

AN EXPLORATORY STUDY OF CAREER AND TECHNICAL EDUCATION TEACHER EMPOWERMENT: IMPLICATIONS FOR SCHOOL LEADERS

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ABSTRACT

The two-fold purpose of the study was to (a) assess the level of empowerment among career and technical education teachers in one Midwestern state and (b) to determine if differences existed in the level of empowerment based on selected career and technical education teacher and school characteristics. Selected characteristics included teaching area, school location, gender, and level of education. While statistically significant differences were found in empowerment among career and technical education teachers based on selected characteristics, the proportion of variance explained was so small as to make the differences to be of little practical significance.

This study examines the relationship between teacher empowerment and important demographic variables as they pertain to secondary career and technical education teachers. In light of the growing number of educational reform initiatives that emphasize greater teacher capacity and involvement through shared governance models, teacher empowerment has emerged as an important component of many school improvement efforts (Pounder, 1998; Short, 1998). With this in mind, this study explores the sense of empowerment held by career and technical secondary teachers for a couple of reasons. First, the experiences of career and technical education teachers have been relatively ignored in the broader educational reform literature. And second, given that most current secondary school reform programs urge school-wide change through such activities as interdisciplinary teaching, it is important to understand how career and technical teachers view themselves within these efforts. In other words, if educational reforms that are devolving leadership responsibilities to teachers are to succeed, it is critical to understand the extent to which all teachers perceive their schools as empowering workplaces.

REVIEW OF THE LITERATURE AND CONCEPTUAL FRAMEWORK

As Smylie (1996) noted, teachers are viewed as both the problem and solution to successful education reform. Since Smylie's observation, research has further solidified our understanding that teacher quality does indeed lead to improved student achievement (Darling-Hammond, 2000). High quality teachers are defined as those teachers who know their discipline, who can engage students in ways that facilitate knowledge transfer and understanding, who view themselves as continuous learners, and who have a commitment to school wide effectiveness and improvement (Darling-Hammond).

One avenue of advancing teachers in this direction is through the improvement of teacher empowerment. Lightfoot (1986) explained empowerment in terms of the opportunities that an individual has for power, autonomy, choice, and responsibility. Extending this concept further by empirically grounding it within education, Short and Rinehart (1992) constructed six dimensions of this concept: (a) decision making, (b) professional growth, (c) status, (d) self-efficacy, (e) autonomy, and (f) impact. Accordingly, teachers must not only have the means to make change, but believe that their efforts can make a difference (Short & Greer, 1993).

In light of the important relationship between school reform and teacher empowerment, we explore the empowerment of career and technical education teachers. We argue that if all students are to learn and perform in ways consistent with being productive citizens (in both economic and civic terms), then all teachers—including career and technical education teachers—must be empowered to successfully promote school reform to advance increased student learning.

With this in mind, this study explores the relationship among empowerment and demographic variables of career and technical secondary teachers and schools in a Midwestern state, with the goal of increasing our understanding of factors that may impede or promote empowerment of said teachers. In so doing, this study broadens the focus of the extant research that has focused on academic teachers and empowerment as an important school reform and organizational variable.

Focus on empowerment has emerged due to changing conceptions of reform and leadership in organizations in various industries and sectors (Lawler, 1986, 1992), including education (Duke & Gansneder, 1990; Marks & Louis, 1999; Short & Greer, 1997; Short & Johnson, 1994). In education, empowerment as a leadership and reform approach rests primarily on a belief that organizational effectiveness is enhanced by participative decision making by teachers related to problems of practice. Recently, research has defined this empowering process according to (a) the types of decisions in which teachers are empowered to participate (Duke & Gansneder; Rice & Schneider, 1994) and (b) the actual processes and contexts that engage teachers in those decisions (Rinehart & Short, 1994; Short, 1998; Short & Greer). Specifically, research suggests that teacher empowerment hinges on teacher involvement in decision-making (an essential dimension of empowerment), but for that involvement to be meaningful, two conditions must be met. First, decisions must focus on areas important to teachers, such as issues related directly to teaching and learning. Second, teachers must feel that their participation actually affects the decisions made (Short & Greer, 1993). Furthermore, Rice and Schneider found that empowerment—defined primarily as decision making power—was positively related to academic teachers' job satisfaction. These researchers also found that teachers' perceived levels of influence "were positively correlated with levels of decision involvement, interest in decision issues and

