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ABSTRACT

Student perceptions of learning environments in 15 inner city schools in a large public school system and 7 nationally distributed comparison schools are examined in this empirical exploratory study. The "My Class Inventory" was administered to fourth grade students in all schools on a pre and post test basis in order to examine changes over a one year period as well as differences among inner city, suburban, and rural student populations. The relationship between achievement and student perceived learning environment using the school as the unit of analysis was examined for the 15 inner city and 4 of the comparison schools. Results indicate that with very gross measures of achievement (grade equivalent scores), there is a confirmation of a relationship between learning environment and achievement for the 19 schools for which achievement data were available. Increased friction is found to be negatively correlated with higher achievement. Results of a regression analysis indicate that urban and inner city school students tend to show an increase in perception of friction, lower thought processes and higher thought processes; suburban school students perceive relatively less competitiveness in school. The gross lumping of schools by locational categories, urban, suburban, inner city is challenged by these data. (Author/AM)

Student Perceived Learning Environments in the Inner City

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Student perceptions of learning environments in fifteen inner city schools in a large public school system and seven nationally distributed comparison schools are examined in this exploratory study. The My Class Inventory (Anderson, 1973) was administered to fourth grade students in all schools on a pre and post test basis in order to examine changes over time (one year) as well as differences among inner city, suburban, and rural student populations. The relationship between achievement and student perceived learning environment using school as the unit of analysis is examined for the 15 inner city and four of the comparison schools.

STUDENT PERCEIVED LEARNING ENVIRONMENTS IN THE INNER CITY

The learning environment of inner city schools has been impressionistically portrayed in a number of films and books.* Yet, empirical research with a defined population is practically non-existent. As the by-product of other evaluation studies, an unusual opportunity was presented for the authors to do a comparative data analysis on learning environments of fifteen "hard core" inner city elementary schools and a national sample of seven elementary schools. It was our purpose to separate fact and fiction as we examined systematically the learning environments of these two qualitatively different samples.

This paper then, presents an investigation of perceived learning environments over time of fourth grade students from fifteen inner city schools in a large city public school system and seven nationally distributed comparison schools. Students completed an instrument that measured dimensions of learning environment that included social perception of students (Anderson, 1973) and the perceived cognitive complexity of the classroom tasks (Steele, et al., 1970). All students were administered the instrument on a pre and posttest basis at the beginning and end of the school year.

The objectives of this study are to:

1. describe inner city students' perceptions of learning environments in fifteen low achieving

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* Among the better known fictional and case study pieces are Blackboard Jungle, Up the Down Stair Case, and a spate of books and pieces by Jonathan Kozol and Herbert Kohl.

elementary schools in a large city and examine changes over time (one year) in their perceptions;

2. compare the student perceived learning environments in these inner city schools with a sample of students drawn nationally from across the United States;
3. examine the relationship between achievement and measures of student perceived learning environment using school as the unit of analysis.

Theoretical Framework

Learning environments as measured through student perceptions have been found to provide useful data on classroom functioning (Eash and Talmage, 1975). Environmental variables have increasingly been recognized as potential predictors of achievement (Walberg and Anderson, 1972). Since environmental variables are manipulable factors in learning, many educators interested in educational measurement are beginning to shift their interests from measures of the individual to measures of the environment (Randhawa and Fu, 1973). Walberg (1974), in his summary of research on process measures in educational evaluation, advocates examining learning from the learner's point of view, analyzing the social context and processes of learning, and deemphasizing standardized achievement test outcomes in evaluating educational enterprises.

The influence of structural and social properties captured in learning environment measures on the classroom have been documented in a number of studies most recently reviewed by Walberg (1976). The quality of instruments in assessing dimensions of the learning environment present new opportunities

for designing interventions in the classroom environment to aid student performance. Inner city schools, characterized by low achievement with average student gains of .7 or .8 per year on standardized tests, have been particularly resistant to interventions to raise achievement. The present study is a first effort at achieving a careful description of the perceived learning environments of fifteen of these lowest achieving elementary schools, how they change over the one year's span of time, and the interaction of perceived learning environment with achievement and other group variables. At present there is a paucity of systematic data on inner city populations in the learning environment literature. As we were looking at evaluative data gathered on these schools, a number of specific questions on learning environments emerged. (1) How do the environments of the two samples of schools differ? (2) How do learning environments relate to achievement? (3) What is the range of variation in learning environment within the two samples? (4) Can we accurately characterize generalizable qualities of the learning environment of inner city schools? In order to shed light on these questions a secondary data analysis of an extant data bank was undertaken.

