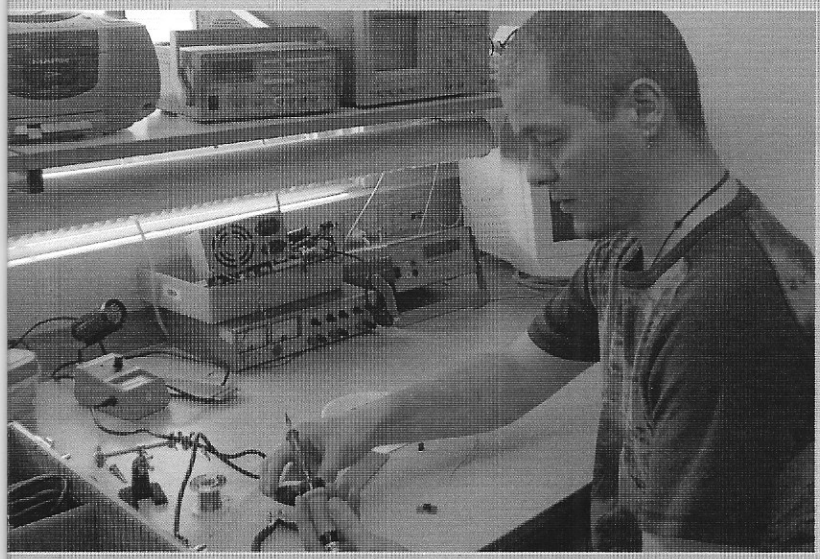
CIRIUS
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Leonardo da Vinci

Continuing Education
Education as Work
Based Learning



Project management:

Aalborg Universitet, ELITE

Development of Skills within Companies

CEE as WBL

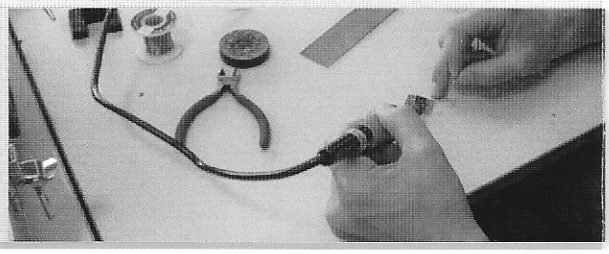
The Challenge

It is characteristic for high technology enterprises in Europe that the technology and the market are innovating and changing fast. Therefore the demand for knowledge and competence development in the enterprise will increase. The competencies of the employees are one of the main competitive parameters in business, and therefore, it is very important to develop the competencies to match company strategies and market demands.

Life long learning is a key factor in vocational training strategies, and Work Based Learning (WBL) is a very cost effective method to combine staff development and organisational learning. However, using WBL opens new opportunities for the enterprises and allows them to benefit from the latest university research results.

The Outcome

Building on research-based university-industry cooperation, this project will develop models and methods for the establishment of WBL. Tools for continuous maintenance and improvement of professional competencies will be developed, and the project will contribute with research concerning pedagogical and didactic methods for facilitation of the continuing learning process at university level in the industry. This research will also contribute to development of tools for knowledge transfer from universities. It will furthermore include the development of a process involving the interrelations between tacit and explicit knowledge and Advanced Knowledge Skills. Test studies will be carried out in four various European countries with various focus points.



Objectives

- To develop life long learning methods for research based facilitation of learning processes and competence development for engineers.
- To supply knowledge to the busy employee in the industry without necessarily having to find time to participate in traditional courses
- To integrate the knowledge directly so it will be of immediate practical use to the employee in his/her job function
- To plan a course of learning matching the competence development strategy of the enterprise as well as concrete development projects of the enterprise
- To tailor-make the courses of learning to the individual employee.



Target groups

- Employees who require a high level of knowledge and competence
- Enterprises with continuous demands for innovation.

Expected results

- A book - working title "Methods and Tools for CEE as WBL"
- Pedagogic and didactic models and tools supporting WBL
- A guide to elaborate WBL contracts
- A course for university lectures in WBL (Teacher Training).

CEE as WBL

DK/03/LdV/PP-145.311 Project Period: 1 October 2003 – 30 September 2005

Contractor

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Education and Culture

The Leonardo da Vinci programme aims to implement a European Community vocational training policy

Billedservice: Per Henmeldge Bureau

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ESCUELA POLITÉCNICA SUPERIOR

CEE as WBL

(final meeting report)

Unai Apaolaza
Aitor Oyarbide

Mondragon, 2005-V-20

Agenda

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- Aim and objectives
- Methodology
- Case studies
- Results
- Conclusions
- Future work

Aim and objectives

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MAIN OBJECTIVE:

To identify strengths and weaknesses within the FWBL method when applying it to business environments.

... within different fields such as: training results, participation and motivation of the attendees, flexibility of the methods applicability, making good use of time, etc.

LIMITATIONS:

- Training limited to "Project Management" field.
  - *... due to MGEP's expertise and interest of companies.*
- Secondary aspects such as: profitability, capacity to give the required multi-disciplinary training by the project, etc.
  - *... in order to evaluate the success of applying the methodology,*

Formation of research method

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FWBL methodology originates **from WBL concepts**, but goes further to introduce the figure of the university professor as a facilitator. Thus, a method was designed based on **five phases** for its correct application.

