BUILDING AN ODL ENVIRONMENT FOR TRAINING
THE BRAZILIAN ELECTRICAL SECTOR EXPERIENCE

INTRODUCTION

The Brazilian Electrical Sector, created in the 70's as a Federal Government monopoly, consisted of a holding company and about forty concessionaires. Until 1997, the holding company used to develop the training programmes and impose them on the concessionaires, whose role was restricted to enrolling their employees in the course. Since 1997, with the beginning of privatisation in this area, the training system of the holding company has undergone profound changes. Among them is the construction of an ODL environment for training employees from the electrical sector.

The ODL environment started with the acquisition of technologies. The holding company set up a multipoint videoconferencing room and a teaching environment on the Internet. It believed that it was creating an ODL environment by simply buying these media and bringing to them the face-to-face courses. When these media were installed, however, the disappointment was twofold: first, that the holding company was not able to link up with the concessionaires because they did not have videoconferencing; and second, that the materials used in the face-to-face courses were not suited to distance learning, making it necessary to invest more time and money in the development of new courses. Towards the end of 1998, the holding company retained the consulting services of a team from the Federal University of Santa Catarina (Brazil), of which I was a member. The consulting team's mission was to assist the holding company in constructing the ODL environment for the electrical sector, through a pilot course using videoconferencing and the Web as the main teaching media. The components of an ODL system discussed in H804 of the MAO&DE were used as the parameters for this project.

The objective of this essay is to describe this project, explaining how the training demand and the learners' needs were identified, how an ODL programme for auditors was designed, and how the pilot course specifications were defined. In addition to representing a historical document for the electrical sector, this essay may also serve as a consulting source for any company interested in distance training.

IDENTIFYING TRAINING DEMANDS

Since the 80's, the concessionaires had been complaining that the courses were not capable of meeting the specific needs of the various companies, nor the needs arising from the fast changes in the sector. Therefore, they asked the holding company to start offering modular, open and pro-active programmes. These demands, which found no response in the conventional training environment, were to be satisfied through the ODL environment.

In terms of pro-active action, the holding company decided to use the Ten-year Expansion Plan as a starting point for the training needs identification. This Plan, prepared annually by a Master Steering Committee for the Electrical Sector, establishes the sequence of projects to be developed in the following ten years. This allows training needs to be determined at the inception of a project and not when it is already being put in place. In order to identify the training needs for the Ten-year Plan, the holding company promoted a discussion with representatives from the Planning Department responsible for the follow-up of the plan, as well as a representative from the training area of each one of fifteen representative companies from the electrical sector. To this debate it used the Forum of its own online teaching environment.

The discussions, moderated by the general co-ordinator, were carried out in two phases. In the first one, the group discussed the training programmes which were to be maintained/developed to meet the Ten-year Plan projects, and at the end of two weeks twelve programmes had been identified. In the second phase, lasting three weeks, these twelve programmes were discussed in the light of issues such as: which courses should be covered by the programmes, what format they should have, what level of complexity and hour load were best suited to each programme; which programmes should be delivered totally or partially on a distance basis; which companies were interested in which programmes/courses

and why; how many trainees each company intended to enrol in each programme/course; what type of support they expected to receive from the holding company and what sort of support they were able to offer the learner.

Based on this information and on a cost/benefit analysis, the holding company decided to: 1) maintain/develop face-to-face courses, albeit taking the teacher to the learners, and not the learners to the teacher; and 2) choose a programme to be developed and delivered entirely on a distance basis.

The Course for Financial Auditors, which already existed in a face-to-face version, was chosen as the ODL programme. The holding company based this choice on the following premises: a) auditors have assumed a strategic role in the privatisation process of the electrical sector and their work has been in great demand; b) the auditors were not up-to-date and needed a refresher course urgently; c) the concessionaires of the north, north-east and mid-west have a large number of auditors and lack good auditing courses; d) universities and companies in these geographic regions are becoming better equipped with videoconferencing to receive university courses from the south and south-east; e) the auditor course can be easily transmitted via videoconferencing and the Web; and f) the holding company's Audit Department, under pressure from the concessionaires, is highly motivated and supports the development of ODL courses.

