involve (Phelps & Hanley-Maxwell, 1997). Recent educational reforms have narrowed this debate. As such, the recently reauthorized IDEA, the Individuals with Disabilities Education Improvement Act of 2004 (P.L. 108-446), makes clear that transition planning/services are to begin at age 16, eliminating the age 14 program of study requirement of IDEA 1997. Although the new IDEA continues to support transition, many in the field believe that the change de-emphasizes the important need to start planning early and focus transition programming throughout the high school experience. There is no contention that the new IDEA aligns with the national educational reform agenda under The No Child Left Behind Act (NCLB) of 2001 (P.L. 107-110). This agenda has established rigorous academic standards and accountability measures for all students. The intent of NCLB is to close the achievement gap and to ensure high levels of academic attainment for all students (National Association of Secondary School Principals, 2005). States have interpreted NCLB mandates in the context of strict grade level academic achievement due to the stated goal as having all children, with the exception of 1% who participate in alternative assessments, on grade level by the 2013-2014 academic year. The NCLB regulations establish federally approved state systems of accountability for progress reporting on annual yearly progress (AYP). State assessment measures focus on grade level academic standards in language arts, math, and science. The IDEA of 2004 reinforces high achievement for students with disabilities and supports NCLB. The emphasis on academic performance for all students, including those with disabilities, has been mandated through NCLB and also articulated in IDEA 2004.

Although there is an emphasis on academics, Johnson, Stodden, Emanuel, Luecking, and Mack (2002) indicated that students with disabilities need to have access to the full range of general education curriculum options. Transition planning for students with disabilities involves aligning student's interests and postsecondary goals with the most appropriate secondary educational curriculum option (e.g., college prep, career and technical education). Gray (2001) stated that CTE is designed to serve all students who choose to participate in secondary CTE within public education. The National Assessment of Vocational Education (U.S. Department of Education, 2002) reported that 37.5% of CTE occupational concentrators (those concentrating in a specific occupation program of study) were students with a disability. Secondary CTE programs, exploratory and CTE that focuses on occupationally specific training, are important for students with disabilities (Harvey, 2001; Sarkees-Wircenski & Scott, 2003; Wagner, 1991). The U.S. Government Accounting Office (2003) reported that work experience and vocational education were significant factors leading to postsecondary employment

for students with disabilities. Given the mandates of NCLB and IDEA 2004, educators should not lose sight of the fact that secondary career and technical education is a viable curriculum option for students with disabilities.

Career and technical education programs serve a diverse student population (Gray & Herr, 1995; NAVE, 2002). This diverse student population has presented CTE educators with instructional challenges (Clark & Kolstoe, 1995; Rojewski, 1991). A direct relationship has been reported concerning CTE instructors' attitudes toward students with disabilities and students' success in CTE programs (Rowjewski, Pollard, & Meers, 1990). Inclusion, teacher attitude, and instructional effectiveness have been studied regarding teachers' perceptions of their instructional effectiveness in providing for the needs of students with disabilities in general education settings (Cook, Tankersley, & Landrum, 2000; Treder, Morse, & Ferron, 2000). Several studies have investigated CTE educators' attitudes and expectations toward students with disabilities (Custer & Panagos, 1996; Harvey, 1999; Harvey, 2000; Harvey & Pellock, 2003; Kraska, 1996; Kraska, 1997; Rowjewski, Pollard, & Meers, 1990; Trott & Holton, 1996). Researchers have reported CTE teachers' lack of preparation and perceived training needs to effectively serve special needs students (Custer & Panagos, 1996; Harvey, 1999; Harvey 2000; Harvey & Pellock, 2004; Kraska, 1997). Okolo and Sitlington (1988) found no significant effects on Iowa's CTE teachers' attitudes by demographic variables (i.e., occupational program area taught, level of education, training experiences, years of teaching). Rowjewski, Pollard, and Meers (1990) reported that age, experience with special needs students, education level, and years of teaching experience were not factors in CTE teachers' attitudes toward students with disabilities. Trott and Holton (1996) explored age, gender, and education level for postsecondary level technical educators. They found only gender had a significant influenced on attitude and that females had more positive attitudes toward students with disabilities compared to males. Kraska (1997) found that age, years of teaching, and education level were not significant influences on CTE attitudes toward special needs students in Alabama CTE programs. Harvey and Pellock (2004) found that Pennsylvania CTE instructors did have significant differences when responding to students with and without disabilities. Significant differences were found regarding CTE program social fit, academic and occupational performance, and employability by CTE respondents' when variables of age, gender, education level, years in education, and training experiences were disaggregated and subgroupings of each variable (i.e. Age by 20-30 yr. old; 31-40 yr. old…) were taken into account. These findings differ from most of the literature and are different due to the nature of variable definition in this investigation.

The literature indicates training needs are critically important for CTE instructor's to more effectively teach students with disabilities enrolled in secondary CTE (Custer & Panagos, 1996; Harvey, 1999; Harvey 2000; Kraska, 1997). The attitudes of CTE instructors as reported by age, gender, education, years of teaching experiences were generally found not to be a strong predictor of student performance (Kraska, 1997; Okolo & Sitlington, 1988; Rowjewski, Pollard, & Meers, 1990; Trott & Holton, 1996). Harvey and Pellock (2004), in a more recent study, found that CTE respondents' variables did influence perceptions and expectations of student performance when comparing students with and without a disability. Several researchers have recommended further research concerning CTE educators' attitudes toward special needs students.

Purpose of the Study

The purpose of this study was to explore the relationship between Indiana career and technical educators' demographic variables and program expectations for students with and without disabilities. Respondents' gender; age; level of education; years in current position; years in education; and special needs training, involving university coursework and in-service, were identified demographic variables. This study used survey research methods seeking CTE instructors' perception ratings of student case studies where all participants rated a student without a disability (control case) and all CTE participants rated a second pre-assigned case study for a student with a specified disability (1 of 5 disability cases) presented in this research. The cases of students with disabilities included: a) physical disability; b) specific learning disability; c) behavior disorder; d) mental retardation; and e) visual impairment. All student cases included information on educational abilities, behaviors, labels and learning characteristics. Student cases were used to explore instructors' views of students' social integration, academic and occupational skill attainment, and post-school employability in the CTE program areas (see Harvey & Pellock, 2003 for further de-

tail). The following questions guided this investigation.

1. Are there differences between CTE educators' perceptions of secondary CTE program socialization, academic and occupational skill attainment, and employability of students with and without disabilities as identified by respondents' gender?
2. ...as identified by respondents' ages?
3. ...as identified by respondents' education level?
4. ...as identified by respondents' years in current positions?
5. ...as identified by respondents' years in education?
6. ...as identified by respondents' special needs training through university coursework?
7. ...as identified by respondents' special needs training through in-service programs?

Methodology

Population and Sample

This study included the random selection of ten secondary CTE sites representing the northern and southern regions of east central Indiana (IN). The population included all secondary level CTE educators serving students in secondary occupational programs in this region. The study region represented an approximate 30% of CTE programming in the state of Indiana. Five schools were located in northern east central IN and five schools were located in southern east central IN. One hundred and forty-nine (n=149) secondary level CTE occupational instructors participated in the research project. Participation by site ranged from a low of 25% to a high of 94% with an overall participation rate of 68%. Participation in this research study was strictly voluntary.

Instrumentation

The assessment instrument, *Student Characteristics and Career and Technical Education Instructional Expectations Assessment Survey,* was developed by Harvey and Pellock in 2000 (see Harvey & Pellock, 2003 for further detail). The study used demographic information from Section II of the survey instrument to create study variables. Section III of the survey instrument used four specific questions regarding respondents' perceptions of students' potential for social fit in CTE, academic skill attainment, occupational skill attainment, and post-school occupational employability. A 5-point Likert-type scale (1=strongly disagree with statement; 5=strongly agree with statement) was used to rate survey items.

Six student case studies were developed for the research project. A case study for a student without a disability (control case) and five specific disability case studies (comparison group) were used. All cases included background information with basic academic profiles and narrative descriptors of the student, including disability classifications and a statement of special needs. The cases for students with disabilities included: a physical disability (PHY) with mobility limitation; legal blindness (VI) with low vision; limited reading comprehension with a learning disability (LD); impulse control and hyperactivity with behavior disorder (BD); limited IQ and adaptive behavior skills with mental retardation (MR). The disability cases were grouped for comparison purposes in this study.

