



CONFERENCE REPORT -
STRATEGIES FOR PROSTHETICS AND ORTHOTICS
EDUCATION AND TRAINING IN EUROPE

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EDITED BY
NERROLYN RAMSTRAND
AND
SANDRA SEXTON



CONFERENCE REPORT

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CONTENTS:

Section	Page
1 Background and Executive summary	1
1.1 Introduction and Background	1
1.2 Conference recommendations and conclusions	3
2 Statement from the World Health Organization	4
3 Overview of outcomes from the Dortmund meeting	6
4 What types of professional do we need?	9
5 Recognition of the profession	15
6 How French schools are meeting the challenge of training paramedics	18
7 How can ISPO Category I become the professional standard for Europe?	20
8 Developments in vocational education and training at European level	23
9 How European schools are addressing European issues	
9.1 University of Strathclyde, Scotland, UK	26
9.2 Katholieke Hogeschool Kempen, Belgium	32
9.3 University of Giessen, Germany	35
10 Best practice in education through benchmarking	37
11 Introduction to continuing professional development	39
12 Examples of continuing professional development	
12.1 Belgium	41
12.2 University of Salford, England, UK	43
12.3 BUFA, Germany	45
12.4 North America	48
12.5 INTERBOR	50
12.6 Proteor	52
13 Appendices:	
13.1 Conference Programme	53
13.2 Participants list	54
13.3 Syndicate questions	56
13.4 Summaries of syndicate and plenary discussions	57

1 Background and executive summary

1.1 Introduction and background

Nerrolyn Ramstrand and Sandra Sexton

The first ISPO conference for prosthetics and orthotics education in Europe was held in Dortmund, Germany in 2004 with the aim of defining professional competencies and developing professional standards for the prosthetics and orthotics profession. A number of the recommendations from Dortmund were addressed in the years following the conference in an attempt to facilitate progress in the quality of education in prosthetics and orthotics. Of particular relevance was the documentation of a professional profile for an ISPO Category I prosthetist/orthotist and the updating of learning objectives for ISPO category I level education.

This document reports on the second conference for prosthetics and orthotics education in Europe. On this occasion ISPO had teamed with INTERBOR in the organisation of the conference, recognising the importance of open communication between educational institutions and industry. The specific aims of this second conference *Strategies for prosthetics & orthotics education and training in Europe* were:

- to follow up on the recommendations of the conference in Dortmund, Germany, in 2004;
- to define the status of the prosthetics and orthotics profession in Europe and;
- to define continuing professional education and certification in Europe.

The conference was held over four days in Valence, France and was attended by 59 people representing 18 countries. It commenced with a welcome from the ISPO President elect and Education Committee Chairperson Mr Dan Blocka who noted that this conference follows on from the positive outcomes of the European Conference for Education in Prosthetics and Orthotics in Dortmund, Germany. He stressed that the role of ISPO is to encourage and promote research, development and evaluation related to prosthetics and orthotics. ISPO has a role to guide and support education and training and to encourage and facilitate a high level of uniform practice in prosthetics and orthotics. ISPO recognises practitioners working at various levels in rehabilitation, namely:

Category I	Prosthetist-Orthotist
Category II	Orthopaedic Technologist
Category III	Prosthetic/Orthotic Technician

ISPO has published standards for professional profiles related to each Category which can be seen in the ISPO category information packages. ISPO has also published a document with the World Health Organization, *Guidelines for training personnel in developing countries for prosthetics and orthotics services*.

Through promoting standards of education and practice in prosthetics and orthotics, our aim is to ultimately provide improvements in the quality of patient care for persons requiring prosthetic and orthotic devices. Professional recognition of the profession is a key element in securing improved patient care in our field. It is of utmost importance that our professionals are able to develop by exposure to continuing education.

Co-operation with each other is a powerful way of improving patient services. Mr Blocka indicated that the conference in Valence provides an ideal opportunity to advance our understanding of each other with a view to better collaboration. He further suggested that the ISPO 2007 World Congress, Moving beyond Disability, in Vancouver, Canada, July 28 – August 3 gives us another great opportunity to come together and develop further collaborations and encouraged delegates to attend.

The INTERBOR President, Mr Eddy Deschoolmeester then welcomed delegates explaining that INTERBOR is a technical association which unites all national professional associations and industry. With regard to professional status, if we have a look at the present situation in the field of prosthetics and orthotics it is difficult to find two identical systems of official recognition (professional status), education and training systems (Dortmund, 2004), regulation systems, nomenclatures, products pricing or reimbursing systems.

Prosthetists/orthotists are often considered craft-workers or manufacturers and suppliers of custom made devices. However, caring for persons with disability is not just about manufacturing and delivering a custom made device, but is linked with other inseparable professional activities, often within a multidisciplinary team. This professional role is seldom officially recognised by Ministers, Administrations or bodies in charge of healthcare across Europe.

The last conference report from Dortmund (2004) stated that the next important step would be to recognise prosthetist/orthotists as health professionals in the European Union. Individuals, training schools and professional associations can all contribute to this recognition by opening dialogue with legislators.

INTERBOR member associations, as well as many associations representing European non-member countries agree that quality assurance of prosthetics and orthotics care can be achieved by agreeing upon standards for education. It is therefore pertinent that a "model" of paramedical status for prosthetist/orthotists (Category I) be proposed by INTERBOR. Such a document should allow associations or professional unions to negotiate with their governments. Furthermore, standards of professional status could be presented to international authorities to achieve official European and world wide recognition. This would help to build an essential foundation for the evolution of professional training in many countries

Delegates were then introduced to the excellent facilities of the Institut Supérieur Technologique Montplaisir, Valence, by the Director of the school, Mr Norbert Kieffer. The school in Valence offers prosthetics and orthotics education to 70 students in both full time and part time courses and also educates 30 pedorthists and 60 radiographers.

The Mayor of Valence, Lena Balsan, welcomed delegates to Valence, a town which is both close to the mountains and the sea. The town of Valence lies centrally in France and the nearby Rhône River and the TGV train service means there is access to Paris in 2 hours and Marseilles in 1 hour. In particular Mayor Balsan recommended that delegates visit the unique museum of the Armenian community which comprises 10% of the population and she also recommended the town's architecture. The Mayor also explained that Valence has a long tradition of Universities from as long ago as the 15th Century and today Valence still offers a wide range of training opportunities.

A statement for the conference from the World Health Organization was then read by Mr Sepp Heim, the chairman of the conference steering group. This statement is presented on page 4.

1.2 Conference recommendations and conclusions

Mr Sepp Heim

There have been some very positive developments indeed since our last conference in Dortmund in 2004. Most importantly, the professional profile has been accepted and endorsed by the World Health Organization. In addition to this, the ISPO Category I learning objectives have been edited and improved following recommendations from the Dortmund meeting and schools have since accepted the concept of ISPO Category I certification.

This year representatives from industry have been invited to this conference to emphasise and encourage collaboration. Although the schools comprise the majority of the participants it has given us the opportunity to come together and to work together.

A series of recommendation statements, based on discussions throughout the conference were put to the floor for consideration. This resulted in the following recommendations being identified:

Recommendation 1:

It was confirmed that the WHO/ISPO Category I professional (Orthotist/Prosthetist) is based on the professional profile of ISPO as endorsed at the Dortmund Conference.

Recommendation 2:

It is necessary to seek acceptance of the Category I ISPO/WHO profession, the prosthetist/orthotist, as a recognised profession by the European Health Authorities within the area of health.

Recommendation 3:

The prosthetics and orthotics profession should be accepted and recognised as a health profession/paramedical profession. A working group should be developed to collect information about different terminology used within the profession and to arrive at a better way of describing or standardising these terms (e.g. Paramedical or Health Care Professional)

Recommendation 4:

The ISPO professional profile should be reflected in the curricula of prosthetics and orthotics educational facilities.

Recommendation 5:

Training institutions should communicate and liaise with stakeholder groups when developing and improving their programmes. These groups should be consulted by schools who should implement a professional advisory system. We should look towards having a member of the disabled community on the advisory board of schools. Industry and schools should have mutually beneficial dialogue.

Recommendation 6:

The priority of education should be in promoting understanding of the patient and developing the competency to judge and solve problem cases. Priority should be given to how students can solve clinical problems, develop treatment plans and evaluate the outcome of treatment. An outcomes study should be initiated to investigate the impact and success of prosthetist and orthotist training in European States.

Recommendation 7:

The prosthetics and orthotics profession should implement a system of continuing education that requires a form of proof that clinicians are maintaining their competencies. There was a general understanding that continuing professional education is needed to maintain the clinical competency of individuals.

The general feeling among delegates was that this should be a European approach and not a national approach. There should be a common declaration by ISPO regarding the need of continuing education with appropriate quality checks. A pilot project for continuing education in Europe could align with prosthetist/orthotist experiences and needs to be developed.

Recommendation 8:

It is important and beneficial to continue the meetings of European schools and stakeholders. It was suggested that a meeting be held on the year of the triennial ISPO conference. This allows schools to meet twice in a year and to follow up on meetings.

2 Statement from the World Health Organization

Chapal Khasnabis and Francesca Racioppi

Read by Sepp Heim

SUPPORTIVE STATEMENT FROM WHO ON THE OCCASION OF THE ISPO/INTERBOR 2ND EUROPEAN SCHOOL MEETING

On behalf of WHO we would like to thank you for inviting us to participate in this important event of ISPO/INTERBOR 2nd European School Meeting to be held on 27 March 2007 in Valence, France. Also, we feel privileged to give the opening remarks for this significant meeting.

WHO is very much conscious of the great demand from all over the world of appropriately trained manpower in the field of rehabilitation especially, in prosthetics and orthotics (P&O). WHO is also aware of the fact that there is a lack of appropriately trained manpower in the field P&O profession in Europe, in particular, in the Eastern European countries; where they are available, they differ in standards. While in some European countries, prosthetics and orthotics programme is available up to PhD level, in others, there is no appropriate structured training programme.

Similarly, in some countries it is clearly defined as a paramedical profession whereas, in others it is referred either as a traditional handicraft profession or it is not at all recognised as a profession.

WHO would like to see harmony and better standards for prosthetics and orthotics training programmes across Europe. This initiative would greatly contribute in improving the health and wellbeing of its citizens. The United Nations Standard Rules (UNSR), especially rule 2, 3 and 4 request States to take several measures to ensure the provision of rehabilitation services and assistive devices to persons with disabilities in order for them to reach and sustain their optimum level of independence and functioning. Again, UNSR 19 specifically mentions that States are responsible for ensuring the adequate training of personnel, at all levels, from the planning and provision of programmes to the quality services concerning persons with disabilities.

