PREDICTING PARTICIPANTS' PERFORMANCE AND REACTIONS IN AN
EXPERIENTIAL LEARNING SETTING:
AN EMPIRICAL INVESTIGATION

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Experiential learning is rapidly becoming an important part of the methodology used in education at all levels. In their efforts to make classroom experience more relevant to future job demands, to heighten interest and motivation, and to build skills required for successful management, business educators have adopted experiential techniques.

There is a small but growing body of research comparing various experiential techniques with more traditional educational strategies [e.g., 5, 7, 9, 13, 16]. However, there have been very few studies of the personal characteristics of participants in experiential learning. Hodgets and Braskamp [10] recommended that success in these participative learning environments be related to personality traits, intelligence, and vocational interest. Johnson and Landon [11] found no significant relationship between personality and performance in a simulation setting. Gardiner [7] did find differences and positive changes in cognitive structure between students in experiential versus traditional settings, but no examination was made of successful and satisfied participants and their personality.

The study of personality, cognitive, and interpersonal attributes of experiential learning participants would seem to be a more important research objective than the very scant and conflicting evidence noted above would signify. Because experiential learning involves conceptual integration and understanding, cognitive structure and ability could differentiate between successful and unsuccessful learners. Because the behaviors exhibited in experiential learning are emitted very often in the presence of others and are directed toward them, interpersonal style, social skill, and motivation to fulfill needs socially could be predictors of success. Personality measures and leadership styles would be further potential predictors which could discriminate between the effectiveness of experiential learning for various participants.

The rationale for the present research was that a great deal about experiential learning and reasons for its effectiveness could be learned not merely by comparing its effectiveness to other pedagogical techniques, but rather by investigating the type of participant for whom experiential learning is effective. This strategy would lead to a contingency view of experiential learning [see e.g., 6]. That is, the environmental and personal characteristics that exist when it is effective could be isolated and the relevant evaluative question would hence become not whether experiential learning is effective, but for what type of learner and in what type of learning environment it is effective. Perhaps more importantly, if a personality, cognitive, interpersonal, and demographic profile of the successful and satisfied experiential learning participant could be constructed, this knowledge could be used to begin to change curricula to employ this type of learning when it is found to be most successful (e.g., for groups of certain sizes).

In an effort to begin to identify those predictors which signal success and positive reactions to experiential learning, this study used several types of measures which were chosen to represent a broad spectrum of individual and interpersonal characteristics. The purpose of the research was to assess which, if any, of these characteristics, singly or in combination, could statistically predict the performance and satisfaction of a group of participants. The study also sought to identify that set of characteristics which could statistically discriminate between those participants whose needs were perceived as being met by the experiences and those whose needs were not met [4].

METHOD

Sample

The sample consisted of 125 college undergraduates enrolled in three sections of an introductory business course during the Fall, 1975, and Spring, 1976 semesters. Eighty- f our subjects were male and 41 female, with mean age 21.68 years.

Procedure

The experiential method was used almost exclusively in the three course sections to which the sample belonged. Course instructor, content, procedures, and grading were all identical across sections. The experiential exercises relied heavily on small group discussion, role-play, structured exercises, and group case studies. They were meant to simulate the human resource programs actually developed in organizations [1].

All students in the three experimental course sections attached themselves to six-person groups of their own choosing who performed the experiential exercises, given a weight of 25% of the total course grade. All subjects were administered several questionnaires (described below) throughout the semester and records of their total course points as well as their groups' performance (in points) were kept.

Measures

The following data were collected from each subject: age, college major, whether employed and number of hours worked per week, whether the course was a requirement or an elective, sex, cognitive complexity [2], intolerance of ambiguity [3], Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) [15] , internal-external control [14], Learning Style Inventory [12], and California Psychological Inventory [8]. In addition, questionnaires were developed to measure overall satisfaction with the course, perceived opportunity to fulfill needs in the course [4], actual needs perceived its being fulfilled by the course, leader style, leader effective- ness, total points earned in course, and total points earned by each group.

