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ABSTRACT

To investigate the relationship between perceived self-competence and other variables affecting the successful adjustment and achievement of students, 400 fourth through seventh graders were surveyed using the Perceived Competence Scale for Children (PCSC), the Revised Children's Manifest Anxiety Scale (RCMAS), which consists of two scales, Anxiety and Lie, and four sociometric questions, using a roster-and-rating technique. Recent results of the Iowa Tests of Basic Skills (ITBS) were obtained for each student. Results indicated strong, positive relationships between the Cognitive PCSC scale and ITBS scores. PCSC scales and sociometric ratings were found to be significantly related. Multiple regression analyses revealed the RCMAS Anxiety scale to best predict each of the PCSC scales. ITBS results were best predicted by sociometric choices of study partners. Sex and race differences were found on many of the variables. The results of this investigation support the notion of the need for multi-faceted studies of achievement and student adjustment. (Author/LLL)

The Relationship of Perceived Self-Competence to Other School Adjustment Factors

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Running Head: PERCEIVED SELF-COMPETENCE AND SCHOOL ADJUSTMENT

Abstract

This study was undertaken in order to investigate perceived self-competence and its relationship to other variables which may affect the successful adjustment and achievement of students. Subjects (N=400) were fourth through seventh graders. Three instruments were administered to these students: 1) the Perceived Competence Scale for Children (PCSC); 2) the Revised Children's Manifest Anxiety Scale; and 3) four sociometric questions, using a roster-and-rating technique. Recent results of the Iowa Tests of Basic Skills were obtained for each student. Correlations were then calculated to study the relationship of perceived self-competence to these other constructs. Analyses of variance were computed in order to identify any sex, race, or grade differences. Multiple regression analyses were calculated using the four PCSC scales and the ITBS math and reading scores as criterion variables. Results indicated strong, positive relationships between the Cognitive PCSC scale and ITBS scores. PCSC scales and sociometric ratings were found to be significantly related. Multiple regression analyses revealed the RCMAS Anxiety scale to best predict each of the PCSC scales. ITBS results were best predicted by sociometric choices of study partners. Sex and race differences were found on many of the variables. The results of this investigation supported the notion of the need for multi-faceted studies of achievement and adjustment of students.

The Relationship of Perceived Self-Competence to Other School Adjustment Factors

The self-perceptions of children are shaped and affected by many factors. Self perceptions begin to form during infancy with the realization that children are able to affect their environments (Allport, 1961). A child's concept of self evolves through new experiences, interactions with others, and a knowledge of his or her own abilities. As children enter the academic setting for the first time, they are thrust into an environment which poses many new challenges. They must adapt to sharing the attention of the teacher, their new significant other, with many other children. Children also find themselves in a situation in which they can compare themselves with other similarly aged individuals. Suddenly, their performances on various tasks are subjected to evaluation.

These early school experiences cause children to begin to introspect with regard to themselves and their abilities. Thus, their level of academic achievement, as well as peer acceptance, may play key roles in the development of children's self-perceptions. Research has indicated that peer acceptance in the early grades does not appear to be related to high achievement (Buswell, 1953). In the following grades, however, achievement has been shown to have some effect on the level of acceptance a child experiences

(Horrocks & Buker, 1951; Schmuck & Schmuck, 1971). In addition, lack of success in these areas may bring about feelings of discomfort and uneasiness, or anxiety. The relationship between anxiety and self-concept is also an important one in the successful adjustment of children to the school setting (Bledsoe, 1967; Coopersmith, 1967; Samuels, 1977).

This study investigated several of the variables which appear to be related to the successful adjustment and achievement of elementary school students. Specifically, it will focus on self-concept as it relates to level of anxiety, acceptance by peers, and academic achievement. Many studies have focused on some of these variables individually. Most researchers, however, have concluded that the child's adjustment to school and subsequent achievement in the academic setting must be studied in a multi-faceted approach (Hartup, 1970).

This investigation limited its population to middle school students. This term is used to indicate those students in grades four through seven. It is at this age that a shift in reference group occurs from the parents and teacher to that of the peer group as their "significant other" (O'Donnell, 1979). Furthermore, the onset, or attainment, of adolescence occurs at this age. This stage of development and the physical and emotional changes adolescents undergo have drastic effects on their concepts of self.

Finally, middle school students are required to assume greater responsibility in their school work. The amount of subject matter increases, as well as the amount of independent work demanded from each student.