Reliability of the instrument for this specific study was established with a Cronbach's alpha internal consistency coefficient of 0.63. Sylvia and Ysseldyke (1985) suggest a conservative minimum reliability coefficient of .60 for group assessment data.

Procedure

The researchers sought permission from CTE site administrators to conduct this study and developed procedures with the ten CTE site administrators in Indiana to complete the research. The study was presented to CTE instructors at staff meetings and/or in-service sessions at each site. All CTE participants were provided with survey procedures prior to the study. Student case studies included a student without a disability (control case) and five student cases with specified disabilities (comparison group). Participants completed two survey forms, one for each of their two case studies. The first case study CTE participant read was the non-disabled student case study (control case). All CTE participants were asked to rate survey items after reading the first case study control case. After completing the first survey, CTE participants were given a second pre-assigned case study to read and rate (a student with one of the following disabilities: PHY; VI; LD; BD; MR). Data were analyzed using both descriptive and inferential statistical procedures. Kruskal-Wallis tests were used to explore the effects of specified demographic variables concerning respondents' ratings for CTE program social fit, academic and occupational skill attainment, and post-school employability in the occupational area. These nonparametric measures were used to explore differences in the response distribution by mean ranks. All significant effects were set at the $p < .05$ significance level. The variables explored included respondents' gender, age, level of education, years in current position, years in education, and special needs training (i.e. university coursework and in-service

training). Mean, standard deviation, Chi-square (χ^2), and level of significance are reported (see tables 2-8).

Results

The results are reported by section addressing the findings for each research question posed in this study. (See Exhibits A and B for a summative and graphic representation of the data.) Table 1 presents demographic information by region for the study participants. Indiana CTE instructors were predominately male (62%), were 51 years old or older (39%), held a graduate degree (39%), had been in their current position for 1-5 years (41%), and had been in the field of education for 21 years or more (31%).

Question 1. CTE educators' perceptions by respondents' gender

Gender was found to be a significant factor concerning Indiana respondents' perceptions of students by disability classification in all four areas (see table 2). Significant differences between males and females were found concerning students fitting in socially with others in CTE programming (χ^2=38.661), similar academic attainment (χ^2=17.386), gain occupational skill competencies (χ^2=35.632), and postsecondary employability in the full range of jobs within the occupational area (χ^2=74.410). Female respondents indicated that students with disabilities would have more challenges fitting in socially compared to others in their CTE programs. Male respondents indicated that students with disabilities would least likely have similar academic attainment compared to others in their CTE programs. Males indicated that students with disabilities would not gain occupational skill competencies at the same level as others in their CTE programs. Males also indicated that students with disabilities would have more challenges in being employed in the full range of employment within the occupational trade area compared to female respondents' ratings.

Question 2. CTE educators' perceptions by respondents' ages

Age was found to be a significant factor concerning Indiana CTE educator's perception ratings of students with and without disabilities by all four areas (see table 3). Significant differences were found concerning students fitting in socially with others in CTE programming (χ^2=38.772), similar academic attainment (χ^2=18.200), gain occupational skill competencies (χ^2=42.031), and postsecondary employability in the full range of jobs within the occupational area (χ^2=76.165). Respondents rated students with disabilities lower across all areas compared to the student without a disability. Indiana CTE instructors between the ages of 20-30 and ages 41-50 indicated that students with disabilities would have more challenges with social fit. Rating differences were noted regarding students with disabilities having similar academic attainment compared to others in their CTE program. Respondents who were in the older age groups (41-50, 51+ years old) had lower ratings for students with disabilities regarding the acquisition of occupational skill competencies at the same level as others in their CTE program. Respondents who were 41 years old or older indicated that students with disabilities would have more challenges being employed in the full range of employment within the occupational trade area compared to those without a disability.

Question 3. CTE educators' perceptions by respondents' education level

Education level was found to be a significant factor concerning Indiana CTE perception ratings of students with and without disabilities by all four areas (see table 4). Significant differences were found concerning students fitting in socially with others in CTE programming (χ^2=38.804), similar academic attainment (χ^2=24.578), gain occupational skill competencies (χ^2=44.012), and postsecondary employability in the full range of jobs within the occupational area (χ^2=77.956). Indiana CTE instructors rated students with disabilities lower in all areas compared to the student without a disability. Respondents who had earned a high school diploma indicated that students with disabilities would have more challenges in their mind concerning all areas compared to other education level groups.

Question 4. CTE educators' perceptions by respondents' years in current position

Respondents' number of years in their current position was found to be a significant factor concerning their perceptions of students with disabilities regarding all four areas (see table 5). Significant differences were found concerning students fitting in socially with others in CTE programming (χ^2=41.677), similar academic attainment (χ^2=26.591), gain occupational skill competencies (χ^2=44.457), and postsecondary employability in the full range of jobs within the occupational area (χ^2=87.754). Indiana CTE respondents who had been in their current position 6-10 years, 16-20 years, or 20 years or more disagreed that students with disabilities would gain occupational skill competencies at the same level as others in

Table 1

Indiana Career and Technical Education Participation by Region and Demographic Characteristics.

	IN Northern Region		IN Southern Region		Total	
	n	%	*n*	%	*n*	%
Participants' Gender						
Male	39	26.2	53	35.6	92	61.7
Female	34	22.8	23	15.5	57	38.3
Total	73	49.0	76	51.0	149	100
Participants' Age						
20-30 yrs.	6	4.0	2	1.3	8	5.4
31-40 yrs.	17	11.4	16	10.7	33	22.1
41-50 yrs.	25	16.8	24	16.1	49	32.9
51+ yrs.	25	16.8	34	22.8	59	39.6
Total	73	49.0	76	51.0	149	100
Educational Level						
HS Diploma	10	6.8	31	20.9	41	27.7
2 yr. Associate	10	6.8	9	6.1	19	12.8
4 yr. Bachelors	19	12.8	11	7.4	30	20.3
Graduate	33	22.3	25	16.9	58	39.2
Total	72	48.6	76	51.4	148	100
Years in Current Position						
1-5 years	27	18.1	34	22.8	61	40.9
6-10 years	14	9.4	19	12.8	33	22.1
11-15 years	9	6.0	6	4.0	15	10.1
16-20 years	6	4.0	10	6.7	16	10.7
21+ years	17	11.4	7	4.7	24	16.1
Total	73	49.0	76	51.0	149	100
Years in Education						
1-5 years	14	9.4	19	12.8	33	22.1
6-10 years	17	11.4	16	10.7	66	22.1
11-15 years	8	5.4	5	3.4	13	8.7
16-20 years	8	5.4	16	10.7	24	16.1
21+ years	26	17.4	20	13.4	46	30.9
Total	73	49.0	76	51.0	149	100
University Coursework						
None	31	20.9	36	24.3	67	45.3
Within 6 months	9	6.1	6	4.1	15	10.1
Within 1 year	6	4.1	8	5.4	14	9.5
Within 2 years	6	4.1	8	5.4	14	9.5
More than 2 years	20	13.5	18	12.2	38	25.7
Total	72	48.6	76	51.4	148	100
In-Service Training						
None	22	15.0	15	10.2	37	25.2
Within 6 months	29	19.7	22	15.0	51	34.7
Within 1 year	8	5.4	12	8.2	20	13.6
Within 2 years	3	2.0	17	11.6	20	13.6
More than 2 years	10	6.8	9	6.1	19	12.9
Total	72	49.0	75	51.0	147	100

Note: Percentages represent data reported by category.

