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PROFESSIONAL TRAINING IN THE LEATHER-BASED INDUSTRIES

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*This document has been prepared without formal editing.

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Information on Institutions Offering Training in Leather-based Industries

as seen on InterNet by End September 1997

Abstract

Some major footwear and leather training establishments in Europe were visited and their training systems, methodology and syllabi were examined. Information on professional education and training were collected from several other countries (e.g. Brasil, Hungary, South Africa). Experience gained through previous UNIDO assistance with regards human resource development was also considered.

Outline proposals were prepared for discussion by the *Leather Panel* in Bologna in November 1997. A five stage structure is proposed which will allow trainees in any country to progress against known standards to the benefit of their company and themselves. Outline schemes are prepared for discussion and later more detailed development. Some draft recommendations are made for further programmes by UNIDO to stimulate and assist development in the developing countries and Africa in particular.

Appendices are important part of this paper. They include visit notes to selected training institutions which offer examples of today's practice, as well as indicate development trends in this field. The last appendix consist the working paper discussed by the *Leather Panel* in Tehran in 1995.

A special attachment was made to show information on training and research associations offering professional education and/or training as it was seen on the InterNet by end September 1997.

Chapter I

INTRODUCTION TO EDUCATION AND TRAINING FOR LEATHER-BASED INDUSTRIES

General Trends

There are a number of worldwide trends which impact upon the leather-based industries and the education and training required.

1. Fashion

This is a volatile influence which creates rapid change in styling and in materials and techniques used to make footwear. People sensitive to these fashion changes will be needed to interpret and create suitable footwear for the industry worldwide.

2. Speed of Communication

Information about fashion and technological trends can be moved around the globe easily and rapidly with fax machines, CAD modems, and using the facilities increasingly being provided on the Internet and on Web Sites.

3. Fast Response and Smaller Orders

It is now commonplace for the orders for footwear, leather goods and leather clothing, to be smaller. Customers expect a fast response to their requirements and faster delivery.

4. Location of Manufacturing

The global nature of the leather business means that the actual location of the manufacturing of leather products is becoming irrelevant. Buyers will resource from whatever country can provide the right design at the right price and at the right time. Global training has been fuelled by the increase in the availability and the reduction of the cost of air freight. This to some extent cancels out the advantage of the producers in the higher labour cost countries to provide small orders very quickly.

5. Quality Improvement

High standards are now set by international buyers and zero defects are expected.

6. Green and Environmental Policies

These are likely to increase in intensity and will impact upon the products and the factories.

7. World trade Statistics

Population levels in Western Europe, Eastern Europe and Australasia are forecast to remain about stable, whereas substantial increases are forecast in Asia, the Middle East and Africa, and smaller increases in North and Central America and South America.

8. Footwear Production

Figures are forecast to rise substantially in Asia and in the Middle East with smaller rises for South America and Africa and some decline for Western Europe, Eastern Europe, North and Central America.

Increased Demand for Training and Education

All the trends noted above create important training and education needs, in the tanning industry, leather goods industry, leather garment industry and footwear industry. There is a growing need for skilled technologists to work in or travel to the developing countries where much of the low labour cost work is now being done.

The huge rise of imports into the high labour cost countries has reduced production. Factories have closed and many skills people have left the industry. Those remaining are often in the second half of their careers.

International business will require knowledgeable technologists in all these areas to ensure good quality and to improve the productivity of the factories.

Competition between the developing countries is likely to increase and the wages are likely to increase. The labour costs will therefore rise as their prosperity increases. They will therefore come under pressure from lower cost countries. Improvements in productivity and reduction of labour costs will therefore assume greater importance in countries where this has not been considered at present.

Chapter II

DISCUSSION ON EDUCATION AND TRAINING FOR LEATHER-BASED INDUSTRIES

These industries are essentially craft based industries. Despite recent efforts at automating parts of the work it still remains a very labour intensive business, and if we are to have attractive leather products there are no technologies on the horizon which will allow us to automate and retain the attractive quality of the leather products which is such an important element in marketing.

Many footwear companies in Europe and also in the developing countries are based on family businesses.

The result of this is that the European Footwear Schools have tended to develop their supervisors and managers by training and College attendance from the shop floor and by two year diploma courses which have prepared the students for supervisory and trainee management positions. More recently the higher diploma courses have given entry to supervisory positions. The degree courses have mainly been design orientated and the demand for designers is limited. There is more need it would appear for technologists and qualified technicians and product developers rather than pure designers.

