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Explanatory Style of Secondary Vocational Educators

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Abstract

The explanatory style of secondary vocational teachers in Georgia was determined using the Attributional Style Questionnaire (ASQ) developed by [Seligman \(1984\)](#). The respondents in this study included 219 teachers of agricultural, business, family and consumer sciences, marketing, technology, and trade and industrial education. Means and standard deviations were used to describe the explanatory style of vocational teachers participating in this study. A 1-way analysis of variance was used to determine if a difference existed between teacher composite scores, Composite Negative (CoNeg) and Composite Positive (CoPos), based on the 6 program areas of vocational education. The results of this study indicated that secondary vocational teachers in Georgia had an optimistic explanatory style. Of the 6 program areas, business teachers emerged as the most optimistic based on their mean Composite Positive minus Composite Negative (CPCN) score. The second and third most optimistic program areas were family and consumer sciences and marketing. Of the 6 program areas, agriculture teachers had the lowest mean CPCN score and thus, the less optimistic.

The popular education reform movement of the 1980s was primarily directed toward improving the academic skills of college-bound students. Unfortunately, little attention was given to strengthening academic skills of those students who were not going to college or who were in vocational education. During recent years, politicians and business leaders have recognized and acknowledged the need to better prepare students for the workplace ([Smith & Edmunds, 1995](#)). The Carl D. Perkins Vocational and Applied Technology Education Act Amendment (1990) and

the School-to-Work Opportunities Act (1994) are examples of the national reports that promoted the urgency of preparing students for the workplace. Additionally, initiatives such as Technical Preparation (Tech Prep) and School-to-Work have been developed to address the issue of preparation for the workplace. Although plans have been made and funds allocated for these initiatives through recently passed acts, implementation has to be considered and orchestrated by a professional. Since a characteristic of vocational education is the preparation of students for the workplace, then the most likely professional is the vocational teacher. However, the success of these programs depends on the perspective of the teacher toward change and adaptability. Consequently, vocational educators who can adjust readily to change are needed to initiate these (work-based) programs. According to [Pellatiro \(1989\)](#), American vocational-technical schools need teachers who exhibit positive professional attitudes. A positive attitude is generally conceived of as a state of readiness to respond effectively in challenging situations. How these vocational teachers react to the various initiatives can be detected through one's explanatory style, a descriptive term used for the manner in which individuals habitually explain to themselves why life events occur as they do ([Seligman, 1990](#)). This study was designed to examine the explanatory style of vocational educators. Explanatory style has attracted other research interest in recent years ([Peterson & Seligman, 1984](#); [Seligman, 1990](#); [Phelps & Waskel, 1994](#); [Hjelle, Busch, & Warren, 1996](#)) and thus guided this research.

Conceptual Framework

Learned helplessness and explanatory style theory offer a framework for examining optimism and pessimism ([Seligman, 1990](#)). Explanatory style is a construct that emerged from the learned helplessness variable. It is a descriptive term used to explain variations in people's response to uncontrollable events; it reflects individual differences along three dimensions in how people habitually explain good and bad events they encounter in life. The first dimension is the extent to which the explanation is internal (It's me) versus external (It's someone else). The second dimension contrasts stable (It's going to last forever) versus unstable (It's short lived) elements. The third is the global (It affects everything that happens to me) versus the specific (It's only going to affect this) dimension ([Peterson, Buchanan, & Seligman, 1995](#); [Gottschalk, 1996](#)). According to Seligman, individuals who give internal, stable, and global explanations for bad events are more prone to have a pessimistic explanatory style, whereas individuals who explain bad events in terms of external, unstable, and specific causes have an optimistic explanatory style.

[Seligman \(1990\)](#) differentiated the beliefs of optimists and pessimists to illustrate their opposing perspectives on difficult life events. Optimists believe that defeat is a temporary, situational setback that is not their fault. Pessimists believe that bad events are long lasting, potentially undermining large portions of their lives, and likely to be their fault. The differing beliefs that distinguish optimists and pessimists have a direct impact upon their abilities to take actions in difficult situations ([Seligman](#)). Thus, vocational teachers' responses to such education reform and initiatives as Tech Prep and School-to-Work may be understood using the explanatory style construct.