- Definition of the Project Framework
- Presentation and launch of the project
- Designing the personalised training action
- Running and monitoring the training action
- Final analysis of the training action

Method – 1.- Definition of the Project Framework

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- **Defines the characteristics of the training action.**
  - Project(s), people, representatives, observation period, topics, etc.,

- For each training action this part must be **defined individually** and in **enough detail** to be able to configure it in detail later.

- Company participation:
  - Danobat Group: Total persons = 9
    - Danobat, D+S, Lealde and Ideko: 2 participants per company and one group representative.
  - Ikerlan: Total persons = 5
    - 4 participants and one representative

- The execution period has been limited to four months

Method – 2.- Presentation and launch of the project

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- Begins with a preliminary session in which the university representatives present the basic characteristics of the method by orienting them to their application within the training project
  - It is convenient for those participating in this meeting to be the company representatives ("Employers"), all company workers who are going to receive the training ("Employees") and the university representatives.

- **Single meeting with each of the companies** (estimated duration of two hours)
  - Presentation of the CEE project as WBL.
  - Presenting the characteristics of the new methodology: FWBL.
  - Presenting the general objectives of the experiment, as well as the forecast steps, participants, roles, etc.
  - Questions.
  - Agreeing calendars with each participant, establishing a schedule of personal interviews and appropriate channels of communication for each participant.

Method – 3.- Designing the personalised training action

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- For the training to have a higher probability of success it should have **acceptance from both parties.**
  - The objectives should have a double commitment: they should respond to the project's own needs, and also should be translated into individualised training objectives
- The methodology employed to specify the training action: **Personal interviews**

- **"Learning Contract"**
  - Area to tackle in the learning and project where knowledge will be applied.
  - Specific learning objectives.
  - Learning methods to be used in each objective.
  - Time available for the learning or other type of limiting factor, if appropriate.
  - Success criteria for later assessment of achieving the objectives or not.
  - Method of presenting the results (Deliverables) and transferring knowledge.
- **As a sign of the acceptance of the commitments, each contract is signed by the three parties involved (Employee-Employer-University).**

Method – 3.- Designing the personalised training action II

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- Given the time limitations, training content was defined as 32 hours per participant as a reference
- One of the critical aspects for drawing up the 'Learning contract' has been the definition of the level of specificity.
  - So, whilst a low level of specificity can make it easier to draw up the contract, it is understood that it could make it difficult to run correct monitoring and determine the degree of suitability for the training action.
  - On the other hand, a high level of specificity can make it very arduous to draw up the contract, particularly taking into account that it must be done individually before the training action begins, when the participants could not even have sufficient knowledge of the problem they have to tackle.
  - So, and following the methodology proposed by Collins and Cordon (1997) the contract has been structured with 'closed' and 'open' questions, in order to find a compromise between the level of specificity and ease of use.
- It should be pointed out, due to this being a pilot test, that this contract has prioritised specificity over simplicity. This could raise concerns that the objectives are diluted, losing consistency due to lack of definition. So, a more conservative criteria was taken, given priority to quality over quantity, and it was also decided to use this in the interviews.

Method – 4.- Running and monitoring the training action

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- **Objective: to guarantee that the participants receive the training defined in the "Learning contract" within the established time limit and with the appropriate quality level.**
  - … personalised evaluation is carried out by assessing the deliverables

- **Three phases:**
  - The training action
  - Drawing up and delivering the corresponding deliverables by each participant.
  - Analysis and assessment of the deliverables by the university

- Given that the training actions are individual but have overall implications for the project, the three previous phases are complemented with an overall monitoring system on the different training actions by the university and the company manager, analysing project running and taking corrective actions if necessary.

Method – 5.- Final analysis of the training action

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- **Purpose:** to determine the contribution of the training to the project, considering the adaptability of the method to the company and its contribution to achieving the project's objectives.
- This is summarised in the following points:
  - **Assessment of the overall result of the training action** in terms of the training acquired by the participants contributing to the project objectives being met.
  - **Assessment of the training process** (suitability of the methodology developed by this project for the company's way of working).
  - **Assessment of the training objectives** (e.g.: employee participation and motivation). Overall assessment is complemented by an individual assessment of each training contract

- Individual assessment of each participant, in questionnaire form including both open and closed questions. The information obtained was processed by the university.
- Meeting of all those implicated in the case to amplify the information obtained.
- Given the scientific character of this research, it has been decided that the university should make a cross reference analysis between the results obtained in the different companies.

Case studies (Danobat, S.Coop.)