Method

Subjects. Subjects for this investigation were fourth through seventh graders drawn from a public school system serving an approximate student enrollment of 25,000. To control for sex and race factors, students were randomly chosen from the initial pool of subjects and blocked randomization was undertaken. Four equal groups were created in each grade level, each with 25 Black and 25 Caucasian boys, and 25 Black and 25 Caucasian girls. This resulted in a total sample size of 400 students, 100 from each grade level.

Instruments. Four instruments were used in this investigation. One f these was the Iowa Tests of Basic Skills (ITBS; University of Iowa, 1979). The scores from the Reading subtest and the Math Composite were obtained from the most current results for each child (percentile scores). The second instrument was a sociometric device. Four questions were asked of each child, using a roster-and-rating technique. They rated each of their classmates as a study partner, a teammate for P. E. class, a good friend, and as a seating neighbor in the classroom, using a five-point likert scale.

Each student's ratings were summed for each question and divided by the number of raters. Lower scores indicate higher sociometric status.

The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds and Richmond, 1978) was also administered to each of the students. This measure consists of two scales, Anxiety and Lie. The former indicates an individual's tendency to perceive situations as threatening, or trait anxiety. The Lie Scale serves as a check scale for social desirability tendencies. High scores on both of these scales indicate higher levels of each variable. The fourth instrument was the Perceived Competence Scale for Children (PCSC; Harter, 1979). It is designed to provide a self-report measure across three domains of competence: social, cognitive, and academic. It also includes a general subscale of self-worth. Lower scores reflect higher levels of perceived competence.

Statistical Analyses. Condescriptive statistics were obtained for each of the variables. This provided a basis for the discussion of the distributions across grade levels, between sexes, and between races. Correlation coefficients were then computed among each of the variables. Following these procedures, 2 x 2 x 4 analyses of variance were run on each of the variables across race, sex, and grade level. Follow-up analyses were accomplished using F-tests.

The final step of the procedure was a series of regression analyses, using each of the four subscales of the PCSC and both ITBS scores as the criterion variables.

Results

Condescriptive statistics for each of the variables are presented in Table 1. Low scores on the PCSC subscales indicate higher levels of perceived self-competence. Low sociometric scores reflect more positive ratings by their peers. Low RCMAS and ITBS scores indicate low levels of anxiety and academic achievement, respectively.

Insert Table 1 about here

Correlation coefficients were then computed among each of the variables. Those correlations most pertinent to the present investigation are found in Table 2. Each of the four PCSC subscales was correlated with the ITBS reading and math scores. The only significant relationship was found between the Cognitive subscale and each of the ITBS scores (-.36 and -.37 for reading and math, respectively). This negative relationship indicates that those students with higher perceptions of their own cognitive abilities, as reflected by lower scores on the PCSC, tend to score higher on achievement tests in reading and math.

Insert Table 2 about here

Correlations were then calculated between the sociometric ratings and the PCSC subscales (see Table 2). The PCSC Cognitive subscale was found to be positively related to peer choices regarding study partners ($r=.36$, $p<.001$). The PCSC Social subscale was significantly related to peer choices of teammate and good friend ($r=.34$ and .23, respectively, $p<.001$). A correlation of .32 ($p<.001$) was found between peer choices of P. E. teammates and self-perceptions on the PCSC Physical subscale. The General subscale of the PCSC was not significantly related to peer choices.

When correlating the PCSC with RCMAS Anxiety and Lie scores, only the Anxiety Scale was found to be statistically related to perceived self-competence (see Table 2). Virtually no relationship was noted between the students' Lie Scale scores and their self-perceptions on the PCSC.

Sex differences were found on several of the variables. As seen in Table 3, males held significantly more positive self-perceptions than females did on the Social, Physical, and General self-worth subscales of the PCSC. They were also chosen by their peers more often as P. E. teammates. Females were chosen significantly more than males as study partners, good friends, and

neighbors in the classroom seating arrangement. Females scored significantly higher than males on the ITBS reading subtest. Females also reflected higher levels of anxiety on the RCMAS.

Insert Table 3 about here

Race differences were noted on five of the variables (see Table 4). On the RCMAS scales, Blacks reflected more anxiety, and also tended to respond affirmatively to questions on the Lie Scale than did Caucasians. Blacks were also chosen more often by students in their classroom as teammates during P. E. class. ITBS results indicated Blacks to score significantly lower than Caucasians on both reading and math subtests.

