

## **FIT IN THE CLASSROOM: PREDICTORS OF STUDENT PERFORMANCE AND SATISFACTION IN MANAGEMENT EDUCATION**

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Person-environment (P-E) fit research embodies the assumption that attitudes, behavior, and other person-level outcomes result not from the person or environment separately but, rather, from the relationship between the two. As management researchers, we have extensively examined the implications of P-E fit for employees and organizations. However, as educators, we have yet to examine the influence of P-E fit on the effectiveness of learning and teaching in the classroom. This study empirically examines three different P-E fit approaches developed in the management literature (values congruence, personality congruence, and work environment congruence) to determine if relationships exist between learning environments and student outcomes in the classroom.

In their 1997 theoretical article on effective learning systems, Lengnick-Hall and Sanders detailed a framework for the development of effective learning systems that included both individual and environmental compo-

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nents. Although the complexity of the individual-environment interaction was not thoroughly explored, they noted that individual differences among students “must be met by equally diverse learning process options . . . to capitalize on the range of individual differences in interests and capabilities” (p. 1336). That is, given the increased diversity of students attending postsecondary education, developing a better understanding of the individual-environment interaction in the learning process is important in improving student performance.

A fundamental assumption of the Lengnick-Hall and Sanders (1997) approach is that beneficial outcomes result from matching individual differences and preferences to learning environments. This study expands this line of reasoning by empirically examining three different P-E fit approaches to determine if relationships exist between learning environments and student outcomes in the classroom. The P-E fit measures used in this study—values congruence, personality congruence, and work environment congruence—are popular in the organization behavior literature. These approaches to P-E fit have been effective predictors of employee job satisfaction (Chatman, 1991; Meglino, Ravlin, & Adkins, 1989, 1992), as well as performance (Caldwell & O’Reilly, 1990). Each approach to fit is discussed in terms of its theoretical and empirical significance, and hypotheses are developed linking each approach to classroom environments.

#### STUDENT-ENVIRONMENT FIT MEASURES AND OUTCOME VARIABLES

*Values congruence.* Attainment of values reflects a comparison of one’s life activities to a predetermined personal standard (Tatarkiewicz, 1976). Locke (1976) noted that there exists “extensive theoretical and empirical support for the general view that satisfaction results from value attainment” (p. 1304). Attainment of one’s values has been linked empirically to outcomes such as job satisfaction and performance (George & Jones, 1996; Locke, 1976).

In contrast, *values congruence* is defined as the compatibility between the systems’ existing cultural patterns (values) and the individual’s basic beliefs (Cable & Judge, 1996; Chatman, 1991; O’Reilly, Chatman, & Caldwell, 1991). Recent research using values congruence measures demonstrates improved significance in predicting employee satisfaction and performance over traditional values measures that did not examine interaction with the work environment (Chatman, 1991; Meglino et al., 1989, 1992; O’Reilly et al., 1991).

Values congruence research may have relevance in developing a better understanding of student-teacher interaction in the academic environment.

Classrooms possess a task and learning orientation similar to that of organizations, as both employees and students are concerned with performance outcomes. Furthermore, academic classrooms also develop patterns and cultures, as an instructor's values create an environment of acceptable work behaviors. We posit that similar outcomes (satisfaction and performance) result from the fit between student values and the classroom culture as result from employee values and the organizational culture.

*Hypothesis 1:* Values congruence is directly and positively related to student satisfaction and performance.

*Personality congruence.* Person-occupation fit theorists argue that career choices represent an extension of the self and that individuals implement their self-concept through career choices. Tom (1971) found that people preferred organizations that were most similar to their self-descriptions and concluded that there is "considerable support" for the role of personality in vocational choice. Social identity theory provides an understanding of the linkage between the general person-occupation fit argument and student-environment fit.