Review of Related Literature

A review of the literature revealed one study that directly explored the attitudes of educators toward change. [Carr \(1985\)](#) sought to determine attitudes toward educational change and innovation with 300 vocational educators in Florida. The Innovativeness-Flexibility Scale and the Attitude Toward Innovation scale were used to collect data. On the Attitude Toward Innovation questionnaire, a score of 5.5 or below was used as an indication of a favorable attitude toward innovation. Therefore, the lower the score the higher the attitude toward innovation. The results of that study revealed all eight groups (agriculture, business, diversified occupations, health and public service, marketing, health occupations, home economics, and

industrial arts) scored in the range of 3.5 to 5.3 with a grand mean of 4.3 on attitude toward change. These scores indicated a favorable attitude toward change. Of the eight groups, diversified occupations teachers were the least favorable toward change with a mean of 5.32. On the other hand, home economics teachers were the most favorable toward change with a score of 3.5.

The second objective was to identify vocational educators who were innovative and flexible where the Innovativeness-Flexibility scale was the determinant. A score of 35 or above on the first 14 items was classified as innovative and receptive to change; a score of 15 or above on the remaining six items was classified as flexible. Analysis showed all eight groups score in the flexible range, that is, 15 or above. Health and public service teachers showed the most flexibility with a mean of 17.2, marketing and distributive education teachers scored the lowest flexibility of the groups with a mean score of 15.2.

Although the literature is limited with respect to educators and explanatory style, one study was found that was conducted in business and industry on job satisfaction with implications to the educational setting; job satisfaction is a topic of interest to the educational community, which includes vocational education. Phelps and Waskel (1994) conducted a study with women 40 to 75 years old. They attempted to determine whether there was a significant relationship between explanatory style and specific work reinforcers. The Attributional Style Questionnaire (ASQ) and the Minnesota Satisfaction Questionnaire (MSQ) were used as measures. Results revealed a weak but significant relationship between explanatory style and the work reinforcers of ability utilization, activity, and creativity. Each of these reinforcers indicated lower job satisfaction for those with a depressive (pessimistic) explanatory style. The results indicated that, as the value of the composite negative variable representing explanatory style on the ASQ increased, the value of these three work reinforcer variables on the MSQ decreased. In other words, individuals who exhibit depressive tendencies may receive less satisfaction from their jobs in areas related to ability utilization, activity, and creativity.

Purpose and Objectives

The purpose of this study was to determine the explanatory style or optimism of secondary vocational teachers in Georgia. Specifically, the objectives of the study were:

1. To determine the explanatory style of secondary vocational teachers based on composite positive--how positively/optimistically one reacts to good events; composite negative--how positively/optimistically one reacts to bad events; and composite positive minus composite negative--how positively/optimistically one reacts to all events.
2. To determine if differences existed on composite scores based on program area taught.

Methodology

The entire population of secondary vocational teachers in the state of Georgia was used to achieve the sample. Names and addresses of all 3,746 vocational teachers employed during the 1996-97 school year were obtained from the Georgia Department of Education. The vocational program areas are agriculture, business, family and consumer sciences, marketing, technology, and trade and industrial education. Based on [Krejcie and Morgan's \(1970\)](#) sample size table, the number of participants for a simple stratified random sample of 350 was established for this population. Since the larger the sample, the more likely it represents the population from which it comes ([Fraenkel & Wallen, 1990](#)) and using the largest sample possible is recommended especially if the expected difference between groups is small ([Gay, 1987](#); [Gall, Borg, & Gall, 1996](#)) the sample size was increased. Thus, the sample size was doubled since it was expected that vocational teachers shared some similarities and the difference was expected to be small. The actual sample, therefore, included 703 possible participants: 42 agriculture, 226 business,

134 family and consumer sciences, 26 marketing, 94 technology, and 181 trade and industrial education teachers. Two hundred and nineteen (219) or 31% of the participants responded; there were 17 (40%) agriculture teachers, 65 (29%) business teachers, 47 (35%) family and consumer sciences teachers, 8 (31%) marketing teachers, 26 (28%) technology teachers, and 56 (31%) trade and industrial education teachers.

The data were collected using a mailed questionnaire developed by [Seligman \(1984\)](#) entitled "Attributional Style Questionnaire." A cover letter and questionnaire were mailed to 703 secondary vocational educators in Georgia. The questionnaire packet included a pre-addressed, stamped return envelope. According to [Dillman \(1978\)](#), a follow-up postcard should be sent in approximately 14 days. Thus, a follow-up postcard was mailed to 622 nonrespondents reminding them to complete the survey. [Dillman \(1978\)](#) further states that after a 2-week period, a second questionnaire should be sent. Consequently, two weeks later, a second questionnaire was mailed to approximately 596 participants who had not responded.