RESULTS

Multiple Regression

Stepwise multiple regression analyses were performed using different subsets of the variables. As Table 1 shows, over 46% of the variance in satisfaction scores could be predicted using the four variables listed. The ability of experiential learning to actually fulfill participants' needs and its ability to provide an opportunity to fill needs were the best single predictors, together accounting for over 44% of the variance in satisfaction scores.

TABLE 1
MULTIPLE REGRESSION ANALYSIS OF PARTICIPANT OVERALL
SATISFACTION USING INTERPERSONAL AND LEARNING STYLES

Variable	Multiple R	R^2	Beta	Standard Error of Beta	F	P-Value
Actual needs fulfilled	.64327	.41379	.54264	.12428	40.822	.001
Opp. to fulfill needs	.66686	.44470	.22253	.09809	6.914	.001
Concrete exper-ience	.67273	.45257	.13763	.32869	3.245	NS
Wanted Control	.68039	.46292	-.11108	.53018	2.243	NS

It is noteworthy that a concrete experience learning style was also a useful predictor of satisfaction, as would be expected in an experiential course. A reflective observation style and an abstract conceptualization style were not useful predictors. There was an inverse relationship between wanted control and satisfied learners in the study, suggesting that those who wanted to control others were not highly satisfied.

Table 2 shows that over 17% of the variance in satisfaction scores can be predicted by using the five variables listed, which include selected personality variables. Satisfaction with one's group was the best single predictor of overall satisfaction. Leadership style and achievement level were also useful predictors. However, those with a need to achieve via independence were not satisfied, while those with a need to achieve through conformity were. This is not surprising as the experiential learning was done in small groups. Cognitively complex persons also were more satisfied.

Table 3 depicts the relation of interpersonal and learning style to performance. Significant F-tests indicate that wanting control over others was a useful (negative) predictor, as was an active experimental learning style and a concrete experience learning style. While these results are not as powerful as those obtained for overall satisfaction, over 11% of the variance in performance was explained by the six-variable set.

TABLE 2
MULTIPLE REGRESSION ANALYSIS OF PARTICIPANT OVERALL
SATISFACTION USING PERSONALITY AND GROUP VARIABLES

Variables	Multiple R	R^2	Beta	Standard Error of Beta	F	P-value
Group Satisfaction	.28767	.08275	.23855	.08956	7.747	.001
Leader style	.33209	.11029	.18951	2.14660	4.833	.05
Achievement via confor.	.37329	.13935	.21388	.23749	5.532	.025
Achievement via independ.	.39723	.15779	-.14451	.24868	2.547	NS
Cognitive complexity	.41457	.17187	.11967	.04288	1.972	NS

TABLE 3
MULTIPLE REGRESSION ANALYSIS OF PARTICIPANT
PERFORMANCE USING INTERPERSONAL AND
LEARNING STYLES

Variable	Multiple R	R^2	Beta	Standard Error of Beta	F	p Value
Wanted control	.13263	.01759	−.18516	.29156	3.884	.05
Active experiment	.18657	.03481	.21156	.11803	4.714	.05
Concrete experience	.24731	.06116	.21455	.16636	4.654	.05
Expressed affection	.27547	.07589	−.19496	.22535	3.612	NS
Expressed inclusion	.31071	.09654	.18724	.27414	3.308	NS
Reflective observation	.33846	.11455	.13976	.12578	2.115	NS

Discriminant Analyses

Two-group discriminant analyses were conducted to identify those variables which most clearly distinguish between participants who did or did not perceive the experiential learning setting both as providing the opportunity to fulfill their needs and actually fulfilling their needs.