Table 2

Indiana Career and Technical Education Expectation and Outcome Ratings by Gender and Disability Level

Career and Technical Program Expectations and Outcomes	Male Respondents				Female Respondents					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	4.15	0.72	3.54	1.01	4.02	0.93	3.23	1.06	298	38.661***
have similar academic attainment compared to others in my program.	3.38	1.06	3.04	1.18	3.79	1.03	3.11	1.34	298	17.386***
gain occupational skill competencies at the same level as others in my program.	3.65	1.18	2.79	1.20	3.80	1.06	2.95	1.30	296	35.632***
have the potential to be employed in the full range of employment in the occupational trade area.	4.47	0.73	3.24	1.25	4.36	0.92	3.32	1.16	295	74.410***

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

Table 3

Indiana Career and Technical Education Expectation and Outcome Ratings by Age and Disability Level

Career and Technical Program Expectations and Outcomes	Respondents Ages 20-30				Respondents Ages 31-40				Respondents Ages 41-50				Respondents Ages 51+					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	4.13	0.35	3.25	0.88	4.21	0.82	3.64	0.96	3.96	0.93	3.29	1.11	4.15	0.73	3.44	1.03	298	38.772***
have similar academic attainment compared to others in my program.	3.25	1.16	2.88	0.83	3.82	0.88	3.24	1.22	3.37	1.14	2.86	1.25	3.56	1.07	3.17	1.19	298	18.200*
gain occupational skill competencies at the same level as others in my program.	3.38	1.06	3.13	1.12	3.91	1.12	3.09	1.25	3.48	1.20	2.56	1.28	3.83	1.08	2.92	1.19	296	42.031***
have the potential to be employed in the full range of employment in the occupational trade area.	4.63	0.51	3.38	1.30	4.55	0.56	3.42	1.09	4.47	0.73	3.12	1.23	4.30	0.99	3.29	1.27	295	76.165***

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

Table 4

Indiana Career and Technical Education Expectation and Outcome Ratings by Level of Education and Disability Label

Career and Technical Program Expectations and Outcomes	Respondents with High School Diploma				Respondents with 2 yr. Associate's Degree				Respondents with 4 yr. Bachelor's Degree				Respondents with Graduate Degrees					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	4.20	0.84	3.41	1.14	4.16	0.60	3.68	0.88	4.00	0.91	3.53	1.04	4.09	0.80	3.31	1.01	298	38.804***
have similar academic attainment compared to others in my program.	3.41	1.02	2.76	1.17	3.32	1.20	3.26	1.24	3.90	0.88	3.53	1.27	3.52	1.12	3.02	1.10	298	24.578***
gain occupational skill competencies at the same level as others in my program.	3.66	1.08	2.53	1.19	3.89	1.23	2.95	1.31	4.03	1.06	3.27	1.31	3.53	1.17	2.86	1.16	296	44.012***
have the potential to be employed in the full range of employment in the occupational trade area.	4.43	0.81	3.08	1.30	4.58	0.50	3.42	0.90	4.53	0.68	3.57	1.16	4.37	0.89	3.21	1.26	295	77.956***

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

their program. Respondents who were in their current position 20 years old or more disagreed that students with disabilities had the potential to be employed in the full range of employment within the occupational area compared to those without a disability.

Question 5. CTE educators' perceptions by respondents' years in education

Respondent's number of years in the field of education was found to be a significant factor concerning Indiana CTE perception ratings of students with and without disabilities (see table 6). Significant differences were found concerning students fitting in socially with others in CTE programming (χ^2=46.380), similar academic attainment (χ^2=25.685), gain occupational skill competencies (χ^2=37.605), and postsecondary employability in the full range of jobs within the occupational area (χ^2=76.560). Indiana CTE instructors rated students with disabilities lower compared to the control group in three categories: a) academic attainment; b) occupational skills; c) employability in the occupational trade area. Most CTE respondents who had been in education for 6-10 years or 16-20 years indicated that students with disabilities would not have similar academic attainment compared to others. Respondents who had been in education between 1-5 years, 6-10 years, or 16-20 years disagreed that students with disabilities would gain occupational skill competencies at the same level as others.

Question 6. CTE educators' perceptions by respondents' university coursework

University coursework in the area of special needs was found to be a significant factor concerning Indiana CTE perception ratings of students with and without disabilities by all four areas (see table 7). Significant differences were found concerning students fitting in socially with others in CTE programming (χ^2=41.369), similar academic attainment (χ^2=20.431), gain occupational skill competencies (χ^2=43.565), and postsecondary employability in the full range of jobs within the occupational area (χ^2=78.426). The CTE instructors in this study rated students with disabilities lower in all categories compared to the student without a disability. Respondents who had taken a special needs university course within the last year agreed that students with disabilities would gain occupational skill competencies at the same level as others in their program. Respondents who had taken a university course within the last two years disagreed that students with disabilities had the potential to be employed in the full range of employment within the occupational area compared to those without a disability.

Question 7. CTE educators' perceptions by respondents' in-service programs

In-service training designed to support special needs students in CTE was found to be a significant factor concerning Indiana CTE ratings of students with and without disabilities for three of the four areas (see table 8). Significant differences were found concerning students fitting in

Table 5

Indiana Career and Technical Education Expectation and Outcome Ratings by Years in Current Position and Disability Label

Career and Technical Program Expectations and Outcomes	Respondents' Years in Current Position 1-5 Years				Respondents' Years in Current Position 6-10 Years				Respondents' Years in Current Position 11-15 Years				Respondents' Years in Current Position 16-20 Years				Respondents' Years in Current Position 20+ Years					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	3.97	0.91	3.54	0.99	4.21	0.85	3.18	1.13	4.40	0.73	3.53	1.12	4.19	0.54	3.38	1.08	4.04	0.62	3.42	0.97	298	41.677***
have similar academic attainment compared to others in my program.	3.56	1.08	3.13	1.23	3.73	1.06	3.06	1.27	3.87	0.83	3.00	1.51	2.56	0.96	2.88	1.14	3.67	0.91	3.08	0.92	298	26.591**
gain occupational skill competencies at the same level as others in my program.	3.78	1.10	3.02	1.21	3.67	1.21	2.76	1.32	3.93	0.88	3.00	1.55	3.00	1.15	2.69	1.19	3.92	1.13	2.57	0.99	296	44.457***
have the potential to be employed in the full range of employment in the occupational trade area.	4.49	0.76	3.33	1.19	4.52	0.83	3.33	1.31	4.36	0.92	3.93	1.38	4.13	0.91	3.06	1.12	4.38	0.77	2.79	0.93	295	87.754***

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

Table 6

Indiana Career and Technical Education Expectation and Outcome Ratings by Years in Education and Disability Label

Career and Technical Program Expectations and Outcomes	Respondents' Years in Education 1-5 Years				Respondents' Years in Education 6-10 Years				Respondents' Years in Education 11-15 Years				Respondents' Years in Education 16-20 Years				Respondents' Years in Education 20+ Years					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	3.82	0.80	4.09	0.72	4.24	0.86	3.45	0.86	4.23	1.16	3.21	1.13	4.25	0.61	3.92	0.95	3.17	1.23	3.54	0.95	298	46.380***
have similar academic attainment compared to others in my program.	3.39	1.02	3.00	1.17	3.76	1.00	2.88	1.29	3.92	1.03	3.54	1.39	3.08	1.13	2.75	1.26	3.61	1.06	3.28	1.04	298	25.685**
gain occupational skill competencies at the same level as others in my program.	3.79	1.05	2.82	1.15	3.73	1.18	2.76	1.32	3.85	1.06	3.00	1.58	3.42	1.13	2.67	1.34	3.76	1.20	3.00	1.11	296	37.605***
have the potential to be employed in the full range of employment in the occupational trade area.	4.52	0.56	3.21	1.16	4.58	0.61	3.27	1.20	4.46	0.96	3.46	1.45	4.27	0.88	3.22	1.27	4.33	0.99	3.28	1.20	295	76.560***

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

socially with others in CTE programming (χ^2=39.310), gain occupational skill competencies (χ^2=37.405), and postsecondary employability in the full range of jobs within the occupational area (χ^2=78.744). No significant differences in respondents' ratings were reported for academic attainment. Respondents who had special needs in-service training within the last two years felt students with disabilities would more likely achieve social fit, gain occupational skills competencies, and would have the potential to be employed in the full range of employment within the occupational area compared to CTE respondents who had no special needs in-service training, had training within the last two years, or had training more than two years ago. Respondents who had no in-service special needs training or training that was not recent (within the last year) disagreed that students with disabilities would gain occupational skill competencies at the same level as others in their CTE program. Neither did they feel that these students had the potential to be employed in the full range of employment within the occupational trade area compared to those without a disability.

