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THE STABILITY OF STUDENT PERCEPTION OF THE CLASSROOM LEARNING ENVIRONMENT

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Theoreticians and empiricists alike have investigated the importance of the social environment of the classroom. In 1960, Getzels and Thelen presented a conceptual framework for the analysis of the classroom group as a unique social system. The importance of environment to learning was emphasized when Bloom (1964) set forth the theory that the inclusion of the environment as a variable makes a major difference in the prediction of human characteristics such as general intelligence and school achievement. In conjunction with Bloom's theory, Maslow (1970) asserted that human behavior is intrinsically related to the situation and to other people, e.g., the social environment of a classroom. In addition to these theoretical considerations, many empirical studies have been completed which investigated the effects of the learning environment (Astin, 1965; Calonico & Calonico, 1972; Coeniff, 1972; Harvey, 1970; Pace & Stern, 1958; Sallade, 1972; Trickett & Moos, 1970; Yamanoto, Thomas, & Karns, 1969). Based on these considerations, the social learning environment of the classroom appears to be an important component of the learning process.

A unique contribution to the understanding of learning environments was made by Walberg, Anderson, Ahlgren, and Welch. They developed an instrument to study classroom environment and completed several investigations with it. These investigations were summarized by Anderson (1973). This instrument, "The Learning Environment Inventory" (LEI), has been shown to be a reliable, valid, and sensitive instrument for assessing differences among or within classes (Anderson, 1973). Perceptions of the learning environment have also been shown to identify differences among specific science courses (Lawrenz, 1975a) and to be related to student attitude toward science (Lawrenz, 1975b). Implicit in all of the previous research with the LEI is the assumption that student perception of the learning environment is stable over time. This assumption is evidenced by the fact that the LEI has been administered only once during the school year and that statements about the general classroom environment were made from this single administration. The assumption of stability is also implicit in Anderson's (1973) suggestion to use the LEI to assess changes in environmental perceptions as a result of intervention. If student perceptions of the classroom social environment varied from month to month, any change might be due to this "seasonal" effect rather than to the effect of a specific treatment.

The purpose of this study was to examine the validity of this implicit assumption, i.e., to investigate the stability of student perceptions of their classroom's social environment over time as measured by the LEI.

Procedure

The data were collected during the 1974-1975 school year from a random sample of classes from western and central New York. Each school was randomly assigned to a group: physics, chemistry, biology, or nonscience (social studies, mathematics, or English), and the chairman of the appropriate department was asked to participate. The participation rate was 44%. (Most people cited busy schedules as the reason for not participating.) The participating teachers were instructed on how to randomly select one of their classes to be used in the study. The final sample consisted of 27 classes: 7 in physics, 5 in chemistry, 8 in biology, and 7 in nonscience.

The instrument used in this study is a modified version of the LEI containing 10 scales related to classroom social situations. A description of each scale along with its reliability is given in Table I. Each item is scored on a 4-1 scale for a strongly agree, agree, disagree, and strongly disagree response. Some items were reverse-scored to reduce response bias. A high score indicates agreement with the environmental variable.

The modified LEI was administered to a random half of the students in the participating classes on three separate occasions: November 1974, February 1975, and April 1975. The random-half administration procedure provided valid class mean scores (Walberg & Welch, 1967) and three samples of students–those who had taken the test once, twice, or three times. These student samples allowed for the investigation of possible test sensitization effects.

This study addresses itself to three questions: (1) Are class mean scores for the LEI

TABLE I

Scales Contained on the Learning Environment Inventory

Scale Description	Internal Consistency - Coefficient Alpha Reliability
Diversity - the extent to which the class provides for a diversity of student interests and activities.	.53
Formality - the extent to which behavior within the class is guided by formal rules.	.76
Friction - the extent to which conflict exists among the students in the class.	.72
Goal Direction - the extent to which the goals of the class are recognized by its members.	.85
Favoritism - the extent to which differential treatment of students exists in the classroom.	.78
Difficulty - the extent to which the work of the class is perceived as difficult.	.64
Democratic - the extent to which all students participate in class decisions.	.67
Cliqueness - the extent to which cliques are present in the classroom	.65
Satisfaction - the extent to which students are satisfied with the class.	.79
Disorganization - the extent to which the class is perceived as disorganized.	.82

TABLE II

Multivariate F Statistics for Type of Courses by Date of LEI Administration: Class Mean Scores

Source of Variation	F Ratio	p Value
Type of Course*	2.28	.001
Date of Administration**	1.22	.25
Course X Date***	.64	.98

*df = 30 and 168.
**df = 20 and 114.
***df = 60 and 304.

scales stable over time? (2) Are individual student scores for the LEI scales stable over time? and (3) Do individual students who take the LEI more than once have different perceptions of the classroom environment than their classmates who take it only once? The statistical procedure used to test the null hypotheses associated with all three questions was multivariate analysis of variance. The 10 classroom environment scale scores for classes or students served as the dependent variables, while type of course and test administration date or number of test repetitions were the independent factors.

Results

Overall environment differences through time were tested based on MANOVA F statistics with class mean score as the unit of analysis. The results of this analysis, presented in Table II, show that the hypothesis of no class difference over time was supported ($p < .25$). There was no significant difference among the class mean scores for the three administrations of the LEI. Because there was no significant interaction ($p < .982$), type of course and stability were considered to be independent. The significant ($p < .001$) finding for the type of course factor collaborates previous research in this area (Lawrenz, 1975a).

A similar MANOVA test was completed using the scale scores of the 31 students who had taken the LEI three times as the unit of analysis. The results of this analysis, presented in Table III, show that the hypothesis of no difference in student perception of the classroom environment over time was supported ($p < .81$). Again, there was no significant ($p < .99$) interaction, but a significant ($p < .003$) finding for the type of course factor, did exist.

TABLE III

Multivariate F Statistics for Type of Course by Date of LEI Administration: Student Scores

Source of Variation	F Ratio	p Value
Type of Course*	2.26	.003
Date of Administration*	.71	.81
Course X Date**	.45	.99

*df = 20 and 150.
**df = 40 and 286.

TABLE IV

Multivariate F Statistics for Type of Course by Number of Times Completing LEI

Source of Variation	F Ratio	p Value
Type of Course*	2.69	.001
Repitition**	.68	.74
Course X Date*	1.47	.09

*df = 20 and 330.
**df = 10 and 165.

To test the third question, the scores of those students who had taken the LEI twice were compared with the scores of those students who had taken the LEI once. The results of this analysis are presented in Table IV and show that there was no difference due to test sensitization effects ($p < .74$). As in the previous analyses, there was no significant interaction ($p < .09$), but there was a significant ($p < .001$) effect for the type of course factor.

Conclusions

Apparently, student perception of the classroom environment as measured by the LEI is consistent over time. The mere existence of stability in student perceptions of the environment lends credence to the belief that the social environment of the classroom may be an important variable contributing to educational outcomes. Also, previous research on the classroom learning environment is strengthened, since the implicit assumption of stability has now been verified.

In the future, changes in student perception of the classroom environment could be used as a measure of treatment effects. In addition, particular teacher or course variables could be identified that contribute to creating a particular environment, and perhaps attainment of a specific type of environment might itself become a primary educational goal.

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