RESEARCHING THE LEARNERS' PROFILES

Rowntree (1999) says that the logical starting point for implementing ODL must be to ask what we know about our intended or intending learners, and that the knowledge about learners may help us in: designing a course and preparing learning materials that relate to their needs and preferences; selecting existing resources that they may find relevant; planning a learner support service; providing support in a humane and responsive way once learners have begun on their courses; fine-tuning the course to suit the needs of different individuals as they work through it.

The concessionaires' training staff claimed to be aware the learners needs and expectations. They believed that from the face-to-face course evaluation they could infer what the auditors expected from an ODL course. Therefore, when the holding company proposed a survey to hear the auditors directly, there was some initial resistance on the part of the training staff. However, this hurdle was overcome by showing them that the learners participation in the construction phase would increase their motivation and commitment in the execution phase, facilitating learning. They ended up agreeing with the survey but preferred to carry it out personally through interviews with the auditors themselves and/or their managers. The holding company also made an analysis of the written evaluations prepared by the learners at the end of the face-to-face courses for Financial Auditors, in addition to hearing the Audit Department opinion on this course.

Evaluating the face-to-face course for Financial Auditors

The face-to-face course for Financial Auditors aims at updating and recycling the skills of auditors in the electrical sector in terms of Process Audit. The course has the following characteristics: it is delivered by a University from the Southern part of Brazil, where all learners are directed; it has an hour load of 120 hours distributed over 3 weeks full time; it is delivered by different professors from the University itself; the support material consists only of some papers and transparencies copies used in class. This course is offered by the holding company to the concessionaires through a transfer of the costs per enrolled student. In the past up to two courses used to be held per year, but the demand for the course has fallen and the tendency is for it to stop being viable.

The learners evaluations of the face-to-face course for Financial Auditors point out as positive aspects the integration and exchange of experiences among the learners. As negative aspects, they mention the excessive duration of the course, the inadequate material, the lack of preparation and/or the excess of academicism on the part of some professors, and the concentration of the examples based on the reality

of the south and south-east portion of Brazil, disregarding the peculiarities of the companies located in other areas.

From the Audit Department standpoint, the face-to-face course currently has more negative aspects than positive. For them the factors which weigh most against the course are: high costs of the course itself, of lodging and transportation, as well as the long period the employee spends away from his work. This Department shows that there are still some deficiencies in the course promotion, which has been carried out by concessionaires' Training Department, so that the information on the course does not always reach the Audit Department. Experience has shown that when the holding company's Audit Department intervenes directly in the concessionaires' audit areas, the number of enrolled students increases.

Hearing the learners on the ODL Programme for Financial Auditors

Rowntree (1999) proposes a list of characteristics to be observed by anyone who wishes to know the intending learners. An adaptation of this list has become the outline for surveying the auditors profile and their learning circumstances. The survey studied the following characteristics: demographic factors, motivation, content, learning factors and resource factors. The survey was carried out by the Training Departments of the same 15 companies which participated in the training demand identification, through interviews with the auditors and their managers. The results of the interviews were then discussed on the online forum in specific threads for each characteristic. In addition to the interviews, the training staff also analysed the local community to survey the availability of access to videoconferencing and resources to support the learner's learning. The result of this survey is shown by Lukowiecki (1999), as follows:

Demographic Factors

The learners are adults who work as Auditors in different companies scattered throughout Brazil. They are Brazilians, of both sexes, age between 25 and 55 years, and most live with their families in urban centres relatively close to their workplace. In their opinion, if there were a distance course, auditors from other companies outside of the electrical sector could also become interested in the course.

Motivation

The Auditors are aware that they have to update their skills and knowledge continuously, if they are to compete in the market. Furthermore, they know that even though they are not obligated, their companies expect them to undertake courses so as to update their expertise and, consequently, improve their productivity and the quality of their work. Despite their motivation, auditors fear that the programmes may require many hours of study which could clash with their job responsibilities and family life.

