Implementing on-the-job training: critical success factors

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Post Offices Inc. in The Netherlands has developed and implemented a new instruction model for the training of desk employees. The quality of the new instruction model was assessed by means of the evaluation model of Jacobs and Jones for on-the-job training. It is concluded that the implementation of the training model has not been completely successful. Critical success factors, such as the performance of the mentors as well as the quality of the self-study material, have to be improved. Mentors are expected to serve as a behavioural model, to provide feedback, arrange an adequate environment for self-study, motivate trainees for self-study and evaluate trainees’ progress on a regular basis. This study shows that mentors must be fully convinced of the benefit of a new instructional model, if not, the implementation will not be successful. Besides, the study shows that the quality of the self-study material depends very much on the similarity between the knowledge needed in work and the knowledge presented in the self-study material.

The last decade can be characterised by structural changes in the economy, technology and work. These developments have created a global market place, characterised by high competition. The human resources and the working potential of employees have become the decisive factor in this competition. This implies that...
continual investment in training is necessary to improve the quality of the labour force and to increase productive capacity.

Instead of traditional off-the-job training a clear tendency can be observed towards on-the-job training (OJT). OJT has well-known advantages, such as: (1) a strong link between training and practice, which has a positive impact on trainees’ motivation; (2) skills acquired on the job are learned more effectively (faster and with high retention levels); (3) favourable cost-effectiveness; (4) flexibility – OJT is very flexible, can be delivered just in time, and can be easily adapted to changes; (5) the transfer problem is minimised, since training is given on the site where the employee will work.

Post Offices Inc. in The Netherlands has been training new employees for more than 25 years. Increased demands for quality and a need for more uniform and cost-effective services have led the Human Resources department of Post Offices Inc. to develop and implement a new instruction model for the training of desk employees in small, privately-owned post offices. It was decided to use (structured) OJT because of the aforementioned advantages that it offers and the appropriateness of the method in this specific case.

OJT was thought to be an appropriate method in this special case because Post Offices Inc. achieved a ‘positive score’ on the selection criteria mentioned by Jacobs and Jones (1995). These criteria include: the nature of the task (training is necessary immediately and involves new employees, the tasks to be learned are not very difficult, and the consequences of errors can be minimised); available resources (mentors, equipment, tools and data are available); constraints on job setting (available training locations, low work distraction); financial considerations (large number of trainees); and individual differences (trainee prerequisites and preferences are both unknown).

Nevertheless, there are also considered to be a number of disadvantages to OJT: (1) supervisors/line managers often perceive OJT as an extra burden; (2) the atmosphere on the work site may not be favourable to starting up the learning process and keeping it going; (3) a heavy pressure of work can impact negatively on the training process; (4) learning materials are often not kept up to date; (5) because of time constraints, little attention is paid to the necessary background of the skills and knowledge to be learned; (6) OJT preparation of the trainers who will have to deliver OJT is mostly inadequate.

Post Offices Inc. decided to evaluate the new instruction model twelve months after its implementation. The study focused on the following research question: Is the quality of the instruction model considered to be satisfactory in terms of instructional materials, learning results, and the practical behaviour of employees?

Theoretical background

Jacobs and Jones (1995) and Rothwell and Kazanas (1994) state that workplace training can be divided into structured, planned on-the-job training, usually referred to as OJT, and unstructured, unplanned on-the-job training. Structured on-the-job training is planned instruction occurring on the job during work, centred on the knowledge and skills workers should possess in order to perform competently (Rothwell and Kazanas, 1994). Structured OJT can be defined as an organised, structured, intentional form of training that contains well-directed pedagogical interventions, in which the workplace functions as a place for learning (De Jong, 1998). An additional characteristic of OJT, according to Van der Klink (1998), is that on-the-job training involves intentional learning and that, as a consequence, a (formal) training arrangement is required that includes the intended training objectives. Structured OJT may be delivered by a supervisor, an experienced co-worker, a subordinate, or a job coach from outside the organisation, or it may be self-directed and thus overseen by the employees themselves. It usually involves one-on-one instruction. In developing structured OJT there is often first an extensive job analysis, followed by a step-by-step instruction method. Unstructured, unplanned OJT also occurs at the workplace. This involves informal methods of learning (non-intentional learning, learning as a
by-product of the daily scheduled tasks). A plan or training arrangement is non-existent and employees learn by, for instance, imitating experienced workers.

