Leadership Opinion Measures of Student Officers in Health Occupations Students of America

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LEADERSHIP OPINION MEASURES OF STUDENT OFFICERS IN HEALTH OCCUPATIONS STUDENTS OF AMERICA

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Abstract: Purposes of this study were (a) to determine specific patterns of leadership attributes for officers at various levels of leadership and in various positions of service in Health Occupations Students of America, (b) to describe reLationships between their leadership attributes and selected demographic characterizations , (c) to adapt Fleishman's Leadership Opinion Questionnaire for use with students in health occupations at the high school level, and (d) to summarize student performance on the adapted Leadership Opinion Questionnaire with sample norms. Factor Analysis, sequential multivariate analyses of variance techniques, and non-parametric statistical techniques were applied to the raw data. Norms were computed for 115 students in leadership positions

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from 27 schools in 2 districts of a southern state. Statistical differences at the .05 level were found for groups of student officers serving at local, state, and national levels: and for groups described with joint attributes of sex and grade level.

Background

Leadership has been said to be "the ability and readiness to inspire, direct , and influence the actions of others" (Binkley & Byers, 1982, p. 84). The term "Leadership" also may be more loosely' used to refer to positions of office in an organization. To be a leader elected to such an office, one necessarily should lead. "To lead" is to guide or show the way. A student officer in Health Occupations Students of America (HOSA), therefore, is a student leader who potentially influences or provides guidance on the decisions or actions of others. Essential to effective group effort is leadership. However, leadership in student organizations presents itself to coordinators and advisors as an ubiquitous problem. Many officers of student organizations run for office, not because of a desire to serve but because of a need to feel popular, a need to develop credentials for entry into college, or to satisfy psychological demands that may or may not be aligned with their new leadership responsibilities. However, many students provide excellent leadership and take seriously their respons bilities to the organization, to the school, and to other students.

Members in student organizations such as HOSA, which is an integral component of the Health Occupations Curriculum, typically receive leadership training and have the opportunity to progress through the organizational hierarchy from member to chapter officer, state officer and ultimately, for a few students, to national officer. However, Owings and Nelson (1979) reported that research in the area of leadership indicated that leadership skills were not the only factors involved in becoming a youth organization officer. Moreover, no attempts to define leadership attributes of students in leadership positions in student organizations at the secondary level were found in the literature of leadership.

Purpose of Study

Recognizing the importance of Leadership training for student leaders in HOSA, this study was undertaken: "

1. To determine specific patterns of leadership attributes for officers at various levels of leadership and in various positions of service to HOSA.
2. To describe relationships between HOSA officer leadership attributes and selected demographic characterizations.
3. To adapt Fleishman's Leadership Opinion Questionnaire for use with students in health occupations at the high school level, and
4. To summarize student performance on the adapted Leadership Opinion Questionnaire with sample norms.

Methodology

Population

The population consisted of 5 districts in a southern state. From the population a sample was drawn that included two districts, 27 schools, and 115 students. The students were all officers in local HOSA chapters. All student leadership positions were represented in the analysis. The leadership positions included: (a) president, (b) vice-president, (c) secretary, (d) treasurer, (e) historian, and (f) other. Leadership position and other demographic data served as the basis for modeling the Leadership Opinion Questionnaire responses and for computing norms characterizing different student leadership positions.

Instrumentation

The instruments utilized to collect the information from the HOSA chapter officers included: (a) An adaption of Fleishman's (1969) Leadership Opinion Questionnaire (LOQ), and (b) a demographic questionnaire. Fleishman's LOQ (40 item instrument) was adapted to a 50 item questionnaire by: (a) making word changes to the 40 items which would communicate better with the age group, (b) adding LO items related to leadership, and (c) standardizing response options across the 50 items. Fleishman (1962) claimed the original version to be a valid "instrument used for analyzing leadership style on two leadership scales : structure and consideration. Both scales are relevant to managerial effectiveness. For Fleishman's original version of the LOQ, test-retest, and split-half (odd-even), reliability estimates for the standardizing sample of

firstline supervisors and Air Force NCO's ranged from .70 to .89 for the Consideration Scale and from .67 to .88 for the Structure Scale.