Discussion

This research explored the effects of demographic variables of secondary CTE instructors in northern and southern east central Indiana concerning students with and without disabilities. The results of this study focused on differences between respondents' ratings of student participation in secondary CTE

Table 7

Indiana Career and Technical Education Expectation and Outcome Ratings by University Coursework and Disability Label

Career and Technical Program Expectations and Outcomes	Respondents' University Coursework - None				Respondents' University Coursework - Within 6 Months				Respondents' University Coursework - Within 1 Year				Respondents' University Coursework - Within 2 Years				Respondents' University Coursework - More than 2 Years					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	4.07	0.85	3.39	1.07	4.40	0.50	3.13	0.99	4.00	0.55	3.79	0.97	4.29	0.61	3.36	1.15	3.97	0.94	3.45	0.97	298	41.369***
have similar academic attainment compared to others in my program.	3.49	1.07	2.94	1.21	3.87	0.91	2.93	0.96	3.86	1.03	3.64	1.08	3.14	1.29	3.00	1.30	3.50	1.03	3.16	1.28	298	20.431*
gain occupational skill competencies at the same level as others in my program.	3.70	1.16	2.67	1.20	4.00	0.75	2.93	1.16	3.86	1.02	3.43	1.45	3.07	1.38	2.71	1.26	3.76	1.12	2.95	1.22	296	43.565***
have the potential to be employed in the full range of employment in the occupational trade area.	4.54	0.65	3.27	1.23	4.43	0.51	3.71	0.91	4.64	0.49	3.64	1.08	4.36	0.92	2.86	1.29	4.16	1.18	3.13	1.29	295	78.426***

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

Table 8

Indiana Career and Technical Education Expectation and Outcome Ratings by In-Service Training and Disability Label

Career and Technical Program Expectations and Outcomes	Respondents' In-Service Training - None				Respondents' In-Service Training - Within 6 Months				Respondents' In-Service Training - Within 1 Year				Respondents' In-Service Training - Within 2 Years				Respondents' In-Service Training - More than 2 Years					
	Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Ratings for Nondisabled		Ratings for Disabled		Total	
This student will:	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*n*	χ^2
fit socially with others in my program.	4.08	0.86	3.51	1.09	4.00	0.75	3.47	1.04	4.10	0.85	3.55	0.82	4.30	0.65	3.00	1.17	4.16	1.01	3.47	0.96	298	39.310***
have similar academic attainment compared to others in my program.	3.51	1.09	3.05	1.15	3.69	0.90	3.24	1.22	3.35	1.13	3.30	0.92	3.45	1.23	2.90	1.29	3.37	1.21	2.74	1.36	298	15.215
gain occupational skill competencies at the same level as others in my program.	3.86	1.17	2.76	1.27	3.80	0.96	2.86	1.29	3.55	1.27	3.30	0.86	3.35	1.38	2.65	1.18	3.63	1.16	2.84	1.46	296	37.405***
have the potential to be employed in the full range of employment in the occupational trade area.	4.62	0.68	3.22	1.31	4.38	0.67	3.34	1.22	4.10	1.19	3.45	0.94	4.70	0.57	3.25	1.33	4.22	1.11	3.05	1.22	295	78.744***

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

programs and student's social fit, academic attainment, gaining occupational skill competencies, and post-school employability in the full range of employment within the occupational area. The researchers wanted to identify which variables concerning age, gender, education level, length of time in education, and special needs training efforts (e.g. university coursework or in-service training) influenced CTE perceptions of students with disabilities participating in secondary CTE programs. The findings provide an overview of perceptions based on Indiana CTE respondents' experiences and knowledge that shape teaching behaviors and personal interactions in CTE programming. The results should be viewed with the following limitations in mind: a) the sample represents northern and southern east central Indiana; b) the sample was limited to ten CTE sites; c) the sample consisted of 149 secondary CTE educators who participated in the study from the selected CTE sites (68% participation rate). Caution should be used in generalizing the results beyond the parameters of this study.

The findings of this study indicate that demographic variables (i.e. age, gender…) of Indiana CTE instructors had significant effects concerning student perception ratings. Twenty-seven of the 28 items analyzed had significant effects and twenty-five were found to be significant at the p<.01 level or higher. The results indicate that demographic variables are

a factor in Indiana CTE instructors' perceptions of students with disabilities concerning CTE program expectations and outcomes. These findings support those reported by Harvey and Pellock (2004) concerning Pennsylvania CTE instructors, but differ from previous research in this area. Demographic variables need to be considered in teacher training efforts in secondary CTE and also in future research studies.

Gender was reported as having significant effects concerning CTE social fit, academic attainment, gaining occupational skill competencies, and post-school employability. Trott and Holton (1996) reported females as having more positive attitudes toward students with disabilities. Indiana CTE respondents indicated that females were more concerned about students with disabilities with social fit and gaining occupational skill competencies compared to their male counterparts. Age was found to have significant effects across all categories. Unlike those reported in the literature (Kraska, 1997; Rowjewski et al., 1990; Trott & Holton, 1996), this study found that respondents who were older (41 years old or older) generally rated students with disabilities lower than other age groups. Younger CTE respondents, ages 20 to 30 years old, also rated students with disabilities lower concerning social fit and academic attainment. The results suggest that age is a training issue given that both younger and older CTE instructors in this investigation had lower ratings concerning students with disabilities. Respondents' level of education was found to have significant effects across all variables studied. Interestingly, Indiana CTE respondents who had a high school diploma generally had lower ratings for students with disabilities concerning social fit, academic attainment, gaining occupational skill competencies, and post-school employability. This finding is similar to results reported by Harvey and Pellock (2004) but are not supported by Kraska (1997), Okolo and Sitlington (1988), or Trott and Holton (1996) who found no significant differences concerning education level.

The number of years Indiana CTE instructors had been in their current positions and the number of years respondents had been in education were found to have significant effects concerning social fit, academic attainment, gaining occupational skills, and postsecondary employment. A majority of respondents who were in their current position between 16 to 20 years felt that students with disabilities would not have similar academic attainment or gain occupational skill competencies at the same rate as others. Those who had been in their position for 20 years or more disagreed that students with disabilities would gain occupational skill competencies at the same rate as others or had the potential to be employed in the full range of positions in the occupational area. These findings are similar to those reported by Harvey and Pellock (2004) regarding Pennsylvania CTE instructors. Respondents who had been in education between 6 to 10 years and those with 16 and 20 years in education rated students with disabilities lower concerning academic attainment and gaining occupational skill competencies compared to others. These findings are important given findings reported by Kraska (1997), Okolo and Sitlington (1988), and Rowewski et al. (1990) who found no significant effects concerning teaching experience and CTE instructor's attitudes/expectations.

Respondents' university coursework in the area of special needs was found to have significant effects concerning social fit, academic attainment, gaining occupational skills, and postsecondary employment. Indiana CTE instructors who had not taken any university coursework in the area of special needs rated students with disabilities lower concerning academic attainment and gaining occupational skill competencies. Respondents' in-service training in the area of special needs was found to have significant effects concerning social fit, gaining occupational skills, and postsecondary employment. Respondents who had no in-service training, had in-service training within the last two years, and had in-service training more than two years ago indicated that students with disabilities would less likely gain occupational skill competencies at the same level as others in their CTE program. These findings differ from those reported by Okolo and Sitlington (1988) who reported no significant effects concerning training experiences and teachers' attitudes toward students with disabilities.

Many of the findings in this study confirm those reported earlier by Harvey and Pellock (2004) regarding CTE instructors' demographic variables and their influence on perceptions of students with disabilities. Respondents gender, age, level of educational attainment, years in current position, years in education, university coursework in special needs education, and in-service training addressing special needs students were found to have significant effects. Indiana CTE instructors, similar to Pennsylvania CTE instructors, generally rated students with disabilities lower compared to the student without a disability. These findings are important given that much

of the research in the field concerning CTE instructors' demographic variables and perceptions toward special needs students were found to have no significant effects.

An important difference between the Pennsylvania CTE study (Harvey & Pellock, 2004) and this Indiana replication study was that academic attainment and occupational skill competencies were found to have significant effects for several variables here whereas they were not found to be significant in the Pennsylvania study. These findings indicate potential challenges for Indiana's CTE instructors in meeting the needs of students with disabilities in secondary CTE programs. They also signal a warning to the field that continued awareness and training efforts concerning individual needs, program modifications and accommodations, and a focus on critical academic and occupational skills development are essential mandates under the Perkins Act, IDEA, and NCLB. The data suggest the need for continued education and training efforts in the area of special needs for CTE pre-service and in-service educators. The findings reported here also suggest that CTE special needs training efforts which are current (6 months to 1 year) assistance in more effective CTE program services for students with disabilities. This is an important finding as it relates to vocational special needs. If the educational reform goals of high academic achievement, accountability, and continued U.S. competitiveness (e.g., economic and employment) are to be met, secondary CTE has an important role to play in achieving this end. Secondary CTE must remain a viable option within the secondary curriculum for all students, including those with disabilities, as suggested by Gray (2001) and Johnson et al. (2002).

This study is important in that it provides direction for future training for Indiana's CTE instructors. University coursework and in-service training programs in the area of special needs should be shaped to address the needs that are presented in this study. Perceptions indicate that continued assistance in meeting the needs of special needs students is an important element of professional development at all levels. The following recommendations are made based on these findings.

