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ABSTRACT

The purpose of this study was to determine the extent of congruence between teachers' and undergraduate education majors' learning styles in selected colleges and if the style congruence was related to student perceptions of the classroom learning environment. A related purpose was to identify needed changes in classroom environments based on the characteristics of the actual and ideal classroom environments as perceived by students, characteristics of the actual classroom environment as perceived by their teachers, and characteristics of the actual and ideal classroom environments as perceived by men and women students. A relationship of classroom environments was also examined. Kolb's Learning Style Inventory and the Adult Classroom Environment Scale were administered to 184 students and 10 teachers in selected colleges for teacher education that were members of the Tennessee Association of Colleges for Teacher Education during the Fall, 1994. Data analysis indicated that the predominant learning style for both students and teachers was Accommodator. The students preferred Diverger as their second dominant learning style while the teachers preferred Assimilator. The teachers incorporated logical thinking, systematic thinking, and intellectual thinking in their learning behavior, while the students preferred to learn by viewing situations from different points of view and to observe without taking action. Matching students' learning styles with those of teachers was not found to be related to the ratings of the classroom environment. Significant relationships were found to exist between all classroom dimensions except Task Orientation and Student Influence. Both teachers and students viewed Teacher Support as the most prevalent element of the actual classroom environment and Student Influence as the least noticeable element of the classroom environment. However, the teachers' views for the actual classroom environment were higher than students' views in all subscales except for Organization and Clarity. (Contains 17 references.) (Author/ND)

The Relationship Between Student and Faculty Learning Style Congruency and Perceptions of the Classroom Environment in Colleges of Teacher Education

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Abstract

The purpose of this study was to determine the extent of congruence between teachers' and undergraduate education majors' learning styles in selected colleges of the Tennessee Association of Colleges for Teacher Education, and to determine if the style congruence was related to student perceptions of the classroom learning environment. A related purpose was to identify needed changes in classroom environments based on the characteristics of the actual and ideal classroom environments as perceived by students, characteristics of the actual classroom environment as perceived by their teachers, and characteristics of actual and ideal classroom environments as perceived by men and women students. A relationship of classroom environments was also examined.

Kolb's Learning Style Inventory and the Adult Classroom Environment Scale were administered to students and teachers in selected colleges for teacher education that were members of the Tennessee Association of Colleges for Teacher Education during the Fall, 1994. Data were analyzed using measures of central tendency and measures of dispersion, t-tests for dependent (correlated) means, t-tests for independent means, and Pearson Product Moment Correlations.

Results indicated that the predominant learning style for both students and teachers was Accommodator. The students preferred Diverger as their second dominant learning style while the teachers preferred Assimilator. The teachers incorporated logical thinking, systematic thinking, and intellectual thinking in their learning behavior, while the students preferred to learn by viewing situations from different points of view and to observe without taking action. Matching students' learning styles with those of teachers was not found to be related to the ratings of the classroom environment. Significant relationships were found to exist between all classroom dimensions except Task Orientation and Student Influence.

Both teachers and students viewed Teacher Support as the most prevalent element of the actual classroom environment and Student Influence as the least noticeable element of the classroom environment. However, the teachers' views for the actual classroom environment were higher than students' views in all subscales except for Organization and Clarity.

Introduction

The classroom environment is a useful construct in predicting academic growth, achievement, and school satisfaction (Galluzi, Kirby & Zuchner, 1987; Moos, 1987; Wright & Cohen, 1982). Ransinki (1990) observed that the classroom was the place where students spend a majority of their days for nine months a year. Therefore, from this perspective, he argued that classroom environment was a vital part of the student's life and should offer opportunities that would facilitate learning.

Emphasizing the importance of the classroom environment, Covington and Omelich (1984) pointed out that different classroom environments and structures elicit qualitatively different motivational goals among students. Along the same lines, Cronbach and Snow (1977) noted that classroom environments and structures may produce differential effects on different segments of the student population.

While a positive classroom environment is an important factor in predicting the students' academic growth and achievement, research indicates that it is influenced by several factors (Fraser & O'Brien, 1985). According to Smith and Renzulli (1990), matching teaching methods to learning style preferences helps to eliminate barriers to learning which arise when individuals fail to address the affective responses various teaching modalities elicit from students. Additionally, the researchers contended that

maximizing the congruence of learning styles results in an improved classroom environment.

Dunn (1990) reported that in classes where teachers and students learning styles were matched, more manageable classes resulted, students received higher grades and were generally more satisfied with the classroom environment.

Another factor that influences classroom environment, as reported by Moos (1987), is the extent to which students perceive supportive relationships between themselves and the teacher. Additionally, supportive relationships promote students' morale, interest in the subject matter, and a sense of academic self-efficacy (Fraser, 1987).

The goal of this study was to determine the relationship between student and faculty learning style congruency and perceptions of the classroom environment, and to identify needed changes in classroom environments based on the characteristics of the actual and ideal classroom environments as perceived by students. Though researchers (Cornett, 1983; Guild & Garger, 1985; Keefe, 1982; and Keefe, 1990) have identified three student learning styles - the cognitive, affective, and physiological, this study addressed the cognitive learning style to describe and understand the performance of students in the classroom.