Structure was defined by Fleishman (1969) as the extent to which individuals design and define their roles and the roles of those around them. Structure primarily measures goal attainment for organizational purposes. Consideration was defined as the ability to maintain mutual trust, respect, warmth, and introspect into the feelings of subordinates. An individual with a high cons deration scale score was presumed able to establish communication and rapport with subordinates; whereas, an individual with a low score was believed to function as an impersonal manager within group settings. De Julio, Larson, Dever, and Paulman (1981) suggested use of ". . . the LOQ . . . where feedback concerning personal attitudes toward leadership may be of particular benefit to persons entering into occupations requiring managerial and leadership role functions" (p. 208).

Control Variables

Level of office. Level of office was the first variable entered into the P ROC GLM analysis by SAS. It classified, in a way, the level of experience of each respondent with respect to the scope of office held: (a) local, (b) state, (c) national, (d) local and state, and (e) local, state, and national. There were no student officers who had held a state office and not a local office, thus, level of office had 4 effective levels.

Leadership position. Leadership position (already cescribed) served as a control variable for describing differences in observed variation for the multivariate analyses and for developing norms for the LOQ factors.

Grade level. Grade level included grades 9, 10, 11, 12. Grade level was the variable of choice for studying relationships between maturity and variation in scores on the consideration and structure factors of the LOQ.

Sex. Sex was the arbitrary name assigned to the gender variable. Sex was included under the assumption that gender differences could exist particularly in interaction with the maturity variable.

District. Under random selection criteria in a Large state hav ng variable resources for health occupations education and differential interests in promoting health occupations education as curricular options, geographic differences in leadership attributes could exist. Thus, a control variable designating geographic location was included.

School within district. All schools within the two districts were invited to participate. There are distinctions within the districts such as urban-rural and size of school. School within district was included to accommodate such differences.

Two-way interactions . There was no clear-cut theory to guide development of the statistical models beyond inclusion of main effects described above. However, the possibility existed for two-way and higher order interactions to be related to LOQ factor scores. Because of the size of the data set, it was deemed feasible to include two-way, but not higher order, interactions. No t

every possible two-way interaction was included, but only those that survived preliminary analyses suggesting absence of statistical problems and presence of some contribution to variation accounted for.

Statistical Methodology

Factor ana ysis (Rummel, 1970) was performed on the adjusted LOQ of 50 items to define its factor structure. The computerized statistical package of choice for this was SAS. The initial principal components matrix was varimax rotated then was Procrustes rotated. Best theoretical results were with the varimax rotated solution.

Factor scores were computed within a DATA Step of SAS based on only the items that loaded principally on the respective factors in a manner that was parallel with Fleishman's reliabilities for the origins LOQ. Inter-item consistency reliabilities were computed for the factors based on the same Loaded items using the REPEATED option of PROC GLM. Each reliability was adjusted for anchor points; that is, adjusted for statistical differences in means of all items composing the factor for which the reliability was calculated.

Sequential multivariate analyses of variance techniques were applied to the 2 factor scores derived from varimax rotation of student responses to the adapted questionnaire. Norms were computed for 115 students in Leadership positions from 27 schools in 2 districts. Normative data were broken down by student groups representing significant differences in factor centroids determined from the sequential multivariate analysis for different Levels of

office, for different leadership positions , for different grade levels, for sex, and for the 2 districts. Norms for joint classifications on sex and grade level were also calculated but are not reported.

All normative computations were based on sub-programs in SPSSX. FREQUENCIES defined the cumulative probability distributions. CONDESCRIPTIVE computed means, standard deviations, and other distribution properties. The K-S sub-command of NPAR TESTS generated the goodness-of-fit tests.

Results and Discussion

Validity and Reliability for the Present Sample

The number of factors determined for the adapted LOQ matched the number reported by Fleishman. Table 1 presents the precise loadings. The varimax rotated solution generally satisfied criteria of simple structure--just 3 items (numbers 6, 14, and 17) loaded ambiguously on both factors. These items were assigned to factors according to Fleishman's classification of them: Items 6 and 14 to Factor 1, the Structure Factor, and item 17 to Factor 2, the Consideration Factor. Item 21 loaded highest on consideration but was assigned by Fleishman to structure. The 10 items (41 through 50) added to Fleishman's LOQ loaded as structure items although item 48 seemed to be more properly a consideration item. The adapted LOQ factor structure seems to be meaningful , and consistent with Fleishman's original instrument applied to adults, for characterizing Leadership attributes of student leaders in HOSA chapters. Reliabilities of adapted LOQ Factor Scores for the 50 item instrument for this sample of student officers were .58 for the Consideration