Method and Techniques

A. Sampling

Two samples of fourth grade students were drawn from data gathered in other evaluation studies for the present study. Both groups had been administered the same instruments during the 1976-77 school year on a pre (in the Fall) and posttest (in the Spring) basis. A total of twenty-two schools were included: 15 inner city schools (N=802), and 7 comparison schools (N=178) which were involved in a national curriculum evaluation project.

The fifteen inner city public schools are located in severely depressed economic areas of a large city. Their student population lives in public housing projects or dilapidated housing, consisting of 80% or higher minority students and a sizeable percentage are on public welfare. One school had 85% of its students on public welfare; several of the schools had 100% of the students eligible for free lunches and breakfast. Poverty is the economic norm. Comparison groups are drawn from three suburban districts, two urban school districts (though much smaller school systems than the experimental group) and two rural schools. The three suburban schools--one each from Illinois, Georgia, and Florida--serve as one group of comparison schools. These schools are characterized as having middle to upper middle class populations with few (less than 5%) minority students. Two urban schools in Pennsylvania and Massachusetts, with large minority populations and in economically depressed areas, form another comparison group. A third comparison group is comprised of two rural schools in Colorado. Because they were selected to participate in a national study it can reasonably be assumed that these schools are perceived by local school administrators to be representative of the "better" schools in their districts. With one exception, inspection of the mean reading scores supports this assumption. Mean grade equivalent reading achievement scores for fourth grade students in 1975-76 were obtained for the 15 inner city schools, as well as for four of the seven comparison schools.

Students' scores on the learning environment measure from each school are examined for significant changes from the Fall to the Spring. Three comparative analyses were run. The first compared the fifteen individual inner city schools with each other; the second compared the inner city

students with students from the urban, suburban and rural comparison schools; the third, for those schools for which mean achievement data are available, examined the relationship between overall achievement and student perceived learning environment.

B. Instrumentation

The instrument used in this study to measure student perceived learning environments was adapted from two instruments: the My Class Inventory (Anderson, 1973) and the Cognitive Activities Rating Scale (Steele, et al., 1970). The My Class Inventory measures classroom social climate and includes the variables: interpersonal relationships among pupils; relationships between pupils and their teacher; relationships between pupils, the subject studied and the method of learning; and pupils' perceptions of the structural characteristics of the class. The My Class Inventory consists of 45 items which form five scales: Satisfaction, Friction, Competitiveness, Difficulty, and Cohesiveness.* Twenty of these items--four from each scale with the highest scale intercorrelations--were selected for inclusion in the study.

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* Satisfaction - The extent to which students like their class.
Friction - The extent of disagreement, tension and antagonism in the class.
Competitiveness - The extent to which students perceive an atmosphere of competition in the classroom.
Difficulty - The extent to which students consider their courses as being difficult.
Cohesiveness - The extent to which the class develops a feeling of intimacy as a result of student interactions.

Support for the validity of the My Class Inventory has been presented in a variety of publications. The My Class Inventory, which is appropriate for younger children, is an edited version of the Learning Environment Inventory (LEI). The LEI has been used by more than 300 investigators in 14 countries, including the United States (Walberg, 1974).

The Cognitive Activities Rating Scale measures pupils' perceptions of the emphasis given to two areas of cognitive activities: Lower Thought Processes, which includes the elements of memory, translation, and interpretation and Higher Thought Processes, which includes the elements of application, synthesis, evaluation and formal analysis. Ten items of the 25 item Cognitive Activities Rating Scale were selected, and revised to a grade 3 reading level.

