Brief Reports

The Relationships Between Academic Self-Concept, Global Self-Concept, and Academic Achievement

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Although self-concept literature has reached immense proportions there is still much confusion in both theory and research (Sarbin, 1952; Wylie, 1974). The relationship between different aspects of the self and academic achievement has been vigorously examined in the research. Despite the fact that existing research has produced inconsistent results and that the methodology used in many studies has been seriously questioned, it is generally assumed that there is a strong positive relationship between self-concept and academic achievement, (Hansford & Hattie, 1982; Marx & Winne, 1978; Wylie, 1974).

The emphasis on comparisons of global measures of self-concept with academic achievement has been questioned by Marx and Winne (1980) who state that "when dimensions of personality variables are collapsed into a global measure, relationships between these global scores and criterion measures will likely cloud interpretation" (p. 78). Moreover, potentially verifiable but complex relationships may be lost or hidden when an unidimensional relationship is presumed (Marx & Winne, 1980). Accordingly, Wylie (1961) suggests that the use of "molecular" or more specific constructs like academic self-concept may prove more productive and manageable in future research.

The present study has been designed to test the hypothesis that academic self-concept will be a better predictor of report card grades than general self-concept.

METHOD

Two elementary schools were selected for the study, one urban school from the Calgary Separate School System, and one rural school from the Rocky View School Division in Southern Alberta. The sample consisted of a total of 198 students (91 girls and 107 boys) in third through sixth grades. Parental consent was obtained for all students who participated in the study.

During regularly scheduled classes, in the spring of 1985, the investigators administered the Student's Perception of Ability Scale (SPAS), and the Piers-Harris Children's Self-Concept Scale, (CSCS) to the students while the teacher was not present in the classroom. Scores on these two scales were correlated with end-of-year report card grades.

Instruments

Student's Perception of Ability Scale — Form B. The Student's Perception of Ability Scale (Form B) was developed to provide a time and cost-effective means of measuring academic self-concept in research studies (Chapman, Silva & Boersma, 1983). The scale contains 35 forced choice "yes-no" questions. It is intended for use with elementary school children in grades three to six. The items were selected to provide information relating to children's attitudes and feelings about school in general, and about five specific academic areas including reading, spelling, language arts, arithmetic, and penmanship/neatness (Chapman, 1985). Psychometric characteristics have proved similar to those of Form A for which test-retest reliability over a four to six week interval was .83.

Piers-Harris Children's Self-Concept Scale. The Piers-Harris Children's Self-Concept Scale was developed by Piers and Harris (1964) and is one of the most recommended global self-concept instruments available for use with children (Crandall, 1976; Wylie, 1974). The scale consists of 80 "yes-no" declarative statements related to self-attitudes, and is intended for use with children in grades 3 through 12. The scale is comprised of six subscales: Behaviour, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness and Satisfaction. Reliability in a test-retest situation over a four-month period ranged from .71 to .77 (Piers, 1984).

TABLE 1

Student Perception of Ability Scale and Report Card Grade Correlations (n = 198)

SPAS Subscales and Full Scale	School Subjects					
	Social Studies	Science	Reading	Written Expression	Math	Grade Point Average
General Ability	.34	.29	.36	.40	.28	.39
Arithmetic	.21	.20	—	.25	.36	.27
School Satisfaction	—	—	—	—	—	—
Reading/Spelling	.29	.36	.29	.34	.37	.39
Penmanship/Neatness	—	—	—	—	—	—
Confidence	.35	.32	.31	.40	.37	.41
FULL SCALE	.37	.41	.36	.46	.41	.47

Correlations less than .20 have been omitted. All remaining correlations are significant at $p <$ .001.

RESULTS

Pearson product moment correlations were calculated between the measures obtained from the SPAS and the CSCS on the one hand, and end-of-year report card grades on the other. These correlations are presented in Tables 1 and 2, respectively. The highest correlation is betwen SPAS full scale scores and grade point average $(r = .47, p < .001)$. Of the specific course related subscales, the Arithmetic subscale correlates most highly with the math report card grade $(r = .36, p < .001)$. The Reading/Spelling Subscale correlates most highly with grade point average $(r = .39, p < .001)$, and lowest with reading report card grades.

The Piers-Harris Intellectual and School Status subscale produced the highest correlation with subject matter grades in this analysis. The highest correlation is with Written Expression $(r = .39, p < .001)$. The weakest correlations are between the Anxiety subscale and subject matter grades. The correlation between the Piers-Harris full scale score and grade point average is .30.