The recently concluded UN Convention on The Rights of Persons with Disabilities went a step further and mentions that personal mobility, habilitation and rehabilitation are also fundamental rights of persons with disabilities. The need of mobility devices including prostheses and orthoses is increasing due to ageing population, injuries and emerging chronic conditions, to name few causes. Article 4 and especially Article 20, recommend that persons with disabilities need to access quality mobility aids, devices, assistive technologies at affordable cost.

WHO has always considered prosthetics/orthotics professionals as health personnel. The prosthetics and orthotics profession is perceived as paramedical profession and a branch of medical/physical rehabilitation profession. In most countries, medical rehabilitation is under Ministry of health and health personnel are actively involved in providing rehabilitation services across the country. P&O professional requires to work with health personnel of various levels to ensure that appropriate services reach the majority in need. World Health Assembly resolution (58.23) reaffirms this statement. Rehabilitation is a team work where a prosthetist and orthotist are equal team members. To formulate a competent rehabilitation team to deliver a quality service to persons with disabilities, the knowledge of P&O service providers needs to be at the same level as other paramedical or rehabilitation professionals. Like many disciplines, P&O Training is also not a one-training affair. It requires constant upgrading of knowledge and skills of the professionals. In this connection, we all have a big task ahead of us.

We are pleased to learn that this conference seeks to define the status of the P&O profession in Europe, upgrade training standards, make a standardization of P&O education across Europe; this will also includes higher standard of training and promotes internationally recognised standards of prosthetics and orthotics competence. In this way citizens in Europe requiring rehabilitation services can have a guaranteed access with a better quality of services as well as ensuring competency and safe practitioners.

We trust that the conference will produce a positive outcome for the benefit of persons with disabilities living in Europe, whose rights to access to quality services have been granted by the recent UN Convention.

We wish you all the best,

Chapal Khasnabis
Technical officer for Disability and Rehabilitation
(DAR)
World Health Organization, Headquarters

Francesca Racioppi
EURO focal point for disability and rehabilitation
WHO Regional Office for Europe

3 Overview of outcomes from the Dortmund meeting and aims of the current meeting

Sandra Sexton

In this introductory session, the outcomes of the *European conference for education in prosthetics and orthotics, Dortmund, Germany (2004)* were reviewed and the aims and format for this conference, *Strategies for prosthetics and orthotics education in Europe, Valence, France (2007)* were presented.

European conference for education in prosthetics and orthotics, Dortmund, Germany

The European Conference for Education in Prosthetics and Orthotics took place in April 2004 at the Bundesfachschule für Ortopädie Technik (BUFA), Dortmund, Germany, and aimed: to define professional competencies for a clinician working in prosthetics and orthotics; and to develop quality standards of education for these clinicians in Europe.

A survey was conducted: *An investigation into the professional profile and education of prosthetists and orthotists in Europe*, the results of which are presented in Section 4 of this document. One of the main findings from the conference was that “a great deal of similarities exist between prosthetics and orthotics practitioners, both in terms of professional competencies and educational needs”

In 2004 a number of recommendations for future work were established and although not all recommendations have been fully implemented, progress was made between 2004 and 2007 as follows:

Recommendation 1 (2004):

1. *ISPO should alter the professional profile for Category I professionals and encourage its adoption following consultation. A time limit should be put on this activity*

Progress:

This action was completed. The ISPO Category I Professional Profile was reviewed and redrafted by a dedicated post conference working group established by the ISPO Education Committee. The new ISPO Category I professional profile describes clearer professional roles and responsibilities in: patient care; fitting, fabrication and treatment; management and supervision; training and education; research and development; and medical and legal requirements of a prosthetist/orthotist. The following section describes these roles and responsibilities in more detail:

Patient care – formulation of treatment:

In patient care, the prosthetist/orthotist formulates treatment and participates as a full member of the clinic team. The prosthetist/orthotist examines patients to determine the extent of their problem, designs an appropriate solution and then prescribes and specifies treatment methods for limb prostheses and, or orthoses (or footwear).

The ISPO Category I professional profile describes a clinician who assists and advises on pre- and post- surgical, medical and therapeutic management of individuals requiring prosthetic and orthotic devices. They record and report information regarding patients and patients' families and also communicate appropriate information to those patients and their families.

Additionally, the professional profile guarantees the full inclusion of the patient/customer in treatment planning and decision making.

Fitting, fabrication and treatment

A Category I professional should be able to direct the activities of Category II professionals trained to a lower academic level, and Category III professionals (non-clinical technical staff). In patient assessment they can identify physical and other relevant characteristics that may effect the treatment of the patient and have sufficient understanding of biomechanics, materials, and the human sciences to formulate prosthetic and orthotic designs.

The ISPO Category I profile describes a clinician who takes all of their casts and measurements, who then modifies the cast models and digital shapes for optimum fit and

alignment of the final prostheses or orthoses. They carry out static and dynamic fitting of all kinds of complexity of cases. They also perform and/or supervise fabrication.

A Category I professional advises the team and participates in check out and evaluation of fit, function and cosmesis and provides instruction on the use and care of the device. They take part in follow up procedures and also collaborate and consult with others involved in patient management.

Management and supervision

The Category I professional supervises the activity of support staff as appropriate; manages clinical and workshop activity; identifies and introduces improved job methods to achieve efficiency; interacts with professional groups and where appropriate with governmental and non- governmental agencies and takes part in planning, development and implementation of technical orthopaedic care systems.

Training and Education:

The prosthetist/orthotist professional supervises and conducts the education and training of Category I, II and III personnel and as part of this educational profile lectures and demonstrates to colleagues in their profession and other professions and interested groups.

They are required to take part in and contribute to the process of continuing professional development. They critically evaluate new developments in prosthetics and orthotics for inclusion in a teaching syllabus and also keep up to date with new teaching techniques.

In Community Services, the prosthetist/orthotist makes a professional contribution to community based rehabilitation.

Research and development:

The Category I professional conducts continuing evaluation of their activities. They develop and actively participate in formal evaluation and research programmes. Additionally they participate in scientific meetings, contribute papers to scientific/professional journals and use outcome measures to review treatment procedures to determine best practice.

Medical, legal and ethical requirements:

They provide patient care within a recognised code of ethics and which complies with medical/legal requirements.

Recommendation 2 (2004):

2. ISPO should develop guidelines on graduate performance. Information on existing programmes to measure graduate performance should be sent to the chairman of the ISPO Education Committee.

Progress:

Actions against this recommendation were partially complete. The chairman of the education committee received few reports and thus there has not been momentum behind completing this recommendation.

Recommendation 3 (2004):

3. ISPO should revise the learning objectives in the Category I guidelines following the discussions in the conference. In particular they should be reorganised into core and secondary subjects and consideration should be given to the removal of some subjects. The revised guidelines should be sent out for comment

Progress:

This action was completed. Revised learning objectives were circulated around the participants of the Dortmund conference and agreement was reached on the learning objectives contained in the ISPO Category I requirements.

Recommendation 4 (2004):

4. *There is a need for ISPO to become more proactive in Europe on matters related to prosthetics and orthotics education by:*

- *Forming a group for the purpose of lobbying Europe*
- *Having direct contact with Brussels administration*
- *Making contact with national members of the European Parliament*
- *Increasing the contact with user groups to gain their assistance in contacting the European Parliament*
- *Contacting Universities' international offices to obtain information regarding contacts in Europe; and*
- *Involving national associations (professional bodies, etc) and gaining their support in lobbying the European parliament*

Progress:

There has been very limited progress towards this recommendation. ISPO committee members have had difficulty in accessing the correct contacts or decision makers in positions of power within the European Brussels administration. This matter is complicated because prosthetists/orthotists are not yet recognised as a professional group in the eyes of European law and there is neither a clear route for lobbying nor a possibility of meaningful negotiation because no one European division has a governance responsibility for prosthetists/orthotists. The different positioning of our working situations varies from country to country and ranges from the healthcare professional within healthcare services to the business entrepreneur in Small to Medium Sized Enterprises, with complex combinations and situations in between. ISPO continue to press for professional recognition in Europe.

Strategies for prosthetics and orthotics education and training in Europe (2007)

The aims for this conference were

- to follow up on the recommendations of the conference in Dortmund, Germany, in 2004, the European Conference for Education in Prosthetics and Orthotics
- to define the status of the profession in Europe
- to define continuing professional education and certification in Europe

The format for the conference was designed to ensure full engagement of each conference participant. Each topic section began with a keynote speaker to help participants to focus on a specific topic. Working group (syndicate) discussions then ensured that the opinion of the individual was heard and each working syndicate had a facilitator whose job it was to ensure that everyone around their syndicate table had a voice. Finally, plenary sessions received feedback from each of the syndicate groups and plenary discussion completed each topic section. Plenary discussions were then considered by the steering group leading to recommendations being drafted for the closing summary session. Participants were asked to ensure that they addressed any post-conference recommendations that pertained to them.

Plenary discussion following overview of outcomes from the Dortmund meeting and aims of the current meeting can be found in section 13.4 of this report.

4. What type of professional do we need – professional profile

Nerrolyn Ramstrand

Introduction

There has been much discussion over the past decade regarding the future of the prosthetics and orthotics profession. Several authors have identified factors which are likely to contribute to the professions inability to meet future market demands (Nielsen, 2002; Raschke and Ford, 2002). Others call for development of the fields “professional status” (Schoenwald, 1990).

It has been suggested that the criteria for reaching professional status should include such factors as: a professional organisation; an ethical code; standards of practice; an accrediting body and licensing governing practice (Feit and Lloyd, 1990; Ritchie, 1990). Unfortunately in many countries and states these criteria have not yet been met in the field of prosthetics and orthotics. Furthermore, when formal attempts have been made to strengthen the professional status, in some instances, they have been unsuccessful (Kazanjian *et al.*, 1997).

It is essential that steps are made to ensure longevity of the prosthetics and orthotics profession. Given the relatively small size of the field, an international strategy which combines resources and demonstrates common goals and practices is most desirable.

With the establishment of the European Union it is becoming increasingly important for prosthetists and orthotists within Europe to increase their co-operation on an international level. Requiring particular attention is the European Commissions' directive that citizens of the European Union should have the right to provide services anywhere in Europe (Council of the European communities 1992) and the Bologna declaration which aims to eliminate all obstacles that stand in the way of free mobility of students between academic institutions (European Ministers of Higher Education, 1999).

In order for unifying efforts to be efficient and effective, it is necessary to first obtain a complete understanding of current practices of prosthetists and orthotists. The aim of this study was to identify similarities and differences in the clinical practices and educational models of prosthetists and orthotists across Europe. The study took the form of a questionnaire that was completed by twenty-one prosthetic and orthotic educators representing eighteen European countries.

Method

A questionnaire was distributed to European prosthetic and orthotic education institutions known to the International Society of Prosthetics and Orthotics. This questionnaire was, in the main, directed to University level institutions. In countries where no such education was available the questionnaire was completed by other interested parties. Respondents were permitted to return the questionnaire by mail or to complete the questionnaire online. In total 33 questionnaires were distributed. Repeat questionnaires were distributed to those institutions who did not respond.