Insert Table 4 about here

Multiple regression analyses were then computed using each of the PCSC subscales and both ITBS scores as the dependent variables. The RCMAS Anxiety subscale was the best predictor of each of the four PCSC subscales (see Table 5). The next best predictors of the Cognitive subscale were the math ITBS scores, peer choices of study partners, and selections of seating neighbors in the classroom. Peer choices of teammates were the next best predictors of the Social subscale. These ratings were also the second highest

predictor of the Physical subscale, followed by peer choices of neighboring seats in the classroom. This latter peer rating was also a significant predictor of the General PCSC subscale.

Insert Table 5 about here

Results of multiple regression analyses concerning the ITBS results, as reflected in Table 6, found peer choices of study partners to account for the most variability for both reading and math scores. The second best predictor of each subtest were peer ratings of seating neighbors. The Cognitive PCSC subscale also accounted for a significant amount of the variance of the ITBS scores.

Insert Table 6 about here

Discussion

The findings of this investigation demonstrated a positive relationship between self-perceptions and peer ratings. Peers tended to choose those individuals for study partners who perceived themselves as competent academically. In addition, students who perceived themselves as competent in sports were chosen more often as teammates during P. E. class. Significant relationships were

noted between the Social PCSC subscale and peer ratings concerning both as good friends and P. E. teammates. Thus, individuals who see themselves as competent socially would be more likely to be chosen as friends, as well as teammates. The General PCSC subscale loaded approximately equally onto each of the four peer ratings. This is not surprising since the General subscale was designed to be "independent of any particular skill domain" (Harter, 1979).

Another significant relationship was noted between perceived self-competence and academic achievement. Students perceiving themselves as more competent on the Cognitive subscale tended to score higher on both the reading and math subtests of the ITBS. This supported other research concerning the relationship between the PCSC and academic achievement (Harter, 1982; Lincoln and Chazan, 1979).

Earlier studies have found a significant, negative relationship between self-concept and anxiety (Bledsoe, 1967; Burns, 1979; Lipsitt, 1958). This was also found to be true of Harter's PCSC scale. Students with a more positive self-concept tended to reflect a lower level of anxiety.

As mentioned earlier, it is recommended that a multi-faceted approach be used in the investigation of a child's adjustment to the academic setting, as well as their achievement in school. In the present study of self-competence and school adjustment factors,

results pointed to the RCMAS Anxiety scale as the best predictor of each area of self-competence. One possible explanation for this could lie in the similar response format of the PCSC and RCMAS, because both instruments require the students to take introspective views of themselves.

Multiple regression analyses indicated that sociometric choices for study partners accounted for the largest amount of variance on each of the achievement measures. Thus, peers seem to hold valid perceptions of their classmates' academic abilities. Furthermore, peer choices of classmates to sit next to them in class accounted for a significant amount of variance of both ITBS scores. As did choices for study partners, these peer ratings also deal with the classroom setting. These sociometric ratings might tend to reflect peer perceptions of abilities, as well as their preference for those particular students. In summary, it appears that the objective ratings of peers tend to better predict academic achievement than the subjective ratings of middle school students.

The dichotomy of sexes in self- and peer ratings is worth additional comment and conjecture. One possible explanation could be existing societal trends. The male is expected to be more self-confident and self-assured; thus, the image a male holds will be more positive in order to decrease cognitive dissonance. Peer

choices, however, usually favored females. It will be interesting to track this dichotomy in future years as the effects of modern society set in (i.e., ERA, two working parents, more diffuse sex roles).

Another finding was the lack of significant racial differences on both the peer- and self-ratings, with only one exception. A possible reason for this result lies with the referent these children have in rating their peers or themselves. This referent may differ from individual to individual, as well as from ability (talent, or construct) to ability. While some students may value academic achievement and high grades, others may value athletic prowess, and still others may value popularity. As noted in the social comparison theory, children rate themselves and others according to certain referents. Future investigations in this area could specify a common referent to insure uniformity in responses.

These results support the necessity of studying multiple variables when investigating the adjustment and achievement of students. The success of students in adjusting to, and achieving in, the academic setting is dependent upon many different factors. The results of this and other studies can provide useful information for implementation in the classroom setting. Through the identification of strengths and weaknesses in specific areas of sociometric standing, self-concept, and anxiety, proper affective

education and remediation can be added to current instructional methods and goals.