job satisfaction” (p. 55). Similar findings were reported by Rinehart and Short. Further exploring these themes, Duke and Gansneder found that in general when teachers were not involved in decision making, their desire to become involved increased, and teachers with high levels of empowerment perceived school leadership more positively.

At an organizational level, evidence suggests that empowerment is an important construct. Both conceptually and practically, teacher empowerment is an important strategy to consider because current school reform efforts have evolved to encompass school restructuring and reculturing in ways that are supposed to affect all students. For example, efforts to reconceptualize schools as communities and teachers as professional communities presuppose that teachers are willing and able to identify problems and take risks to solve those problems (Kruse, 1996; Kruse & Louis, 1993; Marks & Louis, 1999). Supporting the important connection between teacher empowerment and organizational health, Marks and Louis found that empowerment accounted for a significant amount of the variance in the capacity of organizational learning in schools.

The processes shown to be associated with empowered teachers are investigated and codified by Short and Rinehart (1992). Utilizing input from teacher leaders in the Reading Recovery Program throughout the U.S. and other countries, as well as input from a panel of four experts in school empowerment, Short and Rinehart systematically clarified and codified empowerment factors. These factors include (a) decision making, (b) professional growth, (c) status, (d) self-efficacy, (e) autonomy, and (f) impact. According to their research that examined the psychometric properties and factorial validity of the empowerment dimensions, decision making, which accounted for most of the total variance among the subscales (19.6%), relates to teachers’ sense of inclusion in critical decisions that directly affect their work. Professional growth (4.7%) measures teachers’ belief that the school offers them opportunities for professional growth and development. Status (3.0%) refers to teachers’ sense of esteem given them by students, parents, community members, other teachers, and administrators. Self-efficacy (2.8%) reflects the degree to which teachers believe that they are able to help students learn. Autonomy (2.2%) addresses teachers’ sense that they have the latitude within the school to make work-related decisions. And lastly, impact (2.0%) measures teachers’ sense that they can influence the overall well-being of the organization and that they are recognized for their accomplishments.

PURPOSE OF THE STUDY

The purpose of the study was to (a) assess the level of empowerment among career and technical education teachers in one Midwestern state and (b) determine if differences exist in the level of empowerment based on selected teacher and school characteristics. Specifically, answers to the following questions were sought.

1. What is the level of empowerment among career and technical education teachers on each of the following empowerment subscales: decision making, professional growth, status, self-efficacy, autonomy, impact, and overall?
2. Is there a difference in the level of empowerment for the six empowerment subscales among career and technical education teachers based on the following teacher and school characteristics: teaching area, district type, gender, and level of education?
3. What proportion of variance in the level of empowerment for the six empowerment subscales among career and technical education teachers is explained by selected teacher and school characteristics?

METHOD

Specifically, the research design, participants, description of respondents, instrumentation, data collection, and data analyses are described in the following sections.

RESEARCH DESIGN

Since the purpose of the study was to explore potential causal relationships by observing existing consequences while investigating potential causal factors, an ex-post facto design was used (Leedy, 1989). In addition, this design was chosen because of (a) its ability to answer the questions under investigation and (b) its use by earlier researchers conducting similar research (e.g., Short & Rinehart, 1992; Rinehart & Short, 1994).

