

Developments In Business Simulation & Experiential Exercises, Volume 20,1993

ANTECEDENT BIASES OF EXPERIENTIAL LEARNERS: TRAINEE OCCUPATION AND SUBGROUP DIVERSITY

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ABSTRACT

The occupational experience of group members (those who perform similar activities and functions as a way of life) influences their ideas about the workplace. Such antecedent biases are likely to affect subsequent experiential teaching and learning. For example, our assessments show that occupational *females* (as a whole) place more importance on clear Goals; on knowing one's Job; on having a competent Leader; and on well-Designed work-groups, than do males. But we also find that *males* from *different occupational groups* vary widely, as do *females* from *different occupational groups*. Three diverse sources of bias are identified as attendant to occupation, occupational sub groups, and gender.

EXPERIENCE IS A POWERFUL TEACHER.

Trainers and educators increasingly rely on experiential methods to modify the perceptions and performances of participants. (Becker, 1992; Halterman and Sampson, 1992; Smolowe, 1992). Experiential learning is generally agreed to efficiently confront and challenge participants, and to reorient their beliefs, values, style and performance (cf. Bolt, 1990; Galagan, 1990; Petrini, 1990; Smolowe; Thompson, 1991; and Sims and Dennehy, 1992).

In fact, the record of effectiveness of this type of training has been so impressive that it has overshadowed the need to better understand the relationship between knowing the trainee, and knowing the training approach. We must get back to the question: "Just who is this trainee we are we dealing with?"

Better information about trainees is necessary in order to improve the effectiveness of experiential teaching. "Numerous and very complex" factors can attenuate or accelerate trainee change (Gosenpud, J. & Miesing, P. 1992). Do we really know what these factors are? This research attempts to identify antecedent trainee biases *relating to trainee experiences in different occupations*, which may aid or interfere with schooling and learning.

Experiential Training At Work--at Work.

Most experientially-based training programs attempt to challenge a trainee's ingrained habits and perceptions with relatively short bursts of new and highly involved activities, after which the newly-modified individual returns to his or her regular occupational environment. Later, compelling questions are frequently raised: "Why did that training effect wear off so soon?" "Is it the way we work?" This last query is not too outlandish, since, as Katz and Kahn (1978) long ago pointed out, day-to-day occupational activity is a robust learning (or re-learning!) experience. Experiential

Learning and Occupations.

We are already aware of important differences between people involved in different operations--depending on their tasks, their backgrounds, and their objectives (of Sundstrom, De Meuse, and Futrell, 1990; Coleman, 1991; Halterman & Sampson, 1992; and Patz, 1992).

For example, some researchers have quietly explored the effects of (a) different experiential *training* methods (Sampson, Spagnola, and Halterman,1991; Becker; Specht and Sandlin, 1991); (b) the gender of participants (Halterman, Dutkiewicz, and Halterman,1991); (c) their nationality (Halterman and Sampson; and, (d) their *personality* (Patz). All of these investigators found significantly prominent relationships. This research looks for the effects of different occupational experiences on respondents' work-related perceptions and preferences.

Since people achieve self-identity with their occupation, organizational activities play a *critical* role in determining their norms, beliefs and values. Organized groups (e.g. occupations) differ in the types of tasks they perform; and a key determinant of characteristic organizational norms is the type *of activity* in which the organization is involved (Katz and Kahn, p.389, 394).

It is reasonable to expect that occupational norms, beliefs and values which have developed over time during a person's major work activity, are going to be difficult to change. There-for, a person's subsequent learning is largely dependent on how well his or her teacher gets to know the student, and is able to tailor the teaching and learning effectively (cf. Gosenpud & Miesing). We agree with other investigators who believe that it is only through empirical studies of actual, intact work groups that we can expect to learn more about developing them (See Sundstrom, De Meuse and Futrell).

An *occupational group* is a group of people performing similar activities and functions as a way of life. This research empirically assesses how experienced members from various occupational groups differ in the way they ascribe importance to critical workplace characteristics. It asks two questions: (1) "Do different occupational groups vary?", and (2) "In what ways?"