The questionnaire was divided into two general themes, one addressing the professional profile of clinicians practising in Europe and the other addressing the educational models of clinical prosthetists and orthotists. Questions were presented in English reviewed for content validity by five clinicians representing five different countries.

The professional profile element of the survey was divided into four key areas. Eight questions related to the prosthetist and orthotists involvement in patient assessment. Twelve questions related to clinicians' involvement in device fabrication and provision. Seven questions addressed the level of involvement of clinicians in administrative duties and ten concerned involvement in education and research within the field. Respondents were requested to rate questions on a simple three point scale. For each question they were asked to indicate if a specific task listed in the questionnaire was performed by the majority of prosthetic and orthotic clinicians in their country, by some prosthetic and orthotic clinicians in their country or by no prosthetic and orthotic clinicians. In addition, forty-seven specific

devices were listed and respondents were requested to indicate if each device could be obtained by a prosthetist or orthotist in their respective country.

The educational models section of the survey contained questions related to the level and length of education offered in the respondents' country, student and staff specific information and the general structure of curriculum.

Results

Replies to the questionnaire were received from 21 institutions (64%). A full report together with survey results from each institution can be obtained from the ISPO head office.

Professional Profile

Each category investigated in the professional profile section of the survey (patient assessment, device provision, administration and education and research) will be discussed in detail below. Combined results under each of these categories are presented in figure 1. The category that proved to generate responses that were most similar across those countries surveyed was the category "device provision". Under this category 78% of respondents indicated that the majority of clinicians in their respective country performed the specific tasks listed in the questionnaire. Also generating relatively similar results across countries was the category "education and research". Under this category 67% of respondents indicated that some clinicians in their country were involved in education and research activities. The categories of "patient assessment" and "administration" generated varied responses from survey respondents indicating that clinicians across countries differ most in their practice of these activities.

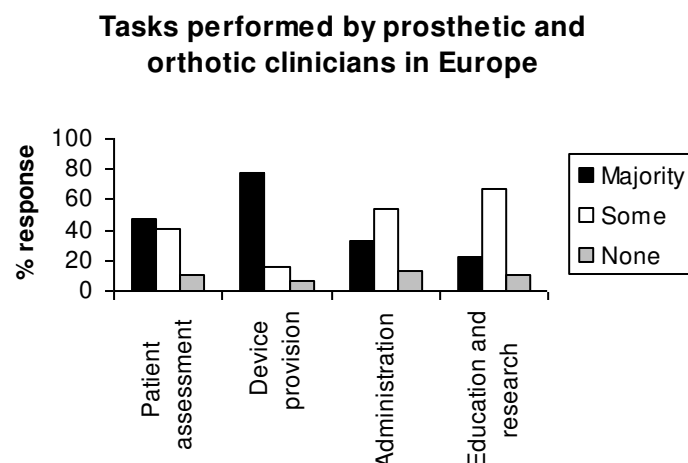


Figure 1: This graph provides an indication of the number of prosthetic and orthotic clinicians (majority, some, or none) who are responsible for performing tasks within four general areas of clinical practice.

Patient Assessment

Questions related to patient assessment addressed the involvement of prosthetic and orthotic clinicians in the collection and documentation of patient medical histories, in performing specific neurological and musculoskeletal tests and in referral of patients to other health care professionals. Results indicated that the level of involvement of prosthetic and orthotic clinicians in such activities is quite varied across countries. 67% of respondents indicated that the majority of clinicians in their country collect a patient medical history, perform tests of muscle strength and perform observational gait analysis. Less than 50% indicated that the majority of clinicians perform basic neurological tests (44%), document the findings of physical examination (44%) and refer patients to other health care providers (33%).

Device Provision

The category of device provision addressed questions related to prescription, casting, fabrication and fitting of prosthetic and orthotic devices. In general country responses were

quite similar regarding these elements of clinical practice. Table 1 presents an overview of responses for tasks that respondents indicated were performed by the majority of clinicians.

Over 80% of responses	50-79% of responses	Less than 50% of responses
Take a plaster mould or digital scan of a body segment	Prescribe an orthosis or prosthesis (i.e. Has autonomy to determine if a device is needed)	Actively fabricate the device
Modify/make changes to patient moulds or digital images	Supervises fabrication of a device	
Decide which materials and components will be used in fabrication of the device	Performs static and dynamic alignment when appropriate	
Fit a device to a patient	Document the results of fabrication and fitting	
Makes changes/modifications to the device when necessary	Determines when a new device is necessary	
Reviews fit of the device		

Table 1: An overview of those tasks that survey respondents indicated were performed by the majority of clinicians.

Administration

Administrative duties carried out by prosthetic and orthotic clinicians proved to vary across countries included in the survey. The most consistent results were obtained for the tasks; financial management, acting as a representative on various committees and supervising staff activities with 72% of respondents indicating that at least some clinicians from their country were involved in these activities. The level of involvement in strategic planning proved to generate the most varied responses. Results for this activity are depicted in figure 2.

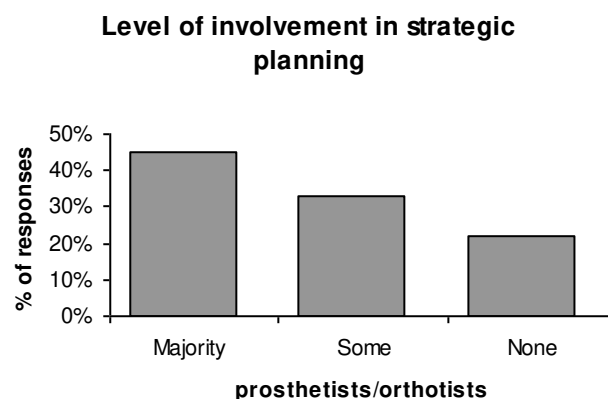


Figure 2: Percentage of survey responses received regarding the level of involvement of prosthetists and orthotists from different countries in strategic planning activities.

Education and Research

Results regarding the level of involvement of prosthetists and orthotists in education and research indicated that some clinicians in most countries are involved in these activities. Over 80% of respondents indicated that some clinicians in their country were involved in the development of research projects and participation in formal research programs. Clinicians' involvement in education related activities proved to be more varied than involvement in research activities. This was particularly evident in relation to training of patients to use prosthetic and orthotic devices. As depicted in figure 3 responses to this particular aspect of education was very inconsistent.

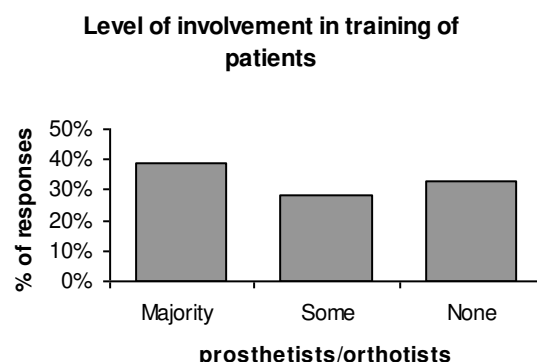


Figure 3: Percentage of survey responses received regarding the level of involvement of prosthetists and orthotists from different countries in training of patients to use prosthetic and orthotic devices.

Specific devices provided by Clinicians

Survey respondents were requested to indicate from a list of 47 specific devices those which could be obtained from a prosthetist or orthotist in their respective country. Table 2 presents a list of devices that received a response of 80% or less.

Orthopaedic shoes	67%
Shoe repair	56%
Hand orthoses (low temperature thermoplastic)	72%
Gait aids (crutches, walking sticks)	67%
Orthoses for burns management	78%
Fracture casts	39%
Facial /ocular prostheses	33%
Mastectomy prostheses	50%

Table 2: Prosthetic and orthotic devices which 80% or less respondents indicated could be obtained from prosthetists/orthotists from their respective country.

Educational Models

In addition to identifying common elements and differences in clinical practice, the survey also addressed issues related to the education of prosthetists and orthotists across Europe. Results indicated large variances in educational models which could potentially inhibit the convergence of prosthetics and orthotics education.

Of the 21 survey responses received, thirteen offered a bachelor level education as the basic educational level to become a clinical prosthetist/orthotist. Three schools offered a diploma qualification, one offered a masters level education and four schools offered a meister qualification.

The formal requirement for entry into prosthetics and orthotics programs was generally reported as being high school graduation. Schools which offer a meister qualification required that applicants to the program complete a diploma qualification prior to entry into the course. One school required completion of a bachelor level education as an entry prerequisite.

The duration of study for students wishing to become clinical prosthetist/orthotists also proved to be very varied across countries represented in the survey. The duration of study in weeks ranged from 34 to 160 with a mean duration of 100 weeks (SD = 40.9).

The average number of students graduating from prosthetics and orthotics programs included in the survey was 20 with a range from four students to one hundred students.

Staff student ratios were calculated by dividing the total number of students at an institution by the total number of part time and full time staff members employed. Three schools were excluded from this calculation as they operate using only sessional staff and do not employ any full or part time staff members within the program. The average staff student ratio of the remaining schools was calculated as one member of staff per 10.4 students.

The balance of curriculum was investigated by requesting survey respondents to estimate the percentage of time students at their respective institution spent studying different educational elements. These elements included prosthetics and orthotics theory, other theoretical subjects, practical clinical work and practical technical work. Average results are presented in Figure 4. As depicted in the graph, the study of theoretical subjects related to prosthetics and orthotics (e.g.: anatomy, physiology, materials science) was dedicated the largest proportion of study time (38%). On average, practical technical work was assigned the least amount of study time (17%).

Eighteen of the 21 institutions represented in the survey required that students complete a period of practical experience within a prosthetic and orthotic facility prior to graduation. Ten institutions indicated that graduates from their program were required to complete an internship period under the supervision of an experienced clinician before being able to practice independently. Eight institutions representing six countries indicated that graduates from their program were required to sit a national certification exam, set by an independent body, after graduation.

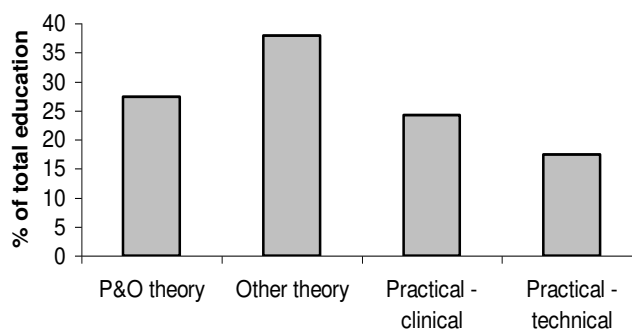


Figure 4: The average duration of time that students enrolled at participating institutions spend studying prosthetics and orthotics theory, other theoretical subjects, practical clinical work and practical technical work.