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- **The initial list of participants was altered after the first presentation step**
  - *Delay in project start.*
  - *Initial meeting had to be repeated for these two people.*
  - *It was necessary to decide between not letting the two new people participate and not wasting more time or going ahead with all the participants and a slight delay, although further limiting the possibilities of choosing objectives. The latter was chosen.*
- **Once the interviews were finished but when the action schedule was still not yet specified, one of the participants changed job.**
  - *This person left the project.*
- **Although the actions and dates were agreed on by everyone, the day to day reality of the company made it impossible to attend some training sessions.**
  - *This was resolved by repeating the action for just one person, but this was not always possible.*
- **Two people were off sick in the observed period.**
  - *This was transitory for one of them, coming back to work quickly.*
  - *The other however, did not manage to return in time.*
- **Out of the eight people starting the project, only four gave in the required deliverables, although rarely meeting the deadlines laid down in the contract.**
  - *Work overload for the university by concentrating the work into a determined period*
  - *The "Learning contract" could not be evaluated in these cases.*
- **Only two participants attended the final assessment meeting, along with the supervisor. Two more handed in the questionnaires.**
  - *The effect was less than hoped for, because some people who did not attend filled in and handed in the questionnaires soon after.*

Case studies (Ikerlan S.Coop.)

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- **Handing in the deliverables accumulated in the final part of the period, and even afterwards.**
  - *Work overload for the university by concentrating the work into a determined period*
- **Three out of the four people did hand in all the corresponding documents. Only one of the three people handing in all the documents did not make the deadline, although they were delayed with the contracts.**
  - *The "Learning contract" could not be evaluated in these cases.*
- **There was a case in which a person produced a deliverable which was much more demanding than what had been initially established in terms of depth and length of the work due to their personal interest in the topic.**
  - *The deliverable level was so high that the company decided to include it as an improvement suggestion for project monitoring,*
- **Misunderstandings occurred between the participants and the university, as there were different interpretations of what the objectives meant.**
  - *These misunderstandings were noted and dealt with appropriately.*

Results (Cont.)

- **Assessment of the training process:**
- It has great potential for opportune moments to apply knowledge. Specifically, the Bloom level 3 is proportionally much more beneficial than level 2, but it depends on whether there is the occasion or not to apply the concepts and this depends on the rhythm of the projects themselves. Running the cases for longer could have presented more opportune actions
- Preparation takes quite a lot more time and effort than in the traditional case, particularly at first.
- Greater effort when preparing the sessions or training actions, and occasionally, the objective's requirement can turn out to be a personal challenge (risk).
- The training has a greater probability of success in comparison with the "traditional" training and particularly with open courses, understanding success to be the employee's satisfaction.
- From the trainer's point of view there have been difficulties in providing the service.

Other assessments

- Although in some isolated cases it seems that there has been a positive contribution, there is no evidence that this is due to the method.

Conclusions

Conclusions related to the objectives and their execution:

- It is important that the employee participates in the process of defining objectives: to know the specific topics of interest, provides motivation, and the chances of success are greater.
- It can be interesting to dedicate more time to it than planned, to the detriment of other objectives. although it could be an invitation to not fulfil one or several objectives without any type of repercussion.
- A greater level of specification of the deliverables in the learning contract would be helpful afterwards (in general, the time dedicated to the deliverables corresponded to what was planned)
- Level 3 of the Bloom model (application), contributes proportionally much more than levels 1 or 2. It is preferable to have a smaller number of higher objectives.

Conclusions (Cont.)

Conclusions related to the training process:

- Initial effort has been compensated from the point of view of the process and on a personal level.
- The delays generated by one of the companies affected the other in terms of time limits, as it had to respond to a closed period of time for both companies and there was a limited capacity. In a real application of various projects: there would have to be a response capacity to be able to cover the needs with independent schedules, which would imply: higher price and would require overcapacity, available or unsaturated resources.
- Not having achieved that the deliverables do not imply an additional load produced an accumulation of work which could be excessive. This overloaded the facilitators too.
- The reality of the company is unpredictable. Consequently, the training plan will be more or less affected meaning it is almost certain that at least one part will not run as planned. However, the stability of the plan must be maintained, by:
  - Having sufficient overcapacity
  - Organising the schedule with a consensus, exactitude and in advance.
  - Limit the number of participants or simultaneous training projects.
- The method was evaluated positively by both companies, and in comparison with traditional methods it is considered to be better: it can be personalised, it is flexible in terms of dates and it therefore implies better use of time.
- The tutorials did not turn out as planned, and were barely used.

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Conclusions (Cont.)

Other conclusions:

- The information sent to the potential participants by the company before deciding whether to participate or not and even the way in which this is transmitted can generate different attitudes (acceptance or rejection, opportunity or imposition, etc.).
- Participation should be voluntarily accepted
  - Participants might show different attitudes from the very beginning of the project: Saw it as an opportunity, sceptical or indifferent, sensation of obligation to participate, etc.
- It does not seem to be necessary to provide accreditation for FWBL experiments.
- Running round tables sessions or something similar among the participants was suggested.
- Availability (of employees) can affect training
- Characteristics of each company can affect training development (Time of year, etc.)
- Problems involving the management topics

Future work

- Conclusions related with contribution of the objectives to the real project needs further analysis because participants were not related with the same project.
- The applicability of the method to any project via being capable of responding to any training need which is given within the project.
- Can an activity with such low attendance per training action be profitable?
- Influence of the culture in the methodology