THE ASSESSMENT METHOD

Management characteristics found to be critical to the performance of successful work-groups (Larson and LaFasto. 1989) are expressed as be-

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havioral aphorisms. The assumptions underlying this approach to capturing work-group members' perceptions and beliefs have been strengthened by other investigators (Menzel, 1991; Neslund, 1991; and Halterman, et al., 1991). Importantly, it has also been found that dissimilar work-groups vary in how they place importance on different workplace characteristics (Halterman, 1992). The instrument itself proposes eight specific statements to be assessed (see Exhibit 1).

Respondents are asked to indicate "the extent to which you believe (the particular statement) is necessary for an effective team." They reply on a 5-point Likert scale, where "1" equals "applies well" and "5" equals "doesn't apply."

THE SAMPLE ASSESSED

From the four categories of team members sampled, 881 usable responses are obtained. To guide our analysis,

EXHIBIT 1. STATEMENTS TO EXPRESS WORKPLACE CHARACTERISTICS.

- A. Team members know the project goals, and are challenged by them.
- B. The team is designed to get results.
- C. Team members know their jobs, and how to get them done.
- D. Members will do whatever is needed for the project's success.
- E. Members like, trust, and help each other.
- F. Team members have high performance standards, and expect high performance from each other.
- G. The project gets outside support, resources, and recognition.
- H. The team leader is seen as competent, respected, and fair.

three null hypotheses are tested:

Hypothesis₁ *There are no differences in the way participants assess the importance of workplace characteristics, when responses from different occupational groups are compared.*

Hypothesis₂ *There are no differences in the way participants assess the importance of workplace characteristics, when responses from occupational sub-groups are compared.*

Hypothesis₃ *There are no differences in the way participants assess the importance of workplace characteristics, when responses from males and females are compared.*

The Four Occupational Types Examined.

The four occupational types and their subgroups are shown in Exhibit 2. To preserve anonymity of the organizations, the sub-groups

are described by their general areas of activity, instead of by their organization's name. Each of the occupational categories is made up of respondents from both regional, state and local units. In aggregating these groups, we sought consistency of occupational type, balanced by a need

for representative variety among a group's membership. There are no individuals in any one category who are also classified in any other. Membership in-groups are mutually exclusive.

Occupational Type 1: Project Team Members (N342)

Respondents are experienced members of project teams, selected for advanced training. The subgroups represent attendees from different organizations. Team members represent multiple operations; all levels of project management; and diverse projects.

Occupational Type 2: Production Team Members (N173)

Respondents are members of manufacturing and assembly units, each with a team orientation. The two smaller subgroups are from well-established mid-sized businesses and the other is from the production division of a large, high tech corporation.

Occupational TYPE 3: Public Agency Members (N=148).

Respondents are largely team-workers (not political appointees) from a variety of political jurisdictions, and ranging from town officials to regional administrative units. They are typically career-oriented; mid-career; and varying in their educational background. The "service group" is a regional arm of a national (voluntary) service organization.

Occupational Type 4: College University Students (N=218).

Respondents are from four different schools, predominantly enrolled in business or engineering programs. All are upper-division or graduate students. Full-time and part-time attendees are represented. Evening students and daytime students are represented. Non US citizens are not identified, but their proportion is estimated at less than 20%. Each school is located in the Rocky Mountain region.

THE STATISTICAL APPROACH AND RESULTS.

Data are examined by analysis of variance

EXHIBIT 2. COMPOSITION OF THE SAMPLE

SUBGROUPS (SIZE)	
PROJECT	Minerals Exploration (64)
	Nuclear Projects (49)
	Heavy Contracting (47)
	Financial Operations (35)
	National Communications (21)
	Air Transportation (18)
	Information Services (15)
	Manufacturing (13)
PRODUCT'N	Provider of Service (13)
	Signage and ID Material (50)
	Large Aerospace Items (100)
AGENCY	Public Safety Unit (5)
	City Financial Office (23)
	County Administrative Unit (22)
	State Planning Activity (34)
	State Administrative Unit (31)
	Regional Volunteer Group (33)
STUDENTS	Undergraduate Engineering (45)
	Undergraduate Management (55)
	Undergraduate General (17)
	Graduate Engineering (24)
	Graduate Management (31)
	Evening MBA Students (53)

(#) Indicates number in major subgroups.