As questionnaires were received, dates were recorded. This process enables an estimation of nonrespondents by comparing the early respondents with the late respondents ([Miller & Smith, 1983](#)). Therefore, early and late responses from participants were compared statistically, and no statistical significant differences were found between early and late respondents. With the assumption that late respondents are more typical of nonrespondents, generalizing from the respondents to the population is warranted. Therefore, generalizations can be made to vocational teachers in Georgia.

Questionnaire

The ASQ was developed in 1979 by Seligman, Abramson, Semmel, & von Baeyer and revised in 1984 by Seligman. The ASQ is designed to determine the individual's style of thinking: pessimistic explanatory style or optimistic explanatory style. The ASQ presents hypothetical good and bad events (e.g., "You are out on a date and it goes badly"). Participants are asked to imagine the event happening to them. The questionnaire is self-reporting containing 12 hypothetical situations: 6 negative events and 6 positive events. Six of the questions relate to interpersonal/affiliation and six are achievement-related. There are four responses per situation. In the first response the teacher is asked to provide a reason or cause for the situation; this item is not scored. The second response deals with internal or external dimension. The third response deals with stable or unstable dimension, and the fourth response is concerned with the global or specific dimension.

The subjects indicated, on 7-point rating scales, the degree to which the cause was internal or external, stable or unstable, and global or specific with each dimension being rated separately. The scale was: 1 = completely external/completely unstable/completely specific to 7 = completely internal/completely stable/completely global. On the rating scale of 1 to 7, positive situations range from a high of 7 to a low of 1, whereas negative situations range from a low of 7 to a high of 1.

The ASQ has been used in many studies. Construct and criterion validity were established. Reliability for subscales ranged from .39 to .64. Based on these findings, the ASQ subscales can be said to have unsatisfactory reliability. However, when composite scores are formed, substantially higher and satisfactory levels of internal consistency are found ([Reivich, 1995](#)). On the composite measures the reported reliabilities were .73 and .69 negative and positive, respectively. For this study, the reported reliabilities on the composite scores are .60 and .64 negative and positive, respectively.

Scoring on the Questionnaire

The three attributional dimensions (internal, stable, and global) rating scales associated with each event description are scored in the directions of increasing internality, stability, and globality. The scales are anchored so that external, unstable, and specific attributions receive lower scores (optimistic), and internal, stable, and global attributions receive higher scores (pessimistic). So low scores are more optimistic and high scores are more pessimistic. Composite scores, composite positive (CoPos) and composite negative (CoNeg) were created by summing the positive, and then the negative scores on the three dimensions of attributional style. The CoNeg is a sum of the negative scores on the three dimensions. The CoPos is achieved by summing the positive scores on the three dimensions. For example, on CoPos the most optimist score is 7 and the least optimistic (pessimistic) score is 1 with a range of 21 to 3. The scores on the likert scale range from 1 to 7; therefore, 1 is the lowest score times 3 situations is 3 and 7 the highest score times 3 situations is 21. This score reflects how positively or optimistically one reacts to good events. For CoNeg, the most optimistic score is 1 and the least optimistic (pessimistic) score is 7 with a range of scores being 3 to 21; same formula applies as for determining CoPos. This score reflects how positively or optimistically one reacts to bad events. Composite Positive minus Composite Negative (CPCN) was computed by subtracting the lowest scores 3 (lowest CoPos) - 21 (lowest CoNeg) = -18 and the highest scores 21 (highest CoPos) - 3 (highest CoNeg) = 18. The negative score (-18) is less optimistic (pessimist) whereas the positive score (18) is most optimistic. Therefore, the range of scores for CPCN is -18 to 18. This score reflects how positively or optimistically one reacts to all events.

Findings and Discussion

In order to describe the explanatory style of vocational teachers participating in this study, a measure of central tendency--means, and a measure of variability--standard deviations were used. For CoPos [how positively/optimistically one reacts to good events], the mean score was 15.58. This score is relatively high considering the highest possible score is 21 and the lowest is 3. Therefore, vocational teachers in this study react positively to good events. Composite Negative [how positively/optimistically one reacts to bad events] received a mean of 12.49. This score indicates moderate optimism since the score is in the middle of the range of scores, 3 to 21; nine points are below 12, and nine points are above 12. So vocational teachers in this study have average reactions to bad events. Composite Positive minus Composite Negative [how positively/optimistically one reacts to all events] received a mean of 3.08. This score is moderately high. An examination of the range of scores on CPCN (-18 to 18) shows that 3 is closer to positive 18 than -18. This score is in the 75th percentile of the scores. Mean scores reported for this sample and shown in Table 1, were in the top half of the ASQ (50-percentile range). That is, congruent with other groups who have used the ASQ, vocational teachers are optimists. Groups using the ASQ were from business and industry because there were no studies using teachers for comparison.