One interesting new phenomenon is the introduction of concepts such as the ‘learning organisation’, ‘lifelong learning’, and ‘organisational learning’. These concepts are based on the idea that organisations cannot build on the individual learning of their employees, but that this learning needs to be shared and acted upon in such a way that the organisation performs outstandingly in an increasingly competitive environment (Senge, 1990). Organisations should operate a continuous, organisational learning cycle (Nomaka, 1991), where knowledge is created, captured, shared and implemented, preferably by teams of workers. In learning organisations the role of the HRD professional is changing from training specialist to performance improver (Robinson and Robinson, 1998), focusing on the creation of opportunities, learning environments, in which individuals and teams can learn and share each other’s knowledge. These developments shed a different light on on-the-job training. On-the-job training should be read as on-the-job learning, which means that the HRD professional has to create situations in the workplace in which employees are invited and encouraged to learn (together). It should also be emphasised that the HRD professional has to take into account a shift in learning content: besides instrumental, job-specific knowledge and skills, growing importance is being attached to self-regulating and team-regulating competencies (meta-cognitive competencies, e.g. planning, monitoring, and assessment activities; socio-communicative and socio-normative skills).

**Underlying reasons prompting the study**

A number of reasons were observed that all pointed to the necessity for implementing a new instructional model. In practice, the variation relating to the execution of the training programme or desk employees could be considered large. Many assessments pointed out that the length of the training programme and the application of the training materials and tests depended very much on the local circumstances of the post offices and the preferences of the mentors. Besides, mentors had often not been trained for this work and were doing it part-time. The introduction of the training model was meant to achieve a minimum level of quality. For these reasons it was decided to use full-time mentors, starting from the introduction of the new training model.

The new training model has the characteristics of structured OJT. The model is based on extensive job analysis, the learning process is planned, the amount of available training time is restricted, and the results are measured (see Figure 1).

**Evaluation of the training programme**

Kirkpatrick (1976, 1994) developed a model to evaluate training efforts. He identified four levels of evaluation and arranged them hierarchically from the least to the most difficult. The lowest and easiest level concerns evaluation in terms of learner reac-

1. The length of the training is four weeks.
2. The training consists of a practical and a theoretical part. The practical part comprises learning on the job by selling the ‘products’ of Post Offices Inc. to clients at the counter (four hours a day) under the supervision of a mentor. The theoretical part consists of learning the theory by self-study (four hours a day), with the mentor being at the new employee’s disposal.
3. The instruction material for self-study is provided by the HRD department of Post Offices Inc. Two manuals, and a CAI-package, describing the products and services of Post Offices Inc., have to be used during self-study.
4. To measure the progress of new employees, the employees’ performance at the counter and their knowledge of products and services will be assessed.

*Figure 1: The four characteristics of the new instruction model*
tions: did the learner like the training? The second level of evaluation is learning: what was learned from the training? The third level is behaviour: how much did learners change their behaviour as a result of the training? The last and fourth level is results: how much organisational improvement resulted from the learner's behavioural change?

This model has been criticised by several authors. Holton (1996) argues that Kirkpatrick's model is unjustly acknowledged by many HRD professionals as the standard in the field. The model is not based on profound empirical evidence and is considered to be incomplete. Several authors suggest adding an additional level to measure more specifically return on investment (see Phillips, 1995). At best, the model could be labelled an (incomplete) taxonomy, that is to say, a framework not including 'all constructs and variables underlying the phenomena of interest, thus making validation impossible' (Holton, 1996: 6). This also suggests that the implied 'causal relations' between the levels of Kirkpatrick's model are not based on empirical evidence, so, to be clear, are 'unmistakably non-existent'.