Method

Subjects

The subjects were 184 undergraduate students majoring in education and enrolled in foundations classes in Fall 1994. Also, 10 teachers involved in teaching the students were included in the study.

Measures

Kolb's Learning Style Inventory (LSI - 1985) and Darkenwald's Adult Classroom Environment Scale (ACES - 1987) were used to measure the learning style of both teachers and students, and the perceived classroom environment respectively. The two inventories are explained in figure 1 and Table 1 respectively.

Insert Figure 1 and Table 1 About Here

Analysis

Data analysis focused on patterns of behavior based upon measures of central tendency and measures of dispersion. Several t-tests for dependent and independent means were used for several hypotheses. Pearson Product Moment Correlations were used to test the strength of the relationships between several variables.

Results

The following research questions served to guide the analysis . Each research question was followed by a hypothesis or hypotheses.

Research questions

-What are the predominant learning styles of the students and their teachers?

-What are the students' and faculty perceptions of the classroom environment?

-What are the students' perceptions of the classroom environment when their styles are matched with their teachers?

-Is there a relationship between learning style differences and assessment of the actual classroom environment by students?

-What are the perceptions of men and women students of the actual classroom environment?

Table 2 presents the students' dominant learning style, and Table 3 the teachers' dominant learning style. As can be seen from both tables the predominant learning style for both students and teachers was Accommodator. However, the second dominant learning style was different. Students were Divergers and the teachers were Assimilators.

Table 4 presents the teacher and student perception of the actual classroom environment. The results indicate that teachers view all the classroom environment subscales (Involvement, Affiliation, Teacher Support, Task Orientation , Personal Goal Attainment, Organization and Clarity, and Student Influence) significantly higher than the students except Organization and Clarity.

Table 5 displays the students' mean on ACES Actual when matched and mismatched. The results indicate no significant difference in the perception of the actual classroom environment. However, matched and mismatched students viewed Teacher Support and Organization and Clarity as the most element of the actual classroom environment.

Table 6 presents the correlations between learning style differences and actual ACES dimensions. The results indicated that there were no relationships or very weak ones.

Table 7 displays a comparison of men and women students' perceptions of the actual classroom environment. Results indicate that although the differences were not statistically significant, the actual means for men were higher than the means for women on all subscales except Task Orientation. However, Table 8 indicates that women viewed the ideal classroom environment differently than men. Women were more likely to prefer more Involvement, Affiliation, Teacher Support, Personal Goal Attainment, Organization and

Clarity and Student Influence.

SUMMARY OF FINDINGS

The predominant learning style for both students and teachers was Accommodator. Accommodators learn primarily from hands-on experience. At the same time, Accommodators enjoy carrying out plans and involving themselves in new and challenging experiences. In solving problems, Accommodators tend to act on "gut" feelings rather than on logical analysis (Kolb, 1985). However, teachers incorporated logical thinking systematic planning, and intellectual understanding in their behavior.

Both students and teachers viewed Teacher Support as the most prevalent dimension of the actual classroom environment. A comparison of the students' views of the actual classroom environment with those of the teachers indicated that the teachers viewed every subscale of ACES except Organization and Clarity more favorably than did the total group of students. The teachers saw their classroom as places in which students were more actively involved in the class activities and more interactive with each other than students reported.

Matched and mismatched students did not differ in their perception of the actual classroom environment. One reason may be that the mismatched students struggled more to understand the teacher and sought more clarity, thus neutralizing any mismatched effect.

An assessment of the relationships between learning style differences and actual classroom environment by students revealed only weak relationships or none at all. A comparison of men and women students' perception of the actual classroom environments rev aled no significant diff.

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Figure 1

The Experiential Learning Model (Kolb,1985, p. 2)

Concrete Experience

Testing implications of concepts in new situations

Observations and eflections

Formation of abstract concepts and generalization

Kolb (1976) indicates that the four abilities of importance within the dialectical model are: Concrete experience (CE), Reflective Observation (RO), Abstract conceptualization (AC), and Active experimentation (AE). All four are needed by the learner.

Table 1

Descriptive Summary of ACES Subscales (Darkenwald, 1987, p. 128)

Subscale Category	Description
Involvement	Extent students are satisfied with class and participate actively and attentively in activities.
Affiliation	Extent students like and interact positively with each other
Teacher Support	Extent of help, encouragement, concern, and friendship the teacher shows toward students.
Task Orientation	Extent to which students and teacher maintain focus on task and value attainment
Personal Goal Attainment	Extent to which teacher is flexible, providing opportunities for students to pursue their individual interests.
Organization and Clarity	Extent to which class activities are clear and well organized.
Student Influence	Extent to which teacher is learner-centered and allows students to participate in planning decisions.