Mean scores were calculated for each of the 7 learning environment scales as follows. For each of the 30 test items, a student responding "yes" (the class does have the specified characteristic), received a score of 3. A student responding "no" (the class does not have the specified characteristic) received a score of 1. Scale scores were calculated by adding the items for the scale, dividing by the number of items answered in the scale, and multiplying by 4. This technique allows for the possibility of missing data, duplicates the scoring procedures of the original My Class Inventory (Anderson, 1973), and permits comparison with the Cognitive Activities Scale.

Results

A. Comparison of the Learning Environments in 15 Inner-city Schools

Pre and posttest mean score comparisons of the 15 low achieving inner city schools are presented in Table 1 and graphed in Figure 1. Overall, students in these 15 schools perceived significantly lower satisfaction, competitiveness, and difficulty in their learning environments and significantly

higher friction over the school year, as seen in the posttest score increase over the pretest.

We then examined the significant and non-significant direction of changes from the pretest to the posttest in student perception of the learning environment by school and found tremendous diversity among schools (see Table 2). As stated above, three scales, satisfaction with the classroom, friction in the classroom, and difficulty of the school work all evidenced a change that was significant (.001) for the inner city schools. The direction of the changes was negative; i.e., over the year there was lower pupil satisfaction, greater friction among pupils, and the classroom work was viewed as less difficult. On the latter finding other evidence from LEI studies indicates that this perception of less difficulty is characteristic of classrooms where achievement is low and falling. While a similar trend was found in two of the three scales (satisfaction and friction) for the comparison sample, differences did not reach statistical significance. On friction the inner-city group data which is significantly higher for the total group is somewhat anomalous, as two schools make an overriding contribution to the variance with their exceptional increase in student perceptions of friction over the year (.001). Similarly, while perceptions of competitiveness show significant decreases for the total group, this is found to be the case for only two individual schools; a third school shows significantly higher perceptions of competitiveness but does not contribute enough to the variance to compensate for the general trend and the major contribution of the two schools which had sizeable decreases over the year.

Finally, significant changes in perceptions from the pretest to the posttest are found on scales for individual schools which do not change the

overall rating for the total group and not infrequently are opposites to the climates in the other schools. For example, these opposing contrasts in the data are seen in: two schools showing significantly lower cohesiveness, two reporting perceptions of fewer lower thought processes, two perceiving more lower thought processes, one perceiving fewer higher thought processes and two perceiving more higher thought processes. Thus, lumping "inner city schools" (or urban, suburban, or rural) together and examining trends in learning environment perceptions may be misleading. We shall have more to say on this point later.

B. Comparison of 15 Inner City Schools to the National Samples

Tables 1 and 2 display information for the three additional sets of schools examined in this study: other urban schools, suburban schools and rural schools. As is seen in Table 1, no significant changes in student perceptions are found in the comparisons among the groups for any of these three groups of schools. By contrast, in Table 2, when data are examined by individual school significant changes by school show up. In one urban school, students perceived a significant increase in higher thought processes; in the other urban school, significantly more friction was perceived on the posttest. No significant changes were found in the three suburban schools, while in one rural school, significantly more competitiveness was perceived. Thus, while looking at the three additional sets of schools overall, no significant changes from the pretest to the posttest were noted; examination of each school did show considerable variability among the schools.

The above analyses used the student as the unit of analysis and compared the significant findings of each school. These analyses suggest that variability within a classification of schools; i.e., inner city, suburban,

rural, etc. might be as great, if not greater, within classification than they are across classifications. This suggests the need for examining learning environments on the classroom level rather than by school, district, geographical location, or socioeconomic status of the school or district. The results below which analyze the data using the school as the unit of analysis shed some further light on this.

C. School As the Unit of Analysis

Significant relationships between learning environment and achievement have been established in a series of studies recently summarized by Walberg (1976). Achievement of the individual students included in the present study were not available; however, mean grade equivalent achievement data by school were available for 19 of the 22 schools.[1] These data are presented in Table 3; no achievement data were available for the two rural schools.[2]

As is evident, each of the three types of schools for which data are available differ considerably in achievement. The inner city schools are lowest in achievement, with a mean grade equivalent score of 3.5; the other

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[1]While mean raw achievement scores would have been preferable, grade equivalents were the only data available in the schools' records.