Discussion

Investigation of the professional profile of prosthetists and orthotists across Europe indicated that most similarities exist in those areas of practice that involve casting and fitting of orthopaedic devices. Of concern is the fact that some clinicians appear not to be involved in those activities that would contribute to growth and promotion of the profession. Such activities include administrative activities such as strategic planning, and education of patient groups and peers. To ensure the longevity of the prosthetics and orthotics profession across all countries in Europe it is important that those countries in which clinicians are not participating in such activities be provided with support to enable them to do so. A further major difference was also observed in the level of clinician involvement in patient assessment activities and documentation of assessment outcomes. These tasks have been listed by ISPO as part of the professional profile of a prosthetist/orthotist (ISPO 1998).

The most common educational model for prosthetist/orthotist in use across Europe is a three to four year bachelor level qualification. There are, however, other models in use including diploma and masters level qualifications as well as the German "Meister" qualification. Given that the Bologna declaration calls for the free movement of students across the European Union this issue requires attention.

The general breakdown of coursework in prosthetic and orthotic programs was relatively consistent in the distribution of time between theoretical subjects, clinical practice and

technical training. This survey did not, however, address the specific competencies required of graduates from each European institution. To meet the aims of the Bologna declaration it is necessary that specific graduate competencies are investigated further.

Conclusion

Prosthetics and orthotics is a relatively small profession. In order for significant advancements to be made within the profession it is necessary to present a united front on an international level. This survey has highlighted differences in both the professional practice and the education of clinicians across Europe. These differences pose as barriers to the advancement of the prosthetics and orthotics profession and toward mobility of workers within a unified Europe.

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5. Recognition of the profession: from technical to health care professional.

Michel Pierron & Laetitia Chiarelli

In France, prosthetist/orthotists have recently been recognised by the government as having paramedical status. This presentation details the recently confirmed definition, code of practice and professional activities for prosthetists and orthotists in France.

Definition of the prosthetist/orthotist profession

Anyone who provides, following medical prescriptions, devices needed by persons with a disability, and who may justify their training with a diploma, a title or a certificate, or has recognised professional experience and complies with the devices delivery legislation may work as a prosthetist/orthotist.

Illegal practice of this profession puts the offender in the position of being prosecuted, in violation of the health code or another legal ruling.

A person who is considered as a prosthetist/orthotist is someone who provides external orthotic and prosthetic devices for a sick or disabled person presenting with either an amputation of a limb (partly or as a whole), or a bone, articulation, muscle or nerve disease, or other physical impairments. The prosthetist/orthotist also provides consultancy to the medical and paramedical team.

Fitting a patient with an orthotic and/or a prosthetic device includes processes such as design, measurement, manufacture, test, adaptation, delivery, adjustment, quality control and follow-up of the patient and their device. The prosthetist/orthotist communicates with the medical and paramedical team during the process.

Exclusive activities of prosthetists/orthotists:

Only prosthetist/orthotists are permitted to:

- take measurements, design, manufacture, adapt, deliver and repair all of the following custom-made external medical devices aimed to support, correct or replace part of a limb or its whole (upper or lower limb), or to support and or correct head and spinal anomalies:
 - upper or lower limb prostheses;
 - upper or lower limb orthoses, and head, spinal and cervical orthoses.
- take measurements, adapt, deliver and repair mass-produced external medical products aimed to be assembled and/or customized.

Professional conditions and regulations

The government has decreed that in order to be awarded a government recognised diploma or equivalent certification there must be specified:

1. terms of admission to training;
2. training curriculum: duration of studies, educational terms, content of theoretical and practical classes as well as clinical training;
3. certification of curriculum, including permanent evaluation and qualification validation terms to pass the state diploma;
4. agreement terms for companies, services, structures and centres where the students carry out their clinical training;
5. pedagogic operating terms for training schools and their control;
6. diploma or certification delivery terms: exam, board of examiners.

Accreditation system granted or recognised by the state

Prosthetists/orthotists must keep up and upgrade the level of their professional competence according to the state of art.

Respect professional privacy and patients' rights

This is an obligation for prosthetists/orthotists.

Premises requirements and conformity

Prosthetists/orthotists may only work in premises specifically designed for this activity. Premises include the whole equipment to fit and follow-up patients as specified by the Authority. In the case that there exist numerous premises, they must all comply with the stated requirements.

Forbidden commercialisation methods (regarding Medical Devices)

Renting, hawking, travel selling, so called demonstration-selling, doorstep selling, mail-order selling of prostheses and orthoses is forbidden.

Medical prescription rights and conformity

A prosthetist/orthotist follows a medical prescription.

Should they believe modifications to the device design seem medically or technically necessary the prescription can be changed only after consultation with a prescribing doctor.

Attitude and respect towards patients

The prosthetist/orthotist should take his/her time to understand the patients' requirements according to their needs and provide all necessary and adequate information to help them choose and use their devices.

He/she takes into account the patients wishes, following the strictest criteria of quality, efficiency, safety and economy.

He/she will not coerce patients in order to have them buy more expensive equipment than needed or to buy unnecessary items (according to the ethical code).

Patient functional assessment

Management of the patient's care from assessment to provision of an adequate device means the prosthetist/orthotist must complete:

1. A medical history: including listening to patients' demands, evaluating their specific needs, motivation, medical and social context, and life plans;
2. A physical examination: in order to fit a device;
3. A clinical record: including all necessary testing to offer a device matching the patient's remaining capacities.

Patient Information

The prosthetist/orthotist has to inform the patient about:

- prosthetic/orthotic device options specific to their needs; material options, instructions for use, function and maintenance of the device;
- cost and reimbursement terms, if appropriate, by the Social Security and/or insurance company. The prosthetist/orthotist will write out a cost estimate for this purpose;
- time of delivery;
- responsibilities and rights of the patient;
- responsibilities and rights of the CPO;
- warranty terms allowing modification for a better fitting if necessary.

The CPO is bound to constitute and update a file for each patient, including: the medical prescription; the administrative file, including insurance information; the anamnesis (medical history) report; an exhaustive description of the device, including the components and, if possible, the parts serial numbers, the device manufacturing steps, and if any, the dates, reasons and type of operations made, as well as the name of the operator, and the conformity assessment if required.

Device delivery

When delivering the device to the patient, the prosthetist/orthotist has to provide oral and written information including fitting, using and maintenance terms.

At delivery, he/she informs the patient that they should be in contact for any future problems with the device. The prosthetist/orthotist should also proceed with any required fitting modification following this delivery.

Device conformity with European norms and regulations

The devices delivered by a prosthetist/orthotist must comply with present European norms regarding materials and finished products.

Quality of product and service

The prosthetist/orthotist must make sure of the patient's satisfaction using a quality approach.

Conclusion

In conclusion, the paramedical status of the prosthetist/orthotist brings four positive developments. Firstly it brings to the person with a disability needing a custom made device a guarantee of a highly qualified person certified by a government controlled state diploma who will maintain and develop their skills throughout their career. Secondly to the prescribing doctors and Social Security and/or insurance companies (reimbursement), it guarantees the work done by the prosthetist/orthotist will comply with norms and regulations, using a quality approach, contributing to patients' satisfaction and meeting the Government's priority goals regarding quality of healthcare. Thirdly to the rehabilitation doctors, prescribing custom made devices, it brings the guarantee to leave their patients in a qualified professional's care, a specialist, and to include this essential link within the professional chain in charge of rehabilitating persons with disability. Finally to the prosthetist/orthotist themselves it brings the satisfaction and recognition of being officially included as a specialist within the multi-disciplinary team. It also eliminates the risk of having this specialist activity fulfilled by other unqualified professionals and signifies that this status gives rights but also a responsibility of continuously developing the prosthetist/orthotist ART and their SCIENCE.

6. How the French schools are meeting the challenge of training paramedics.

Karinne Mialon and Norbert Kieffer

Introduction

In consideration of the development of the profession in France, 1973 saw the beginning of the first 3-year course in a private school at Lille with additional practical lessons in a private company. This resulted in recognition of prosthetist/orthotists with a diploma required by professionals (CORFINA).

The evolution of the profession then saw the formal development of courses and in 1976 the BTS school D'Alembert, Paris "école nationale du cuir", emerged. The first graduates from this programme completed their studies in 1979 realising. At this time there was a partnership with the National Education System, a similar section for pedorthists but not with the Health Ministry (CORFINA = manufacturing devices)

In 1996 the BTS school Montplaisir, Valence was launched, emulating the existing arrangements. There was, at this time, no legislative changes that impacted on courses although the schools themselves were active in progressing course developments. With no exchange between the National Educating System and the Health Ministry, the need for change was expressed by the associations of professional members which comprised of graduates from the schools.

A number of elements were significant in attaining the new paramedical profile. Primarily the professional association, UFOP, set up an agreement with the Health Ministry in France. Further to this, the conclusions by Claude Simonnot drawn from an ISPO/UFOP audit informed authorities of the situation. Aligned with this brief, French law indicated that prosthetist/orthotists are paramedical professionals in August 2005. This was confirmed through legislative change for the qualification (diploma) which took place in February 2007.

The Montplaisir prosthetic and orthotic programme is delivered by an experienced team who have developed their curriculum for prosthetics and orthotics for some time now. A new professional standing on site includes a clinical team, a workshop close to rehabilitation staff and a stronger identity which will hopefully be strengthened by ISPO.

The 3 years baccalaureate course structure is shown in Table 3:

Course Outline		
1 st year	30 weeks	13 weeks work placement
2 nd year	30 weeks	13 weeks “
3 rd year	24 weeks	9 weeks “
Total	84 weeks	35 weeks work placement

Table 3: ISTM, Valence, Prosthetics and Orthotics programme outline

The work placement training weeks take place across France and in a number of other countries including Senegal, Ireland, Germany and Canada. Placements are in 30

rehabilitation centres including hospitals, private hospitals, rehabilitation centres and in 70 companies.

	Year 1	Year 2	Year 3	Total
Connaissances médicales (1)	320	320		640
Atelier/ Techno Spécialités	288	422	422	1132
Mécanique	30	30		60
Matériaux/RDM/Chimie	30	30	14	74
Techniques graphiques	32	64	32	128
Maths/Physique/Biomécanique	62	64	78	204
Français/Communication	32	64	32	128
Anglais	32	64	32	128
Gestion/Législation		48	48	
Psycho/Hygiène/Sécurité			16	16
TOTAL				2558
Stages	455	455	1404	

Table 4: French training in prosthetics and orthotics TOTAL of 3962 hours

In the prosthetics and orthotics course, theory is supplemented by technical and clinical experiences. The course continues to develop and adapt to the needs and skills of the profession. New materials (thermoplastics; composites such as carbon fibre) and components are introduced to the students. New and emerging clinical techniques are taught including such examples as Computer Aided Design and Manufacture and myoelectric upper limb prostheses.