POPULATION AND SAMPLE

The population for this study consisted of all career and technical education teachers ($N = 3,366$) in one Midwestern state during the 1998–1999 school year. For the purpose of this study, a career and technical education teacher was defined as a person teaching full-time in public K-12 schools in one of the following programs (a) agriculture, (b) business, (c) family and consumer sciences, (d) industrial, or (e) marketing education. A list of all persons teaching in these agriculture, business, family and consumer sciences, industrial, and marketing education programs was provided to the researchers by a representative from the state department of education. Of the total population, 1,120 (33.27%) teachers were in business education, 913 (27.14%) were in family and consumer sciences education, 720 (21.39%) were in industrial education, 401 (11.91%) were in agriculture education, and 212 (6.29%) were in marketing education. To assure that the sample was representative of the population, a proportional stratified sampling procedure was employed. The sampling procedure resulted in 1,368 career and technical education teachers being selected to participate in the study; the survey was mailed to each of the selected participants in the sample population. Of the 1,368 surveys distributed, 864 (63%) surveys were returned with 827 (60%) providing usable data.

DESCRIPTION OF RESPONDENTS

Of the 827 respondents, 112 (14%) were agriculture education teachers, 252 (30%) were business education teachers, 226 (27%) were family and consumer sciences teachers, 173 (21%) were industrial education teachers, and 64 (8%) were marketing education teachers. The responding teachers had been teaching full-time, on average 14.51 years ($SD = 9.19$), taught in their current school for 11.41 years ($SD = 8.87$), and had their current principal or vocational director for 6.51 years ($SD = 6.78$). Most of the respondents were female, 500 (60%); had completed a master's degree, 395 (48%); and were teaching in rural school districts, 528 (64%).

INSTRUMENTATION

To assess empowerment among career and technical education teachers, the School Participant Empowerment Scale (SPES) developed by Short and Rinehart (1992) was used. The SPES consists of 38 items divided into six subscales (a) decision making, (b) professional growth, (c) status, (d) self-efficacy, (e) autonomy, and (f) impact. Participant response options for the 38 items were arranged on a 5-point, Likert-type scale as follows: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. In the study by Short and Rinehart, the coefficient alpha for the SPES instrument was .94, and the coefficient alphas for the subscales were the following (a) decision making (.89), (b) professional growth (.83), (c) status (.86), (d) self-efficacy (.84), (e) autonomy (.81), and (f) impact (.82). In the current study, the coefficient alphas for the six subscales were calculated to be (a) decision making (.81), (b) professional growth (.84), (c) status (.86), (d) self-efficacy (.87), (e) autonomy (.70), and (f) impact (.79),

with an overall internal consistency of .94. These coefficient alphas indicated that the scale and subscales were internally consistent.

DATA ANALYSIS

To answer the three research questions, a variety of analytical procedures were used. Specifically, to answer question one and determine the level of empowerment among career and technical education teachers, the descriptive statistics of mean, standard deviation, and range were used. To answer question two and determine if differences existed in the level of empowerment based on selected demographic characteristics, a series of 2-factor repeated measures ANOVAs were employed. To answer question three and determine the proportion of variance in empowerment explained by the selected characteristics, Omega squared values presented in the ANOVA tables were reviewed.

FINDINGS

The three research questions will provide the framework for presenting the findings. Question one sought to determine the level of empowerment among career and technical education teachers. The means, standard deviations, and range for all career and technical education teachers on each of the six empowerment subscales is presented in Table 1. A review of Table 1 reveals that career and technical education teachers reported their highest level of empowerment with the subscale item self-efficacy with a mean of 4.37 (SD = .49) and their lowest level of empowerment with the subscale item decision making with a mean of 3.28 (SD = .66).