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techniques. Processing is by SPSS. Mean scores, deviations, and F scores are reported. Table 1

eight scales. This additional information supports rejecting Hypothesis₃.

DISCUSSION

It comes as no surprise that the four occupational groups differ on six of the eight scales. After all, the "occupational groups" were carefully constructed by the researchers, so that their subgroups were collectively "consistent" in terms of a rudimentary "job analysis" by the researchers--not simply on the basis of occupational "titles." This is important, because when inadvertent variance is introduced (e.g., via some-one else's "titles") it cannot be explained.

The occupations differ most on how they see the importance of SUPPORT, of DOING what is necessary, of the LEADER, and of understanding the GOAL. They also differ on the importance of performance EXPECTATION, and liking and TRUSTING each other. The degree of dispersion of these differences can be seen in Figure 1. (Original data have been transformed so that the highest values in the figures are furthest from the 1-origin.) This figure reflects data in Table 1. Please note that these differences do not imply the importance of the variables they simply show how each category sees them, possibly as a result of their occupational experiences.

TABLE 1.
WORK-GROUP STATISTICS FROM THE FOUR GROUPS

	PROJECT N=342		PRODUCTN N=173		AGENCY N=148		STUDENT N=218		F	Sig
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
GOAL	1.35	.60	1.54	.80	1.50	.83	1.46	.73	1.46	.018 *
JOBS	1.58	.74	1.60	.71	1.58	.77	1.70	.84	1.18	.322
LEADER	1.57	.71	1.80	.98	1.84	.83	1.67	.88	3.04	.028 *
DESIGN	1.69	.80	1.68	.82	1.80	.88	1.83	.88	1.88	.114
EXPECT	1.88	.80	1.73	.90	1.88	.91	1.00	.89	2.82	.033 *
TRUST	2.04	.85	1.82	.87	1.97	.98	2.17	1.05	2.75	.041 *
SUPPORT	1.86	.87	2.08	1.14	2.19	1.15	2.57	1.07	21.63	.000 *
DO	2.08	.90	1.98	.95	2.08	.98	2.51	.98	13.88	.000 *
Univariate Project by Sex: F=0.75, p=.643										
Product'n by Sex: F=3.47, p=.001										
Agency by Sex: F=1.95, p=.067										
Student by Sex: F=.88, p=.443										
All Four Occ Gps: Manova F=5.54, p=.000 (Pillai)										
MANOVA Project: 9 sub. F=1.23, p=.103										
Product'n: 3 sub. F=3.77, p=.000										
Agency: 7 sub. F=2.19, p=.000										
Student: 5 sub. F=1.75, p=.006										

displays basic work-group statistics for the four groups. It is readily apparent that the four groups differ from each other (ANOVA) on six of the eight scales. The significant Pillais F of 5.54 (MANOVA) tells us that the four occupations are statistically different in the way they respond. MANOVA testing (for variation among the occupational subgroups in each type) indicates that the Project respondents are homogeneous, while other subgroups vary.

Statistical Results.

Hypothesis₁ is rejected (See Table 1.). A multiple analysis of variance yields a Pillais F of 5.54 [p=.000]. The four occupations are found dissimilar based on the way they respond.

Hypothesis₂ is rejected. A univariate analysis of variance yields significant F's for three of the four occupational groups. Only the Project occupational group (F1.23; p=.103) is determined to have similar subgroups.

Hypothesis₃ is rejected. ANOVA (Sex) for Production yields an F of 3.47, [p=.001]. Separate sex differences cannot be established for Project, Agency, or Student respondents. However, further analysis (See Table 2) indicates that for the entire sample, males and females differ [F=1.65; p=.000]. Males and females for the entire sample are shown to differ in their responses to four of the