The course includes significant involvement from prosthetist/orthotists and other professionals who also act as tutors in the work placement periods. In the final examination, an assessment team is set up to review the students' final report, practical work and clinical work. This team comprises of a lecturer from ISTM, a doctor and a visiting prosthetist/orthotist.

The course is open to international students, which benefits all students by exposing them to different cultures and ideas. Students can also take the opportunity to have an international work placement or lead a team to achieve a humanitarian project. Cultural exchanges are enhanced through partnerships with Handicap International.

In conclusion, ISTM students will graduate with a stronger clinical professional portfolio than before. ISTM wish to ensure that the prosthetics and orthotics baccalaureate achieves the ISPO Category I professional profile. The new recognition of prosthetists and orthotists as professionals clarifies the position that prosthetics and orthotics belongs to the Health Care System in France.

7. How can ISPO Professional profile, Cat I, become the professional standard for Europe?

The Implications of Competence Requirements of Technologically Advanced Work Processes for Vocational Education and Training (VET).

Rainer Bremer

The following quote is taken from the post conference document of the ISPO Conference held in Dortmund, Germany, 2004.

“It was apparent early in the conference and from the survey returns that a great deal of similarities exist between prosthetic and orthotic practitioners both in terms of professional competencies and educational needs. These similarities indicated that these professionals work in a recognised and defined way in providing prosthetic and orthotic care to patients in many countries in Europe and thus should be recognised as a single professional group, known as prosthetists and orthotists.

Whilst a number of differences in models and pathways of education existed between the countries represented, delegates agreed upon the need for a common set of learning objectives and standards of education for student prosthetists and orthotists in Europe. This was seen as important in ensuring appropriate care for persons using prosthetic and orthotic devices.”

To state this more generally we can say that the competences that are required of skilled workers in relation to work processes can set important standards for vocational education and training. From a European perspective, the advantage of this approach is that it is fairly independent of a particular national education and training system. This has two important consequences:

1. Qualification and skill requirements

Raw material, technologies and processes are available all over the world. They tend to become the same everywhere. The quality of products and work processes are expected to develop to congruence. This shows an impact on the qualifications required by modern work processes (hypothesis of convergence emerged by universalisation).

2. Learning environment and competence development

Such tendencies of universalisation have to be adapted before they take effect. The basis of any adaptation is given by cultural traditions, for example, expressed in the diversity of school systems and VET (hypothesis of divergence emerged by adaptation).

Based upon these two consequences we can conclude that it is necessary to define the input to shape the outcomes. Although there are differences between national ways of qualifying regarding the demands of qualifications, there is a high similarity to be identified in the tasks of modern industrial work (hypothesis of a structural reference between tasks and competencies).

The following paragraphs will details the steps necessary to conduct research that aims to define the competencies required for a particular vocation.

Research Step I

The first step that is necessary to undertake is to subject the sector of interest to research. This should involve investigation into the following key areas:

- the dimensions and expressions of proficiency;
- professional tasks;
- work organisation;
- technologies;
- the legal framework.

If we consider prosthetics and orthotics in Europe as an example, I would suggest that most of this research (including standards) seems to be done or that the process has at least already begun.

Research step II

In order to progress from this point it is necessary to assume that the sector can be described by tasks and functions, which show a lot of commonalities. In the end we should know the sector's specific requirements well, but what does this mean for VET? What should VET have as its outcome? What means and structures of the outcomes can be improved?

When we know the competencies required by the sector, the question must now be directed at how to enable young people to acquire them. For this, we need a deep understanding of the emergence of competencies through learning that is supported by institutions (schools) and means (syllabuses).

As it is not possible to define competencies against their real development we need to understand the process of their obtainment. To realize this kind of empirical research we rely on the developmental theories of Piaget and Havighurst. The Basis of any professional competence development is to elaborate three concepts:

- one of vocational learning (incl. Life Long Learning)
- one of vocational working (incl. coping with changes)
- one of vocational co-operation (integration into the community of practice).

All these concepts should match the sector's requirements. Research questions and hypotheses should be generated to identify;

- which concept of learning is built
 - *Is there a difference from a school's concept to a professional one?*
- which concept of work is built considering which demands
 - *Standards of learning vs. standards of profession*
- which (social) concept of integration is followed
 - *Peer-to-peer vs. community of practice*

There is however a fundamental problem: Even if the sector and its typical professional tasks have been identified, this covers only the first methodological step to be done. The structural reference between tasks and competencies still remains a black box. The solution to this lies in the methodology. If you can't analyse ready made competencies you are particularly interested in it for improving VET performance, then the best methodological way seems to be to analyse competencies by observing them in the period of their emergence. Doing so means that one must expose students who do not yet have the skill that the competency demands by giving them specific professional tasks. Figure 5 demonstrates how this methodology can be applied to a mathematical task. In this method, researchers choose test items from the standard curriculum and assess the contribution of the training institution towards transferring the educational standards. We depart from work practice and the related work demands. Evaluation tasks directly refer to the work process. How a particular task is mastered gives insight into levels of competency development.

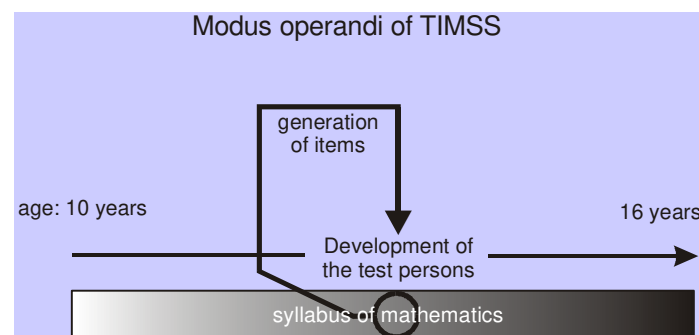


Figure 5: Analysing competencies by observing them in the period of their emergence

Figure six presents the stages involved in developing competencies. This is reflected in the ability to perform specific professional tasks and in the level of elaboration of solutions.

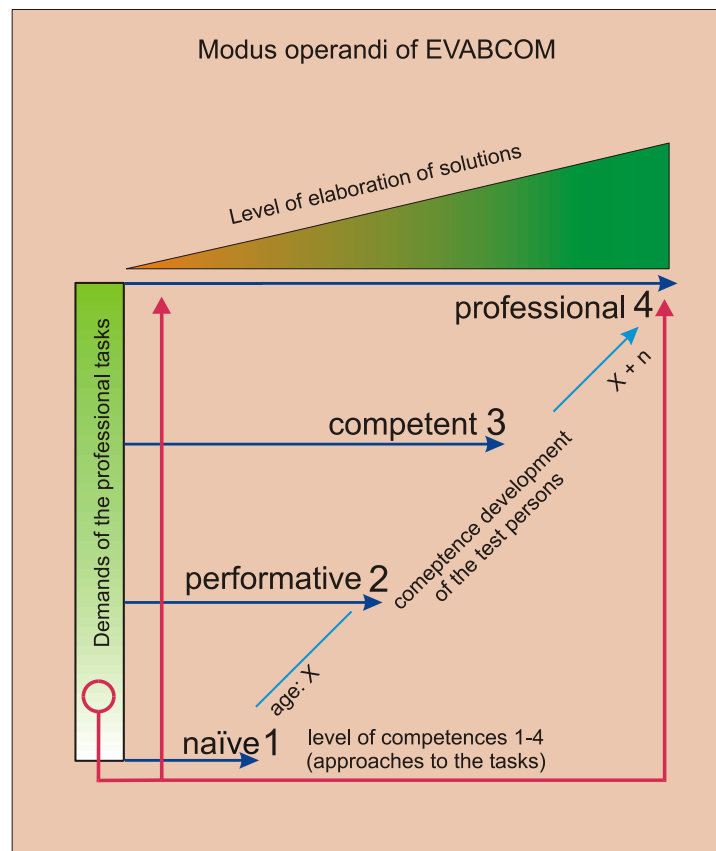


Figure 6: Stages involved in developing competencies

Conclusions and Recommendations

Defining standards which fix the commonalities is the first necessary step to improve VET in a sector of professional work. It is then necessary to conduct research to establish an empirically based knowledge about typical clusters of real competency development which leads to proficiency. We recommend comparative research on best-practice when young people are prepared for working in the sector.

Such a research project should cover a period of at least 3 years including the stages before VET and the 1st year of practical working. The ITB has initiated projects like this in the sector of both automotive maintenance (Germany, Poland, Slovakia, Czech Republic) and aircraft mechanics and avionics in Germany, France, Spain, UK.

8. Developments in Vocational education and Training at European level

Ralf Drachenberg, Advisor for Education and Training Policy, UEAPME

Introduction to UEAPME

UEAPME is the employer's organisation representing the interests of European crafts, trades and Small and Medium sized Enterprises (SMEs). 99% of all companies in the EU are SMEs, and 92% are micro enterprises with less than 10 employees. UEAPME is a recognised European Social Partner and is a non-profit seeking and non-partisan organisation. The organization is involved in negotiating and signing independently all EU agreements.

Education and Training at European level

Formal and informal education and vocational advanced training play a key role in the development of European crafts and SMEs. Education and Training is a European policy area where the EU has a supplementary role. Article 149 and 150 of the EC Treaty set out the role of the EU in education and training. Despite the limited formal role there are many activities. Some initiatives include the Copenhagen process, and the Education and Training 2010 programme, as well as the European qualification framework (EQF) and the European Credit (Transfer) System for Vocational Education and Training (ECVET).

European Qualification Framework: scope and functions of the EQF

The EQF is a translation device for comparing qualifications across different education and training systems. We believe that it serves to increase transparency of qualifications and to act as a neutral reference point based on learning outcomes. Participation in EQF is voluntary. It entails no legal obligations on Member States or sectors. The EQF levels shall not be used when applying Directive 2005/36/EC. The EQF consists of 8 common reference levels (learning outcomes). Each of the 8 levels is defined by a set of descriptors indicating the knowledge, skills and competence necessary for this level (ranging from basic to most advanced). Figure 7 demonstrates how the 8 reference levels are applied.

