

Structured On-the-Job Training: Pre-design Analysis Activities

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In the design models for OJT emphasis is rather exclusively on task analysis and the learner's prerequisite skills. A broader consideration of trainee characteristics and work environment conditions is proposed. In this paper focus is on measurement and implications of trainee characteristics and workplace conditions.

In the current discussion about designing On-the-Job Training (OJT) in the pre-design analysis phase strong emphasis is on analyzing work tasks focusing on the determination of the content for OJT (see for example Jacobs & Jones, 1995). The question is whether this is sufficient to design effective OJT. Recent studies showed various factors that enhance or inhibit learning, training and transfer of training. Based on a review of transfer literature Baldwin & Ford (1988) distinguished three categories of factors that affect the effectiveness of training: work environment characteristics, trainee characteristics and training design.

With regard to the work environment recent publications reported several important factors influencing training effectiveness. Critical factors are the role of colleagues, the role of the supervisor and work load during all phases of the training event. Furthermore, Rothwell (1991) stressed the influence of the organizational climate on the possibilities for the use of OJT. Support of colleagues contributes to the trainee's self-efficacy and coping strategies for solving problems (Latham & Crandall, 1991) and has an positive impact on the employee's performance (Becker & Klimoski, 1989) With regard to the role of the supervisor Becker & Klimoski (1989) reported this was the most powerful source of feedback. Gielen (1995) found supervisory support was indirect linked to performance and had a direct impact on trainee's self-efficacy and job involvement. Finally, in several publications the influence of the work load is mentioned (see for example, Baitsch & Frei, 1980; Onstenk, 1994). High levels of work load are perceived as a barrier for acquiring new skills because of time constrains. With regard to the assessment of employee characteristics Baldwin & Ford (1988) suggested that trainee characteristics were most accountable for training outcomes. Important variables were ability and experience. Rather than concentration exclusively on the trainees' prerequisite skills and knowledge in the current thinking about needs assessments more emphasis is placed on the trainees' (learning) attitudes, interests and perceptions (Richey, 1995). Rothwell & Kazanas (1992) reported various employee characteristics to take into account for training design such as work experience and learning style. With regard to the latter characteristic several attempts have been made to identify learning styles and match them with instructional strategies (Vermunt, 1992). An important aspect of a person's learning style is the ability to learn self-directed. Rothwell stressed the importance of this ability because in the case of OJT a trainer is not always permanent available in the workplace.

Above mentioned characteristics contribute to a design of OJT that meets better the preferences and the abilities of the trainees and the specific circumstances in the workplace resulting in a more powerful training environment. In this paper focus is on analysis of employees characteristics and workplace characteristics. The research question that is addressed in this paper concerns the contribution of the analysis of employees characteristics and the analysis of workplace characteristics to the design of OJT.

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Methodology

Corporate setting. This research project was carried out among the franchise post offices of the Dutch Post Office Organization. The franchise post office is a new phenomenon. The independent entrepreneur enters a contract that settles which products and services of the Post Office Organization will be sold in his franchise post office. In most cases the entrepreneur contracts employees to work as desk clerks in his office. The immediate cause for this research project was the necessity to design a product-oriented training that meets the needs of the desk clerks within these new franchise post offices. The HRD-department suspected that training for desk clerks in these offices was necessary. As a training method OJT combined with CBT was perceived as most suitable. However, no information was available with regard to what specific tasks should be included in the training program. Furthermore, no information was available about desk clerks' background features, their willingness to participate in training programs, their learning style and their appreciation with regard to OJT and CBT. Also was not clear on which conditions employers were willing to invest in training. All these topics were included in the research project. In this paper focus is only on workplace and employee characteristics. The practical aim of the research project was to gather descriptive data that provided input for the design of the training program.

Questionnaires. Data from two surveys are presented here. In survey 1 employee characteristics was an important topic and in survey 2 workplace characteristics was one of the major topics. Survey 2 consisted of two separate versions for employers and employees.

Sample. The whole population of eighty franchise post offices was included in the sample. They were split up at random in two equal groups of forty. Each group of forty offices was questioned with one of the two surveys. The sample for survey 1 consisted of 118 desk clerks. In many offices the employer also performs desk clerk tasks so the questionnaire was completed by employees and employers. Response rate was 64% (75 respondents). Response rates for the workplace characteristics survey were 55% (22 employers) and 60% (47 employees).

