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ABSTRACT

The development and preliminary validation of an instrument to measure attitude toward school subjects (GRASS) is described. An item pool consisting of 30 items was generated and refined. A 23 Likert item scale was then administered to 893 eleventh and twelfth grade high schools Ss. A principal component analysis and obliquimax transformation generated three dimensions of attitude toward school subjects (social studies). Two of the dimensions (General Interest and Usefulness) were found to be both meaningful and reliable (internal consistency). It is suggested that scores on the two dimensions could be used separately or combined into a total attitude-toward-school-subject score. (Author)

The Development of an Instrument to Measure Attitudes Toward School Subjects

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The measurement of affective dimensions of learning is an increasingly important aspect of curriculum evaluation. In order to measure attitude towards subject matter, evaluators must employ instruments which are psychometrically adequate. The purpose of this study was to report the results of an examination of the content and construct validity and the internal consistency reliability of one such measure: the Gable and Roberts Attitude Towards School Subjects (GRASS). The specific school subject in this study was Social Studies.

Method

The content validity of the GRASS instrument was examined by reviewing the literature and available instruments for measuring attitudes towards school subjects. Following some of the work of Remmers (1960), 30 item stems were written to reflect two dimensions of attitude towards social studies: general interest and usefulness. Following this, the 30 item stems were distributed to four faculty members from the University of Connecticut Secondary Education Department in the following areas: social studies, curriculum, and English. This judgemental screening and editing of items resulted in 23 useable items. Eleven of the 23 Likert type items, responded to on a 5-point scale from "strongly agree" to "strongly disagree", were written in a negative direction. A copy of the instrument can be found in Appendix A.

The GRASS instrument was administered to 893 eleventh and twelth grade social studies students in two suburban high schools in the Connecticut town of Enfield.

The construct validity of the GRASS scale was examined by generating a 23 by 23 item intercorrelation matrix for the response data and employing a principal component analysis followed by an oblique rotation. (Hofmann, 1970). Alpha internal consistency reliabilities were generated.

Results and Discussion

Table 1 contains the item means and standard deviations. Inspection of the table entries indicates that with the exception of items 2 and 10, high or low means and low standard deviations were not associated with responses to the 5-point Likert scale.

Table 2 contains the primary pattern matrix generated by the principal component analysis and obliquimax transformation procedure. Employing a root criteria of unity, the three component solution accounted for 53% of the total variance associated with the item interrelationships.

Table 3 contains the item numbers, item stems and component loadings for each derived factor. Note that the reverse scored negative item stem numbers have been underlined.

Factor I (40% of total variance) was called General Interest. The item content defining the factor suggests that people scoring highly on the factor feel that the subject under consideration is interesting and enjoyable. Factor II (7% of total variance) was called Usefulness, as it reflects one's attitude toward the usefulness of the subject in their every day life. People scoring highly on this dimension feel the subject is beneficial as it not only helps them to develop the ability to reason and be accurate, but it also assists them in dealing with situations they meet in their lives. Finally, Factor III (6% of total variance) was labed Relevancy as the items in this category reflected the extent that the subject was perceived to apply to real life.

Table 4 contains the intercorrelations of the derived factors. This table indicated that Factor I, General Interest was related to Factor II, Usefulness,

Table 4

Intercorrelations of the Derived Factors*

	FACTOR		
	1	2	3
1	100		
2	63	100	
3	57	45	100

*Decimals have been omitted.

(r = .63) and to Factor III, Relevance (r = .57). Students who expressed interest in the subject matter (social studies) also tended to feel it was useful and relevant.

Table 5 contains the names, number of items and estimated alpha internal consistency reliabilities for each derived factor.

Table 5

Factor Names, Number of Items and Estimated Alpha Internal Consistency Reliabilities

Factor	Number of Items	Estimated Alpha Reliability
I. General Interest	11	.94
II. Usefulness	5	.70
III. Relevance	3	.59

Factors I and II have adequate reliabilities which warrant their use in evaluating student changes in attitude toward school subject. Scores for each student on these two related dimensions of attitude toward school subjects could be obtained by summing responses across items defining each factor. Since general interest in the subject matter as well as perceived usefulness of the subject matter were substantially related for this sample, a total attitude toward the school subject could be derived by combining scores from factors I and II. Since the GRASS items were written to apply to most subject matter areas, researchers may find these items useful in future curriculum evaluations. Additional empirical analyses of the items for other areas are clearly in order.

Summary

The development and preliminary validation of an instrument to measure attitude toward school subjects (GRASS) was described. An item pool consisting of 30 items was generated and refined. A 23 Likert item scale was then administered to 893 eleventh and twelth grade high school Ss. A principal component analysis and obliquimax transformation generated three dimensions of attitude toward school subjects (social studies). Two of the dimensions (General Interest and Usefulness) were found to be both meaningful and reliable (internal consistency). It was suggested that scores on the two dimensions could be used separately or combined into a total attitude toward school subject score.