This does not mean, however, that the model is completely unfit for our purpose. Elements of Kirkpatrick's model were included in the evaluation model that Jacobs and Jones (1995) developed to measure the results of structured OJT. Jacobs and Jones' model has all the characteristics of a systems model, and consists of four components: training outputs, training processes, training inputs and organisational context. The training output questions relate to whether the training objectives were met (e.g. Were the training objectives achieved? What were the effects on job and organisational performance? Were training outcomes consistent with the trainer's development needs?). The training process questions focus on the behaviours of the mentor and the trainee during the training (e.g. Did the mentor use the model as intended? Did the mentor use effective communication skills? Did the trainee attend to the mentor?). The training input questions focus on the system components present at the time of training: learning tasks, training design and training module, training location, and trainee. Questions relating to this are: was the training module accurate and complete and appropriately formatted? Did the trainee have the prerequisites needed for training? The organisational questions address the support for the trainee within the context, such as the role of supervisors and colleagues, constraints caused by production process pressures, time constraints, and the quality of the tutor's training (employees in the role of mentor). The questions included the following: did management provide sufficient resources to support OJT? Can OJT occur within the constraints of the production or service delivery schedule?

Methodology

This section describes the methodology of the study. The following topics come up for discussion consecutively: the research questions, the subjects and settings, and the data collection procedure.

Research questions

The overall research question (can the quality of the new instruction model be considered to be satisfactory?) was divided into sub-questions. These sub-questions were clustered according to the four components of the evaluation model of Jacobs and Jones (1995): training outputs, training processes, training inputs and organisational context.

Training outputs

- Did the trainee's behaviour in dealing with clients at the desk meet the criteria?
- Did the knowledge achieved by the trainees reach a predetermined level?
Training processes

- Did the mentor implement the new instruction model completely, as intended by the designers?
- Did the mentor apply all four characteristics of the new instruction model, such as a training duration of four weeks, four hours’ on-the-job training, alternated with four hours’ self-study, application of the instructional materials provided by the HRD department, testing the learning results of the trainees four times in the programme?

Training inputs

- Were the trainees’ entrance level and prerequisites, the mentor’s method of instruction, and the complexity of the training material taken into account during the development of the new instruction model?
- Was the quality of the training materials (the text manuals, the CAI package, the learning guide) judged satisfactory?
- Did the different participants/stakeholders have a positive attitude towards the new instruction model?
- Did the beliefs and the behaviour of the mentor correspond with the vision defined by the HRD department?

Organisational context

- Did the management of Post Offices Inc. provide the necessary resources to support the implementation of the new instruction model?
- Was there a conflict between being a productive trainee (selling products at the counter) and, at the same time, being expected to learn new behaviour through OJT?
- Did the mentor have enough time available to train the trainees?

Subjects and settings

Two studies were in fact carried out: a small-scale survey and a case study. The following groups of persons participated in the survey: instructional designers (N = 2), mentors (N = 33), regional managers (N = 7), employers (in this study: self-employed shopkeepers) (N = 3) and trainees (N = 18). In addition to the survey, case studies were carried out in four situations to obtain a deeper insight into the training process and the factors influencing it. In the case studies the number of participants were: mentors (N = 4), trainees (N = 5), employers (N = 3), regional managers (N = 7) and training designers (N = 2).

Data collection procedure

Data collection took place by means of a survey of all participating post offices and four selected case studies. Figure 2 mentions all the sources and instruments used. Although the collected data were processed quantitatively per question/item in each instrument, in this article the results are discussed qualitatively at an aggregated level: all collected data (per research question) are taken together, which implies that all the available source material contributed to the composition of the answers.

Results

Training outputs

Did the trainee’s behaviour in dealing with clients at the desk meet the criteria? The employers who were involved in the case study were on the whole satisfied with
Mentors
Data from mentors were collected by means of a questionnaire and, if they were participating in the case studies as well, a semi-structured interview and a log.

Employers
Employers were asked to fill out the standard evaluation form of the HRD department of Post Offices Inc. and, if they were also participating in the case study, an interview was held.

Regional managers
Regional managers filled out the standard evaluation form and, if also involved in the case studies, a semi-structured interview was held.