Table 1

Loadings on the Varimax Rotated Factor Pattern Matrix for Student Officer Responses to the Supplemented 50 Item LOO

Item #	F	Factor 1 (s)	Factor 2 (c)	Item #	F	Factor 1 (s)	Factor 2 (c)	Item #	F	Factor 1 (s)	Factor 2 (c)	Item #	F	Factor 1 (s)	Factor 2 (c)
1	s	59	71*	14	s	68*	67	27	s	50	73*	40	s	79*	53
2	c	65	68*	15	c	64	70*	28	c	45	71*	41	s	68*	64
3	s	65	67*	16	s	57	71*	29	c	40	79*	42	s	79*	56
4	s	64	67*	17	c	66	67*	30	s	41	79*	43	s	81*	49
5	C	61	71*	18	S	63	70*	31	s	79*	51	44	s	83*	46
6	s	66*	66	19	c	71*	62	32	C	74*	57	45	s	83*	47
7	C	62	68*	20	s	59	70*	33	c	81*	49	46	S	81*	49
8	c	73*	62	21	s	51	66*	34	c	78*	56	47	s	78*	51
9	s	63	68*	22	S	42	72*	35	s	75*	56	48	C	79*	53
10	c	60	72*	23	C	45	77*	36	C	75*	62	49	s	82*	49
11	c	64	68*	24	c	46	74*	37	s	75*	58	50	s	84*	46
12	c	58	71*	25	S	42	80*	38	C	73*	58				
13	c	67*	65	26	S	47	72*	39	s	80*	50				

Notes :

F represents Fleishman's assignment of the item either to the c, Consideration Factor, or to the s, Structure Factor. Items 41 through 50 were added by the authors to supplement the LOQ. Each loaded in the factor analysis as a structure item, but the content of item 48 suggests it to be more conformable to Fleishman's consideration items.

(s_) and (c) as column headings indicate current SAS designation of the items from the Proc Factor procedure of SAS.

Items 6, 14, 17 loaded on both factors but are asterisked as structure or consideration items according to Fleishman's designation.

Item 21 was not asterisked by SAS. Item 21 was not loaded in conformance with Fleishman's designation. The asterisk indicates the obviously larger loading on the consideration factor.

Factor and .61 for the Structure Factor. These are somewhat lower than reported by Fleishman for the standardizing sample of adults with the original instrument.

Multivariate Analysis of Variance

Four sources produced sequential multivariate significance at the .10 level for consideration and structure centroids computed for the adapted LOQ. In first position, Wilk's lambda for level of office was significant at the .05 level, in fifth position district was significant at the .10 level, and in twelfth position grade level nested within sex (an interaction of grade level with sex) was significant at the .05 level. Results of the complete sequential multivariate analysis of variance are presented in Table 2.

Means and standard deviations for factor scores broken down by relevant student demographic characteristics are presented in Table 3. For level of office, students differed on structure scores at the .01 level, and on consideration scores at the .10 level. The student officer who had held local, state, and national offices scored about 3 standard deviations higher on both scales than did the typical student holding only local offices or holding both local and state offices. For district as a source, student officers differed on both consideration ($p < .10$) and structure ($p < .05$) scores. Students from District A were higher than District B on both scales. For grade level within sex as a source of variance, student officers differed within sex as follows: As males entered higher grades, scores on structure decreased, then increased; while for females, structure scores decreased

Table 2

Sequential Multivariate Analysis of Variance of LOO Factors on Demographic Variables for High School Student Officers of HOSA