TABLE 2.
MALES' AND FEMALES' RESPONSE STATISTICS

	TOTAL N=881		FEMALES N=372		MALES N=508		F	Sig
	Mean	SD	Mean	SD	Mean	SD		
GOAL	1.44	.72	1.38	.68	1.44	.72	4.07	.044 *
JOBS	1.62	.76	1.54	.75	1.67	.77	6.55	.011 *
LEADER	1.65	.83	1.58	.81	1.70	.84	4.13	.043 *
DESIGN	1.74	.84	1.67	.81	1.78	.85	3.84	.050 *
EXPECT	1.88	.88	1.83	.90	1.91	.86	1.91	.167
TRUST	2.04	.93	1.99	.96	2.08	.91	1.93	.165
SUPPORT	2.13	1.06	2.14	1.12	2.13	1.02	.38	.849
DO	2.15	.96	2.09	1.00	2.20	.94	2.55	.111
Univariate ANOVA (SEX): F=1.65, p=.000								
MANOVA(4/OCC TYPES): F=3.86, p=.000*								
MANOVA(4/OCC TYPES): F=3.84, p=.000*								
*Indicates significance @.05								

CONCLUSIONS

Respondents from different occupational groups differ in how they see the impor-

FIGURE 1.
THE FOUR OCCUPATIONAL GROUPS
(Highest value has highest importance)

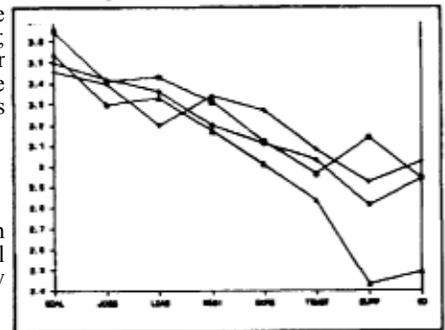
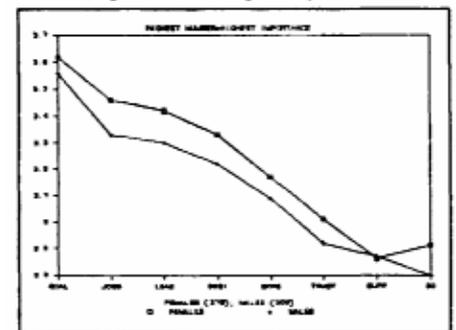


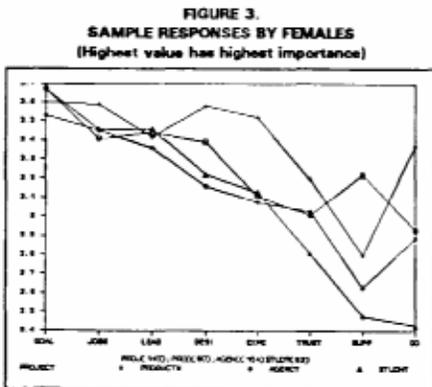
FIGURE 2.
GENDER DIFFERENCES IN RESPONSES.
(Highest value has highest importance)



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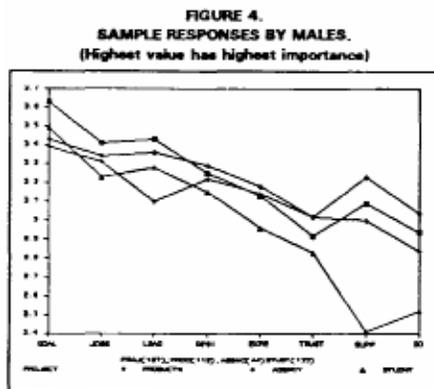
tance of workplace characteristics They differ or six of the eight scales.

Also, within occupational groups, there is significant diversity, among the subgroups of occupations, in the way the subgroups perceive the importance of workplace characteristics.



Occupational males and females differ in how they see the importance of workplace characteristics. Specifically, *females* (on the whole) place more importance on clear GOALS, knowing one's

JOB, having a competent and respected LEADER and having workgroups DESIGNED for results than do males. *Males* from different occupations are dissimilar in how they see the importance of workplace characteristics; and *females* from different occupations are also dissimilar in how they see the importance of workplace characteristics.



The student category is treated as an occupation to demonstrate the broad applicability of this approach. However, other research indicates to us that the norms and values of students--like this sample--are usually very close to those of the general population. Of course, dissimilarities are found among student subgroups, among US and Non-US students, and between male and female students (Haltermann 1992). It is important to remember that every student is a part of a larger community; -of a work experience; of an age cohort; and of some nationality and gender (just as are other "occupational groups"). *Biases stem from such associations.*

This study confirms that antecedent biases attendant to occupations; to occupational subgroups; and to gender; probably exist. These effects should be carefully considered by those developing, managing, and facilitating educational and training activities.

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