Most of the learners and their managers expect that the course can help them change their role from "inspector/policeman" to "consultant/counsellor". For them the contents of the ODL programme should focus on Management Audit rather than Process Audit. The learners' supervisors, in the belief that distance training is the solution to many training problems, are willing to collaborate with their learning.

Learning Factors

All auditors are University graduates in different subjects and have been familiar with auditing practices for at least two years. They reject long-duration, theoretical courses that require a large amount of reading. They don't have the habit of reading books and hate academic texts, especially when written in a foreign language. For them, a good course is a useful and practical course, full of examples, illustrations, simulations, and cases. Auditors know little of ODL, but they are predisposed to undertake distance courses as they know that the conventional training is

becoming unfeasible. The auditors like the idea of being able to chose when and where to study. Although they recognise the value of formal training, their believe they learn more when they share knowledge with their workmates.

Resource Factors

In addition to paying the course fees, companies agree to let their auditors take time off to study. They can also provide some type of face-to-face learner support in each remote point, such as a co-ordinator and videoconferencing technician. Only two companies from the electrical sector have videoconferencing rooms; among other companies, 80% could obtain access by renting videoconferencing in their own town or from neighbouring towns, and 20% would be excluded. With regard to Web-based study, all auditors have access to PCs connected to the Internet in their companies and some of them also in their own homes. Most of them use PCs as word processors but few are as yet used to communicating via e-mail or using the Web.

In addition, the survey revealed that 'time' and 'usefulness' were critical factors for the auditors. On this issue, Lukowiecki (1999) says:

Time

The auditors know that even if the companies allow them to study during office time, once they are in their offices, they will be interrupted to attend some job requirement. Since submission to routine prevails over the self-discipline required to comply with a study program, learners will likely relegate studying to a second plane. In some cases, they may use the time to spend with their families or to rest to the detriment of their studies.

Usefulness

Knowles (1978) says that, in order to learn, children must acquire a lot of information as the basis of life in the future, but for adults the future is now; adults have a basis of information and see learning as necessary for using it in solving problems in the present. In fact, auditors accumulate considerable experience throughout their lives, including work related to the course theme, and this 'knowledge which is not found in books' should be used to advantage in the course by providing practical examples and students' reports.

DESIGNING AN ODL PROGRAMME FOR FINANCIAL AUDITORS

A team formed by an instructional designer of the hired consulting team, plus two more people from the holding company, one from Training and the other from the Audit Department, was directly responsible for the ODL Programme for Financial Auditors design. However, seeking quality assurance (QA), this team wrote proposals that were evaluated by the Training and Audit areas of the concessionaires throughout the entire design phase of the programme. Thus, the term 'course designers' in this essay includes the people that were involved both directly and indirectly.

The ODL Programme for Financial Auditors design was based on the following premises: a) the auditors and their managers had expectations with regard to the ODL course which were to be met to the extent possible, b) the holding company already has a videoconferencing room and a Web teaching environment and wants these media to be used in the ODL course. Analysing the face-to-face course evaluations and the auditors expectations with regard to an ODL course, it became clear that instead of a single long course they preferred programmes made up of several shorter courses. They expected these courses to be practical and useful for their work, to allow the exchange of experiences, to require little reading and to cover the specificities of all the companies in question. In spite of this evidence, the people from the holding company and the concessionaires initially thought that the ODL programme for Financial Auditors would be a mere adaptation of the face-to-face course to the new medium. They believed, for

example, that by distributing the contents into modules, and by having the teachers go to a videoconferencing room instead of a classroom, that was enough to produce an ODL programme. Likewise, they thought that the transparencies copies that the teachers used as a teaching aid represented the material to be used in the online teaching environment. Furthermore, they believed that any written material, image and/or character could be used in the ODL course without needing any authorisation from their authors or often even without having to pay for it.