Well developed training systems are in existence at AFPIC in France where the emphasis is on full time training in the Institute before releasing people to the workplace. In fact the AFPIC centres are operating under the MINISTRY OF LABOUR and have no educational equivalents under the French system.

The UK system operates *National Vocational Qualifications* and this is entirely factory based with no college attendance, but it is strictly monitored by visiting assessors to ensure that systematic training is given. The UK colleges provide education and training at a higher level.

The tanning industry have traditionally recruited their more senior personnel through higher level courses, and both NENE COLLEGE in Northampton, BRITISH SCHOOL OF LEATHER TECHNOLOGY, and the REUTLINGEN SCHOOL OF TANNING in Germany have fine international reputations and a wide range of high level courses. In the case of Reutlingen they also operate the Germany apprentice scheme where students attend on block release.

A distance learning system is operated by LIRI in Grahamstown, South Africa, and this could well be relevant in the discussions about how to deal with the training and education of young people in the emerging industries in Central and East Africa. Details of the scheme are in the appendix.

Reference should be made to the paper produced by Ference Schmel entitled Professional Training in the Leather Based Industries.

Credit Accumulation and Transfer

Research is continuing into the possibility of credit accumulation and transfer. The *Education Library* at LEICESTER UNIVERSITY has information. Details of the credit transfer system for the UK OPEN UNIVERSITY have been obtained. The American system of credits has been investigated and the *UK Universities Entrance System* organized by UCAS (Universities and Colleges Admission Service) has been obtained. Enquiries will be pursued with CEDEFOP which is the European Organization for the *Comparability of Education Standards*. Conclusions from this research will be presented at the Leather Panel Meeting.

A proposed scheme will be based on average education time and training time and level of competence received. An important principle is to give credit for prior learning. It is also extremely important to allow a clear pathway for any ambitious person to progress from the lowest operative standards through to management levels if he or she has the application, ability and opportunity. Any scheme that is devised must have this in mind as a first and over-riding principle. It is equal opportunity for people of any background, colour or gender, to enable anybody to progress if they so desire.

A five stage outline is in *Table 1* and comments from the Panel are invited.

Establishment of Training Centres

It would seem sensible in the short term to use the facilities of the existing long-established training institutes to help with training the trainers and for some of the higher level training.

Regional and National Centres could be established in appropriate countries where there is an industry to support them and where local support is enthusiastic. Institutes do not work unless support by a local industry.

Key Skills Training

At each of the 5 levels in *Table 1*, we need to include training in key skills or life skills to ensure that sustainable development takes place in the Centres that can be maintained when any UNIDO funding has run out.

Table 2 offers some proposals for this programme. This needs to be incorporated into the training and education programmes in the Centres and in any education programme that takes place for any part of the industry.

Clearly the level of ability in these important skills will need to be varied according to the levels of job they are seeking to undertake.

Table 1

Outline of the proposed professional training system

| Typical Entry Level | Time to accumulate credits or equivalent | Examples of Job Descriptions | Typical minimum entry age | Level |
|--|--|--|---------------------------|-------|
| 3-4 year University Degree or Professional Qualification | 3 years full time and 2 years experience | Trainee Manager Junior Supervisor Junior Designer Technologist | 24 | 5 |
| Higher Diploma 2 years full time or 3-4 years part time 12 years school education plus Mathura Baccalaureate or A levels | 2 years full time and 2 years experience | Trainee Supervisor Assistant Designer Trainee Technologist | 22 | 4 |
| Diploma - 2 years full time study 10-12 years schooling | 2 years full time or substantial part time course or systematic distance learning programme | Trainee Supervisor Skilled Technician Trainee Pattern Cutter | 20 | 3 |
| 10-12 years schooling | 2 years training and experience plus education on block release or part time or distance learning programmes | Multi-skilled workers Trainee technicians | 18 | 2 |
| Unemployed, unskilled, any age or 8-10 years schooling | 6 months in-plant training or special training institute | Operator or semi-skilled worker training takes place in workplace or in local specialist training centre. | 16 | 1 |

Table 2

Key Skills

| | International Business Language - English, French, German, Spanish & Italian | Literacy | Numeracy | Computer IT | Communication | Group Work | Health & Safety |
|---|--|----------|----------|-------------|---------------|------------|-----------------|
| Manager <i>Level 5</i> | | | | | | | |
| Technician <i>Level 4</i> | | | | | | | |
| Supervisor <i>Level 3</i> | | | | | | | |
| Multi-skilled Operative <i>Level 2</i> | | | | | | | |
| Operative <i>Level 1</i> | | | | | | | |

*Chapter III***CONCLUSIONS AND RECOMMENDATIONS**

Reference should be made to the Paper entitled “Professional Training in the Leather-based Industries” by Ferenc Schmél.

