New Horizons in Simulation Games and Experiential Learning, Volume 4, 1977

TEACHING ABOUT THE IMPLEMENTATION OF JOB REDESIGN USING SIMULATION AND GROUP DISCUSSIONS

Irmtraud Streker Seeborg, Ball State University

INTRODUCTION

The traditional social science research model maintains a power differential between researcher and subjects by keeping the latter as ignorant as possible--deceiving them about the purpose of the research, denying them any influence on the methods used and, at times, keeping them uninformed about the results. In recent years, increasing concern has been expressed about this process, and it has been suggested that participatory research models be developed which give the participants more influence and, if possible, provide a learning opportunity for them [5, p. 1003] This paper describes a workshop on the implementation of job redesign; this workshop was designed with the objective of creating a research setting which would also provide an opportunity for personal learning for the participants.

Purpose of this Paper

A workshop on the redesign of jobs was conducted for employees of various Connecticut firms on the campus of Yale University. The goals of the workshop were twofold: to study different implementation methods, their impact on employees and their success in improving jobs; and to explore the feasibility of using simulation in teaching about job redesign.[1] Twenty-five participants from varying backgrounds were recruited through their organizations. They volunteered, knowing that this was an experimental workshop, not an established and well-tested training program.

The purpose of this paper is to describe the approach taken in the workshop, present the evaluation results that are available (participant reports), and discuss the applicability of the workshop design--with modifications--for training in the future.

Training Objectives

The job redesign literature is oriented toward theories of what makes jobs motivating, to the point of almost ignoring questions of implementation; yet, mistakes in implementation may have led to failure of a large number of redesign projects [3, pp. 109-1141. Likewise, job

[1] This research was supported by a grant to the author from the Manpower Administration, U.S. Department of Labor, under research and development contract No. 91-09-75-34.

redesign training often emphasizes what a good job should look like with little discussion of implementation questions. An exception is the AT&T approach where very specific steps are outlined for implementation [2, pp. 139-1671. In this case, only one way of implementation is considered, whereas in reality several options are available and that implementation method should be chosen which is most appropriate to the circumstances.

One of the goals of the workshop was to make participants familiar with three different implementation methods (implementation by workers, supervisors, or a manager 2 levels removed from the job under consideration), their advantages and limitations.

In addition, it was necessary to acquaint participants with a theoretical framework within which they could conduct their redesign activities.

A third goal was to stimulate participants' desire to know more about the issues of job redesign and to provide the basic tools so that they could investigate the problem on their own after the end of the workshop.

An experiential learning model was chosen to achieve the goals listed above. Some lectures were added to the experiential setting to assist participants in the development of a theoretical framework.

Feedback on how well these training objectives were achieved could be obtained in different ways--in direct discussions with participants, through written evaluations, and through an assessment of what participants actually did after they returned to their work environment. Some steps were taken to obtain feedback by these methods, but a rigorous evaluation was not possible due to the small sample size and the exploratory nature of the entire experiment.

TRAINING ACTIVITIES

The training activities were divided into 3 parts: Pre- workshop reading, simulation of an organization, and post-simulation meetings.

Pre-Workshop Activities

About 4 weeks before the start of the workshop, 3 articles on job redesign were sent to the participants. These were not scholarly articles, but reports on the experience different companies had with job enrichment, and they were meant as an introduction to the ideas of job redesign for those who had not been exposed to the topic at all (55%).

Since only four participants (<20%) had indicated on their application that they had been in experiential learning situations before, a short article on experiential learning was prepared

and mailed to the participants 2 weeks before the workshop started. This was intended to prepare participants what to expect so that they would not show too much resistance to the simulation once they entered the workshop.

The Experiential Learning Model and the Workshop

The workshop design followed closely the experiential learning model outlined by Kolb [6, pp. 27-29}. In the simulation, the participants were taken through the four stages of the learning cycle: (1) a concrete work experience, (2) a period of observation and reflection, (3) a presentation of basic concepts which can be related to the concrete experience through the observations made, and (4) an opportunity to deduce implications of the concepts and create new concrete experiences to test these implications. In addition, the session which followed the simulation gave participants an opportunity to reflect on the entire experience, and the final session presented a summary of the concepts which could have been developed during the workshop. This will be described in detail in the following sections.

Simulation of an Organization - General Setting

For the simulation, a temporary organization--ELITRONICS, INC.--was created. The workshop participants were assigned to one of five workgroups; each workgroup consisted of 4 production workers and one production supervisor. Assistants to the researcher played the roles of plant manager, industrial engineer, supply clerk, messenger, and librarian.

Work areas were located in two buildings. Two rooms were assigned to each workgroup. The rooms were equipped with the necessary tools, tables and chairs.

The product selected for the simulation was the Fussy- Vroom decision box.[2] This was chosen because the product is real, it has a potential market and can provide a sense of achievement to the person assembling it.