Table 4 contains the results of the analysis on opportunity to fill needs. As can be seen, the analysis was extremely powerful as all F-tests were significant. Further, the canonical correlation for the resultant discriminant function was .684, the eigenvalue was .89706, and Wilks' Lambda was .5322 ($X^2[6]=47.308$, $p<.001$). As in the regression analyses, a concrete experience learning style was important, as was the performance of the participants, their degree of self- acceptance, and their overall satisfaction.

TABLE 4
DISCRIMINANT ANALYSIS OF OPPORTUNITY
TO FULFILL PARTICIPANTS' NEEDS

Variable	Standardized Discriminant Function Coefficient	Wilks' Lambda	Approx. F	p Value
Actual needs fulfilled	−.57848	.63819	44.221	.001
Overall satisfaction	−.31402	.59577	26.1222	.001
Concrete experience	−.21125	.57503	18.722	.001
Self-acceptance	−.16344	.55236	15.195	.001
Performance	−.15072	.53218	10.695	.001

The discriminant equation made up of the five variables listed in Table 4, along with their coefficients, was used to predict whether any single participant belongs to the "high" or "low" perceived opportunity to fulfill needs group in 86.25% of the cases.

The discriminant analysis for actual fulfillment of needs of participants through experiential learning is shown on Table 5. Six variables, all significant individual discriminators between participants in high and low perceived need fulfillment groups, formed the discriminant set. The last two variables, number of hours worked and expressed inclusion, were not contained in the previous discriminant function. This function had a canonical correlation of .748 and a Wilks' Lambda of .4410 (X^2[6]63.864, p<.001), leaving little doubt such a result occurred by chance. The classification matrix of this analysis showed the discriminant function correctly classified 87.95% of the individual cases.

TABLE 5
DISCRIMINANT ANALYSIS OF ACTUAL FULFILLMENT
OF PARTICIPANTS' NEEDS

Variable	Standardized Discriminant Function Coefficient	Wilks' Lambda	Approx. F	p Value
Overall satisfaction	−.61015	.61481	50.749	.001
Opportunity to fulfill	−.32706	.54219	33.775	.001
Concrete experience	−.25260	.50973	25.328	.001
Performance	−.27036	.47911	21.201	.001
Work hours	−.27204	.45124	18.728	.001
Expressed inclusion	−.15120	.44097	16.180	.001

CONCLUSIONS

This exploratory analysis of participant characteristics in an experiential learning environment was able to isolate several variables which could be used to help predict the participants' performance and reactions. Further, sets of variables were isolated which were able to discriminate with a very high degree of accuracy between participants who perceived experiential learning as fulfilling their needs and those who did not.

Specifically, the following general conclusions could be drawn from these results:
1. Experiential learning activities which are perceived as fulfilling participants needs will also evoke a favorable overall reaction from them.

2. Participants who have a favorable reaction to experiential learning are likely to have an orientation toward and preference for concrete experience as their learning style, are likely to value achievement via conformity, are likely to be cognitively complex, are likely to want little control over others, and are likely to be satisfied working in a group situation.

3. Participants who perform successfully in experiential learning settings are likely to be those who want little control over others, have an orientation for active experimentation and concrete experience as preferred learning styles, have a high need for affection in interpersonal relations, work few hours on outside jobs, and are cognitively complex.

4. Reactions toward experiential learning can be predicted more effectively than can performance when using personal and interpersonal characteristics of participants.

5. Some of the measures developed in regard to experiential learning [4, 12] seem to have considerable power and validity when used in that setting.

Unfortunately, this study raises more questions than it answers. Much more data must be available before the prediction of participants' performance and reaction to experiential learning is a reliable endeavor. No doubt additional individual variables must be included, tested, and either added or deleted from lists of those which explain the experiential learning process. The results of the study do point to propositions which can be tested by further inquiry. An iterative process of delineating variables from theory, examining variables in research, amending variable lists based upon empirical data, developing additional propositions to test, etc. is necessary in order to build a logically developed and related body of research results. Without this body of data, the utility of such potentially useful innovations in management education as experiential learning will go unfulfilled.

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