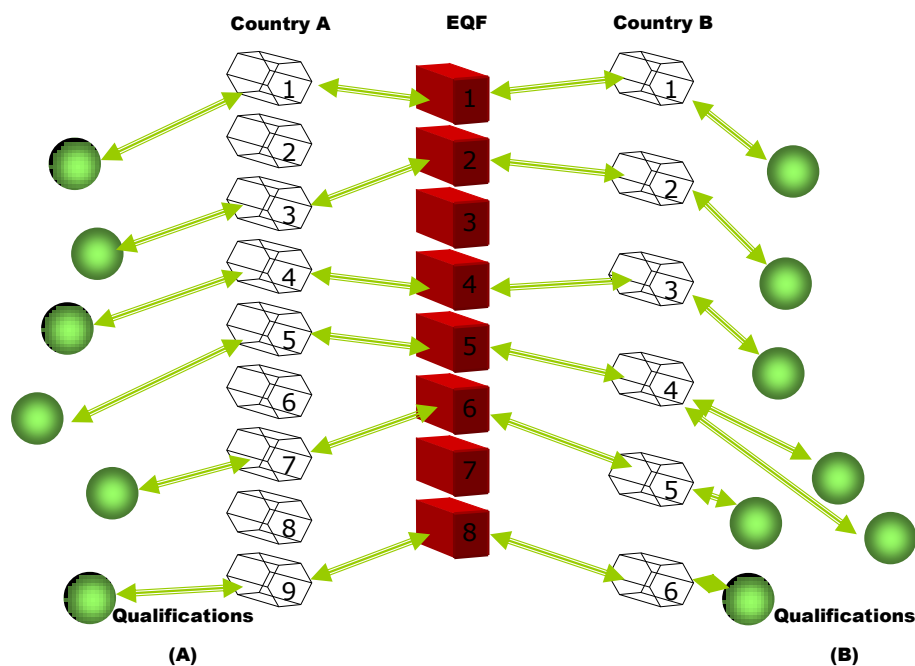


Figure 7: Application of the EQF for comparing qualifications across countries

UEAPME has previously commented on the EQF in the various committees at EU level and has participated in the consultation process. Furthermore, UEAPME was a member of the working group which reworked the original proposal. The EQF proposal is currently being discussed in the European Parliament.

European Credit (Transfer) System for Vocational Education and Training (ECVET)

ECVET is a device for promoting the transfer, accumulation and recognition of credit for VET in Europe. ECVET aims to facilitate:

- the mobility of people undertaking training;
- the validation of the outcomes of lifelong learning;
- the transparency of qualifications;
- mutual trust and cooperation between vocational training and education providers.

ECVET will be based on the voluntary participation of the Member States and stakeholders. Credit points are supposed to be used in order to describe the units in more detail, but have no absolute value in themselves

ECVET is a transfer process, transferring units. A profession is divided up into units at national level by the responsible competent bodies (Figure 8). Under this system, each unit comprises a set of knowledge, skills and competences which constitute a part of a qualification. A unit can be the smallest part of a qualification that can be assessed, validated and possibly, certified. A unit can be specific to a single qualification or common to several qualifications.

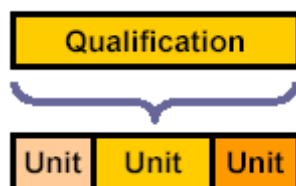


Figure 8: ECVET is a transfer process

In applying ECVET, a competent body/institution A (in host country) assesses certain individual's learning outcomes and awards credit to this person. Competent body/institution B (in home country) subsequently validates credits obtained and transferred by the individual and recognises learning outcomes as part of the qualification to be obtained.

ECVET is currently undergoing a consultation process. Consultation was launched November 2006 and will finish at the end of March 2007. Results will be presented at a conference in June 2007. Based on these results a final proposal will be prepared. This will then be presented to the European Parliament and the Council. Once adopted, it can then be implemented in the Member States. UEAPME will oversee activities concerning ECVET.

UEAPME was involved from the beginning in the various discussions at European level and in the creation of an ad hoc working group. This group conducted initial discussion and holds regular meetings on ECVET with feedback from the ongoing national discussions. The group is currently drafting a preliminary response and sending it to the members for comment. UEAPME's response to the consultation has just been sent to the Commission. Additionally, several national members of UEAPME will contribute directly to the open consultation process

What SMEs expect of ECVET

It is expected that ECVET will motivate people to participate in continuous training and will enhance the mobility of apprentices and young people in initial VET. SMEs also expect that ECVET will involve the company as a key actor in the process of evaluation, recognition and validation and to contribute to providing skills, adapted to the needs of the labour market.

UEAPME supports the process of creating a European credit transfer system in VET but the ECVET communication should be seen as only the start of a process. A sector approach is welcomed, at national & European levels. One of the main benefits of this would be to attract more people to the learning context.

We recognise that units are the core of the system and that one of the difficulties will be to decide on the units at national level. A common European definition of terms of references is needed to help the national level to define workable units. Credit points are one of the weaknesses of the ECVET proposal and the main source for misunderstandings.

European Social Dialogue

The European Social Dialogue Committee ad hoc working group on education and training provides a Framework of Actions (FoA) for the lifelong development of competencies and qualifications. European Social Partners identified four priorities:

- anticipation and identification of competence and qualification needs;
- recognition and validation of competences and qualifications;
- information, support and guidance;
- mobilising resources.

Following three Annual follow-up reports and an evaluation report, the following achievements were noted;

- national social partners have intensively debated the issue of competence development;
- social partners have promoted all four priorities, the number activities on the 4 priorities varied;
- employers' and employees' organisations have used different tools to implement the FoA
- it helped bring about concrete actions;
- besides traditional initiatives, novel instruments were applied;
- the FoA gave a clear message and a sense of focus to social partners in most countries.

Conclusion

UEAPME is involved in many activities in Vocational Education and Training at a European level. EQF is a voluntary translation device for comparing qualifications based on learning outcomes described in skills, knowledge and competences. ECVET is a transfer process for the recognition of learning outcomes achieved while being abroad. Social partners contribute actively to a European VET policy either by working together with the European Institutions or through autonomous activities.

9. How European schools are addressing European Issues

9.1 University of Strathclyde, Scotland, UK

Elaine Figgins

The Bologna Agreement offers both challenges and possibilities for educators in Europe. The University of Strathclyde prosthetics and orthotics course team have been considering this issue as part of a wider course review. The Bologna Agreement Process led to the evolution of an initiative to create a European Higher Education Area (EHEA) by 2010. The success of the EHEA depends upon fulfilling a number of specific targets.

EHEA expects to implement a system of easily readable/comparable degrees across Europe and to adopt a standard educational system initially with 2 cycles leading to a total of 5 years of University Education (3+2 Bologna standard with variants like 4+1 at Strathclyde). The establishment of a credit system across Europe is intended to enhance a mutual understanding of courses and remove obstacles to student mobility. At Strathclyde the current credit rating system for all courses map onto the Bologna model. Furthermore the intent of EHEA is to promote quality assurance systems and the prosthetics and orthotics programme at Strathclyde is validated (via inspection visits) by ISPO at Category I level, by the Quality Assurance Agency (UK) institutional audit and also by the Health Professions Council, the regulatory body for prosthetists and orthotists and all professions allied to health in the UK.

An intense review of the BSc (Hons) Prosthetics and Orthotics programme by an undergraduate review working group comprised of representatives of the Strathclyde faculty led to a revised 4 year programme to be delivered from 2007. The revised course plan maps conform to the Bologna model and can be aligned with the points system of the European Credit Transfer System (ECTS). The ECTS users guide suggests that ECTS credits should be taken into account as well as student workload in terms of the impact of teaching, learning and assessment. Our clinical placement blocks present a particular challenge in terms of allocating credits because of the nature and intensity of the content. Student workload can be estimated by using questionnaires. Within the ECTS grading scale, the percentage of failure is rated and a course catalogue is required which includes learning agreements and curriculum choices.

Alignment of credit systems

Table 5 shows the University of Strathclyde ECTS credit model mapped against the credit system used by the University of Strathclyde. The table shows a University versus ECTS credit ratio of 2:1. Tables 6 and 7 show how these credits are assigned to different course modules.

BSc (Hons) Prosthetics and Orthotics	ECTS Comparison
120 credits per year	60 credits per academic year
60 credits per semester	30 credits per semester
2 semesters in one year	-
15 weeks in one semester	-
10 credits = 100 student hours minimum	5 credits = 125 student hours
4 year Programme BSc (Honours) totals 480 University credits	240 ECTS in total

Table 5: *BSc (Hons) Prosthetics and Orthotics, University of Strathclyde & ECTS credit points*

CREDITS	Year 1	Year 2	Year 3	Year 4
Stats/Ethics/Research Methods	20		10	
Human Biological Science (Anatomy/physiology/pathology)	20	20	10	
Principles of PO Design (Biomechanics/Graphics/ Materials/electronics)	20	20	10	
Inter-Professional Learning	20			
Prosthetics and orthotics science	20	60	30	
Professional and technical skills	20	10		
Clinical placement			60 in semester 2	60 in Semester 1
Project				30
Optional LIST & elective		10		30

Table 6: *Revised course content and University credits*

Year 1 120 Uni 60 ECTS	Human Biological Science 20 Uni, 10 ECTS	Principles of P & O Design 20 Uni 10ECTS	Inter professional learning 20 Uni 10ECTS	Introduction to health service research 20 Uni 10 ECTS	Professional Technical Skills 20 Uni, 10ECTS ----- P & O Science 20 Uni, 10 ECTS
Year 2 120 Uni 60 ECTS	Human biological science 20 Uni 10 ECTS	Principles of P & O design 20 Uni 10 ECTS	Professional skills 10 Uni,10 ECTS ----- Elective 10 Uni,10 ECTS	P & O Science 60 Uni 30 ECTS	
Year 3 120 Uni 60 ECTS	Human biological science 10 Uni 5 ECTS	Principles of P & O design 10 Uni 5 ECTS	Applied Health Services Research 10 Uni 5 ECTS	P & O Science 30 Uni 15 ECTS	
	P & O Clinical Placement 60 Uni, 30 ECTS				
Year 4 120 Uni 60 ECTS	PO Clinical Placement 60 Uni, 30 ECTS				
	Optional Class 10 Uni 5 ECTS	Optional Class 10 Uni 5 ECTS	Elective Class 10 Uni 5 ECTS	P/O Project 30 Uni, 15 ECTS	

Table 7: *Strathclyde - First cycle (Bachelor with honours) Totals Uni =480, ECTS=240*
Key: Uni = University credits ECTS = ECTS credit points

Learning Outcomes and competencies

The learning outcomes for the course were matched to three levels of competency standards set by the UK professional regulator, the Health Professions Council. These include Standards of conduct, performance and ethics which are generic to all allied health professionals and the prosthetist/orthotist standards of proficiency (found at www.hpc-uk.org).

In considering the characteristics of the ideal prosthetist/orthotist graduate the undergraduate review group used mind mapping techniques to explore all elements of graduate requirements. The group then developed learning outcomes for the course in the three key domains of knowledge, skills and attitude for the following: clinical skills; practical procedures; patient investigation; patient management; health promotion and wellbeing; basic, social and clinical sciences; attitudes, ethical understanding & legal responsibility; decision making skills & clinical reasoning; the role of the prosthetist/orthotist practitioner within a health service; communication; prosthetic and orthotic informatics; personal development. A bibliography was then produced to inform the course content.