[2]Randhawa and Fu (1973) summarize current research on the comparison between rural and urban learning environments, and conclude that pupils in rural areas tend to be disadvantaged. They conclude: "The problems of the disadvantages for the pupils in the rural areas are not limited only to geographical location, but all factors, such as socioeconomic status, aspirations and social class, and educational achievement are interrelated."

urban schools are next highest, with a mean score of 4.1; and the suburban schools are highest, with a mean score of 5.3.

To examine the relationship between achievement and student perceived learning environment, five sets of seven regression analyses were performed. In the first set, the posttest of one of the seven scales was entered as the dependent variable and the corresponding scale pretest, urban* (1= non-urban, 2= urban), and mean achievement were entered as the independent variables. (See Table 4 for a summary of all significant regression equations with accompanying R^2 increments). In four of the equations--satisfaction, friction, difficulty, and cohesiveness--the pretest significantly predicted the posttest. In two equations--competitiveness and lower thought processes--the urban variable significantly predicted the posttest. That is, perceptions of increased competitiveness and lower thought processes are significantly associated with urban schools. In no case was achievement found to significantly predict student perceptions of the learning environment.

A second series of regression analyses were run, with the posttest student perception scores on the LEI as the dependent variable and the pretest, inner city school (1= non-inner city, 2= inner city), suburban school (1= non-suburban, 2= suburban), and achievement as the independent variable. As above, the pretests for satisfaction, friction, difficulty, and cohesiveness significantly predicted their respective posttests. In addition, the inner city schools were found to be significantly associated with perceptions of more competitiveness, cohesiveness and lower thought processes. Again,

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* Urban = inner city and the 2 other urban schools.

achievement was not a significant predictor of students' perceptions of the learning environment.

Finally, a third series of regressions were computed with post perceptions as the dependent variables and pretests and achievement as the independent variables. The same four pretests (satisfaction, friction, difficulty and cohesiveness) that predicted the posttests in the first two sets of regressions again were significant. In addition, achievement was found to be significantly negatively related to the friction posttest; that is, perceptions of increased friction were associated with lower achievement. Thus, achievement was found to have a significant relationship with learning environment perceptions only when the geographical divisions of variables were dropped. Again, this suggests that not only does the examination of learning environments provide more useful data on the classroom or school level, but also that examining learning environments by geographical level (or other larger units) may dilute the actual effects of the learning environment on student achievement.

Dropping achievement as an independent variable permitted the addition of the rural schools in the "school as unit" analysis. A set of regression analyses with the posttest as the dependent variable and the pretest, suburban and urban as the independent variables resulted in the same four pretests significantly predicting their corresponding posttests. In addition, urban schools were significantly associated with increased perceptions of lower and higher thought processes, and suburban schools were associated with significantly decreasing perceptions of competitiveness.

A final set of regression analyses was run with the posttest as the dependent variable and the pretest and inner city school as the independent variables. The

same four pretests predicted their posttest; in addition, the inner city schools were significantly associated with increased competitiveness, lower thought processes, and higher thought processes.

Discussion and Conclusions

Learning environment measures have been used to study a number of variables in schools that contribute to achievement. The learning environments of the inner city schools as contrasted to other schools grouped by socio-economic and demographic variables have not been part of this literature. In the present study--using only very gross measures of achievement (grade equivalent $\bar{X}$s)--we find confirmation of a relationship between learning environment and achievement; for the 19 schools for which achievement data were available, increased friction is found to be negatively correlated with higher achievement.

In the initial analyses of the present study, the examination of learning environments among inner city schools shows a wide range of variability among these schools. However, when we look at learning environments across larger locational classifications (urban, inner city, suburban, and rural schools), we find that the among school variability is masked. We find no clearcut patterns of significant changes in perceptions from the Fall to the Spring when each school is examined independently and then compared on a pre to posttest basis.