9. If some universal system of credit accumulation and transfer is to be introduced, there needs to be some central body to record, validate and monitor the standards, and this would require continuity of funding. Possible candidates to undertake this co-ordinating role would be AFPIC in France, and the INTERNATIONAL TEXTILE INSTITUTE, who already validate courses in Greece and India and have a large number of validated courses worldwide. They would delegate the job of co-ordination to LEICESTER SOUTH FIELDS COLLEGE. The LEATHER INDUSTRIES RESEARCH INSTITUTE in South Africa have a well-established distance learning system and could be considered for this role.
10. *Foreign language.* This is mentioned in the key skills chart (*Table 2*) and there are plenty of international systems for measuring ability in foreign language. This could best be left to the country whose language is being used (BRITISH COUNCIL for example have the IULTCS system).
11. It is important to involve local people and industries at the early stages of the planning so that they feel a part of the development and that they also understand that progression through the system is possible for all people, given the necessary application and ability.
12. The differences in the training methods in the various European Institutions is probably not important. Certainly the time spent in training is not the criteria but the competence of the individual at the end of the training is important. A well developed system to measure this is to be found in the NVQ system in the UK. It is also well structured at AFPIC whose emphasis is on training.
5. Any schemes introduced should gain the acceptance of the National Government of the recipient country and if possible should have an educational equivalence to allow students if necessary to transfer into other industries without disadvantage to them.

Proposed Programme for Footwear Development in Africa

1. Graduates from the English, French, German and Czech schools could be employed on assignments to work as assistants to senior consultants in Africa to assist in setting up the training schools.
2. Scholarships could be provided for outstanding students in Africa from the Institutes to attend full time or short courses in the main European footwear centres, in Pirmasens, AFPIC, Leicester, London, and Czech Republic who are already running a six month course.
3. Courses for training the trainers could also be run in these locations. Some African countries are french speaking and would be most suitable therefore to study in France.

4. Consultancy advice and guidance would be required to assist in setting up syllabi and training centres in Africa.
5. A programme of moderation of the centres using appropriate experts would be required. There needs to be a discussion about the appropriate organization to act as moderator. The existing system in India uses the INTERNATIONAL TEXTILE Institute who delegate the responsibility to LEICESTER SOUTH FIELDS COLLEGE. AFPIC would be prepared to undertake this role and are an alternative, although perhaps without the international strength of the TEXTILE INSTITUTE.
6. The use of design consultants to travel to individual companies in Africa has been a successful programme, and during their visits they could undertake some lectures at the centres to stimulate design sensitivity.
7. Already existing and successful programme is the use of consultants to help set up the technical capability of centres in developing countries. A good example is the garment facility at IILP in Chennai.
8. The footwear manufacturers associations in the different countries need to be involved with the formation of the training centres and to act as management or advisory committees to ensure that they feel ownership of the schemes and therefore give them good support (Mr Anthony Clothier has this programme in hand).

Training the Trainers

Considerable care is required in selecting the African people to be trainers before sending them on courses. The existing system of using counterparts alongside the new trainees should be continued. Moderator visits should sometimes be unscheduled and therefore allow spot checks of the progress of the Centres.

Equipping the Centres

The AFPIC Centres in Cholet and Romans have surplus sewing machines and equipment and it would be a cost effective idea to transfer some of this equipment to the African Centres. However, this is difficult as the machinery is owned by the LABOUR MINISTRY who would have to release it. This commonsense arrangement is possible but needs further discussion and arrangements.

French speaking countries in Africa include Ziare, Mauritania, Congo, Central Africa, Senegal and French Guinea. On the language issue a number of the instructors at Cholet speak good English and arrangements could be made for translators as is done in Zlin, Czech Republic. The courses could therefore be undertaken in English if required.