For the first day, the production process was split into four individual operations. As part of the participants' learning experience, the work low for each workgroup was redesigned on the second day; four different redesigns were used for the five groups.

Simulation of an Organization--Scenario

Participants checked in at different times, depending on their organizational role. Supervisors were required to come in first. They received 3 1/2 hours of training for their jobs.

[2] See Vroom and Yetton [7] for the underlying theory.

This involved an introduction by the plant manager to ELITRONICS, its history and products, and a demonstration by the industrial engineer of all the operations to be performed. Supervisors were encouraged to spend some time working with the equipment. Also, handouts describing the organization and the individual jobs were made available.

Supervisors then met their workgroups. They had been told that they should get the production line going as soon as possible, and they started out by training the workers in their jobs; each worker started as soon as he was trained and the preceding person in line had completed work on the first unit.

The first day really tested the supervisors' skills. They had to work with a new work group and an unfamiliar production process, and in some groups the first assembler was so slow that other group members had to be idle for quite some time. Most supervisors coped fairly well with the problem.

During the first day, the Job Diagnostic Survey (JDS)[3] was administered twice to all participants. The questionnaires were processed before the end of the first day so that results were available before the jobs were redesigned.

The first day had served to make participants familiar with the organizational situation and to provide the concrete experience on which further discussions were based. The jobs were frustrating to most people, and some groups used the opportunity of working together to discuss questions of motivation, job satisfaction, and work incentives. The first day had been planned to last 7 hours, and it was expected that the need for change would be felt by all participants after this time.

After completion of the first workday, the jobs were redesigned for each workgroup. Three approaches were used. (1) In two groups, the supervisors were given a lecture on job redesign by an outside consultant[4]; they were given the JDS results as diagnostic data, and were instructed how jobs could be changed to improve JDS data; then each supervisor had to redesign the jobs for his group individually. (2) In two other groups, all group members (supervisor and workers) met with the consultant and discussed job redesign; group members were given the same diagnostic data as the supervisors and were asked to redesign their jobs as a group. The consultant left the group after discussion had started and did not directly influence the final redesign. (3) In the fifth work group, the plant manager informed the supervisor that he wanted

[3] See Hackman and Oldham [4] for a description of the instrument.

[4] The author wishes to thank J. Richard Hackman, Yale University, for playing that role.

him to change the jobs in his group in a given way; the redesign used here was one that had been developed in a participative group.

This phase of the simulation was designed to provide an opportunity for observation and reflection (use of diagnostic data, discussions with the consultant and/or within the workgroup) as well as for the forming of new concepts (stimulated by the consultant's presentation of the job characteristics model described in [4, pp. 160-161] and by the implementation presentations and discussions in each workgroup). The process of redesigning the jobs made up the last phase of the learning cycle: implications of the new concepts and diagnostic data were discussed and new concrete experiences (= new jobs) were designed.

Following the redesign activity, the new job design was implemented in each workgroup, either by the supervisor or the workgroup itself, and each workgroup then worked for 8 hours in the newly designed jobs. Thus, participants had the opportunity to experience two aspects of job redesign: (1) how the mode of implementation (participative or imposed from above) affects the success of the redesign efforts and (2) the effect of a particular redesign on the workers (e.g., each worker performed the entire task in one group, whereas another group functioned as autonomous workgroup).

Working in the new jobs for a day then provided a second round of concrete experiences which should have led to more reflection and a subsequent refinement of the concepts.

Post-simulation activities

Since participants worked in 5 groups in 3 different implementation conditions, their experiences in the workshop varied widely. Therefore, a debriefing session was offered after the end of the simulation to give participants an opportunity to share experiences, but also to vent frustrations and express their feelings about the simulation.[5]

During the three-hour session, the activities of the simulation were reviewed. Representatives from several groups reported what had happened to them at given times, and many participants realized for the first time that the experience had not been the same in all groups. Comments from some individuals suggested that the simulation had really been effective. In general, the discussion was open and provided ample opportunity for participants to learn from their own as well as others' experience about the effects of different methods of implementing job redesign. Thus, the reflection and observation phase was entered a second time.

[5] The author wishes to thank Clayton P. Alderfer, Yale University, for conducting this session.

The final phase of the workshop was designed to provide a framework into which participants could fit their experiences (forming of new concepts). This was conducted as a lecture. The job characteristics model was explained again, and problems that could occur during diagnosis--based on the JDS---and implementation were discussed. Participants had the opportunity to ask questions, and reading material on the job characteristics model was made available.

EVALUATION OF THE TRAINING EFFORT

The primary research effort during the simulation was devoted to the influence of employee participation on the implementation of job redesign. But the workshop had been planned so that participation in it would lead to personal learning, and all the activities outside of the simulation were conducted strictly for that purpose.