Table 1

Descriptive Statistics for the Empowerment Subscales (N = 827)

Subscale	Mean	Std. Dev.	Min.	Max.
Decision Making	3.28	.66	1.30	5.00
Professional Growth	4.17	.61	1.33	5.00
Status	4.36	.50	1.17	5.00
Self-efficacy	4.37	.49	1.17	5.00
Autonomy	4.06	.65	1.00	5.00
Impact	4.28	.50	1.00	5.00

Question two sought to determine if there was a difference in the level of empowerment for the six subscales among career and technical education teachers based on selected characteristics. To answer this question, a series of 2-factor, repeated measures ANOVAs were conducted. The first characteristic examined was teaching area (e.g., agriculture, business, family and consumer sciences, industrial, or marketing education). The $F = 3.45$ and $p = .008$ indicating a statistically significant difference in the level of empowerment based on career and technical education teaching area; these findings are presented in Table 2. Tukey's post hoc analysis revealed significance at the .05 level for (a) the business education and marketing education teaching areas and (b) the industrial education and marketing education teaching areas. Results from this analysis are presented in Table 3. In both cases, marketing education teachers reported significantly higher levels of empowerment. The ANOVA also revealed significance for the interaction between the teaching areas and the empowerment subscales; the $F = 5.44$ and $p = .000$.

Table 2

Two Factor Repeated Measures ANOVA with Empowerment Subscales as a Repeated Measure and Career Education Teaching Areas as a Between-Subjects Measure

Source	SS	DF	MS	F	p	w ²
Between Subjects						
Teaching Area	17.46	4	4.36	3.45	.008	.0057
Subj/Area	1040.51	822	1.27			
Within Subjects						
Empowerment	523.72	5	104.74	776.06	.000	.2430
Area x Emp (Subj x Emp) /Area	14.70	20	.73	5.44	.000	
Total	2151.11	4961	.43			

Cell means for the 2-factor ANOVA in Table 2 are reported in Table 4. A review of the means in Table 3 indicates that marketing education teachers reported the highest level of empowerment on five of the six empowerment subscales. The only exception was with the subscale of status, in which family and consumer sciences teachers reported the highest level of empowerment at 4.46 (SD = .45). Note that marketing education teachers reported 4.45 (SD = .48) level of empowerment on the subscale of status.

Table 3

Tukey's Post Hoc Analysis on Teaching Area

	Ag. Ed.	Bus. Ed.	Fam. Ed.	Ind. Ed.	Mar. Ed.
Ag. Ed.	1.00	.661	.989	.064	
Bus. Ed.		.593	.925	.042*	
Fam. Ed.			.213	.365	
Ind. Ed.				.011*	
Mar. Ed.					

* p < .05, ** p < .01

Table 4

Cell Means Corresponding to the Two-Factor ANOVA in Table 2

Area	N	Dec. Making	Prof. Growth	Status	Self-Efficacy	Autonomy	Impact	Total
Ag. Ed.	112	3.40	4.07	4.20	4.25	4.14	4.19	4.04
Bus. Ed.	252	3.27	4.17	4.34	4.34	3.97	4.26	4.06
Fam. Ed.	226	3.24	4.24	4.46	4.45	4.04	4.35	4.13
Ind. Ed.	173	3.19	4.09	4.32	4.32	4.08	4.21	4.03
Mar. Ed.	64	3.44	4.37	4.45	4.52	4.23	4.46	4.24
Total	827	3.28	4.17	4.36	4.37	4.06	4.28	4.08

The second characteristic examined was district type. Career and technical education teachers were asked to identify their district type as urban, rural, or suburban. To assess the relationship, if any, between district type and the empowerment subscales, a 2-factor, repeated measures ANOVA was computed. Results of this analysis are reported in Table 5. No statistically-significant difference was found in empowerment based on district type; however, significance was found in the interaction between the district type and the empowerment subscales, with the $F = 3.90$ and $p = .000$. Means for the three district types and the six empowerment subscales, presented in Table 6, revealed differences in autonomy in relation to the other subscales.