Designers
Designers were interviewed by means of a semi-structured questionnaire.

Trainees
Trainees filled out a questionnaire and the standard evaluation form, had to pass four written tests (one each week of the training programme) and the so-called WAVE test (observations made by the mentor of the trainee’s performance at the counter).

Figure 2: Instruments for data collection and data sources used to answer the research questions

the way the trainees performed their tasks at the desk. Since the WAVE test – an observation set used by the mentors to assess the trainee’s behaviour in dealing with clients at the desk – was applied by only 15 of the 30 mentors, the findings are, to a certain extent, subjective.

Did the knowledge of the new employees reach a predetermined level? The trainees were tested at the end of each week of the training programme. These tests consisted of two sub-tests: the mail traffic test and the post bank test. The scores were expressed in percentages. The assumption was that the trainees’ score would increase as the training programme progressed. At the end of week 1 a score of 35 per cent was expected, at the end of week 2, a score of 50 per cent, at the end of week 3, a score of 65 per cent, and at the end of week 4, a score of 80 per cent. Data were collected from 10 mentors. Nine mentors stated that the score of 80 per cent had not been reached at the end of the programme. They explained that the overall criterion was too high and the subject matter too broad. These results were confirmed when the trainees’ test results were compared. It appeared that the criteria for test 1 and test 2–35 per cent and 50 per cent respectively – were too low and the criterion for test 4 (80 per cent) was too high. Trainees scored on average 59 per cent, respectively 55 per cent on the subtests of test 1, 64 per cent and 60 per cent on the sub-tests of test 2, 67 per cent and 68 per cent on the sub-tests of test 3 and, finally, 72 per cent and 74 per cent on the sub-tests of test 4.

Training processes
Did the mentor fully implement the new instruction model, as intended by the designers? Did the mentor apply all the four characteristics of the new instruction model in the programme, such as a training duration of four weeks, four hours’ on-the-job training, alternated with four hours’ self-study, application of the instructional materials provided by the HRD department, testing the learning results of the trainees four times? The length of the training programme was considered the minimum to achieve the training objectives. Since it is considered to be very difficult to start work as a trainee in a post office that has been set up very recently or – even worse – that is being set up at the time of the trainee’s arrival, many mentors send trainees for their first, and sometimes second, week to a post office that is operating well. It should be understood that this problem occurs frequently as a consequence of the implementation of a new policy of Post Offices Inc. to close their own post offices and set up new, small post offices in existing, privately-owned (manual) stores.

A considerable number of mentors were of the opinion that the written self-study material and, to a lesser extent, the CAI package were too extensive; this resulted in not all the material being studied by the trainees. Only 20 out of 33 mentors used the week planning and the checklist of activities from the mentors’ guide; only 12
administered the learning (theory) tests, due to a lack of time. The WAVE test was used by only 15 mentors, because the mentors did not value it. (Some think that this practical test cannot be scored objectively, while others are of the opinion that the practical test should be administered after the trainees have learned the necessary (prerequisite) knowledge.)

The mentors were selected after the training programme had been developed, which meant that they did not participate in the design and development process. This was considered to be a handicap, because the mentors were not always aware of the paradigm that is basic to the training programme. The designers tried to reduce the complexity of the programme content by using the modularisation principle and by applying clear sequencing principles. The training programme seemed to have been prepared for 'normal' post offices, and not to have taken into account the specific situation in the new, privately-owned post offices.

Training inputs

Were the entrance level and prerequisites of the trainees, the mentor's method of instruction, and the complexity of the training material taken into account during the development of the new instruction model? It became clear from the interviews with the designers of the training programme that the (educational) entrance level of the trainees had not been taken into account during the development process. There had also been no communication with the trainees during the development process. Trainees were only expected to give feedback on an evaluation sheet at the end of the training programme.

The mentors were recruited after the development of the new instruction model and were told how to instruct. This meant that the mentors did not have the opportunity to deliver input to the designers. From an innovative perspective, this was not very sensible.