References

Hofmann, R. J. The obliquimax transformation. Unpublished doctoral dissertation, State University of New York at Albany, 1970.

Remmers, H. H. (Ed) A scale to measure attitude toward any school subject. Lafayette, Ind., Purdue Research Foundation, 1960.

Appendix A

GABLE-ROBERTS ATTITUDES TOWARD SCHOOL SUBJECTS

The following items survey your opinions about Social Studies. Do not write on this survey question sheet. Turn the answer sheet on its side and use a soft lead PENCIL to enter the following on the right side of the sheet:

(Be sure to also blacken the appropriate boxes)

a.) your LAST and FIRST NAMES

b.) grade

c.) sex

d.) In the last student number box (right hand side) indicate a "1" if you are in a Mini-Social Studies section and a "0" if you are not.

Turn the answer sheet so that you can locate the space for the answer to question number 1. Please indicate your opinion to each question on the basis of the following code:

5 means "strongly agree"
4 means "agree"
3 means "uncertain"
2 means "disagree"
1 means "strongly disagree"

To what extent do you agree or disagree with respect to SOCIAL STUDIES:

1. I like to study the subject.
2. The subject has no place in the modern world.
3. The subject fascinates me.
4. I find the subject to be a real bore.
5. The subject is of great value to me.
6. The subject does not hold my interest.
7. The subject is the most undesirable subject taught in school.
8. The subject gives pupils the ability to interpret situations they will meet in life.
9. I look forward to my class in the subject.
10. The subject is practical.

Please indicate your opinion to each question on the basis of the following code:

5 means "strongly agree"
4 means "agree"
3 means "uncertain"
2 means "disagree"
1 means "strongly disagree"

11. I wish that I didn't have to take the subject.

12. The subject is beneficial to everybody who takes it.

13. I find the subject to be dull.

14. The subject does not challenge me to think.

15. I really enjoy the subject.

16. The merits of the subject far outweigh the defects.

17. The subject is not relevant to my life.

18. The subject helps me develop good reasoning ability.

19. The subject is interesting.

20. The subject teaches me to be accurate.

21. Any student who takes the subject is not going to be benefited.

22. I am not interested in the subject.

23. The subject does not apply to real life.

Table 1

Item Means and Standard Deviations
(N=893)

Item	$\bar{x}$	SD
1	3.29	1.01
2	2.04	.99
3	2.67	1.09
4	2.51	1.09
5	2.95	1.00
6	2.67	1.09
7	2.12	1.02
8	3.12	1.07
9	3.04	1.07
10	3.55	.92
11	2.80	1.22
12	2.77	1.06
13	2.67	1.09
14	2.35	1.04
15	2.97	1.11
16	3.22	.86
17	2.67	1.13
18	3.01	1.00
19	3.34	1.08
20	2.59	.89
21	2.25	1.01
22	2.66	1.16
23	2.30	1.13

Table 2

Primary Pattern Matrix: Principal Component Solution and Obliquimax Transformation*

Item	Factor I	Factor II	Factor III
1	85	02	-07
2	-32	00	-38
3	66	24	-15
4	-84	08	-02
5	20	49	00
6	-87	06	01
7	-72	29	-17
8	-29	67	32
9	-60	23	-04
10	19	23	25
11	-79	04	-06
12	-16	76	-12
13	-80	01	-02
14	-18	-10	-32
15	78	16	-12
16	37	22	01
17	-06	-35	-46
18	-05	71	10
19	74	07	03
20	-03	81	-22
21	-01	34	-80
22	-69	01	-16
23	30	-12	-89

*Decimals have been omitted; underlined item numbers are items which should be reverse scored.

Table 3

Item Numbers, Item Stems and Component Loadings*

FACTOR	Item Number	Item Stem	Loading
FACTOR I			
General Interest			
	6	The subject does not hold my interest.	-87
	1	I like to study the subject.	85
	4	I find the subject to be a real bore.	-84
	13	I find the subject to be dull.	-80
	11	I wish that I didn't have to take the subject.	-79
	15	I really enjoy the subject.	78
	19	The subject is interesting.	74
	7	The subject is the most undesirable subject taught in school.	-72
	22	I am not interested in the subject.	-69
	3	The subject fascinates me.	66
	9	I look forward to my class in the subject.	60
FACTOR II			
Usefulness			
	20	The subject teaches me to be accurate.	81
	12	The subject is beneficial to everybody who takes it.	76
	18	The subject helps me to develop good reasoning ability.	71
	8	The subject gives pupils ability to interpret situations they will meet in life.	67
	5	The subject is of great value to me.	50
FACTOR III			
Relevance			
	23	The subject does not apply to real life.	-89
	21	Any student who takes the subject is going to be benefited.	-80
	17	The subject is not relevant to my life.	-46

*Decimals have been omitted; underlined item numbers should be reverse scored.