Source	Multivariate				Univariate					
	Wilk's Lambda	Num df	Den df	F	Structure df	Structure SS	Structure F	Consideration df	Consideration SS	Consideration F
1. Level of Office	0.77	4	76	2.6**	2	763.16	5.6***	2	448.27	3.0*
2. Ldrshp Positn	0.77	10	76	1.0	5	615.15	1.8	5	312.39	0.8
3. Grade" Leve 1	0.87	6	76	0.9	3	172.75	0.8	3	41.80	0.2
4 Sex	0.98	2	38	0.5	l	58.57	0.9	L	7.88	0.1
5. District	0.89	2	38	2.4*	1	293.49	4.3**	1	268.45	3.6*
6. School w District	0.25	78	76	0.9	39	2323.6	0.9	39	2951.0	0.9
7. 1 BY 2	0.96	4	76	0.3	2	76.27	0.6	2	70.72	0.5
8. 1 BY'3	0.98	2	38	0.4	1	1.38	0.0	1	29.53	0.4
9. 2 B Y 3	0.72	18	76	0.7	9	518.32	0.8	9	346.30	0.5
10. 2 B Y 4	0.89	6	76	0.7	3	87.46	0.4	3	93.82	0.4
11. 2 BY 5	0.80	10	76	0.9	5	298.90	0.9	5	109.01	0.3
12. 3 B Y 4	0.85	2	38	3. 3**	L	430.67	6.4***	L	79.21	1.0
13. 3 B Y 5	0.95	4	76	0.5	2	104.53	0.8	2	22.6-0	0.2
14. 4 B Y 5	0.87	2	38	2.9*	1	12.63	0.2	1	196.26	2.6

*p<.10. **p<.05. ***p<.01

Leadership Opinion

Table 3

Mean and Standard Deviations of Factor Scores Broken Down by Selected Demographic Characteristics

Demo Char	n	STRUO m	STRUO Std	STRUA m	STRUA Std	STRU m	STRU Std	CONS m	CONS Std
All Students	115	45.90	6.25	20.59	6.25	66.50	8.58	66.00	8.16
District A	51	46.06	6.29	22.00	5.43	68.06	8.34	67.45	7.67
District B	64	45.78	6.26	19.47	5.00	65.25	8.63	64.83	8.42
Males	10	47.10	4.53	21.20	6.27	68.30	6.09	65.20	5.71
Females	105	45.79	6.40	20.53	5.25	66.32	8.78	66.07	8.37
9th Grade	2	48.00	4.24	22.00	8.49	70.00	4.24	61.00	5.66
10th Grade	15	46.67	5.60	21.67	6.33	68.33	8.98	67.47	9.25
11th Grade	37	46.19	6.90	20.46	4.85	66.65	9.67	66.24	8.67
12th Grade	61	45.47	6.13	20.36	5.36	65.84	7.94	65.64	7.71
Local	108	45.68	6.26	20.52	5.19	66.25	8.30	65.77	8.10
Local & State	6	47.83	3.37	18.50	4.76	66.33	7.20	66.50	5.17
Loc State Nat	1	59.00	+	35.00	+	94.00	+	87.00	-
Male & 9th	2	48.00	4.24	22.00	8.48	70.00	4.24	61.00	5.66
10th	2	44.00	8.49	21.00	7.07	65.00	1.41	62.00	5.66
11th	0								
12th	6	47.83	3.76	21.00	6.7S	68.83	7.55	67.67	5.24
Female & 9th	0								
10th	13	47.08	5.41	21.77	6.52	68.85	9.58	68.31	9.56
11th	37	46.19	6.90	20.46	4.85	66.65	9.67	66.24	8.67
12th	55	45.22	6.30	20.29	5.25	65.51	7.97	65.42	7.93

Notes:

STRUO are scores for original, unadapted LOQ portion.
STRUA are scores for adapted portion of adapted LOQ.
STRU as sums of STRUO and STRUA are adapted LOQ scores.
"+" = only one case, and thus no standard deviation reported.
"-" = no cases for this condition.

consistently. Consideration scores for males increased with grade level, but for females , decreased with grade level. Although differences in the main effect of grade level were not significant, it could be noted that for males and females taken together the structure scores decreased consistently across grade levels, while the Table 2 consideration scores rose substantially between 9th (mean=61.00) and 10th grade (mean=67.47) then dropped slightly in the llth (mean=66.24) and 12th grade (mean=65.64) but not as low as they were in the 9th grade. Sex by district, appearing sequentially in the last position in the model, while multivariately significant ($p < .10$), is not univariately significant.

Norms for the Sample

Norms descriptive of student officer performance on consideration and structure scales of the adapted LOQ are presented in Table 4. These norms are suitable for cautious use by those who may wish to apply present adaptations of the LOQ in future research for student officers at the high school level. Caution is urged because of the small number of students in the various categories for which the norms are defined. However, each norm seems to be reasonable when evaluated in the context of other findings in this study and in comparison with norms reported by Fleishman for the unadapted LOQ.