Recommendations

1. Secondary CTE instructors need to have access to local and regional training to assist them in best serving all students, including those with special needs, enrolled in secondary CTE.
2. Training efforts at the university and local education agency (LEA) level for secondary CTE educators need to focus on research-based educational best practices in the following areas:

a) behavior management and peer relations
b) academic modifications and accommodations within the CTE curriculum/content area
c) occupational skill modifications and accommodations to meet the learning needs of all students enrolled in CTE, especially those with disabilities
d) focused occupational skill training and development to meet the postsecondary employment goals of the individual student enrolled in CTE programming
e) appropriate participation and advocacy for CTE program enrollment/participation for students with disabilities, including participation in the IEP planning process (Sarkees-Wircenski & Scott, 2003).

3. Training and practice need to serve the purposes of the current educational reform agenda concerning academic achievement, occupational skill development, and access to the general education curriculum for students with disabilities. Policy makers need to understand the interconnection between reformers intent, educational mandates, postsecondary outcomes and service delivery articulated in Perkins and IDEA in order to have students with disabilities fully benefit from educational options and full employment opportunities.

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Exhibit A

Summary of Indiana CTE Instructors' Expectations and Outcome Ratings by Demographic Characteristics and Student Disability Label

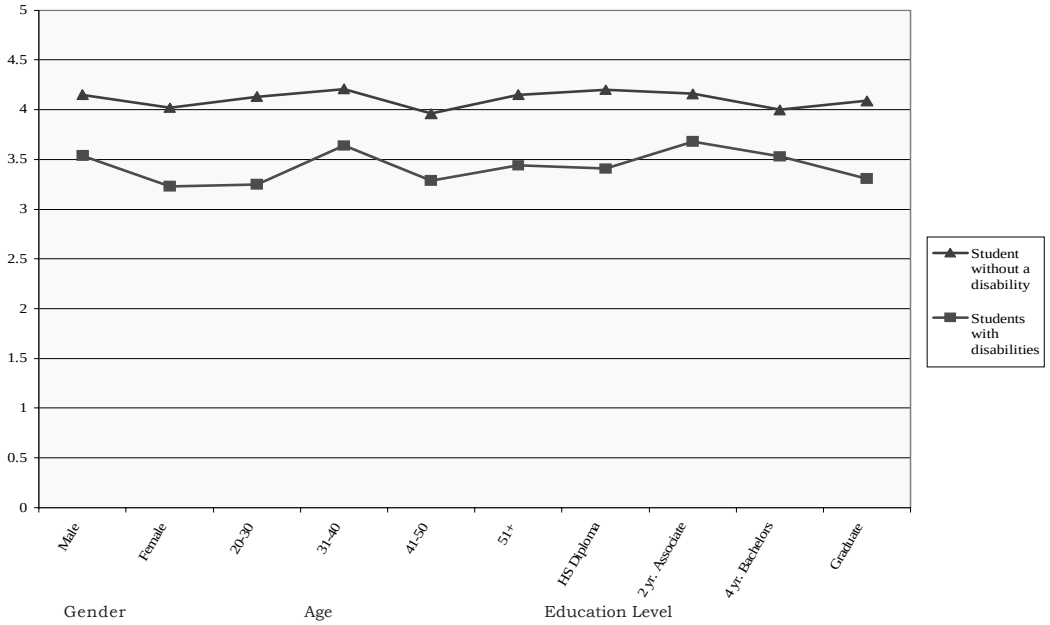
Career and Technical Program Expectations and Outcomes	Gender	Age	Education Level	Years in Current Position	Years in Education	University Coursework	In-Service Training
This student will:	χ^2	χ^2	χ^2	χ^2	χ^2	χ^2	χ^2
fit socially with others in my program.	38.661***	38.772***	38.804***	41.677***	46.380***	41.369***	39.310***
have similar academic attainment compared to others in my program.	17.386***	18.200*	24.578***	25.591**	25.685**	20.431*	15.215
gain occupational skill competencies at the same level as others in my program.	35.632***	42.031***	44.012***	44.457***	37.605***	43.565***	37.405***
have the potential to be employed in the full range of employment in the occupational trade area.	74.410***	76.165***	77.956***	87.754***	76.560***	78.426***	78.744***

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

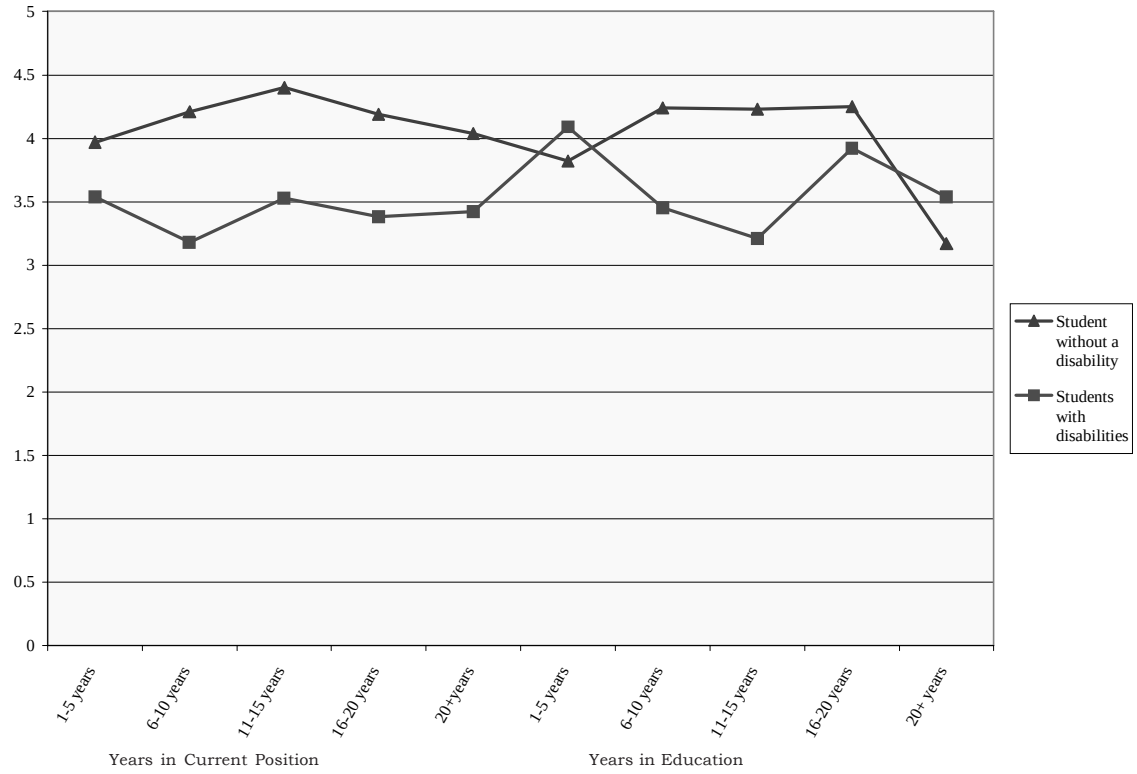
Exhibit B

Graphic Summary of Means for Indiana CTE Instructors' Perception Ratings of Students With and Without Disabilities by Demographic Characteristic