Table 2

Student's Dominant Learning Style

Learning styles	f	%
Accommodator	57	31.00
Diverger	54	29.30
Converger	28	15.20
Assimilator	45	24.50
Total	184	100.00

The majority of the students (31.00%) were Accommodators followed very closely by Divergers (29.30%). Those who were identified as Assimilator (24.50%) were followed by Convergers (15.20%).

Table 3

Teachers' Dominant Learning Style (n = 10)

Learning styles	f	%
Accommodator	4	40
Diverger	1	10
Converger	2	20
Assimilator	3	30
Total	10	100

Table 4

Teacher and Student Perception of The Actual Classroom Environment

	Teacher (n = 10)		Student (n = 184)				
Subscale	M	SD	M	SD	Mean Diff	Paired t	r
IN	20.90	2.33	20.08	3.94	0.82	3.33*	.54
AF	23.60	2.91	22.02	3.17	1.72	1.51*	.30
TS	26.00	2.26	24.02	3.22	2.26	8.46*	.12
TO	21.50	1.96	20.79	2.47	0.59	2.87*	.14
PG	20.90	2.23	20.10	3.07	0.90	3.08*	-.17
OC	22.90	3.11	22.61	3.21	-0.12	-0.38	.01
SI	19.10	2.51	18.02	2.78	1.37	5.53*	.15

Note.
* $p < .05$
The means and the standard deviations for teachers were based on the total number of teachers (n = 10). The teacher-student pairs of scores contrasted with the t-test were based on the total number of paired scores (n =184) Abbreviations: IN (Involvement), AF (Affiliation), TS (Teacher Support), TO (Task Orientation), PG (Personal Goal Attainment), OC (Organization and Clarity), SI (Student Influence)

Table 5

Students' Mean on ACES Actual When Matched and Mismatched

	Matched (n = 58)		Mismatched (n = 126)		
Subscale	M	SD	M	SD	t
IN	19.50	3.45	20.34	4.14	-1.35
AF	21.76	2.23	22.13	3.52	-.75
TS	23.84	3.32	24.09	3.18	-.49
TO	20.43	2.12	20.95	2.06	-1.33
PG	19.69	3.08	20.29	3.06	-1.22
OC	22.55	2.62	22.64	3.46	-.18
SI	17.53	2.77	18.25	2.77	-1.62

Note.
n = 58 (match), 126 (mismatch)
Abbreviations:
IN (Involvement), AF (Affiliation), TS (Teacher Support),
TO (Task Orientation), PG (Personal Goal Attainment),
OC (Organization and Clarity), SI (Student Influence)

Table 6

Correlations Between Learning Style Differences and Actual ACES dimensions

	Learning style differences			
Subscales	CEdiff	ROdiff	ACdiff	AEdiff
IN	.03	-.11	.02	.02
AF	-.07	-.10	.02	.13
TS	.05	-.09	-.03	-.00
TO	-.02	.11	-.04	-.10
PG	.08	-.12	-.09	.07
OC	-.11	.04	.05	.00
SI	.06	-.16	.01	.08

Note.
Abbreviations:
IN (Involvement), AF (Affiliation), TS (Teacher Support)
TO (Task Orientation), PG (Personal Goal Attainment)
OC (Organization and Clarity), SI (Student Influence)
CE (Concrete Experience), RO (Reflective Observation)
AC (Abstract Conceptualization), AE (Active Experimentation)

Table 7

Men and Women Students' Perception of the Actual Classroom Environment

	Men (n = 58)		Women (n = 126)		
Subscale	M	SD	M	SD	t
IN	20.40	4.16	19.93	3.85	.75
AF	22.12	3.51	21.97	3.01	.30
TS	24.41	3.30	23.83	3.18	1.14
TO	20.57	2.89	20.87	2.23	-.82
PG	20.19	3.12	20.06	3.06	.27
OC	23.06	3.25	22.41	3.19	1.26
SI	18.24	2.83	17.92	2.76	.73

Note.
men (n = 58) women (n = 126)
Abbreviations:
IN (Involvement), AF (Affiliation), TS (Teacher Support)
TO (Task Orientation), PG (Personal Goal Attainment)
OC (Organization and Clarity), SI (Student Influence)

Table 8

Men and Women Students' Perception of the Ideal Classroom Environment

	Men (n = 58)		Women (n = 126)		
Subscale	M	SD	M	SD	t
IN	23.40	3.89	24.49	3.17	-2.02*
AF	21.98	3.30	23.14	2.57	-2.59*
TS	24.91	3.74	25.96	2.61	-2.19*
TO	20.39	2.63	21.06	2.14	-.72
PG	21.86	3.12	23.04	2.78	-2.57*
OC	23.89	3.70	24.91	2.86	-2.07*
SI	19.79	3.27	20.98	2.90	-2.49*

Note. * $p < .05$
men (n = 58) women (n = 126)
Abbreviations:
IN (Involvement), AF (Affiliation), TS (Teacher Support)
TO (Task Orientation), PG (Personal Goal Attainment)
OC (Organization and Clarity), SI (Student Influence)