Goodness-of-fit-Tests

Distributions for various breakdowns by student characteristics of adapted LOQ factor scores subjected to goodness-of-fit testing using the Kolmogorov-Smirnov algorithm of SPSSX are presented in Table 5. The reader

Table 4

Norms for Consideration and Structure Factor Scores of the Adapted LOO For All Cases, 2 Districts, 2 Sexes, 4 Grade Levels, and 2 HOSA Officer Service Levels

		District		Sex		Grade		Level		Officer	
	all	A	B	Male	Fmale	9	10	11	12	Local	Lo St
%ile	n=115	n=51	n=64	n=10	n=105	n=2	n=15	n=37	n=61	n=108	n=6
	c s	c s	c s	c s	c s	c s	c s	c s	c s	c s	c s
99	90 93	90 93	90 94	74 79	90 93	73 65	90 92	90 94	82 81	90 92	72 75
98	87 92	82 81	87 92	-- --	87 92	-- --	-- --	-- --	80 --	85 81	-- --
97	85 81	-- 79	85 --	-- --	85 81	-- --	-- --	87 93	79 79	82 79	-- --
95	80 79	80 78	76 79	-- --	80 79	-- --	-- --	85 79	-- 78	80 78	-- --
90	75 76	-- --	74 74	72 75	76 76	-- --	-- --	76 76	75 76	75 76	-- --
85	73 74	74 76	71 72	-- --	73 --	-- --	-- 85	75 73	75 73	74 73	74 --
80	71 73	-- --	70 70	70 73	71 73	-- --	71 --	-- 72	71 73	71 73	-- --
75	70 71	71 74	-- --	-- --	70 71	-- --	-- 73	69 --	70 71	70 71	-- --
69	69 --	69 73	-- --	66 71	69 --	-- --	-- --	67 --	-- --	69 --	-- --
60	67 68	67 --	-- 66	65 67	67 68	-- --	66 66	-- 67	-- --	------	--
50	65 --	66 67	64 65	-- 66	-- --	67 57	-- --	-- --	66 66	65 --	66 --
40	63 63	65 65	62 62	-- --	63 63	-- --	64 --	-- 64	-- --	63 63	-- --
31	62 61	63 --	59 60	60 64	-- 61	-- --	-- --	62 --	61 62	-- 61	-- --
25	60 60	-- 61	58 --	-- --	60 --	-- --	59 62	-- 60	59 59	60 60	-- --
20	59 59	-- 60	57 58	58 63	59 59	-- --	-- 61	60 --	58 58	-- 59	-- --
15	58 58	61 --	56 --	-- --	57 58	-- --	-- --	-- --	56 57	57 --	57 57
10	56 --	59 --	-- 56	57 59	56 --	-- --	-- --	57 57	55 56	56 57	-- --
5	54 53	55 58	53 53	-- --	53 53	-- --	-- 57	56 53	52 53	53 53	-- --
3	52 49	54 53	50 49	-- --	50 49	-- --	-- --	45 43	50 49	50 49	-- --
2	49 47	49 43	45 47	-- --	49 47	------	--	-- --	49 47	49 47	-- --
1	45 43	-- --	-- --	-- --	45 43	-- --	-- --	-- --	-- --	45 43	-- --

Notes:

-- indicates no value from the data.
Entered values are either exact, or within 2 percentile points.
Lo St are Local and State Officers.
There was just 1 Local, State, and National Officer.

Table 5

Kolmogorov-Smirnov Goodness-of-Fit z Scores for Consideration and Structure Factor Score Distributions Under Normal Assumptions Based on Observed Means and Standard Deviations Broken Down By Selected Demographic Characteristics