Workplace characteristics. Following variables were included. Employer's feedback consisted of a four-item scale only rated by employees. Feedback of colleagues was only rated by employees and contained three items. Perception of solving work problems was a scale of four items. For the measurement of the time available for OJT a scale of four items was constructed. These items focused on the time constraints related to opportunities for OJT in post offices. To measure the willingness to invest in employee training five single items only rated by employers were included. Willingness to be involved in employee training was measured with four two-point scale items that were only rated by employers. With exception of the four latter items, all other items used five-point rating-scales.

Employee characteristics. As much as possible existing scales were used. Gielen's job involvement six-item scale was used (Gielen, 1995). Three learning style variables developed by Vermunt (1992) were included. Acquiring knowledge measured a person's preference toward mental activities focusing on memorising facts and procedures, applying knowledge rated a person's preference to emphasise the application of the training content. Self-directed learning measured the ability to carry out cognitive activities for monitoring the learning process. One learning style variable constructed by Kwakman (1992) was included that measured employee's problem solving attitude (active versus reactive) in work settings. Appreciation of different types of training programs was measured with six items that were used also by Cramer & Thijssen (1994). Appreciation for specific training conditions were rated with five items. In every post office manuals are available that contain the desk clerks' tasks procedures. The appropriateness of these manuals to serve as a book of reference in training programs was measured with a scale of six items. Also a scale of six items was constructed that focused on the actual use of these manuals in the respondent's work setting. All items concerning employee characteristics used five-point rating scales.

Background variables. Several items were adjusted in both questionnaires that focused on educational level, length of contract, hours per week, type of contract (employer or employee).

Results

Reliabilities varied between $\alpha .56$ (self-guided learning) and $\alpha .84$ (feedback employer). The rather low reliability of self-guided learning is equal to the reliability Kwakman (1992) reported. Elimination of items to receive acceptable reliabilities was necessary for several scales. For all the scales with regard to workplace characteristics the same division of rating points was used: 1 = very high to 5 = very low.

Feedback. Respondents reported sufficient feedback from their colleagues ($M = 2.38$, $SD = .88$) and their employers ($M = 2.26$, $SD = .91$) on their performance. Items of both variables were rated only by employees. The oneway analysis of variance showed that months working as a desk clerk was related to the perceived feedback of colleagues ($F = 2.60$, $p.05$). Respondents that worked more than two years reported significant less feedback of their colleagues.

Time constrains for OJT. The mean of this variable indicated that time constrains did not really exist ($M = 3.01$, $SD 1.05$). However, the variability around the mean showed that among respondents rather different perceptions existed with regard to the possibilities for OJT in the post offices.

Problem solving. Respondents perceived the organizational climate as a rather open climate wherein problems and mistakes are discussed in a positive manner ($M = 1.93$, $SD = .62$).

Employers' willingness to invest. The willingness to pay travelling expenses for employees that attend training in a training centre was modest ($M = 2.90$, $SD = .145$). This is also valid for their willingness to supply for employees that must leave their workplace for an evaluation meeting in a training centre ($M = 2.63$, $SD = 1.46$). The absence of an employee for a whole week in case of off-the-job training activities is less appreciated ($M = 3.16$, $SD 1.46$). Employers are not willing to pay for hotel accommodations for their employees ($M = 3.58$, $SD 1.31$). Because training is perceived as an important instrument to improve quality of the post office services, employers receive a bonus of \$ 1560,- of the HRD-department for every employee that attends training. The mean score revealed this bonus is perceived as somewhat insufficient ($M = 2.56$, $SD 1.10$). Oneway analysis of variance showed that valuation of the bonus was related with the length of time employers served ($F = 3.75$, $p.04$). A longer length of time correlated with lower valuation scores. In general, there was considerable variability around the means of the items that measured employers' willingness. This indicated that among employers various opinions existed with regard to their willingness to invest in employee training.