Social identity theory offers an explanation for the cognitive, evaluative, and emotional processes that motivate individuals to join a social group and to maximize their contribution (Hogg & Abrams, 1993). This theory posits that the motivation for thinking, feeling, and working as a cohesive unit is socially constructed. Tajfel and Turner (1986) describe social identification as a transition from feeling and thinking like a distinct individual to feeling and thinking like a representative of a social group. The widely documented tendency of individuals to prefer others who are similar to themselves (e.g., Brewer & Miller, 1984; Kramer, 1991; Messick & Mackie, 1989; Tajfel & Turner, 1986) indicates the potential for individuals to implement their self-concept through membership (or self-categorization) in classrooms of individuals with similar personality types. Thus, it is possible that students prefer classrooms in which the instructor's personality (the predominant personality) is similar to their own.

Furthermore, it may even be possible that instructor perceptions of a student's divergence from the instructor's personality increases out-group effects directed toward that individual. According to social identity theory, such effects would decrease the attractiveness of the class for the out-group member, negatively influencing thoughts regarding the class.

Research suggests that personality congruence is related to individual attitudes. A meta-analysis conducted by Assouline and Meir (1987) found that congruence between a subject's personality type and the modal personality

type in his or her environment was significantly correlated ( $r = .29$ ) with satisfaction. Research using the Big Five personality factors (Barrick & Mount, 1991) indicates that the factors are quite robust across longitudinal and across-observer studies in different age, sex, race, and language groups (Barrick & Mount, 1993). Furthermore, meta-analytic evidence demonstrates that some of the factors are consistently predictive of attitudes and performance (Barrick & Mount, 1993; Barrick, Mount, & Strauss, 1993). Consequently, we propose that a relationship exists between instructor-student personality congruence and student outcomes.

*Hypothesis 2:* Personality congruence is directly and positively related to student satisfaction and performance.

*Classroom environment congruence.* Moos (1994b) has developed several social climate scales to measure P-E fit. Research using Moos's (1994c) Work Environment Scale to measure P-E fit in an organizational setting has indicated significant relationships between P-E fit and employee satisfaction and commitment (Westerman, Ambrose, Rosse, & Cyr, 1998). For this study, work environment is measured more appropriately using Moos's (1994a) Classroom Environment Scale (CES) climate measure, which was specifically developed for an educational setting. Although designed as a diagnostic instrument to detect gaps in student perceptions of "ideal" and "real" classroom environments, its measurement scales allow for a determination of fit that is conceptually distinct from values and personality congruence.

Moos's conceptual work describes how perceptions of social climates influence behavior and is based on the assumption that understanding the manner in which an individual perceives the environment influences the attitudes and outcomes of the individual in relation to the environment. Moos asserts that there are three basic dimensions on which fit between student preferences and classroom reality should exist. First, the relationship dimension measures the extent to which students are involved in the classroom, receive teacher support, and experience affiliation. Second, the goal orientation dimension examines the emphasis in the classroom on competition and task completion. Third, the system maintenance and change dimension pertains to rule clarity, the degree of teacher control, order and organization in the classroom, and the expectation for innovation among students. We propose that Moos's diagnostic instrument can be used to measure the congruence between an individual's desires for a specific classroom environment and the degree to which such an environment is provided to determine the relationship between classroom environment fit and student satisfaction and performance.

*Hypothesis 3:* Classroom environment congruence is directly and positively related to student satisfaction and performance.

## MEASURES

Data for the independent variables were collected measuring three types of student-environment fit: values, personality, and classroom environment congruence. Dependent variables measured were student satisfaction and performance. Age, gender, race, and grade point average in high school were the control variables.

*Values congruence.* Values congruence was measured using the Organizational Culture Profile (OCP) (Chatman, 1989). The OCP contains 54 value statements that capture individual norms and values. Examples include “being supportive” and “being competitive.” Students sort the 54 items into 9 categories with a specified number of values in each category (2-4-6-9-12-9-6-4-2), approximating a normal distribution. Each student completed two OCP Q-sorts. In the first Q-sort, students were asked to describe the values that would exist in their “ideal” classroom; in the second Q-sort, they described the value system they felt currently exists in the classroom. The overall fit of the student’s “ideal” classroom values to the existing classroom values was calculated by correlating the ratings of the items in the two profiles.