Demo Char	n	STRUO		STRUA		STRU		CONS	
		K-S Z	p	K-s z	p	K-s z	p	K-s z	p
All	115	0.92	0.36	1.21	0.23	0.69	0.49	0.83	0.41
District A	51	0.92	0.36	0.73	0.47	0.63	0.53	0.94	0.35
District B	64	0.75	0.53	1.05	0.29	0.70	0.48	0.61	0.54
Males	10	0.44	0.66	0.79	0.43	0.58	0.56	0.59	0.56
Females	105	0.86	0.89	1.07	0.28	0.73	0.47	0.80	0.42
9th Grade	2	0.37	0.71	0.37	0.71	0.37	0.71	0.37	0.71
10th Grade	15	0.56	0.58	0.57	0.57	0.78	0.44	0.73	0.47
11th Grade	37	0.78	0.44	0.64	0.52	0.90	0.37	1.02	0.31
12th Grade	61	1.28	0.20	1.01	0.31	0.52	0.60	0.74	0.46
Loca 1	108	0.84	0.40	1.14	0.26	0.64	0.52	0.82	0.41
Local & State	6	0.59	0.56	0.51	0.61	0.76	0.44	0.72	0.47
Loc State Nat	1	+	+	+	+	+	+	+	+
Male & 9th	2	0.37	0.71	0.37	0.71	0.37	0.71	0.37	0.71
10th	2	0.37	0.71	0.37	0.71	0.37	0.71	0.37	0.71
11th	0								
12th	6	0.62	0.53	0.69	0.49	0.36	0.71	0.48	0.63
Female & 9th	0								
10th	13	0.75	0.45	0.49	0.62	0.56	0.57	0.61	0.54
11th	37	0.78	0.43	0.64	0.52	0.90	0.37	1.02	0.30
12th	55	1.30	0.19	0.91	0.36	0.57	0.57	0.82	0.41

Notes:
"+" = only one case, thus no standard deviation reported
"-" = no cases for this condition
Two-Tailed probabilities are from Siegel (1956).
STRUO are scores for original, unadapted LOQ portion.
STRUA are scores for adapted portion of adapted LOQ.
STRU as sums of STRUO and STRUA are adapted LOQ scores.

may observe that for every breakdown the distribution does not differ significantly from the normal in terms of approximating z-scores. This provides Further evidence for the tentative use of norms from the current sample in future studies and for the acceptability of the unadapted LOQ, under a 2 factor, factor analysis in future research. Of course, as more evidence is accumulated on high school student leadership opinions, the norms should be adjusted accordingly.

Cone usions

Recognizing the importance of leadership training for student leaders in HOSA, this study was undertaken.

1. To determine specific patterns of leadership attributes for officers at various levels of leadership and in various positions of service in HOSA. Patterns of leadership for the present sample of high school student leaders do not differ substantially from patterns for the standardizing sample of Fleishman.· Curves reflect essentially the same mound-shaped distributions inferred from Fleishman's reports.

2. To describe reLationships between HOSA officer leadership attributes and selected demographic characterizations. Three multivariate relationships between leadership attributes and demographic characterizations are presented in Table 2. There were significant differences in responses summarized as structure and consideration for factors computed on the basis of factor analysis reported for these student Leaders in this study when broken down by (a) Level of office, (b) district, (c) grade level by sex, and (d) sex by district.

3. To adapt Fleishman's LOQ for use with students in health occupations at the high school level. The LOQ may be adapted with cautious attention to factor patterning of its underlying dimensions for describing structure and consideration as leadership attributes of student officers of HOSA at the high school level. There were differences in loadings when compared with Fleishman's Tables, but, the same labels used by Fleishman for the two factors have been supported through this study. Loadings and labels are reported in Table

4 To summarize student performance on the adapted LOQ with sample norms. Sample norms were computed and reported as Table 4. 'dowever, a comparison of the norms of Table 4 with Fleishman's norms shows specific differences in raw score values at the break points in the rows and for different levels in the columns of the demographic variables used for classifying the student leaders.

Additional concluding comments may be helpful for interpreting the educational importance and relevance of this study: District A was higher on both consideration and structure scores than District B. Males were generally higher-on structure, females were generally higher on consideration. But, males were relatively lower on structure in 10th grade and relatively higher in 12th grade; and as grade level increased, female scores on both consideration and structure tended to decrease. As level of office increased, both consideration and structure scores increased with national office being associated with scores about 3 standard deviations higher for the single case.

Educational Importance

This attempt to identify attributes of student leaders of HOSA has implications to one community-based mission of the high school. It is important for high schools to provide to the community developed leaders who have had leadership experience at the high school level.

On the basis of these findings, potential roles for future political, social, business, and professional leaders may be delineated. Other implications exist for those in advisory roles to student organizations. The LOQ should be administered by student advisors to all student organization members. Analyses of those scores may be helpful in suggesting candidates for student offices and for planning leadership training workshops. Future leadership training workshops should focus on training topics relevant to improving opinions that may be characterized according to LOQ criteria as structure or consideration opinions.

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