Rowntree (1999a), referring to the development of an ODL course, says " it would be a mistake to see the task in terms merely of repackaging something you and/or colleagues have done before. (Even if the management of your institution seems to think that's all there is to it.)" From this perspective, the course designers defined a training programme for auditors consisting of six courses. This programme, with a summary description of the courses, was submitted by the holding company to the concessionaires' Audit Departments for them to evaluate the program and choose a pilot course to be the first one developed entirely on a distance basis. After suggesting some adjustments in the programme, the ' Management Audit' course was chosen to be the pilot course.

SPECIFYING THE ODL MANAGEMENT AUDIT COURSE

The course designers considered the following aspects in the ODL Management Audit course specification: learning objectives, pedagogical options, teaching media, structure, support system, and evaluation.

LEARNING OBJECTIVES

The course objective is to provide the auditors with the opportunity to reflect on the overseer role that they have been performing so far, aiming at replacing it with a consulting role, which is what is going to be expected from them hereafter.

At the end of the course, it is expected that the learners will be capable of identifying the situations which require the pro-active intervention of the auditor, and also of proposing actions in terms of avoiding/minimising negative impacts for their companies.

PEDAGOGICAL OPTIONS

The pedagogical option of the course was made with a view toward satisfying the auditors requirements and preferences. The learner profile survey showed that they liked to exchange experiences amongst themselves and to establish their own study schedule, they learned more in their workplace than in a training course, they expected to receive a practical and useful course more than an academic one, and they wished to discuss the peculiarities of all the companies in the electrical sector and not only some of them. Thus, the course designers understood that the most appropriate approach for supporting the course involved constructivism, collaborative learning, focus on learning and andragogy. We believed that the course would have more meaning for the auditors to the extent they could maximise:

1. Sharing their individual knowledge and experience with the other members of the group. By means of mutual collaboration, the auditors would be constructing significant knowledge for their own work. Tony Kaye (1998) says "in a social-constructivist perspective learning is seen as a situated social practice in which participants' interpretations are continually being negotiated within 'communities of practice' in terms of their individual levels of prior knowledge, mental structures and beliefs. This implies that understandings and instructional outcomes can be negotiated between teachers and learners , and that course designers must accept that different learners may interpret the same material or event somewhat differently, even they are working together in learning groups."

2. Achieving a type of learner-centred learning. This can be better understood through the idea of a 'continuum' as imagined by Rowntree (1999a). According to this idea, at one extreme of the continuum, knowledge would be transmitted from the professor's perspective (subject-centred), and

at the other knowledge would be constructed by learners based on the reflection of their own experience (learner-centred). Or, yet, by the 'voyaging' metaphor presented by him, we could say that auditors and teacher embark together upon a journey where each contributes with his/her experience to make the trip richer and more agreeable – but one of them (the teacher) is at the helm.

3. Assuming the responsibility for their own learning. Moore and Kearsley (1996) say that adults need to define their own course contents (or at least be convinced that the contents are good for them); adults have a feeling of self-direction and personal responsibility; adults like to make their own decisions as to what, how, where and when to learn; adults see learning as something that will help them to solve their problems in the present and not in the future; adults learn as a function of intrinsic motivation and not extrinsic; time for an adult who works and also studies is a crucial factor; and adults have a lot of personal experience which should be taken advantage of in the course: they are not "empty vessels to be filled".

TEACHING MEDIA

In addressing media choice and media design in education, Durbridge (1997) thus expresses her view: "it is not good design practice to begin with a course component (radio, set-books, audio-vision etc) and then try to divine a use for it. Rather, one should begin with a context, and with a purpose or an idea relevant to that context, and then design an event (learning problem and media) that addresses that purpose or idea". However, in the understanding of the course designers, videoconferencing and the Web already were part of the context, so the challenge was to make the best use of these two media in the course.