Table 1

Composite Scores for Secondary Vocational Educators

Variable	n	M	SD
COPOS	219	15.58	1.99

CONEG	219	12.49	2.28
CPCN	219	3.08	2.60

A one-way analysis of variance was used to determine if a difference existed between teacher composite scores based on the six program areas of vocational education. There were no observed differences based on CoPos scores. The results of analysis of variance (ANOVA) (see Table 2) revealed a statistically significant difference ($F = 2.78$, $p = .018$) between program areas based on CoNeg scores with the alpha set at .05.

Table 2

One-Way Analysis of Variance for Composite Scores

Source	df	SS	MS	F	p
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Composite Negative (CoNeg)

Between Groups	5	68.65	13.73	2.78	.018
Within Groups	204	1006.48	4.93		
Total	209	1075.13			

Composite Positive minus Composite Negative (CPCN)

Between Groups	5	81.38	16.27	2.54	.029
Within Groups	204	1303.94	6.39		
Total	209	1385.33			

A post hoc analysis was performed to determine which means differed. The analysis indicated a significant difference in CoNeg mean scores between trade and industrial teachers and business and marketing teachers with business ($M = 12.11$) and marketing ($M = 10.98$) teachers being more optimistic than trade and industrial teachers ($M = 13.02$). A significant difference also occurred in CoNeg mean scores between agriculture ($M = 13.70$) teachers and family and consumer sciences ($M = 12.19$), business ($M = 12.11$), and marketing ($M = 10.98$) teachers. Agriculture teachers were less optimistic than business, family and consumer sciences, and marketing teachers. The mean scores for CoNeg that could range from 3 to 21 are shown in Table 3 whereby the lowest score is more optimistic and the highest score pessimist.

Table 3

Mean Scores for Composite Negative (CoNeg) by Program Areas

Program	Agric	Bus	FCS	Marketing	Technology	T & I
N	17	65	47	8	26	56
M	13.70	12.11	12.19	10.98	12.59	13.02
SD	2.04	2.09	2.35	1.05	2.09	2.46

Analysis of variance was used to determine if program area was related to CPCN. The analysis in Table 2 showed program area was statistically significant ($F = 2.54$, $p = .029$) based on CPCN scores. A post hoc analysis revealed there was a significant difference in CPCN mean scores between family and consumer sciences ($M = 3.4$) and business ($M = 3.7$) teachers with family and consumer sciences teachers being less optimistic than business teachers. A significant difference also occurred in CPCN mean scores between business ($M = 3.7$) teachers, and trade and industrial ($M = 2.7$), technology ($M = 2.2$), and agriculture ($M = 1.8$) teachers. The business teachers were more optimistic than teachers in the other three program areas were. Furthermore, of the six program areas, business teachers emerged as the most optimistic based on their mean CPCN score ($M = 3.70$). The second and third highest mean CPCN scores were by family and consumer sciences and marketing teachers ($M = 3.40$). Of the six program areas, agriculture teachers had the lowest mean score ($M = 1.8$). Mean scores for CPCN are shown in Table 4, whereby the higher the score the greater the level of optimism.

Table 4

Mean Scores for Composite Positive minus Composite Negative (CPCN) by Program Areas

Program	Agric	Bus	FCS	Marketing	Technology	T & I

N	17	65	47	8	26	56
M	1.80	3.70	3.40	3.40	2.20	2.70
SD	2.38	2.46	2.63	1.76	2.30	2.73

According to [Hjelle et al. \(1996\)](#), in psychology the CoPos and CoNeg are the most valid and reliable in the prediction of depression. However, in education these scores were used to predict what kind of disposition educators would display toward the various initiatives and project how well one would adjust to change. The purpose in this study was to determine the explanatory style, pessimistic or optimistic, of secondary vocational teachers. Composite scores indicated that teachers respond well to bad events (CoNeg), and better to good events (CoPos) and both good and bad events (CPCN). These results are indicative of the adaptability of vocational teachers, an important trait to possess in a vocational program setting. These findings are also positive as it relates to the role of vocational teachers in facing the increased demands of implementing and evaluating such initiatives as The Carl D. Perkins Vocational and Applied Technology Education Act Amendment (1990) and the School-to-Work Opportunities Act (1994) and other such programs.