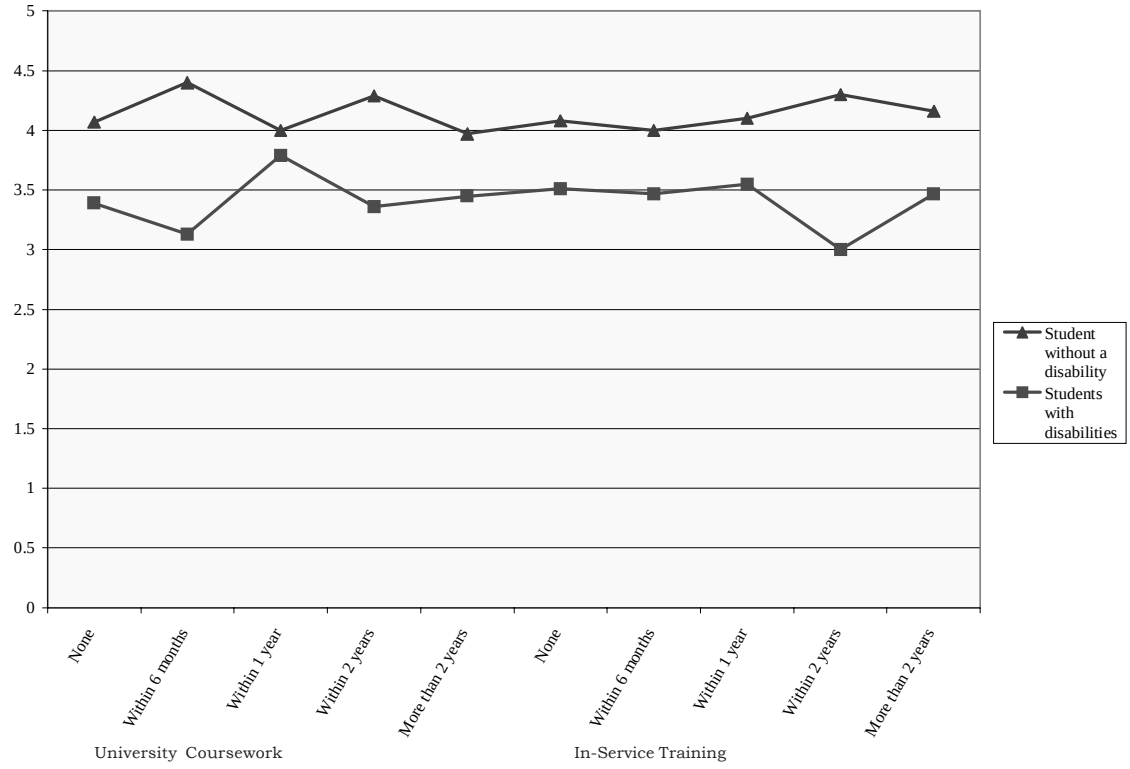
Summary of Indiana CTE Instructors' Ratings of Social Fit by Gender, Age, and Education Level



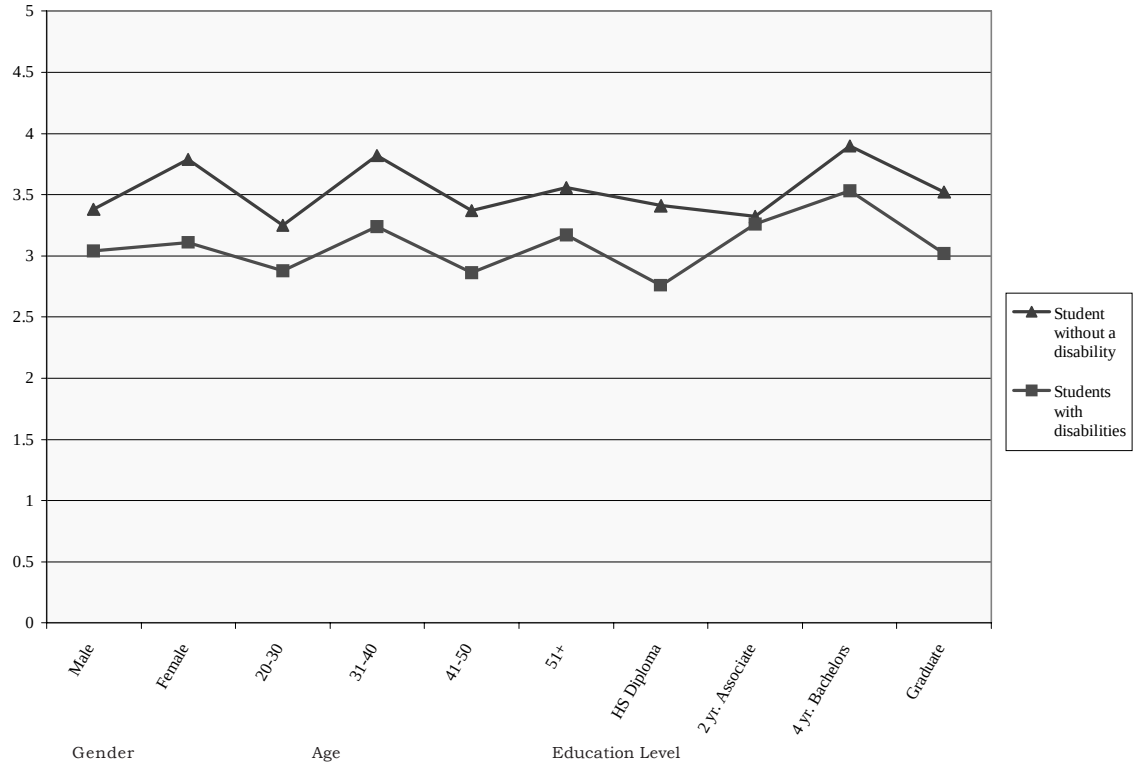
Summary of Indiana CTE Instructors' Ratings of Social Fit by Years in Current Position and Years in Education



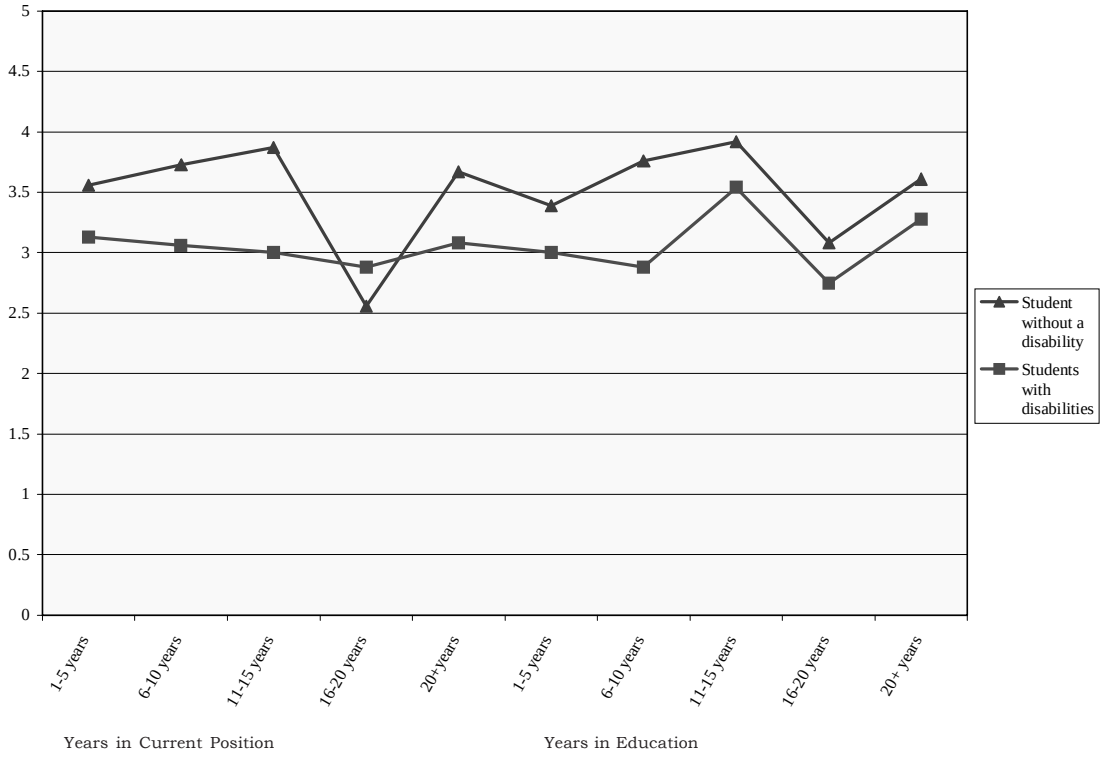
Summary of Indiana CTE Instructors' Ratings of Social Fit by Years in University Coursework and In-Service Training