Videoconferencing

Videoconferencing (VC) was chosen as the main teaching medium. Through it the teacher delivered the lessons at a distance. The VC system installed at the holding company was of the multipoint type, allowing simultaneous connection between six points. This system requires each point to have a space with the following basic equipment: a camera attached to a TV monitor, a computer, a modem, microphones and a control keyboard. For the optimum use of the VC, each room should have no more than 15 people, which allowed reaching 90 learners at the same time.

In view of the lack of experience with the use of this medium, the course designers proposed starting the course with only 30 learners. This generated an impasse. On the one hand, the managers of the holding company and the concessionaires wanted to rent conferencing rooms to train the largest number of learners possible, and on the other, the course designers argued that the excessive number of points and learners hooked up simultaneously made it difficult to control the situation, placing the experiment at risk. The following arguments were used to make the managers change their mind: a) increasing the number of connection points also increased the likelihood of transmission failures due to the low quality of the telecommunications services in Brazil, b) increasing the number of connection points lessened the chances of the teacher involving everybody from all sites and stimulating the participation of those who perhaps needed the course most; and c) increasing the number of learners increased the need for learner support, mainly with regard to tutoring. Once this impasse was resolved, the option was made to present the course initially by connecting the three points already existing in the electrical sector, each one with ten auditors. These points belonged to the holding company located in the south-east region, and to two concessionaires, one located in the north-east and the other in the mid-west. The holding company which generated the VC with the teacher presence was called the ' local point' and the other two the ' remote points'.

In view of the vast territorial extension of Brazil, the consultants felt that the VC as a teaching medium could only survive with an ample network of well-distributed points. Therefore, we proposed to the holding company the creation of a network shared with other companies which already owned a VC system. Thus, installing VC rooms in some sites lacking this medium, the electrical sector could benefit from a broad network. Another alternative was to rent VC, including the rental price in the cost composition of the course.

Web

The online educational site was used as a complement to videoconferencing. Although it had a variety of tools and resources, only a few were selected for the pilot course. To make their choice, the course designers took into account that: a) as the learners and teacher/tutor were beginners in Internet usage, the online teaching environment would have to be as simple as possible in order to minimise the difficulties in the use of the interface; and b) as the learners would already have to comply with pre-fixed time schedules in VC, synchronous communication would not be well received in the online discussions, in addition to possibly being more difficult for the teacher, tutor and learners. As a result, the option was made for an Electronic Forum, E-mail, Q&A, Library, Electronic Notice Board, and Who's Who.

Electronic Forum – to continue the debate initiated in the videoconferencing classes. The debate was carried out in two groups of fifteen learners, one moderated by the teacher and the other by the tutor.

Email – to stimulate the learners who were not participating actively, give feedback on progress, and reply to messages sent privately.

Q&A – to ask questions related to the theme of the course, which were answered by the teacher/tutor.

Library – to gather the material shown in the VC classes, articles from newspapers and magazines, papers selected by the teacher, tutor or by the auditors themselves, URLs and bibliography related to the course theme. These materials had a title and a summary description, and were organised by topics.

Electronic Notice Board – for the teacher /tutor or general co-ordinator to put up notices regarding the course.

Who's Who – to introduce the people involved in the course, giving at least their telephone numbers and e-mail address.

Telephone

The telephone was to be used to request/receive any type of support. The calls could be made from inside the companies, as if they were business calls, i.e., at no expense to the learner. However, no collect calls were accepted.

Print

The course had a printed guide and folder, written up by the instructional designer and produced by the holding company using computer and colour printer/copier resources.

Printed guide – to orient the auditors in distance learning, informing them of the VC schedule and the functioning of the Web.

Folder – to announce the course, informing its title and description, target audience, organisers, duration, teaching media, cost, and procedures for enrolment.