*Personality congruence.* Personality fit was operationalized using the five-factor approach to the structure of personality (Digman, 1990), as measured with the NEO Five-Factor Inventory Form S (Costa & McCrae, 1991). Each item was rated on a *strongly agree to strongly disagree* scale. Examples of statements include “I often get angry at the way people treat me” and “I have a lot of intellectual curiosity.” Both instructors and students completed a personality profile so that the overall fit of the student’s personality to the personality of the instructor could be calculated by correlating the ratings of the items in the two profiles.

*Classroom environment congruence.* The CES (Moos, 1994b) was used to measure salient characteristics of the classroom environment. The CES consists of two forms: the ideal form (Form I) used to measure students’ perceptions of their ideal classroom environment and the real form (Form R) that measures students’ perceptions of the current classroom environment. Both forms contain the same 90 questions, with a true/false response format. Examples of statements include “This class is often in an uproar” and

“Grades are not very important in this class.” The overall fit was calculated by correlating each student’s ratings of the real classroom environment with each student’s ideal classroom environment ratings.

*Dependent variables.* Student satisfaction was measured using a Likert-type scale response to a single survey question asking each student to rate their overall satisfaction and liking of the class. Final student percentage grade was used to measure student performance.

## PROCEDURE

Three business instructors teaching five different sections of management classes in state-funded educational institutions in the western United States participated in the study. In these sections, average class size was 36 students. Two sections of Principles of Management (a sophomore-level survey course), two sections of Strategic Management (a senior-level capstone course), and one section of Organizational Behavior (a senior-level course) comprised the five sections. The predominant mode of instruction was a combination of case and lecture methodology. One instructor taught a section of Strategic Management and a section of Principles of Management; a second instructor taught a section of Principles of Management and a section of Organizational Behavior; a third instructor taught a section of Strategic Management. All of the courses were required in the management emphasis of the business administration major. Multiple instructors and different courses were included to ensure diversity and fuller coverage of the undergraduate management education discipline and to improve the external generalizability of the results.

Data collection consisted of two surveys administered to every student in the management classes in our sample. Surveys were administered during the last 4 weeks of the semester term to allow for accurate student perceptions of the classroom. The first survey contained the questions on the control variables, the student’s “ideal” classroom environment, the value set of their “ideal” classroom, and the student’s personality. Two weeks after completing the first survey, students were given the second survey that measured their perceptions of the classroom environment, their existing value set, and their satisfaction in the class. Delaying administration of the second survey made it less likely that subjects would artificially inflate the similarity of the ratings given on the commensurate measures of the surveys. Surveys were administered during class time and were collected by participating instructors. A total of 171 completed responses were obtained from students (response rate

of 94%). Each faculty member participating in the study also completed the personality inventory.

## Results

Means, standard deviations, reliabilities, and intercorrelations for all of the variables are reported in Table 1. Results indicate that intercorrelations among the independent variables or dependent variables did not exceed  $r = .30$  (see Table 1).

Hierarchical regression analyses were used to analyze the effects of the independent variables (student value congruence, classroom environment congruence, and personality fit) between students and instructors on the dependent variables (student satisfaction and performance). In the first step, control variables were entered into the equation; in the second step, the fit measures were entered.

Hypothesis 1 proposed that the congruence between a student's "ideal" values and the value set existing in the classroom (values congruence) would account for unique variance in predicting student satisfaction and performance. The results partially support Hypothesis 1. Values congruence was a significant predictor of student satisfaction with a class ( $\beta = .17, p < .05$ ) (see Table 2); however, it was not a significant predictor of student performance in the classroom ( $\beta = .13, n.s.$ ).

Hypothesis 2 examined the possibility of student-instructor personality fit and the variance accounted for in the prediction of student satisfaction and performance. The results were similarly mixed, as personality congruence predicted a student's performance in the classroom ( $\beta = .21, p < .01$ ) but not student satisfaction ( $\beta = -.03, n.s.$ ) (see Table 2).