Proposed Structure to Cascade Skills and Knowledge

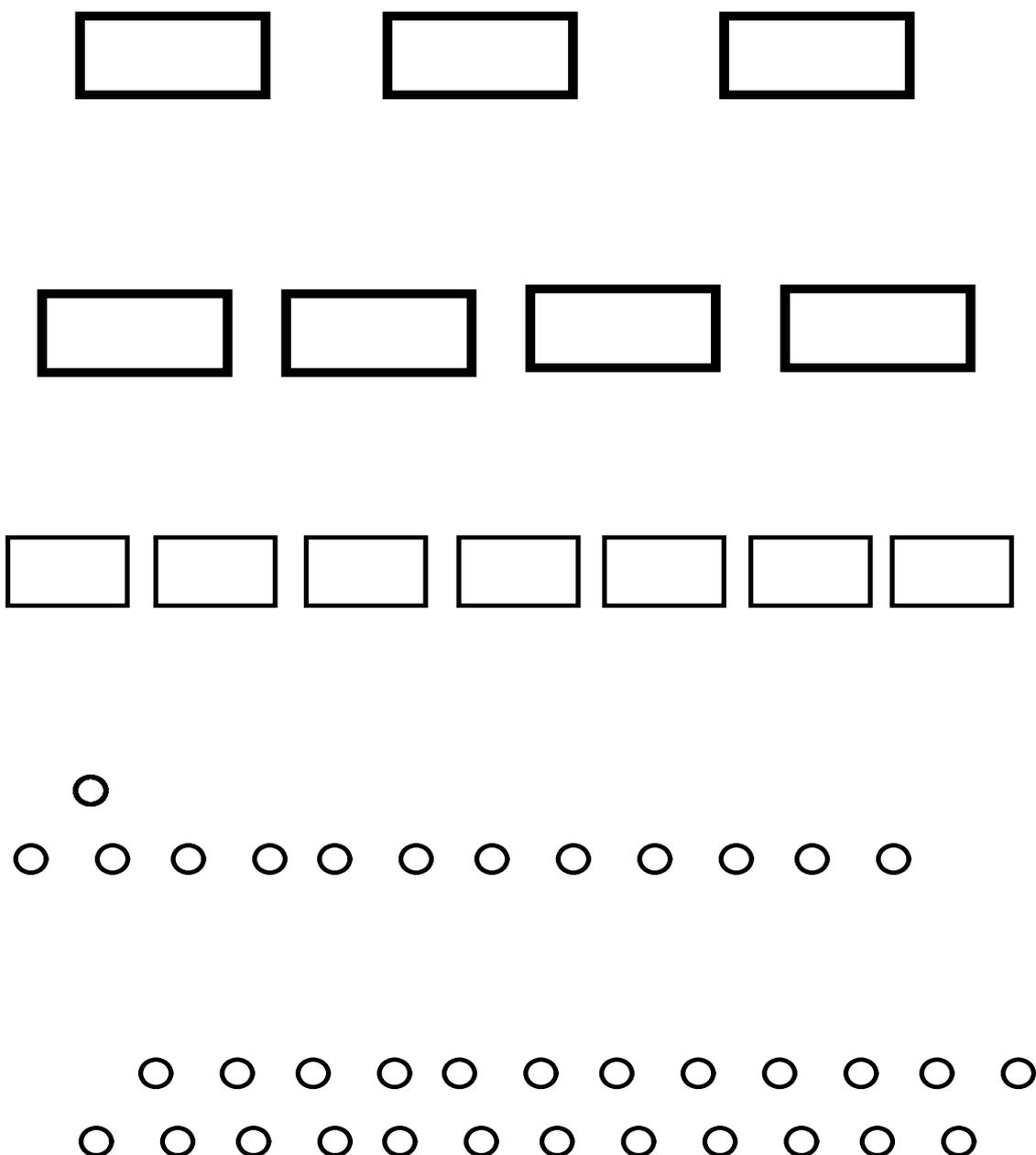
The long established facilities in the developed countries who are already offering international courses, should be used as a resource to train the trainers, and to offer scholarships for the best of the students from levels 3 & 4 as detailed in *Table 2*.

National centres should be set up or strengthened in the major countries in Africa, and support and training given by the established international centres. This could be achieved by scholarships, short courses for trainers, and visits to the national centres by experienced lecturers from the international centres.

Regional centres should be established where there is a concentration of footwear and leather businesses, to teach factory supervisors, and to develop the skills for level 2 skilled operatives to achieve multi-skilling and to develop potential as supervisors. These Centres will also receive support by visits from experienced lectures.

In-factory training will take place for levels 1 & 2 and instructors for these levels will attend courses at the regional and national centres (see *Figure 1*).