STRUCTURE

The estimated hour load for the pilot course was 36 hours, distributed over 8 consecutive weeks, among videoconferencing classes, Web-based study, reading of print texts, research/survey at the work sites, as outlined below:

Week	VC	Web	Reading	Survey	Total
1	2:00h	1:30h	30min		4:00h
2	2:00h	1:00h		2:00	5:00h
3		1:00h	30 min	3:30	5:00h
4	2:00h	1:00h	30 min	1:30	5:00h
5		1:00h	30 min	3:30	5:00h
6	2:00h	1:00h	30 min	1:30	5:00h
7		1:00h	30 min	3:30	5:00h
8	2:00h				2:00h
Total	10:00h	7:30h	3:30h	15:00h	36:00h

Hour load Distribution

In the first week of the course, the learners received ODL notions, information on the functioning of the ODL Management Audit course, and were introduced to the educational site on Internet. This was achieved by means of: a) a videoconferencing session conducted by the instructional designer jointly with the general co-ordinator of the course, during which the teacher, tutor, remote co-ordinators and learners were also introduced to each other, b) practical exercises to explore the online site under the supervision of the remote co-ordinators; and c) reading of texts on ODL downloaded from the computer.

In the second week, through a videoconferencing session, a representative of the Brazilian Government presented the scenarios for the electrical energy sector world-wide and in Brazil, and the head of the Audit Department of the holding company showed the strategic audit plan for the Brazilian electrical sector. This videoconferencing session was intended not only for the learners but also for their managers and some peers. Based on this, the teacher suggested three cases which were suitable material for the course. The auditors also had the opportunity to suggest other cases which were then analysed by the teacher. This material was discussed in the online forum and one case was chosen on the basis of criteria proposed by the teacher.

From the third week on, the videoconferencing sessions, the online discussions, the readings and the survey/research carried out at the work sites focused on the selected case. The teacher assigned specific tasks to the learners, orienting them as to how they could be carried out, and recommending some reading. At the end, the teacher discussed the outcome of these assignments with the students, pointing out where they were already adopting a pro-active, consultant attitude, and where they were still using a reactive, “inspector” approach. The reactive attitudes were then worked on by the learners through a brainstorming session conducted by the teacher in the videoconferencing classes. The objective of this process was to have the auditors learn different ways of performing as consultants in their own context.

SUPPORT SYSTEM

Thorpe (1999) says "Where they are a source of positive support, the ODL providers can assume that much emotional and practical support will be available to the learner. Where this is not so, the individual learner will be more isolated and potentially in need of a wider range of support from the institution". In view of this, the course designers formally included the learner's manager and peers in the support system. The support to the learners and their supporters was then provided by the following actors: course manager, teacher, tutor, general co-ordinators, remote co-ordinators, VC technicians, Web site administrator, and auditors' supervisors.

Course Manager - the formal manager of the holding company's Training Department. She accompanied the entire course progress, both in the development and delivery stages. She made decisions, provided resources, administered conflicts, and kept upper management informed as to the course.

Teacher

An expert in auditing, with experience in teaching face-to-face classes in Universities. He was hired from outside to develop and give the course. He contributed with theoretical knowledge of auditing, structured the course in view of the learning objectives, the pedagogical options, and the materials specifications, all previously defined by the course designers; he selected reading texts, developed the activities to be set up in the electronic forum, conducted the videoconferencing classes and the discussions of a group of 15 learners, gave feedback on progress, and made adjustments to the course in response to learner feedback. The teacher in turn was assisted by the course designers in preparing the VC materials and Web activities, in using the VC equipment, in integrating and motivating the different audiences, in determining what he should wear and how he should behave in front of the cameras.

Tutor

A retired person who has a deep hands-on knowledge and a thorough understanding of the Brazilian power industry and that of other countries. He was hired from outside to assist the teacher in course development and delivery. He contributed in the selection of the course content and reading texts, in the definition of the level of complexity and depth of the course, in the preparation of the activities, and provided clarification in the videoconferencing sessions when requested. In addition, he conducted the discussions of a group of 15 learners in the online forum. In turn, the tutor received support from the auditors of the holding company and several concessionaires, as well as from the course designers.