The next step was to develop learning outcomes and a programme specification for the course and these are presented below and available online at www.strath.ac.uk:

Knowledge and Understanding

- A1 the applied sciences which underpin prosthetic and orthotic practice
- A2 therapeutic programmes based on applied physical medicine and rehabilitation
- A3 the professional ethical and legal context of current practice and adhere to codes of professional conduct and practice
- A4 health promotion and the factors which influence health and well-being
- A5 wider context of health and social care
- A6 formulate, implement and evaluate applied physical medicine and rehabilitation programmes and appropriate care pathways
- A7 scientific research enquiry and how this contributes to the professional knowledge base
- A8 the concepts of health, illness and disability
- A9 how to evaluate prosthetic and orthotics intervention in relation to the needs of different groups and in different models of health care provision
- A10 your own learning needs and the learning needs of others and, engage in the process of personal and professional development as an independent learner

Intellectual skills

- B1 adopt systematic approaches to gathering, interpreting, analysing and evaluating information from a variety of sources
- B2 gain a comprehensive understanding of the relationship and scope of theory to practice
- B3 critically appraise evidence in relation to prosthetic and orthotic practice
- B4 implement effective prosthetic and orthotic management and justify selected client management
- B5 critically appraise the reasoning underpinning clinical decisions
- B6 apply appropriate outcome measures in order to evaluate prosthetics and orthotics within the context of different models of health care provision
- B7 to critically evaluate your own prosthetic and orthotic practice
- B8 engage in research and critical evaluation
- B9 appraise the social, political and resource issues in health care
- B10 engage in continuous professional development

Professional Practice Skills

- C1 demonstrate and practice efficient moving and handling skills
- C2 be proficient in practical skills and client assessment
- C3 analyse human movement
- C4 be skilled in the selection, application and modification of a wide range of prosthetic and orthotic practice
- C5 develop a critical enquiry approach when relating movement principles to client examination

The credit structure of the course is also shown:

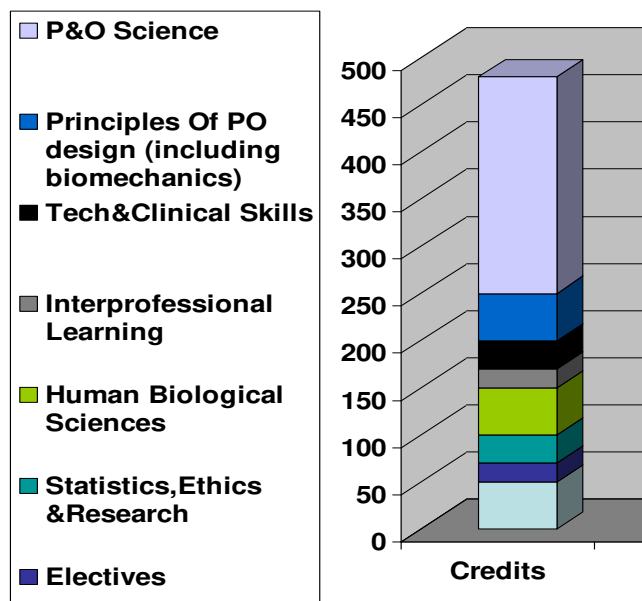


Figure 10: The credit system and the BSc (Hons) Prosthetics and Orthotics

Masters level

In redesigning the course it was decided to have a route for the best students of the 4 year BSc (Hons) Prosthetics and Orthotics course to progress to complete a Master of Science in Prosthetics and Orthotics. (MSci). The fifth year structure would include a level 5 project (60 University credits) with the possibility of choosing a further 60 credits worth of modules from specialist subject: Wheelchairs and Seating; Applications in Upper Limb Prosthetics; Hip, Knee& Ankle Disarticulation Prosthetics; Lower Limb Prosthetic Design; Orthotic Management of Spinal Deformity; Orthotic Management of Neurological Conditions; Clinical Governance; Application of Clinical Gait Analysis. These courses can also be offered to other Masters level students.

Exit routes

The two exit routes for the Prosthetics and Orthotics programme will now be:

4 year Bachelor of Science with Honours	480 University credits	240 ECTS
5 year Master of Science	600 University credits	300 ECTS

Quality Assurance

EHEA states that we must promote quality assurance systems. Methods for evaluation and improving quality and standards of teaching & learning at Strathclyde include the use of Teaching Evaluation Questionnaires (TEQs) for each module of each subject. TEQs are essentially student feedback questionnaires and these are used in a system of quality improvement.

The Strathclyde course is heavily regulated and assessed via a number of internal and external processes:

- Accreditation visits by HPC Education Board
- Faculty of Engineering Annual Monitoring /Review
- ISPO Category 1 accreditation and review
- External Examiner Reports
- Assessments & regular visits to clinical practice placement centres & supervisors
- ISO 9001 Quality System Staff Appraisal
- Graduate & Employer Audit Questionnaires

Information about the course is provided in various forms: Course Catalogue; National Centre Student Course Guide (All module descriptors, student regulations, timetables) available from the department and distributed to ALL students and staff every year on day one.

The University of Strathclyde promotes Learning Agreements and Curriculum Choices and students and staff communicate via an online information system called PEGASUS. Curriculum verification for students is online and students interact with an assigned advisor of studies.

Strathclyde also has an International and Graduate Office (IGO) and supports the Undergraduate Selectors Forum (Europe). NARIC exists in the UK as credential evaluators and the University seeks qualification comparison levels for international applicants from NARIC. UK University applications are managed by UCAS (Universities & Colleges Application Service).

Strathclyde's University's position (October 2006) states 'Institutional Engagement with the Bologna Process includes exploration to: engage with European HE developments; ensure alignment with Bologna cycle; ensure a relationship to level descriptors of SCQF (Scottish Credit Qualification Framework); seek to develop European Joint Masters programme in key areas.

For Prosthetics and Orthotics there is still potential to develop a 2 year Masters programme route for European graduates with 3 years Bachelors training.

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9.2 Katholieke Hogeschool Kempen

Dirk Vermetten

The Katholieke Hogeschool Kempen is a unique programme in Europe that operates as a collaboration between 2 institutions and across two countries. These are the Katholieke Hogeschool is Kempen Belgium and KHK-Fontys Hogscholen in the Netherlands. The location of these institutes is shown in Figure 11.

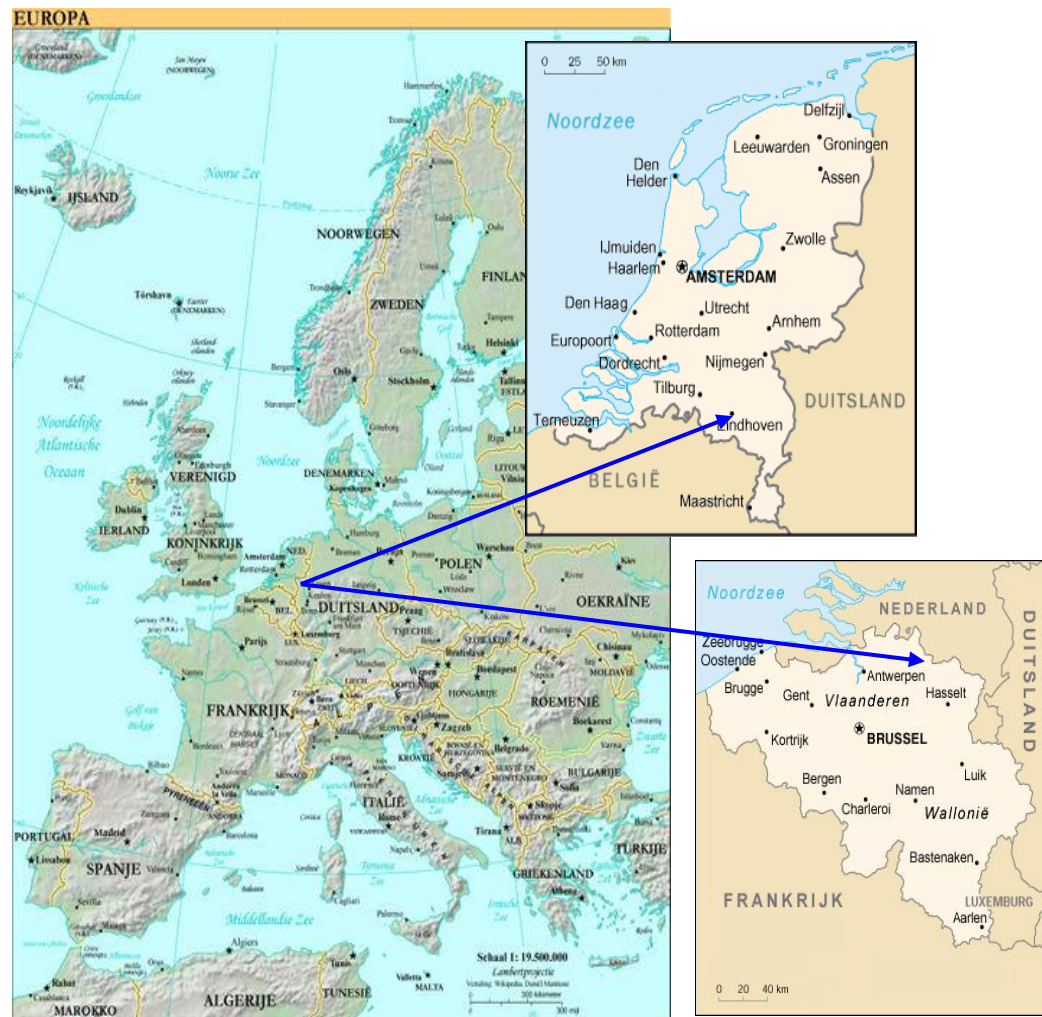
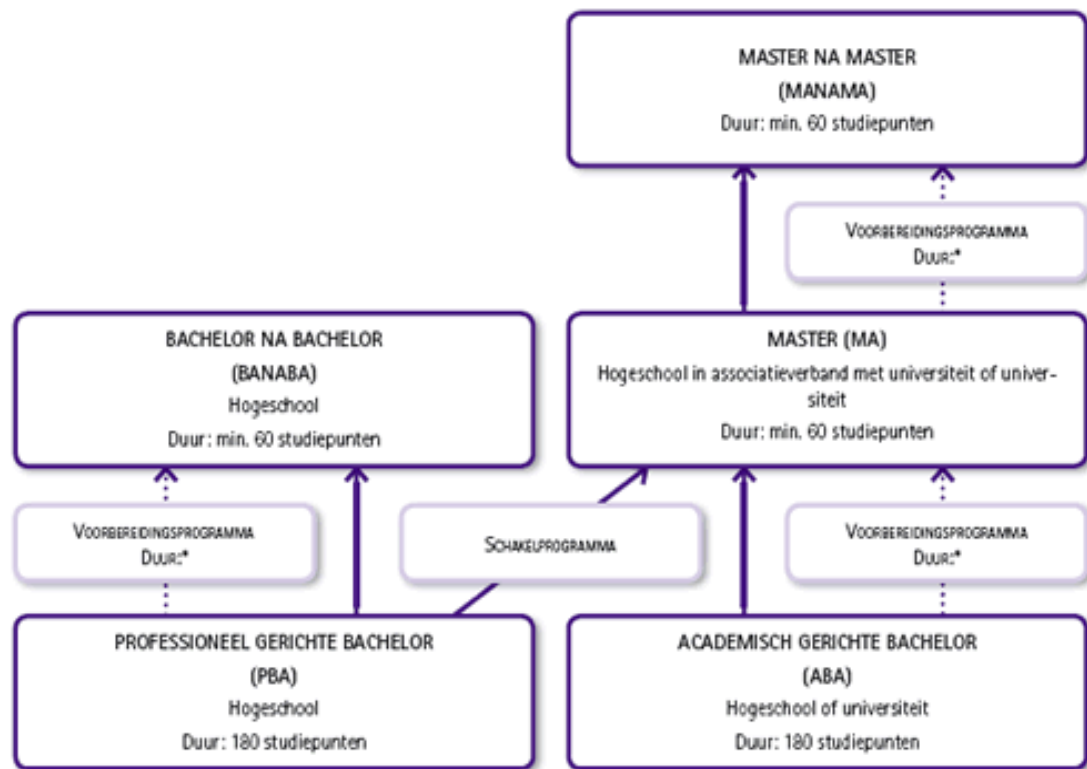