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Table 1

Condescriptive Statistics for All Variables

Variable	Mean	Std. Dev.	Std. Error	Range
PCSC[a]				
Cognitive	15.57	5.03	0.25	7 - 28
Social	14.46	5.01	0.25	7 - 27
Physical	15.65	5.31	0.27	7 - 28
General	15.60	4.63	0.23	7 - 28
RCMAS[b]				
Anxiety	13.57	6.36	0.32	0 - 28
Lie	2.74	2.11	0.11	0 - 8
Sociometric[c]				
Study	282.70	87.51	4.38	113 - 490
Sit	273.08	65.57	3.28	142 - 489
Teammate	259.31	68.77	3.44	125 - 487
Friend	240.41	61.20	3.06	116 - 427
ITBS[d]				
Reading	48.46	17.24	0.86	1 - 99
Math	54.19	17.57	0.88	1 - 99

[a]Perceived Competence Scale for Children

Table 1 (continued)

[b]Revised Children's Manifest Anxiety Scale

[c]Sociometric Device

[d]Iowa Tests of Basic Skills

Table 2

Correlation Coefficients between the PCSC Scales and Other Variables

Variables	PCSC Subscales			
	Cognitive	Social	Physical	General
ITBS				
Reading	-.36*	-.06	.11	-.10
Math	-.37*	-.11	-.00	-.13
Sociometric				
Study	.36*	.19	.05	.18
Sit	.15	.20	.01	.18
Teammate	.12	.34*	.32*	.19
Friend	.15	.23*	.04	.16
RCMAS				
Anxiety	.51*	.50*	.42*	.55*
Lie	.04	-.02	-.07	-.06

*$p < .001$

Table 3

Means and Standard Deviations for Variables with Significant Differences Between Sexes

	Males		Females		
Variables	Means	SD	Means	SD	F
PCSC					
Social	13.63	4.90	15.28	4.99	11.04[e]
Physical	13.61	5.00	17.70	4.81	69.52[e]
General	15.05	4.53	16.15	4.66	5.66[b]
RCMAS					
Anxiety	12.11	5.94	15.03	6.44	22.83[e]
Sociometric					
Study	307.17	84.89	258.23	83.32	33.70[e]
Sit	284.87	66.64	261.30	62.45	13.28[e]
Teammate	249.56	71.03	269.06	65.17	8.61[d]
Friend	246.27	60.78	234.56	61.21	4.11[a]
ITBS					
Reading	46.19	17.39	50.72	16.82	7.65[c]

[a] $p < .05$ [b] $p < .02$ [c] $p < .01$ [d] $p < .005$ [e] $p < .001$

Table 4

Means and Standard Deviations for Variables with Significant Differences Between Races

	Blacks		Caucasians		
Variables	Means	SD	Means	SD	F
RCMAS					
Anxiety	14.21	6.49	12.93	6.17	4.39[a]
Lie	3.03	2.04	2.12	2.45	7.52[b]
Sociometric					
Teammate	244.54	59.20	274.09	74.43	19.76[c]
ITBS					
Reading	43.77	15.49	53.15	17.65	32.78[c]
Math	50.72	15.53	57.67	18.81	16.22[c]

[a] $p < .05$ [b] $p < .01$ [c] $p < .001$

Table 5

Stepwise Multiple Regression of Independent Variables with the PCSC

Step	Variable	Multiple R	Adjusted R Square	F*
		Cognitive Subscale		
1	Anxiety	.507	.255	137.59
2	Math	.592	.347	107.11
3	Study	.611	.369	78.64
4	Sit	.627	.387	63.98
5	Lie	.632	.392	52.39
		Social Subscale		
1	Anxiety	.495	.243	129.22
2	Teammate	.561	.311	91.23
		Physical Subscale		
1	Anxiety	.421	.175	85.56
2	Teammate	.492	.238	63.29
3	Sit	.583	.335	67.88
4	Reading	.592	.344	53.24
		General Subscale		
1	Anxiety	.549	.299	171.33
2	Sit	.562	.312	91.59

*F significant for each variable at $p < .001$

Table 6

Stepwise Multiple Regression of Independent Variables with the Reading Subtest Score and Math Composite Score of the ITBS

Step	Variable	Multiple R	Adjusted R Square	F*
		Reading		
1	Study	.452	.202	102.18
2	Sit	.524	.270	74.92
3	Lie	.549	.296	56.94
4	Cognitive	.576	.325	49.63
5	Teammate	.593	.343	42.63
		Math		
1	Study	.540	.289	163.53
2	Sit	.576	.329	98.64
3	Lie	.597	.351	72.99
4	Cognitive	.619	.376	61.18

*F significant for each variable at $p < .001$

Author Notes

This investigation is an overview of findings in my doctoral dissertation. These results were presented at the 16th Annual Convention of the National Association of School Psychologists in Philadelphia, in April, 1984.

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