Additionally, the initiatives, forces, or factors developing in the program areas at the time of the measurement might affect explanatory style. According to [Holland \(1973\)](#), people in a given vocation have similar personalities and will respond to many situations and problems in similar ways. They will create characteristic interpersonal environments that will help cope with forces or factors. Therefore, if a particular program area is undergoing change then it is anticipated that their style of explaining events--good, bad, and both good and bad--would be altered. At the time of this measure, the researchers are not aware of any such forces unfolding in vocational education in Georgia. Therefore, this measurement is a true representation of the explanatory style of vocational teachers in Georgia.

Findings showed that teachers in all program areas seemed to handle good events (CoPos) similarly. However, they handled bad events (CoNeg) and all events (CPCN) differently. In dealing with bad events (CoNeg), teachers of business, family and consumer sciences, and marketing emerged as the most favorable (optimistic). On the other hand, agriculture teachers were the least favored (pessimistic). This finding could be a result of the flexibility or lack of in the subject matter or content of the program area. Although gender was not a variable in this study, the finding could also be gender related. The findings seem to suggest that program area faculty with a high concentration of females are more optimistic. Nationally, family and consumer sciences is female dominated and in this study the participants in both business and marketing were primarily females. On the other hand, agricultural teachers, traditionally male dominated, were the least optimistic.

According to [Caine and Caine \(1994\)](#), an optimal learning and working environment is one where participants perceive tasks as challenges rather than threats. An individual's optimism is described as his/her ability to consider challenging situations as opportunities rather than perceiving challenging situations as threatening, insurmountable tasks ([Fry & Hibler, 1993](#); [Moss & Johansen, 1991](#)). Based on the scores from this study, vocational teachers in Georgia will view new initiatives as a challenge rather than a threat and, therefore adapt well to change. Their explanatory style as indicated by the composite scores (CoNeg, CoPos, CPCN) showed an optimistic explanatory style in which bad events are attributed to external, unstable, and specific

causes. Thus, based on the results of this study, it is anticipated that vocational teachers will approach challenges presented by changing conditions in education in general and in vocational education specifically, optimistically.

To date, no studies were found that explored explanatory style and educators. Therefore, this study is the first and should begin the dialogue in education concerning explanatory style. Literally, no attention has been given to how educators adjust to new initiatives. In order to ensure the success of new initiatives, it is important to explore the attributes of those implementing such programs.

Conclusions

The following conclusions were drawn for vocational teachers in Georgia. Vocational teachers react positively to all events, both positive and negative (CPCN) across the three dimensions, global, internal, and stable. Vocational teachers are similar on positive events, CoPos (Global Positive, internal positive and stable positive). However, their responses vary on CoNeg and CPCN. Concerning CoNeg, first, business and marketing teachers were more optimist that trade and industrial teachers. Secondly, family and consumer sciences and marketing teachers were more optimist than agricultural teachers. On CPCN, business teachers were more optimistic than family and consumer sciences teachers. Business teachers were also more optimistic than trade and industrial, technology and agricultural teachers. Business teachers were the most optimistic of all program areas.

The conclusions from this study are drawn for vocational teachers in Georgia, but are applicable to vocational teachers in all program areas except Agriculture and Marketing. According to [Sudman \(1996\)](#), there should be at least 100 subjects in a major subgroup and 20 to 50 in minor subgroups in order to generalize. There were 219 participants in this study and 65, 47, 26, and 56 participants in (business, family and consumer sciences, technology, and trade and industrial, respectively) which satisfied Sudman's principle.

Recommendations

There are a number of factors that might relate to explanatory style that could be examined in further research. Gender is one factor that might affect peoples' outlook. Some of the areas in vocational education have primarily male teachers; other areas, primarily female teachers. Gender might explain some of the differences found among areas in vocational education. Another factor might be age and length of teaching experience. This would explain if teachers who have taught longer or less number of years had an impact on explanatory style. Sometimes age and length of teaching experience is closely related, however the phenomenon of nontraditional teachers has created a different scenario. Many teachers are entering the teaching profession later or as a second career. Additionally, a study should be conducted with vocational educators at technical institutes since technical institutes are growing in Georgia as well as in other states. The study should also be extended to include all educators, that is, elementary and secondary teachers, and especially school administrators. Administrators deal with change in the school system constantly; therefore, a study on explanatory style would probably be beneficial.

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