PROPOSED STRUCTURE TO CASCADE SKILLS AND KNOWLEDGE TO AFRICAN AND DEVELOPING COUNTRIES



**Information on Institutions Offering
Training in Leather-based Industries**
as seen on InterNet by End September 1997

Appendices

Appendix XIII

Report on Visits Made to Brazilian Training Institutes

24 August - 1 September 1997

by Ferenc Schmél

A visit was made to the CENTRO TECNOLÓGICO DO CUORO in Estancia Velha. As in almost all SENAI institutes, the centre deals with industrial R&D, professional education and training. (Similar institutes exist in Campina Grande and Sao Paolo.) This technical centre has a pilot tannery effluent treatment plant capable of demonstrating a variety of treatment processes (it was created by an earlier UNIDO project). The regular secondary school lasts four years, of which three years are regular education, the first half of the last year is practical work in the industry and the last semester is devoted to preparing the diploma projects. Those completing their secondary education in general schools or in other (industrial) areas may receive another diploma in leather technology after completing a two-year course at this centre. Another one-year special course is offered in (general) waste management. Some short term courses lasting up to 70 hours are organized in the evenings (3 hours/occasion), while others with a duration of 40-234 hours are run full day. The topics covered by training include wet processing, vegetable tanning, grading, exotic leather processing, machine maintenance, effluent treatment, solid waste marketing, management, informatics, management and technical English language. Fees range from R\$¹ 60 for a 20 hour course to R\$ 200 for a 70 hour evening course; the charges for the longer courses are R\$ 80/month. The overwhelming majority of trainees are delegated and paid by tanneries operating in the region.

The CENTRO TECNOLÓGICO DO CALÇADO in Novo Hamburgo (also part of the SENAI system) is involved in R&D, professional training and education specialized in footwear manufacturing (similar institutes exist in Campina Grande and Franca). Footwear technology training was started in Rio Grande do Sul in 1972, the present technology centre was formed in 1990 and presently has 76 staff members. The laboratories and the full fledged workshop are well equipped: there are three different CAD systems used in training, one of them has ten workstations in a classroom. There are 174 students in the secondary school, another 51 students participate in the two-year course offered for those having a secondary education, 414 trainees attend the three semester supervisory courses. The centre implements a wide range of special (mostly evening) courses for employees of local shoe companies in quality control/ISO 9000, time studies, environment/ISO 14000, production control, CAD, design and pattern engineering, informatics etc. with more than 16,000 hours in total for about 550 people in a year. This centre was a pioneer in developing computerized training methods and respective knowledge bases when they created a comprehensive software for identifying common problems and errors met in shoe technology. Building on this experience, they started to develop a series of interactive multimedia programmes to teach various technical subjects. Having support through a bilateral aid project, a German specialist assists in implementing a reform in the regular professional education and short term training. (It is envisaged that the new modular programme will be transferred to the technical school in Pirmasens, Germany). A very interesting and promising modular approach is adopted in training (semi-skilled) operators and plant supervisors for local footwear manufacturing plants.

Higher (engineering) level technical education is organized by the UNIVERSITY OF PORTO ALEGRE (FEEVALE) in both leather and footwear technology. The education process lasts three years; technical subjects are taught in the two specialized technology centres and lectures are delivered by the latter's professors. (Such courses are not launched every year.)

¹The official exchange rate was R\$ 1.00 = US\$ 0.90 at the time of the mission.

Report on Visits Made to Hungarian Training Institutes

8-10 September 1997

by Ferenc Schmél

Detailed discussions were held with directors LEATHER AND LEATHER PRODUCTS COLLEGE (BSZSZI) and the BUDAPEST LIGHT INDUSTRY POLYTECHNIC (KMF), as well as with a deans of the BUDAPEST TECHNICAL UNIVERSITY (BME) on the Hungarian professional education and training system. Due to the drastic decrease of the local leather and footwear production (as a consequence of loosing the former Soviet market) and concentrating on job-works the need for professional (re)training has practically disappeared. At the same time the number of students enrolled in regular education has fairly increased during the last five years. The entire secondary education is undergoing a massive reform which has an influence on technical schools, but the real effect is still to be measured. Universities introduced a credit system in 1994 which is built on modules (in fact one semester long portions of the traditional subjects). These modules fall into three categories: obligatory, obligatory-selectable and freely selectable. Each module has its credit value (point) depending on its anticipated workload (the latter is described by the number of hours spent in classrooms and laboratories plus the number of hours to be used for preparing home works, projects and learning for tests). The modules also have their entry requirements (what other modules should have been completed). Each student composes his own programme (timetable) such a way that the total credit value falls between prescribed minimum and maximum limits. To achieve certain milestones in the education students should collect the target total credit value. Since the credit value is a quantitative measurement expressing only the volume of students' work, an attempt was made to create a qualitative parameter which is the sum of the product of grade and the credit value divided by the total credit value achieved. The transfer between different departments and universities is subject to individual judgement rather than based on any systematic approach.