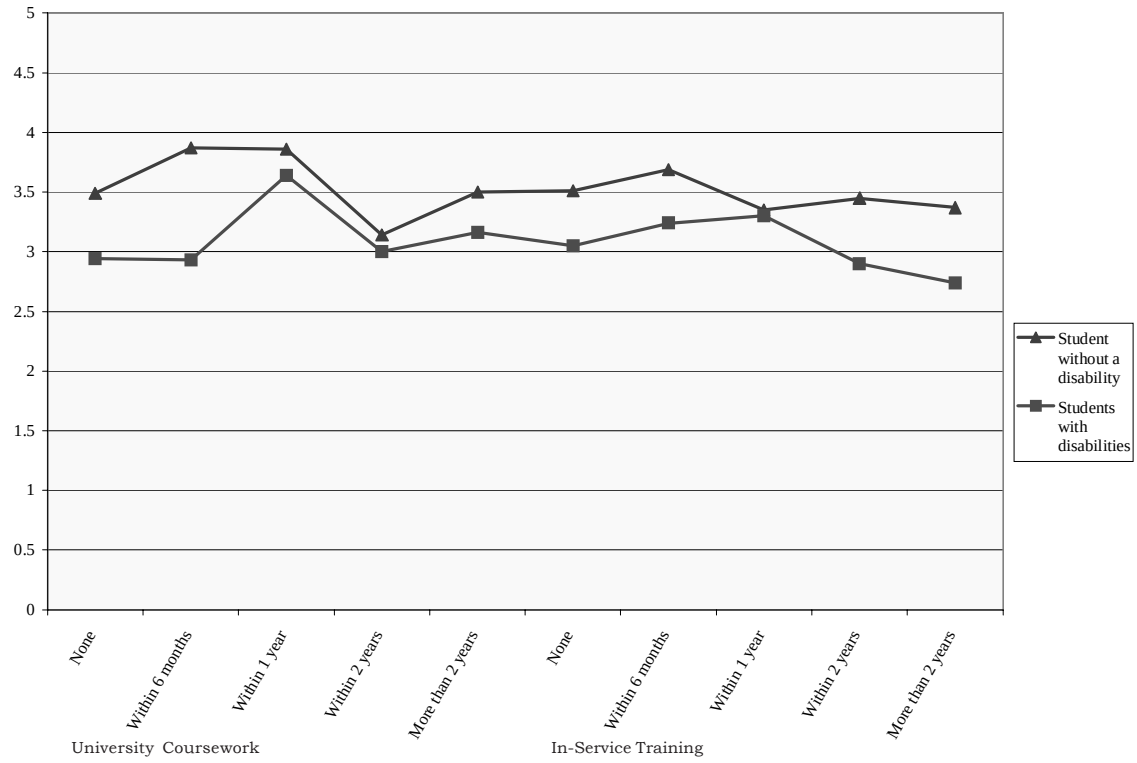
Summary of Indiana CTE Instructors' Ratings of Similar Academic Attainment by Gender, Age, and Education Level



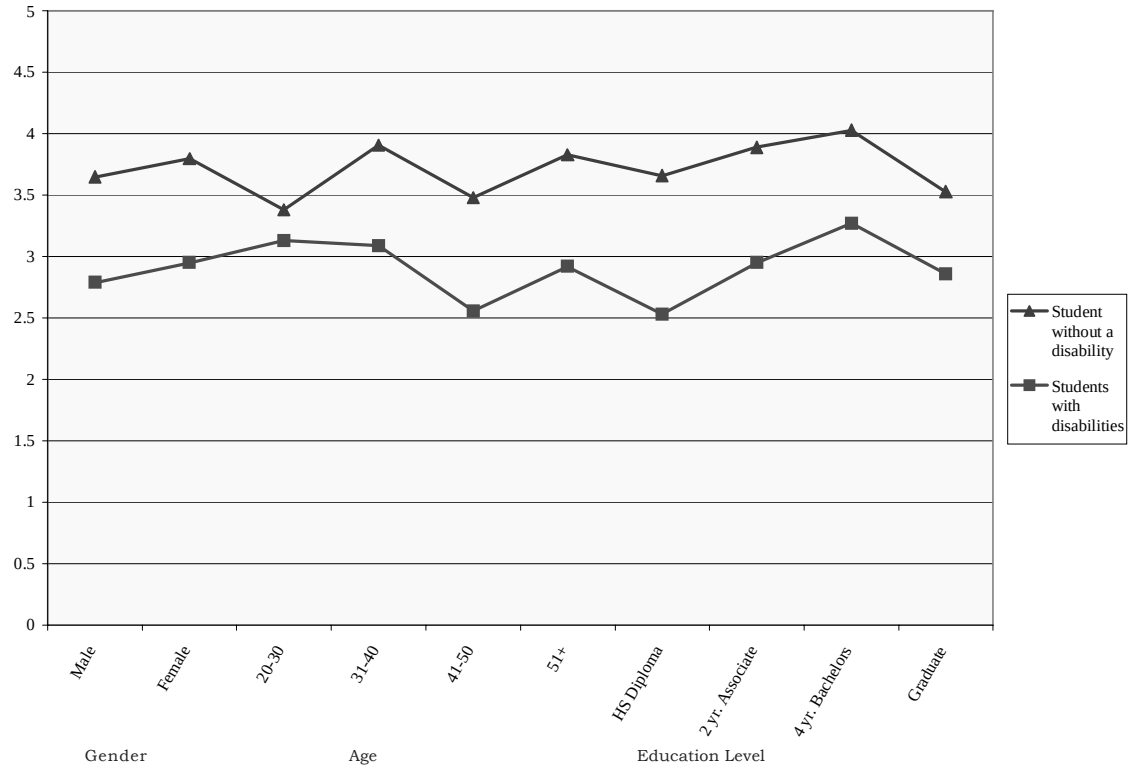
Summary of Indiana CTE Instructors' Ratings of Similar Academic Attainment by Years in Current Position and Years in Education



Summary of Indiana CTE Instructors' Ratings of Similar Academic Attainment by University Coursework and In-Service Training



Summary of Indiana CTE Instructors' Ratings of Occupational Skill Competencies by Gender, Age, and Education Level