Subjecting the data to regression analysis, some tentative patterns begin to emerge. Urban and inner city school students tend to show an increase in perceptions of friction, lower thought processes and higher thought processes; suburban school students perceive relatively less competitiveness. Due to the great variability among schools, however, we present these as very

tentative findings and probably subject to major correction from more refined subsequent analysis. Analyses of learning environments of additional schools along with longitudinal data from the same schools are needed. Both types of data are currently being collected by the authors; learning environment perception data from the 15 inner city schools will be collected in April, 1978 from the same pool of students (now in 5th grade). While data from the same comparison sites are not available this year, data will be available from additional, comparable sites.

The results of the present study indicate that, at least on the school or classroom level, useful information on learning environments and their relationship to achievement is available. The gross lumping of schools by locational categories, urban, suburban, inner city, as if these schools had common learning environments is challenged by these data. Inner city schools as revealed in these data are not of a piece--the conventional wisdom is more stereotype than fact. Thus the present study has found a dominant learning environment in the inner city when schools are analyzed as a group, but this can be misleading. That learning environments may be more accurately described as unique to these classrooms and each school is the case, not the exception. Group analysis of these data camouflage the breadth of variability.

Inner city schools as a group over the year did show trends toward generating lower student satisfaction, higher friction among students, increased competitiveness and feelings of less difficulty in the school work. But the differences among the 15 individual schools are quite great and some of the inner city schools profile in learning environment closer to the comparison schools than to other inner city schools. What causes these shifts in learning environment is not known. We suspect it may be particular to the

school or classrooms and the functional relationships that prevail between the student and instruction. Wherever it is, it seems to be very powerful in a few schools contributing so overwhelmingly to the collective group analysis as to swing the results sharply in one direction. If the comparison schools' N had been larger would we have found the same results? We honestly do not know. What does seem apparent from the regression analysis is that in general if inner city schools start off with negative learning environments as perceived by students, they seem to increase rather than decrease over the year. But more importantly, these data do indicate that a good learning environment can be found in any location, be it suburban, inner city, or rural. We feel this factor may be more maleable to shaping than is thought by many who publish in the popular literature.

Finally, this study speaks to another concern in education evaluation research. All data on schools are becoming increasingly more expensive to collect and more difficult to come by as researchers have less access to students through restrictions imposed at all levels of the school system. The data used in the present study, while not collected for the express purpose of this study, do represent a valuable data source on populations not in the learning environment literature. In a secondary data analysis there is present an opportunity to examine a series of variables--their interaction and relationship--which will contribute to clarifying differences in learning environments that are products of gross variables which characterize school populations (socio-economic, geographic setting, housing). While these may not be questions of particular concern to the school districts from which the data were gathered, performing the secondary data analysis provides useful information on learning environments and suggestions for further research.

Table 1

Pre and Post Student Learning Environment Perceptions of Fourth Grade Students

	15 Inner City Schools (N=802)					Other Urban Schools (N=52)					Suburban Schools (N=70)				
	Pretest		Posttest			Pretest		Posttest			Pretest		Posttest		
	Mean	S.D.	Mean	S.D.	t	Mean	S.D.	Mean	S.D.	t	Mean	S.D.	Mean	S.D.	t
Satisfaction	9.55	2.05	9.16	2.28	-4.27***	8.68	2.07	8.26	1.87	-1.06	8.85	2.47	8.80	2.60	- .16
Friction	9.51	2.25	9.95	2.14	5.03***	10.47	1.64	9.79	2.54	-1.57	8.48	2.18	8.65	2.15	.68
Competitiveness	9.26	1.88	9.08	1.92	-2.07*	8.72	1.82	8.58	1.79	- .43	8.45	2.09	8.19	1.88	-1.00
Difficulty	7.28	1.88	6.75	1.85	-6.60***	6.11	1.91	6.26	1.81	.42	6.31	2.09	6.02	1.96	-1.19
Cohesiveness	9.86	2.01	9.81	1.91	-0.60	9.32	2.15	8.89	1.96	- .92	9.05	2.07	9.05	2.09	0.00
Lower Thought Processes	10.74	1.66	10.82	1.60	1.08	9.93	2.17	10.39	1.75	1.11	9.80	2.08	9.78	2.06	- .08
Higher Thought Processes	10.76	1.40	10.73	1.37	- .43	10.04	1.89	10.63	1.85	1.47	9.93	1.50	9.88	1.79	- .24