General co-ordinator

Person from the holding company's Training Department who served as liaison between the Course Manager and the other members of the support team. He moderated the online debates in the identification phase of training demands and learner profiles, and also in the course development phase; in addition, he took care of materials production and distribution; sent/received course evaluations forms, and assisted the teacher during videoconferencing. The general co-ordinator received support from the Course Manager and hired consultants.

Remote co-ordinators

People from the training staff of the concessionaires, who provided face-to-face support to the learners. They contributed in the course specification, provided information related to the administrative aspects, arranged appropriate study areas, handled the enrolment and payment of course fees, helped the learners during the videoconferencing classes and Web studies, in short, helped to remove/avoid any infrastructure obstacle that could hamper the learning process of the learners. In turn, the remote co-ordinators received support from the general co-ordinator and hired consultants.

VC technicians

People from the training staff of the holding company and the concessionaires, trained to provide technical assistance face-to-face during the VC sessions. They helped by turning on the codec and the monitors, dialling the distant sites to establish a link, controlling camera focus and field at the origination site and at the distant sites, adjusting the volume to an acceptable level, switching to and from the document camera, switching to and from a computer generated output, utilising a computer to generate and display multimedia presentations, and terminating the link with the distant sites and shutting down the equipment. They had support of the technicians from companies which provided the VC system to their companies.

Web site Administrator

Person from the training staff of the holding company, trained to feed the educational online site. The administrator placed/updated the teaching material provided by the teacher and tutor, as well as other course materials sent by the general co-ordinator. She received support from the instructional designer.

Auditors' Supervisors

They authorised the enrolment of the learners in the course, supported them in the course activities, freed them up to participate in the videoconferencing sessions and Web studies, helped them directly in choosing examples of interest to the course, facilitated their access to company employees who could supply pertinent information to enrich course discussions, provided feedback.

EVALUATION

"The term evaluation refers to the evaluation of the teaching and organisation activities which support student learning and includes the assessment of student performance as just one aspect or function" (Calder, 1994).

With regard to the learners, the course design foresaw only a formative evaluation. This implied in the follow-up of the learners learning throughout the entire course without their having to write an assignment to receive a grade at the end of the course. Although the formative evaluation was a task primarily attributed to the teacher, the tutor and the learners' supervisors also contributed with feedback on progress. At the end of the course the auditors received a certificate of participation if they came to at least eight videoconferencing sessions.

During the delivery phase, the quality of the course was continually checked upon with the learners in the videoconferencing sessions, by Web, over the phone or even personally. Moreover, at the end of the course, an electronic form was submitted to the learners so that they could evaluate the various aspects of the course, such as teacher/tutor performance, hour load, course delivery strategy, content, materials, and usefulness of the course. According to Lockwood (1999) quality control may enable us to see when the previous idea of quality in some product or service is no longer applicable and so take action to modify it.

CONCLUSION

Distance Training has proliferated in Brazilian companies with a widespread geographic distribution. This essay describes the experience of creating an ODL environment for the training of employees of companies in the electrical sector. The major conclusions drawn from this experience are listed below.

1. Decision makers believe that by acquiring VC equipment and educational sites rapidly they can train a great number of employees. But they become disappointed when they perceive that an ODL environment also requires investment in the development of distance courses.

2. An ODL course allows the fulfilment of different learner needs in a customised manner. However, for this to really happen, the learners and their sponsors must be heard during the course design and also during its delivery.

3. When learners and their supporters participate in the construction phase, they feel more motivated and present a better performance during the delivery phase, improving the course quality.

4. The face-to-face training staff fear that the ODL environment will eliminate their functions and consequently resist change. However, as they become involved in the construction of the course, this apprehension dissipates and they prove to be helpful and enthusiastic collaborators.

5. Interaction through synchronous communication is greater than in asynchronous communication, both in the public and private space. In other words, there is more interaction between teacher/learner and learner/learner in videoconferencing and over the phone that on the online forum and through e-mail. In spite of the incentive provided by the teacher and tutor, the learners still present a certain inertia in using the Internet and the Web as a communication medium.

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