Hypothesis 3 explored the effects on student satisfaction and performance of fit between a student's "ideal" classroom environment and perceptions of the existing classroom environment (classroom environment congruence). Results indicated that classroom environment fit was a strong predictor of student satisfaction ( $\beta = .41, p < .001$ ) but not of performance ( $\beta = .11, n.s.$ ) (see Table 2). Thus, similar to our first two hypotheses, Hypothesis 3 received mixed support.

From an outcome-based perspective, when the fit variables were entered into the equation, the changes in  $R^2$ s for both dependent variables (satisfaction and performance) were significant at the .01 level, and the overall  $R^2$ s for the equations were significant at the .01 level (see Table 2). Values congruence and classroom environment congruence were significant predictors of

TABLE 1  
Means, Standard Deviations, and Correlations

	M	SD	1	2	3	4	5	6	7	8	9
1. Age	21.00	3.29	—								
2. Gender	0.73	0.45	-.01	—							
3. Race	0.89	0.31	.11	.05	—						
4. High school GPA	3.01	0.52	-.03	-.15	-.07	—					
5. Values fit	29.34	24.64	.04	-.08	.01	.15*	—				
6. Classroom environment fit	40.30	22.31	.18	-.14	-.01	.08	.29**	—			
7. Personality fit	35.42	20.57	.14	-.07	-.04	.18*	.23**	.14	—		
8. Satisfaction	5.32	1.54	.08	-.08	-.03	.19*	.30**	.48**	.10	—	
9. Performance	83.35	10.31	.20*	-.17*	.10	.49**	.27**	.23**	.34**	.36**	—

\* $p < .05$ . \*\* $p < .01$ .

**TABLE 2**  
**Regression Analyses for Student-Environment Fit Measures**

<i>Variable</i>	<i>Predicting Satisfaction</i>	<i>Predicting Performance</i>
Step 1		
1. Age	.07	.22**
2. Gender	-.05	-.09
3. Race	-.03	.11
4. High school GPA	.18*	.47**
<i>R</i> -squared	.04	.30
<i>F</i>	1.64	13.88**
Step 2		
5. Values congruence	.17*	.13
6. Personality congruence	-.03	.21**
7. Classroom environment congruence	.41**	.11
<i>R</i> -squared change	.22	.09
<i>F</i> change	5.95**	2.47**
Full equation		
1. Age	.02	.16*
2. Gender	.01	-.04
3. Race	-.02	.11
4. High school GPA	.13	.41**
5. Values congruence	.17*	.13
6. Personality congruence	-.03	.21**
7. Classroom environment congruence	.41**	.11
<i>R</i> -squared	.26	.38
<i>F</i>	7.59**	16.36**

NOTE: Values are standardized regression coefficients at each step.

\* $p < .05$ . \*\* $p < .01$ .

student satisfaction. Personality congruence, along with the control variables of high school grade point average and age, were significant predictors of student performance.

## Discussion

This study examined the effectiveness of three nontraditional predictors of student performance and satisfaction in undergraduate classes in the management field. The results indicated that personality congruence was a significant predictor of student performance and that both classroom environment congruence and values congruence were significant predictors of student satisfaction.

At the most obvious level of analysis, these results indicate that student-environment fit measures can contribute significantly in the prediction of stu-

dent outcome variables. To further examine this conclusion, a series of sensitivity analyses were conducted to determine if the results were accounted for by the fit measures or whether the variance was contributed by the components of fit. Thus, the fit measures were entered into a regression equation that also contained the components of student personality dimensions and preferred classroom environment dimensions (the value congruence measure does not have any subdimensions). Results of the sensitivity analyses indicated that all three student-environment fit measures remained significant in their respective analyses. Specifically, in the sensitivity analysis of student satisfaction, values congruence ( $\beta = .16, p < .05$ ) and classroom environment congruence ( $\beta = .33, p < .01$ ) were the only significant predictors. However, although personality congruence remained a significant predictor of student performance ( $\beta = .37, p < .01$ ), the student personality dimensions of conscientiousness ( $\beta = .33, p < .01$ ) and introversion ( $\beta = .20, p < .01$ ) were also significant.