	Rural Schools (N=56)				
Satisfaction	9.14	1.98	9.29	2.23	.38
Friction	9.38	1.70	9.42	1.83	.12
Competitiveness	8.25	1.67	8.69	1.85	1.31
Difficulty	5.89	1.85	5.85	2.05	- .13
Cohesiveness	9.32	2.17	9.59	2.02	.67
Lower Thought Processes	9.93	2.16	9.91	2.35	- .04
Higher Thought Processes	9.48	1.77	9.40	1.88	- .22

*Significant at the .05 probability level.
**Significant at the .01 probability level.
***Significant at the .001 probability level.

Direction of Changes in Student Learning Environment Perceptions of Fourth Grade Students by School

	SATISFACTION	FRICTION	COMPETITIVE-NESS	DIFFICULTY	COHESIVE-NESS	LOWER THOUGHT PROCESSES	HIGHER THOUGHT PROCESSES	N
15 Inner City	-***	+***	-*	-***	-	+	+	802
A	-*	+	-*	-	-	+	+	59
B	-	+***	-	-**	-	+	+	51
C	-	+***	-***	-**	-**	-	-	57
D	-***	+	+	-	-	-***	-*	48
E	+	-*	+	-***	+	-	+	153
F	-*	+	-	+	+	-*	-	50
G	+	+	+	-	+	-	+	9
H	+	+	+***	+	-	+	+*	31
I	+	-	+	-	+	+	+	7
J	+	-	-	+	+	-	+	60
K	-*	+	-	-**	+	+	-	30
L	-	+	+	-*	+	+*	+***	70
M	-**	+	-	-	-*	+	-	51
N	-	+	-	-	-	+	-	51
O	-	+	-	-**	+	+*	-	75
COMPARISON SAMPLE								
Other Urban	-	-	-	+	-	+	+	52
A	+	-	+	-	+	+	+*	27
B	-	+*	-	+	-	-	-	25
Suburban	+	-	-	-	+	+	+	70
A	+	+	-	-	-	-	+	23
B	-	-	-	-	-	+	+	24
C	-	-	-	-	+	+	+	23
Rural	+	+	+	-	+	-	-	56
A	-	+	+*	+	+	+	+	34
B	+	+	+	-	+	-	-	22

*Significant at the .05 probability level. **Significant at the .01 probability level.
***Significant at the .001 probability level.

+ = increase from pretest to posttest
- = decrease from pretest to posttest

Table 2

Table 3

Mean Grade Equivalent Achievement Data

School	Achievement	School	Achievement
15 Inner City	3.5	Other Urban	4.1
A	3.6	A	4.6
B	4.0	B	3.6
C	3.0		
D	3.7	Suburban	5.3
		A	4.2
E	3.3	C	6.3
F	3.4		
G	3.7		
H	3.8		
L	3.7		
J	3.6		
K	3.4		
L	3.1		
M	3.5		
N	3.8		
O	3.4		

Table 4

Summary of Regression Analyses - R^2 Increments

Independent Variables	Dependent Variables						
	Satisfaction	Friction	Competitiveness	Difficulty	Cohesiveness	Lower Thought Processes	Higher Thought Processes
Equation 1							
Pretest	.56***	.50**		.66***	.23*		
Urban			.18*			.28*	
Achievement							
Equation 2							
Pretest	.56***	.50**		.66***	.23*		
Inner city			.23*		.18**	.44*	
Suburban							
Achievement							
Equation 3							
Pretest	.56***	.50***		.66***	.23*		
Achievement		(-).13*					
Equation 4							
Pretest	.53***	.50**		.66***	.33*		
Suburban			(-).16*				
Urban						.30**	.18*
Equation 5							
Pretest	.50***	.50***		.69***	.33**		
Inner city			.17*			.44***	.13*

NOTE: This table identifies significant independent variables in 5 sets of regression equations, with corresponding R^2 increments. The symbol (-) indicates a significant negative relationship between the independent and dependent variable; e.g. in Equation 3, lower friction is significantly predicted by higher achievement.