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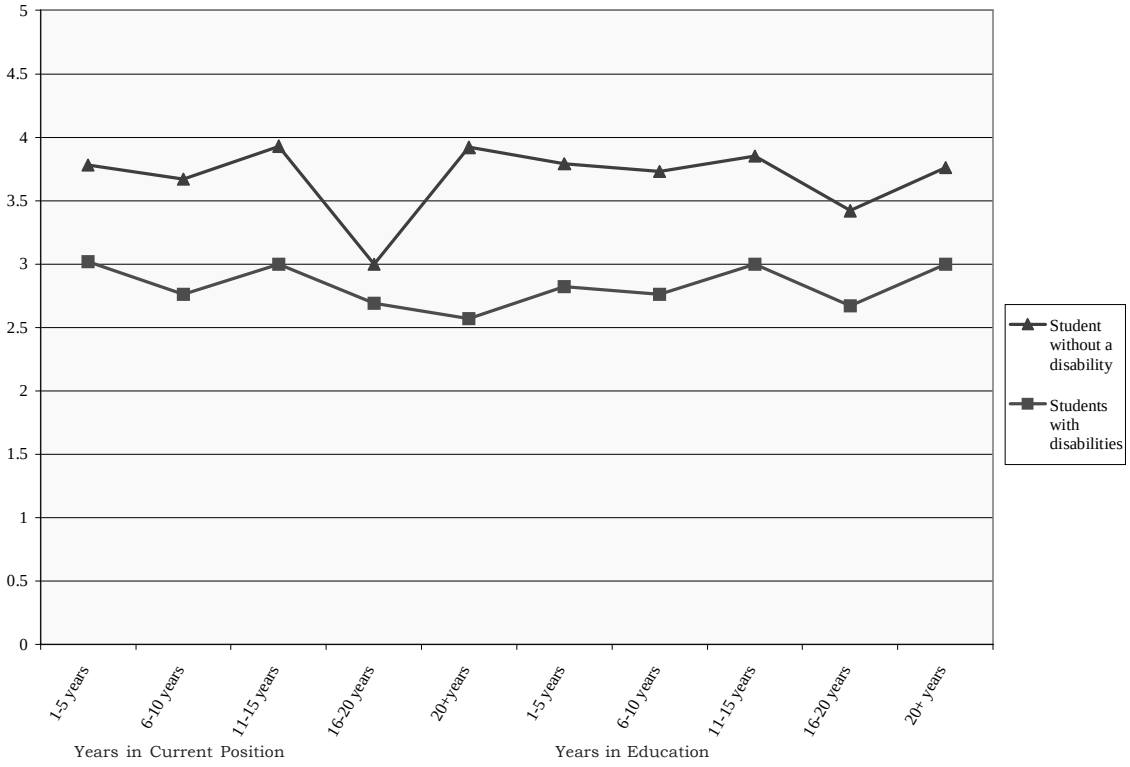
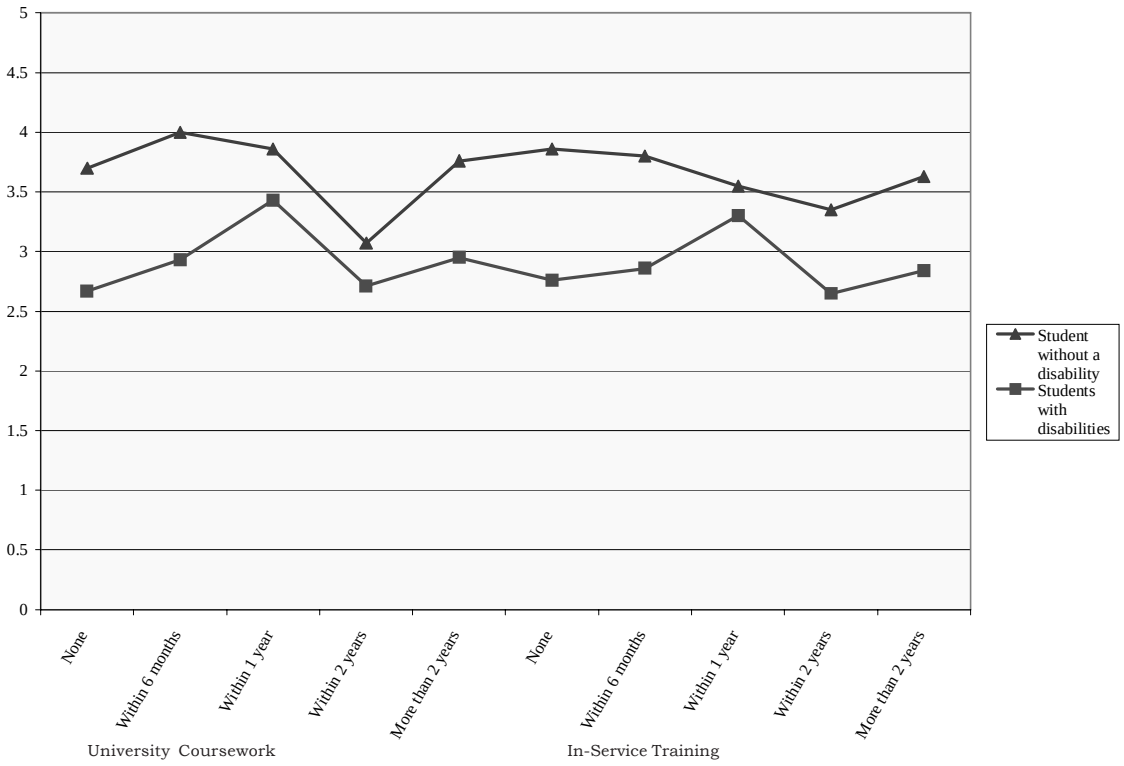
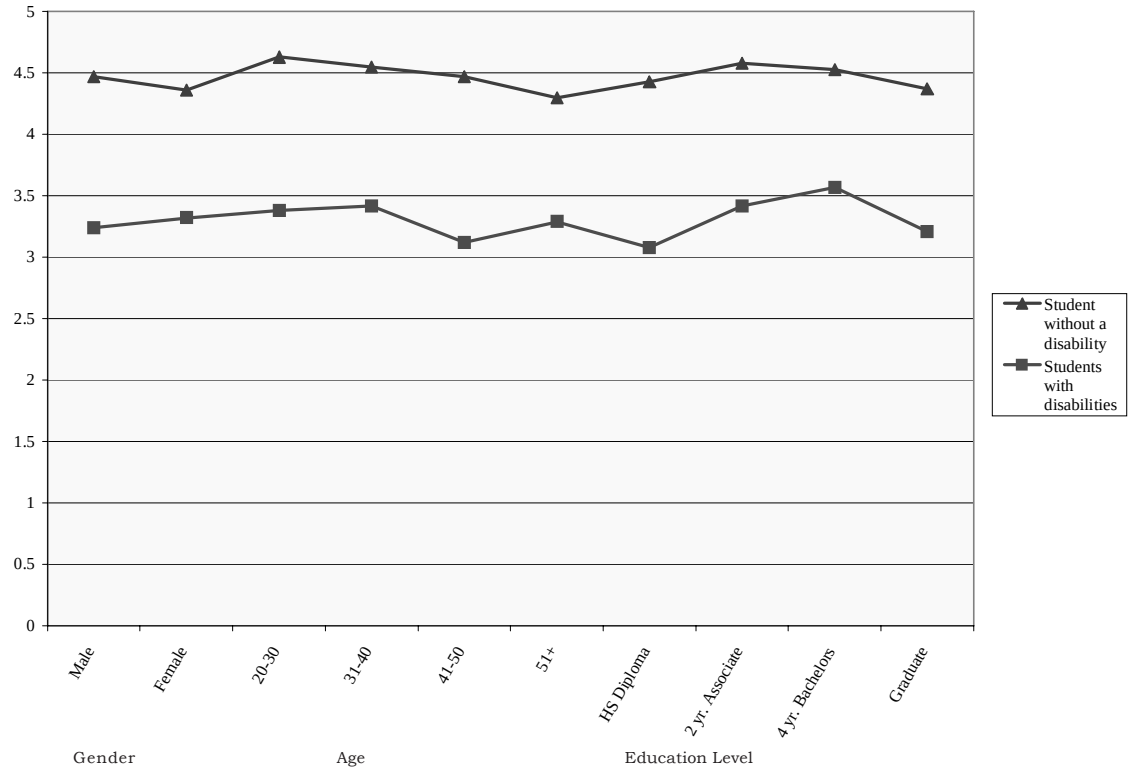


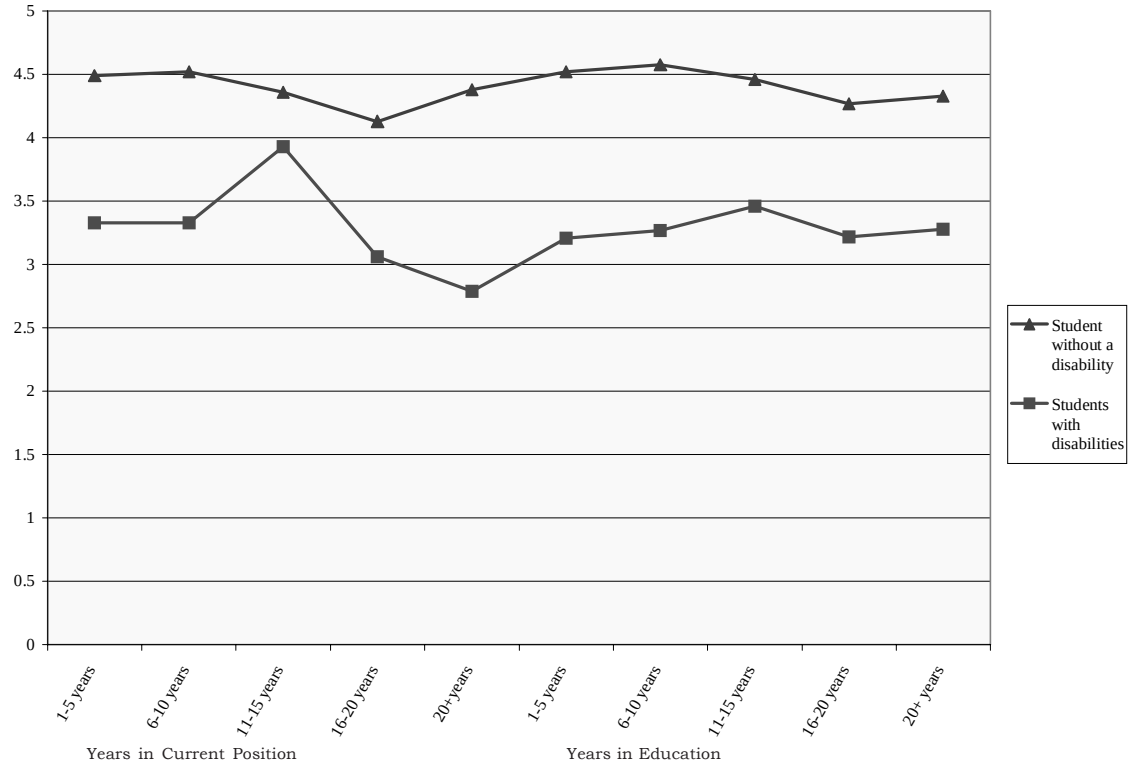
Summary of Indiana CTE Instructors' Ratings of Occupational Skill Competencies by University Coursework and In-Service Training



Summary of Indiana CTE Instructors' Ratings of Potential Post-School Employability by Gender, Age, and Education Level



Summary of Indiana CTE Instructors' Ratings of Potential Post-School Employability by Years in Current Position and Years in Education



Summary of Indiana CTE Instructors' Ratings of Potential Post-School Employability by University Coursework and In-Service Training