To ascertain which of two self-concept scales is the best predictor of academic achievement, a multiple regression analysis was used to study the relationship between the scores of these instruments and grade point average. Together, the two self-concept scales produce a significant R^2 $(p < .001)$ which accounts for a total of 22.3% of the variance associated with grade point average. The SPAS alone accounts for 21.8% of the

TABLE 2

Piers-Harris Children's Self-Concept Scale and Report Card Correlations
(n = 198)

Piers-Harris Subscales and Full Scale	School Subjects					Grade Point Average
	Social Studies	Science	Reading	Written Expression	Math	
Behaviour	—	.28	.20	.30	.21	.27
Intellectual and School Status	.31	.32	.31	.39	.32	.38
Physical Appearance	.21	.25	.21	.27	—	.26
Anxiety	.20	—	—	—	—	—
Popularity	.22	.24	—	.24	—	.22
Happiness	.27	.27	.23	.34	.28	.33
FULL SCALE	.24	.29	.22	.32	.24	.30

Correlations less than .20 have been omitted. All remaining correlations are significant at the $p. < .001$ level.

total variance explained. The increase of .5% in variance accounted for by global self-concept is not significant.

The results of this study indicate that there are significant and positive relationships between measures of self-concept and academic achievement. The full scale SPAS, an academic self-concept measure, produced a significantly higher correlation with academic achievement ($p < .05$) than did the CSCS which is a more global measure. We thus may conclude that academic self-concept, as measured by the SPAS, accounts for significantly more variance in academic achievement than global self-concept as measured by the CSCS.

DISCUSSION

The results of this study support the findings of Brookover, Erickson, and Joiner (1967), Brookover, LePere, Hamachek, Thomas, and Erickson (1965), and Brookover, Paterson and Thomas (1962).

Although the data do not indicate whether a positive self-concept facilitates academic achievement, or whether academic achievement facilitates the development of a positive self-concept, they do support Wylie's (1961) contention that the use of molecular rather than global self-concept constructs may be more useful predictors of academic achievement.

This study indicates that children's perceptions of their academic ability are significantly related to their achievement in school. Based on this study and the results of other research it appears that either children's academic self-concept affects their scholastic achievement or that children's successes and failures in school affect their academic self-concept. A longitudinal study using an experimental design and a random cohort student sample might shed some light on the causal relationship between self-concept and academic achievement. Meanwhile it is suggested that schools use a bidirectional approach — one which strives to improve academic performance through building self-concept but also seeks to build self-concept through promoting academic achievement.

References

Brookover, W. B., Erickson, E. L., & Joiner, L. M. (1967). *Relationship of self-concept to achievement in high school: Self-concept of ability and school achievement III*. U.S. Office of Education, Cooperative Research Project No. 2831. East Lansing Office of Research and Publications, Michigan State University.

Brookover, W. B., LePere, J. M., Hamacheck, D. E., Thomas, S., & Erickson, E. L. (1965). *Self-concept of ability and school achievement, II: Improving academic achievement through students self-concept enhancement*. U.S. Office of Education, Cooperative Research Project No. 1636. East Lansing: Office of Research and Publications, Michigan State University.

Brookover, W. B., Paterson, A., & Thomas, S. (1962). *The relationship of self-images to achievement in junior high school subjects*. U.S. Office of Education, Cooperative Research Project No. 845. East Lansing: Office of Research and Publications, Michigan State University.

Chapman, J. W. (1985). *Self-perceptions of ability, learned helplessness and academic achievement expectations of children with learning disabilities* (Research Contract 55-1-18) Willington, New Zealand: Department of Education, Massey University.

Chapman, J. W., Silva, P. A., & Boresma, F. J. (1983). Student's perception of ability scale: Development of a short form. *Perceptual and Motor Skills, 57,* 799-802.

Crandall, R. (1976). The measurement of self-esteem and related constructs. In J. R. Robinson & P. R. Shaver (Eds.), *Measures of social psychological attitudes.* Ann Arbor: Institute for Social Research.

Hansford, B. C., & Hattie, J. A. (1982). The relationship between self and achievement/performance measures. *Review of Educational Research, 52*(1), 123-142.

Marx, R. W., & Winne, P. H. (1978). Construct interpretations of three self-concept inventories. *American Educational Research Journal, 15*(1), 99-109.

Marx, R. W., & Winne P. H. (1980). Self-concept validation research: Some current complexities. *Measurement and Evaluation in Guidance, 13*(2), 72-82.

Piers, E. V. (1984). *Piers-Harris Children's Self-Concept Scale, Revised Manual.* Los Angeles: Western Psychological Services.

Piers, E. V., & Harris, D. B. (1964). Age and other correlates of self-concept in children. *Journal of Educational Psychology, 55*(2), 91-95.

Sarbin, T. R. (1952). A preface to a psychological analysis of the self. *Psychological Review, 59,* 11-22.

Wylie, R. C. (1961). *The self-concept: A critical survey of pertinent research literature.* Lincoln, Nebraska: University of Nebraska Press.

Wylie, R. C. (1974). *The self-concept, Vol. 1: A review of methodological considerations and measuring instruments.* Lincoln, Nebraska: University of Nebraska Press.