Involvement in employee training. Four items with yes/no ratings were used to measure the employers' willingness to be actively involved in the training of their employees. For all four items counts that training was defined as OJT delivered by a professional trainer from outside the office. 19 from the 22 employers rated these four items. Here percentages are reported. 63% appreciated a discussion with the trainer and their employees before the training to discuss the training content. 58% wanted to be informed by the trainer about their employees' progress. To play an active role as a trainer was valued by 37% of the employers. Only 21% of the employers wanted to map out an written agreement containing the division of tasks and responsibilities of the trainer, the employee/trainee and the employer.

Below the findings of the survey focusing on employee characteristics are reported. In many cases the employer also perform desk clerk tasks. Therefore the ratings below are based on the mutual scores of employees and employers. For all the scales with regard to employee characteristics the same division of rating points was used: 1 = very high to 5 = very low.

Job involvement. The mean showed respondents are slightly involved in their work ($M = 2.60$, $SD .62$). It appeared that employers were more involved than employees ($F = 9.39$, $p.00$).

Training preferences. The ratings showed that a training in a training centre was most appreciated ($M = 2.16$, $SD .87$) and second best was OJT delivered by a professional trainer ($M = 2.21$, $SD 1.09$). Both types of training are almost equally valued. Less appreciated was OJT delivered by the employer ($M = 2.95$, $SD = 1.10$). For the employers the phrasing of this item was different. They were asked to rate the appreciation of OJT with the district post office manager as a trainer. Respondents have hardly no appreciation for self-study with CBT ($M = 3.41$, $SD 1.09$) or self-study with written training materials ($M = 3.64$, $SD 1.02$). The least appreciation existed for not to attend training programs at all in case of learning needs ($M = 3.88$, $SD 1.02$). In general, there was

considerable variability around the means of the training program items. This variability was not explained by demographic variables as educational level or type of contract (employee or employer). With regard to the appreciation for training conditions all were highly appreciated. These training conditions were regular feedback, the use of an advanced organizer at the start of the training, active participation in training activities, learning in individual pace, focus on applicability of the training content. For all the five training conditions items no links with background variables were found.

Learning styles. The mean of the variable application of knowledge showed that respondents were focused on application of rules and concepts in the work situation ($M = 1.52$, $SD .50$). Less emphasis was found on activities for acquiring knowledge ($M = 2.60$, $SD .57$). The variable self-directed learning that measured the cognitive activities to monitor the own learning process showed respondents were able to do this ($M = 2.34$, $SD .67$). This is also the case for the variable self-guided learning that rated the attitude of respondents toward problem solving ($M = 2.17$, $SD .64$). The variability around the means of the learning style variables was rather limited. It was not explained by the background variables, with exception of educational level for one of the four learning style variables but no clear interpretable pattern existed.

Use and appreciation of manuals. The mean showed that these manuals are consulted quite often ($M = 2.15$, $SD .71$). The appreciation of the manuals was also rather positive ($M = 2.43$, $SD .61$). The use of the manuals was linked with the working hours per week. Respondents that worked no more than 20 hours consulted these manuals less ($F=2.65$, $p.04$). Most parttime desk clerks work during hours when work load is high. Apparently they had less possibilities (quiet moments in their work) to consult these manuals.

Cluster analysis. Involved in this analysis were the learning style variables and the items that measured appreciation of training programs and appreciation of training conditions. The cluster analysis resulted in two clusters. One cluster consisted of 50 respondents and 20 respondents belonged to the other one. A two-tailed t-test was performed with the clusters as grouping variable for all variables involved in the cluster procedure. Results are summarized in Table 1.

In general, the respondents of cluster 2 had lower ratings of all the four learning style variables but only with regard to self-directed learning there existed a significant difference. Lower scores indicate higher ability/stronger emphasis on performing these aspects of the learning style. Five types of training programs were found with significant differences for the two clusters. Inspection of the means showed respondents in cluster 1 only appreciate the training centre and OJT with a professional trainer, while the respondents of cluster 2 appreciated other types of training too and they much stronger rejected the idea of not to attend training activities in case of learning needs. For three of the five training conditions significant differences were found. A general pattern was that respondents of cluster 2 emphasised stronger the presence of training conditions, with exception of the immediate application of the training content in the own work setting.

Differences between both clusters for the background variables were also examined. For one variable, length of time working as a desk clerk, an significant difference was found. The results of the t-test showed that respondents of cluster 1 worked longer as a desk clerk than the respondents in the other cluster ($p. 05$). For the variables job involvement, use and appreciation of the manuals no differences between both clusters were found.