* significant at the .05 probability level
** significant at the .01 probability level
*** significant at the .001 probability level

Table 4

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Figure 1

Pre and Post Learning Environment Perceptions of Fourth Grade Students

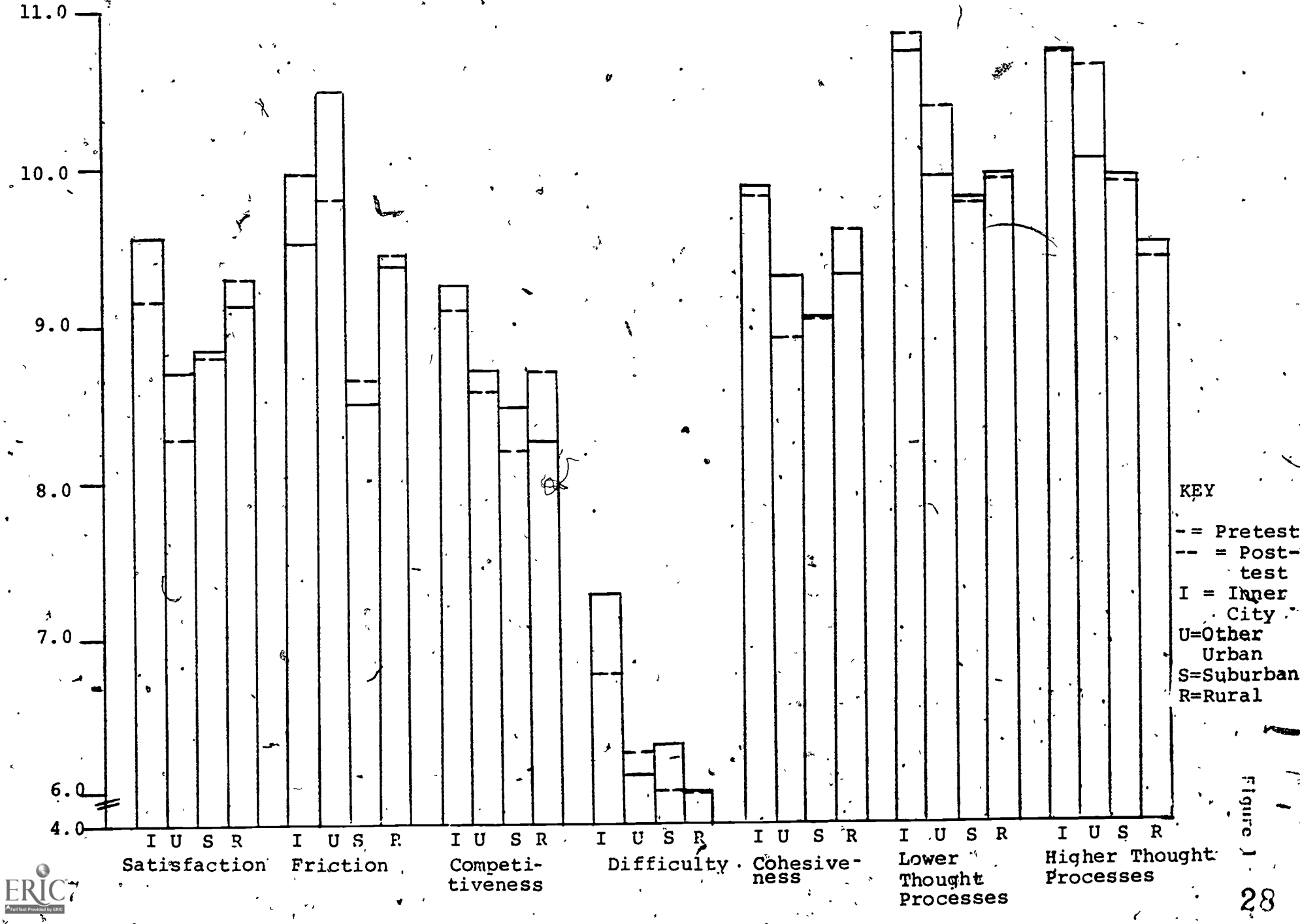

Figure 1