Table 5

Two-Factor Repeated Measures ANOVA with Empowerment Subscales as a Repeated Measure and School Type as a Between Subjects Factor

Source	SS	DF	MS	F	p	η^2
Between Subjects						
School Type	.37	2	.19	.14	.866	.000
Subj/Type	1045.53	803	1.30			
Within Subjects						
Empowerment	455.22	5	91.04	662.66	.000	.221
Type x Emp (Subj x Emp) /Type	5.36	10	.54	3.90	.000	
Total	2058.11	4835	.43			

Table 6

Cell Means Corresponding to the Two-Factor ANOVA in Table 5

Type	N	Dec. Making	Prof. Growth	Status	Self-Efficacy	Autonomy	Impact	Total
Rural	528	3.27	4.15	4.35	4.35	4.11	4.27	4.08
Urban	106	3.27	4.19	4.30	4.35	3.97	4.31	4.07
Suburban	172	3.28	4.19	4.40	4.43	3.97	4.31	4.10
Total	827	3.28	4.17	4.36	4.37	4.06	4.28	4.08

The third characteristic examined was gender. To assess if, and to what degree, gender played a role in empowerment, a 2-factor repeated measures ANOVA was computed. The results of this analysis are reported in Table 7. No statistically-significant difference was found. A statistically-significant difference was found in the interaction, however, between gender and the empowerment subscales, with the $F = 6.39$ and $p = .000$. Means for the six empowerment subscales and gender are outlined in Table 8; note how the means for autonomy (where the mean for females is lower than the mean for males) differ from the means in the other subscales (where the means for females is consistently higher than the means for females).

Table 7

Two Factor Repeated Measures ANOVA with Empowerment Subscales as a Repeated Measure and Gender as a Between Subjects Factor

Source	SS	DF	MS	F	p	w ²
Between Subjects						
Gender	3.45	1	3.45	2.70	.101	.001
Subj/Gender	1054.51	825	1.28			
Within Subjects						
Empowerment	663.44	5	132.69	968.67	.000	.290
Gender x Emp (Subj x Emp)	4.37	5	.87	6.39	.000	
/Gender	565.04	4125	.14			
Total	2290.81	4961	.46			

Table 8

Cell Means Corresponding to the Two-Factor ANOVA in Table 7

Type	N	Dec. Making	Prof. Growth	Status	Self- Efficacy	Autonomy	Impact	Total
Female	500	3.28	4.21	4.39	4.40	4.03	4.31	4.10
Male	327	3.27	4.10	4.30	4.31	4.09	4.23	4.05
Total	827	3.28	4.17	4.36	4.37	4.06	4.28	4.08

The fourth characteristic examined was level of education. To assess if differences in the empowerment subscales existed based on the teachers' level of education, a 2-factor repeated measures ANOVA was performed. Results of this calculation are reported in Table 9. Results confirmed that there was a statistically-significant difference between empowerment and the level of teacher education; $F = 4.35$ and $p = .005$. Tukey's post hoc analysis, the results of which are presented in Table 10, revealed significance at the .05 level for (a) the degree levels less than bachelor's degree and master's degree and (b) the degree levels bachelor's degree and master's degree. Means are presented in Table 11.

Question three sought to determine the proportion of variance explained by each of the selected characteristics. To answer question three, the Omega squared values presented in the ANOVA tables were reviewed. While statistically-significant proportions of the variance were explained, the amount of variance explained was small (e.g., $w^2 = .0057$ for teaching area; $w^2 = .007$ for education level) indicating little practical significance.

Table 9

Two-Factor Repeated Measures ANOVA with Empowerment Subscales as a Repeated Measure and Level of Education as a Between Subjects Factor

Source	SS	DF	MS	F	p	w ²
Between Subjects						
Ed. Level	16.48	3	5.49	4.35	.005	.007
Subj/Ed. Level	1035.87	820	1.26			
Within Subjects						
Empowerment	210.97	5	42.19	306.08	.000	.115
Ed. Level x Emp (Subj x Emp) /Ed. Level	2.96 565.21	15 4100	.20 .14	1.43	.123	
Total	1831.49	4943	.37			

Table 10

Tukey's Post Hoc Analysis on Education Level

	<B.S.	B.S.	M.S.	>M.S.
<B.S.		.457	.013*	.060
B.S.			.027*	.232
M.S.				.796
>M.S.				