To get some feedback on the workshop design, a questionnaire was administered at the end of the workshop; this measured participants' reactions to the workshop, but could not assess how much actual learning had taken place.

To assess actual learning about job redesign theory, it would have been necessary to test participants' knowledge before the workshop. This was ruled out because it would have made the simulation less realistic and would have spoiled the research on implementation of job redesign.

Since the reactions immediately following the last workshop sessions could have been unduly influenced by the experiences of the past days, it was decided to sample participants' reactions again at a later time. For this purpose, a second questionnaire was mailed to participants 11 months later. The first 5 questions were identical on both questionnaires. Since one measure of training effectiveness is how much is transferred into the organizational environment, a number of questions were added to explore what--if anything--employees had done about job redesign after the workshop.

RESULTS

Only 60% of those who answered the first questionnaire also returned the second questionnaire. To check for possible response bias, the answers to the first questionnaire of those responding to both questionnaires were compared to the answers of those who did not respond to the second questionnaire. There was a significant difference on one question only; those who responded to both questionnaires found the workshop a little too theory-oriented whereas those who did not respond to the second questionnaire considered the workshop to be a little too application-oriented ($t = 2.64$, $p<.02$).

Participants' responses at the end of the workshop and responses eleven months later were not significantly different for any of the questions. The reactions to the workshop were generally favorable. For example, 95% of the 20 respondents would recommend a similar workshop to others, and 70% felt that the workshop was properly balanced between theory and practical application. A majority of the respondents found the workshop somewhat too focused on experience.

The second questionnaire also attempted to assess what--if any--use participants had made of information that they had been exposed to during the workshop, and if the workshop had stimulated an interest in the subject material. This information allows us better to assess of how much value the workshop was to participants than their (more affective) reactions captured in the first part. The results of the second part of the questionnaire are summarized below.

Less than 50% of the 13 respondents to the second questionnaire actually had an opportunity to use their newly-acquired skills on the job; consequently, the two questions concerning the usefulness of the workshop are based on an extremely small sample (6).

The majority of those who were involved in a job redesign project could use at least some of the skills and information they acquired in the workshop. Two thirds of the same group found the theoretical part of the workshop more useful than the experiential part which is consistent with the evaluation by participants reported earlier (somewhat too focused on experience).

The workshop did stimulate participants to find out more about the subject material. Almost 70% of the respondents had spent some time reading more about the topic, attending lectures or participating in additional training sessions. All but one had discussed the subject with others in their organization. Some respondents had even met after the workshop to discuss the implications of their experience for the organization in which they worked.

DISCUSSION

Participants tended to feel that the experiential part of the workshop was too heavily weighted and did not contribute enough to their learning. This is apparent from questionnaire responses as well as comments made in the debriefing. Several reasons can be considered for this:

-Most participants had never been exposed to an experiential learning environment before. Although they were sent some material on experiential learning before the workshop, they still expected that a considerable portion of the time would be spent with traditional teaching methods. Very few people took the initiative to discuss experiences with each other,

reflect on their experiences, or make use of the resources that were available; therefore, they did not learn as much from the experiential part as they could have otherwise.

-The time to be spent on different parts of the simulation had been determined from a pretest involving mostly students. The pretest subjects had been much quicker in learning the jobs than the workshop participants; therefore, the workshop timing was less than ideal. Participants had to spend too much time learning the job; this time did not effectively contribute to their learning about job redesign. This may have been another reason why some participants felt that too much time was spent on the experiential part.

-It is possible that a reflective observation phase needs to be structured into the workshop design at several points in time. Providing a discussion with the consultant about the questionnaire results was planned to serve that purpose, but very little discussion was stimulated. The session with the consultant was also designed to provide abstract conceptualization; not enough effort was made to help people to reflect on their experiences before the concepts were introduced. A change in the format of this session could have enhanced experiential learning considerably.

It should have been expected that participants' reactions also varied with the condition in which people worked--the participative groups were actually forced into discussion and reflecting more than the others. But an analysis of the questionnaire responses showed no differences among conditions on almost all of the questions where an analysis was meaningful.

If future workshops were conducted which follow a similar pattern, some changes should be made:

(1) A simpler production process should be chosen so that less time is spent concentrating on technical details.

(2) Participants need to be helped with thinking about their experiences. In the meetings with the consultant, reflection and discussion need to be stimulated to a much larger extent before the conceptual material can be presented.

This means that more time needs to be made available; it may be necessary to use a team building exercise of some kind before a meaningful discussion can develop[6]; and the concepts need to be discussed in much more detail, including controversial issues, before a redesign can be attempted.

[6] For one example from industry where team building exercises have been used successfully in conjunction with job redesign, see Doyle [1, pp. 193-210].

In general, I feel that there is a great potential in this approach, but a few additional exploratory workshops with modifications as outlined above need to be conducted before a definite model can be suggested.

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