This study highlights the importance of student-classroom fit in understanding student performance. Results from this study indicate that student performance and satisfaction in the classroom may not be limited to classroom environments, instructor personalities, or prevailing value sets in the classroom, but rather, it is the interaction between the student and these components of their environment that predicts outcomes. Fit in the classroom may be a multidimensional construct, whose various dimensions have differing effects on different student outcome variables. These results illustrate the complexity of the learning process and the difficulty involved in prescribing one-size-fits-all approaches to maximize learning outcomes.

At least for now, empirical insight into the value of student-classroom fit is limited. Thus, implications for daily classroom methodology remain speculative. However, in that spirit, based on the results of this study, some general suggestions and implications to improve P-E fit in the classroom include the following.

From the instructor's perspective, student satisfaction is important not just for contributing to a positive learning environment but also for having an impact on an instructor's career prospects through teaching evaluations. As this research indicates that value congruence is significantly related to student satisfaction, several possibilities exist for instructors to improve value congruence with students. The instructor could discover and adapt to prevailing student value sets. Faculty might attempt to know their audience by researching the value structures of their students by using measurement instruments (such as the OCP) and/or direct questioning of the class. Such information could be used to adapt syllabi, course process, and/or course content to appeal to the value sets held by students.

Another approach might be to adapt student value sets to faculty preferences. This may be accomplished by faculty explicitly stating their classroom-oriented values on a syllabus, Web site, and/or during the first day of class, to allow students to self-select participation in the course. Although values are not easy to change, faculty might attempt to strategically alter classroom value sets by using strategically placed rewards and punishments in the initial phases of a class based on acceptable modes of classroom participation.

This study indicated that classroom environment congruence was also linked to student satisfaction. Similar suggestions for faculty are provided: (a) get to know your audience and adapt, and (b) be explicit about the classroom environment to allow for student self-selection and/or adaptation. However, developing an understanding of your students may be more explicit using the CES than the values measure (OCP). The CES is specifically designed for classroom environments, and its subdimensions can provide more explicit information for faculty, including student preferences for involvement, teacher support, affiliation, competition, goal orientation, rule clarity, teacher control, and so on.

The linkage between personality congruence and student performance is intriguing. This relationship could be a reflection of inherent liking of a student or a "similar to me" bias in grading on the part of faculty. From the instructor's perspective, just possessing an awareness of the potential impact of personality congruence between professors and students on student performance may help to alleviate any potential bias that may occur in grading and performance assessment. Further measures can be taken such as grading exams and/or assignments identified only by a student's social security number.

However, an alternative interpretation of the personality congruence–student performance relationship may be that there are similarities in learning styles or communication patterns that result from personality congruence between teacher and student, contributing to enhanced student performance. Instructor training on learning styles and how to teach to different audiences may be helpful.

From a student's perspective, if a student wants to maximize performance, it may be worthwhile to ask other students or otherwise attempt to determine the personality of one's choice of professors. To improve satisfaction, a student's review of professors' syllabi could illuminate values and/or classroom environment issues. Furthermore, impression management skills may be vital to students who consistently vary significantly from professor personalities.

As diversity in the classroom expands in response to societal changes, it is becoming increasingly important that we better understand the dynamics of the student-classroom environment. We must learn more about the fit interactions to effectively accommodate diversity in our classrooms: to allow for a

variety of preferences in value structures, personalities, and classroom environments without the potential negative effects of a lack of fit on student satisfaction and performance. This study provides an initial insight into the relationship between student fit and outcomes and a foundation for understanding and reconciling differences.

Conclusions based on the findings of this study should be tempered by consideration of several methodological issues. Each primarily affects the study's generalizability. First, the students in this study may not be typical of those in other student populations. It also was not possible to determine the extent to which individual instructors influenced the outcomes. The sample was limited to three instructors and was further narrowed to the field of undergraduate management education.

This study has made several contributions. Our findings suggest the importance of understanding student-classroom environment fit as a predictor of two outcomes: performance and satisfaction. Suggestions were provided in understanding and interpreting the results in regards to student and instructor behavior. As the field and research on student-environment fit and its impact on management education are further examined, important contributions will be made to improve our understanding of learning and teaching.

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