Table 11

Cell Means Corresponding to the Two-Factor ANOVA in Table 9

Ed. Level	N	Dec. Making	Prof. Growth	Status	Self-Efficacy	Autonomy	Impact	Total
<B.S.	67	3.11	4.07	4.23	4.23	4.02	4.11	3.96
B.S.	362	3.20	4.14	4.32	4.35	4.03	4.25	4.05
M.S.	371	3.36	4.21	4.41	4.40	4.08	4.33	4.13
>M.S.	24	3.52	4.24	4.48	4.53	4.18	4.34	4.21
Total	824	3.28	4.17	4.36	4.37	4.06	4.28	4.08

DISCUSSION

The findings of this study of career and technical education teachers in one Midwestern state lend support to several conclusions. First, the level of empowerment for career and technical education teachers varied across the six subscales. Interestingly, the lowest subscale mean was decision-making, the subscale that explained the largest amount of total variance by the developers of the instrument (Short & Rinehart, 1992). Second, there were statistically-

significant differences in the level of empowerment subscales among career and technical education teachers based on teaching area and education level. Third, it is important to note that no significant differences among any of the subscales according to gender or district type were found. Fourth, and also a limitation of the study, while the proportion of variance in empowerment was statistically significant in some analyses, the amount explained was so small as to be of questionable, practical significance.

All the findings from this study together, however, do provide evidence as to the degree to which career and technical education teachers feel empowered and the ways in which educational leaders such as superintendents and principals can foster empowerment in these teachers. It is important for school and district administrators (and other school leaders) to note that while the teachers in this study generally believed they were empowered as reflected in the subscales, decision making was reported by teachers as the weakest dimension. This finding is important because many current reform efforts require teacher involvement in meaningful ways. If teacher perceptions of their involvement in critical school decisions are low, school reform efforts are often less likely to succeed (Scribner, Hager, & Madrone, in press). Accordingly, principals and superintendents would do well to foster a decision-making environment that includes all teachers, wherein increased decision making by teachers is not simply a goal, but is carefully integrated into the process of how things get done. Furthermore, characteristics associated with the content area in which one teaches appear to influence empowerment; if school improvement efforts are to be schoolwide, the potential for different experiences across teaching areas should be considered.

This study also found that empowerment according to gender did differ in a statistically-significant way only in the interaction with the empowerment subscales. This finding is important because it suggests that overall both women and men experience empowerment similarly, but that gender appears to make a difference as to how teachers experience the different dimensions of empowerment, especially autonomy, in relation to the others. This suggests that principals might consider stepping back from making work-related decisions and allowing teachers—specifically female teachers—more control in making said decisions (Short & Greer, 1993). The different experiences that some teachers have regarding autonomy also appear to be related to the rural location of the school district, suggesting that cultures in urban and suburban schools should provide greater freedom for teachers to make decisions regarding what and how they teach. Finally, the study supports the possibility that education level plays an important role in teachers' sense of empowerment. Thus, school leaders should take seriously the role that continuing professional development and specifically education plays in fostering teachers' sense of empowerment within the school, especially as that empowerment pertains to participation in critical school decisions. Together, these findings suggest the need to take a closer look at how school cultures surrounding teaching area influence the empowerment experienced by career and technical teachers, as teachers working together help effect school reform to produce positive changes for students.

RECOMMENDATIONS FOR FURTHER RESEARCH

Based on a review of the relevant literature and the data analysis, the following recommendations for further research are offered.

1. First, a study that explores the relationship between career and technical teachers' sense of empowerment and job satisfaction levels could be conducted, as increased job satisfaction

and performance have been identified as desirable organizational outcomes. Because this study explored empowerment and certain demographics, it did not address whether increased levels of perceived empowerment led to greater job satisfaction.

2. Second, while this study addressed its research questions broadly, future research could focus more specifically on the effects of particular reform efforts in secondary schools and the effects of those reforms on career and technical teacher empowerment.

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