Table 1. Cluster means for learning style, training programs and training conditions

Variables	Cluster 1 (n=50)	Cluster 2 (n=20)
Learning style		
Using knowledge	1.59	1.54
Obtaining knowledge	2.68	2.62
Self-directed learning	2.53	1.93 ^{**}
Self-guided learning	2.19	2.07
Training programs		
Training centre	2.02	2.35
OJT delivered by trainer	2.46	1.80 [*]
OJT delivered by employer/ district manager	3.34	2.10 ^{**}
Self-study with CBT	3.78	2.35 ^{**}
Self-study with written training materials	3.84	3.35 [*]
No training	3.68	4.40 ^{**}
Training conditions		
Regular feedback	1.74	1.30 ^{**}
Advanced organizer	1.82	1.45 ^{**}
Active involvement	1.76	1.55
Individual pace	2.24	1.70 ^{**}
Application training content	2.06	2.20

Two-tailed t-test ^{**} p < 01 ^{*} p < 05

Implications of the study

For employees as well as their employers of the franchise post offices there are no obligations to attend training programs delivered by the HRD-department of the Post Office Organization. Participation is voluntary. Consideration of the desk clerk training needs, their attitudes and interests and workplace features is therefore necessary to design training programs that are highly appreciated and practicable.

The findings of this study suggest that most valued are the training in a training centre and OJT delivered by a trainer. Valuation of both training programs was almost equally. These two types of training programs have in common that instruction is provided by a professional. Especially types of self-study training programs are not appreciated by the majority. The intention of the HRD department to offer desk clerks OJT seems therefore a suitable solution when one takes in mind the expressed preferences.

With regard to the workplace conditions there are no real barriers for the use of OJT. As the findings indicate there exists an organizational learning climate in the offices wherein providing feedback and discussing problems are legitimate. Especially for OJT these workplace conditions are obvious of paramount importance because the training takes place in the actual work setting. Also there exists some willingness of employers to be involved in the OJT of their employees. As research

implies, employers actual involvement in employee training contributes to the employees' efforts to acquire and applicate knowledge and skills in their jobs and is therefore an important factor for positive training and transfer results. A possible barrier for the use of OJT is the time available for training in the work setting. However, the alternative, off-the-job training, encounters more opposition of employers. In general, there is only very modest willingness to accept the financial costs and the absence of employees that are the consequences of off-the-job training.

The idea to combine OJT with CBT delivered as a self-study program is not without problems. Although CBT might be an attractive solution because it offers trainees the possibility to study in their own pace, there exists some resistance against CBT. This is also valid for the ratings with regard of self-study with written training materials. A possible explanation for this resistance is that self-study programs require more of trainees' perseverance. In the case of self-study programs there is no trainer that takes over some control of the learning process. Apparently, respondents appreciate 'trainee control' (learner control) less than 'trainer control'.

When one ranks all the preferences that were included in the survey, the structured types of training that possess the highest degree of 'trainer control' (training centre, OJT delivered by a trainer) were most preferred.

To some extent the respondents' emphasis on 'trainer control' is not in line with their learning style. The findings indicate respondents possess a certain ability to monitor their own learning process (self-directed learning), to solve work problems independently and to carry out activities focusing on acquiring and applying knowledge. These latter findings suggest respondents possess a learning style that enables to attend to self-study programs. As Grow (1991) stated, becoming a self-directed learner requires learning experiences wherein trainees experience they are able to take over the control for their own training. A careful introduction of CBT and additional trainer support in the first stages of the CBT might reduce the initial resistance against CBT.

The cluster analysis revealed that the time a respondent works as a desk clerk is linked with the preferences, the learning style and the appreciation of training conditions. In general, there is a pattern that a longer career as a desk clerk results into a stronger preference for types of training programs with higher 'trainer control'. A possible explanation is that desk clerks with a longer career had less recent experience with training and have less confidence in their own learning capacities. Furthermore, it is possible that desk clerks with a longer career have lost some interest and are only willing to participate if the training program meets very specific conditions. This implies a very careful introduction of training programs that make an appeal to learner control.

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