Was the quality of the training materials (the text manuals, the CAI package, the learning guide) judged satisfactory? Eighteen of the mentors stated that the theoretical part of the training programme did not prepare the trainees adequately for their work at the desk. Too much information was presented. Essential information only should be presented briefly so that everything can be worked through in the time available. The mentors would like to add job aids; the district managers were of the same opinion.

The mentors judged all the 41 modules of the training programme. They rated which modules were most important for job performance, which were very difficult, which very motivating, which too extensive and, finally, which took more or less time than expected. Nineteen mentors did not apply the sequence of 41 modules, as recommended in the programme, because this did not link up with the trainees' practical work as expressed in activities at the desk. Only eight of the mentors approved the recommended sequence of modules.

Did the different participants/stakeholders have a positive attitude towards the new instruction model? The mentors, the district managers and the developers of the instruction material criticised the training programme on the same points: there was not enough time available and there was too much subject matter. Nevertheless, all respondents commented positively on the daily alternation between theory and practice, which was based on the central paradigm underlying the new training programme.

Did the beliefs and the behaviour of the mentor correspond with the vision defined by the HRD department? Mentors 'play' four roles: the mentor as mirror, instructor, supporter, or confidential agent. Most (28) mentors saw themselves as an instructor. In second place, 25 mentors saw themselves as a supporter; the role of confidential agent was mentioned by 22 mentors, and that of mirror by 21 mentors.
Organizational context

Did the management of Post Offices Inc. provide the necessary resources to support the implementation of the new instruction model? One of these resources is an adequately trained mentor. The mentors mentioned that the training content was not difficult for them to teach, although a few mentioned that the pressure of work was too heavy. A quiet place to study the self-study manuals is another important condition, frequently missing. The mentors indicated that 27 post offices did not have such a quiet place to study. The mentors' solution was to let the trainees take their self-study manuals home.

Was there a conflict between being a productive trainee (selling products at the counter) and, at the same time, being expected to learn new behaviour through OJT? The training programme was designed so that clients would be inconvenienced as little as possible. The mentors indicated that clients were aware of the fact that training was going on, but that they reacted very positively and patiently; only a few clients complained that they had to wait too long.

Did the mentor have enough time available to train the trainees? The mentors and the district managers indicated that the duration of the whole course was too short and should be extended to 6 weeks.

Conclusion

This study shows some of the typical difficulties attached to putting OJT into practice. The overall conclusion is that the implementation of the model did not meet all expectations. Taking the data into account, it is reasonable to assume that successful implementation of OJT lies in the variety of the products and services of the particular post office (a large post office has a broader range of products and services than a small one). The new, small private post offices offer, in theory, the same products and services as the large ones that are employed by Post Offices Inc., but, in practice, they offer only a limited number of products and services. The training model assumes that all products and services have to be learned during self-study. However, it is likely that mentors advise trainees to study only those modules that cover the products and services of their own private post office. OJT is only effective if what is learned can be put into practice, and this might explain the findings regarding the trainees' scores on the learning tests. So, what is learned during self-study, depends on the similarity between the knowledge needed in work and the knowledge presented in the self-study material.

A second factor influencing successful implementation concerns the mentors' performance. Mentors are expected to serve as a behavioural model, to provide feedback, arrange an adequate environment for self-study, motivate trainees for self-study and evaluate trainees' progress on a regular basis. When mentors are not fully convinced of the quality of the new instructional model, the implementation will not be successful. The following provide some explanation of the fact that the mentors did not work according to the guidelines of the new instructional model.

First of all, the recruitment of mentors and the development of the new instructional model were two different projects. Although all the mentors were recruited from a group of experienced desk clerks within Post Offices Inc., their experience was not included during the design of the new instructional model. There was thus no opportunity to use the feedback of highly skilled desk clerks in the development of the model.

A second explanation might be that there was only a short, two-day training programme scheduled for the mentors. There was not enough time to explain the theoretical background of the model, to convince mentors of its quality, to discuss the application of the model in practice, or to teach mentors how to cope with problems (such as the lack of sufficient time for trainees' self-study). The preparation of the mentors for their mentoring activities was insufficient.
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