Figure 11: Location of the collaborating schools, Katholieke Hogeschool Kempen and KHK-Fontys Hogscholen

The institutes offer a bachelor level education in prosthetics and orthotics. Due to different regulations within the specific countries the credit points to obtain a bachelor degree is slightly different for each institute. In Belgium students are required to complete 180 ECTS credit points and in the Netherlands students are required to complete 240 ECTS credit points.

Figure 12 demonstrates the academic pathways that students may pursue. A masters degree may be pursued after completion of a bachelor degree. This requires that candidates complete a minimum of 60 more ECTS points of study. Students may enrol in PhD studies after completing their masters degree.



*: In de voorbereidingsprogramma's zijn de studiepunten vrij te bepalen door de onderwijsinstellingen.

Figure 12: Academic pathways for students pursuing bachelor and masters level education.

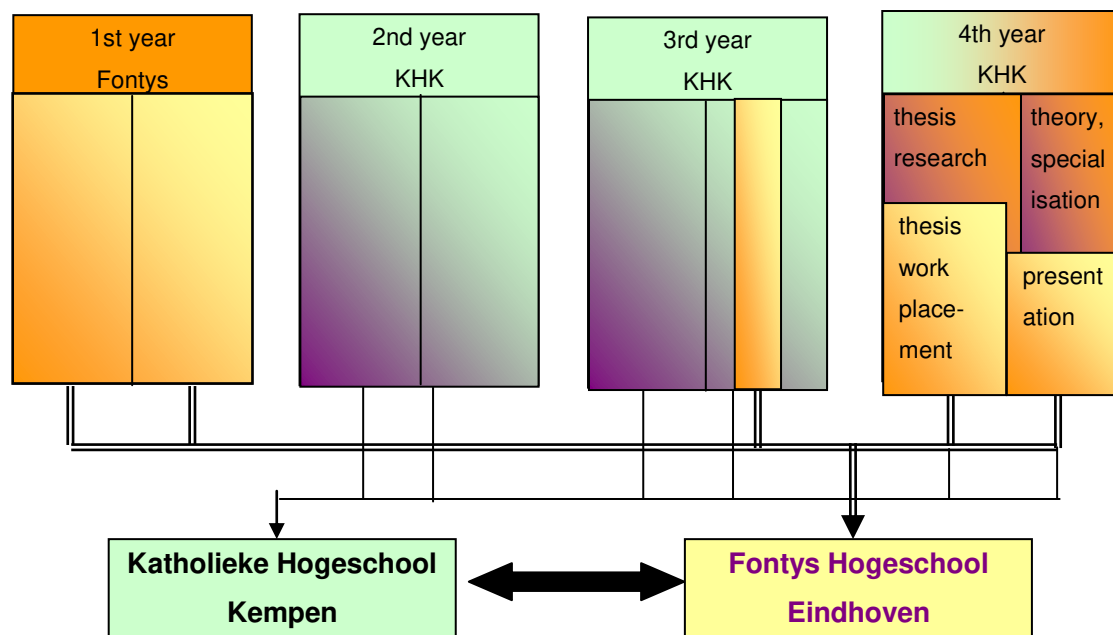


Figure 13: Overview of bachelor degree in orthopaedics

The structure of the bachelor in orthopaedics degree is presented in Figure 13. This is the only University College orthopaedic education in Europe that is conducted in the Dutch language. Most subjects are shared by both groups of students (Belgian and Dutch). The work placements and preliminary year (only for the Netherlands) is conducted separately for

both university colleges. Upon completion of the education, every student receives a degree from their home country.

Outline of the costs

Education is provided at KHK in Belgium for 3 years. The student body is comprised of 65 students from Katholieke Hogeschool Kempen plus 43 students from Fontys Hogeschool Eindhoven. Six full time equivalent (FTE) members of staff are involved in the education.

In the Netherlands (Fontys) students must complete a total of 4 years education. The total number of Dutch students is 68 students including 25 in the 1st year which is conducted in Eindhoven and 43 in the remaining years which are completed in Kempen. The school also has 19 students who are enrolled on a part-time basis. Three full time equivalent members of staff are employed by Fontys to educate the first year students.

The school received a subsidy of € 5200 per student per year from the government. In addition, students are required to pay an enrolment fee of € 510 and a fee for materials costs of € 400/year to cover costs associated with the purchase of books/syllabi, tools and study tours.

Figure 14 demonstrates the approximate division of courses (ECTS) throughout the programme. This is divided between work placements, general subjects, technical subjects, medical subjects and orthopaedics.

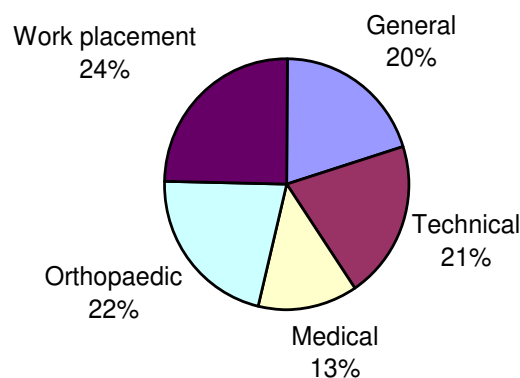


Figure 14: ECTS subject divisions in the programme

The orthopaedic sections of the course cover the following key areas:

- bandages ;
- orthotics ;
- prosthetics ;
- wheelchairs ;
- orthopaedic shoes.

A lot of our students ($\pm 25\%$) already have an (academic) higher degree or a background in physiotherapy or occupational therapy (sometimes biomedical engineer/pharmacist). A physiotherapist can receive credit for prior learning and complete the course in 2 years if they undertake work placements during their holidays.

Our school is also committed to conducting research and we have recently installed a gait laboratory (MobiLab) comprising of 3D kinematic measurement with active markers, an AMTI force plate and pressure distribution (1x0,4m), a 16 channel wireless EMG system and high speed visual cameras.

9.3 University of Giessen, Germany

Joerg Subke

The University of Applied Sciences, Giessen Friedberg

Studying Orthopaedic and Rehabilitation Technology at the University of Applied Sciences in Giessen, Friedberg means that students can experience life in Giessen, Central Germany, which is 60 km North of Frankfurt and has a tradition of 400 years of university education. The region has the highest amount of students in Germany.

The University has 11 departments for 9500 students. It offers students the opportunity to undertake interdisciplinary and scientific education and study in manageable groups. The University is known for excellence in subjects under in the fields of technology and study of the economy.

Collaboration is important to success and the University of Applied Sciences, Giessen works with other partners such as the Justus-Liebig University of Giessen, clinics in Giessen and Marbur and the Bundesfachschule für Orthopädietechnik (BUFA), Dortmund, Germany. The University also fosters international collaboration and has around 40 partnerships in Europe, North and South America, Africa and Australia.

Diploma programme: Orthopaedic and Rehabilitation Technology

Entrance requirements for the diploma programme in Orthopaedic and Rehabilitation Technology expect candidates to have an abitur or equivalent examination pass or examination for orthopaedic technologist (Geselle für Orthopädietechnik). The programme contains the following subjects over 3 years of study described below while the general course structure is presented in table 8:

1st year of study

- basics in natural sciences;
- mathematics;
- physics;
- chemistry;
- computed Aided Design;
- statistics.

2nd year of study

- basics in engineering and life sciences;
- electrical engineering;
- measurement techniques;
- control systems;
- human biology;
- orthopaedics;
- physiology;
- training supervisor;
- economics.

3rd year of study

Theory and clinical practice at BUFA, Dortmund

1st term:

Theory Pathology / Orthotics / Prosthetics / Rehabilitation technology Material science/
Work techniques /Theory and clinical practice

2nd term:

Practical work / Projects in orthotics, rehabilitation technology and prosthetics / Exam
Bundesfachschule für Orthopädietechnik (BUFA) Meister (optional)

4th year of study

- Biomechanics
- Rehabilitation
- Electives
 - Technology (e.g.)
 - Construction methods
 - Robotics and automation
 - Finite element method
 - Graphical programming
 - Electives
 - Economics (e.g.)
 - Marketing
 - Design and project management
 - Quality management
 - Administrative law
 - Business management

The Diploma programme in Orthopaedic and Rehabilitation Technology offers two pathways of education leading to:

1. Certificates: Diploma of Engineering: Orthopaedic and Rehabilitation Technology;
2. Bundesfachschnule fur Orthopädiotechnik (BUFA) Meister (optional).

1 st Year	basics in mathematics + natural sciences
2 nd Year	basics in engineering and life sciences
3 rd Year	complete BuFa-Meister course in Dortmund
4 th Year	electives, research project and diploma thesis

Table 8: Course structure and options for Orthopaedic and Rehabilitation Technology

Bachelor and Master Programmes:

The Bachelor programme consists of 7 semesters:

Biomedical engineering with focus on:

- biomechanics / orthopaedics / rehabilitation;
- medical Informatics;
- medical Physics;
- clinical engineering.

The 7th semester consists of practical work with BUFA, clinics and industry and also a bachelor thesis is required.

The Masters programme consists of studies in

- biomedical engineering / technical orthopaedics / rehabilitation

Entrance requirements:

Bachelor in biomedical engineering or equivalent

Admission for other qualified BSc programmes require 1 semester preparatory courses in life sciences and rehabilitation

The Masters programme is delivered over three semesters. The first semester includes clinical and practical work experience (BUFA / clinic / industry) plus research projects. The second semester is of elective modules in technology and economics plus projects allowing students to customise their learning pathway and the final semester consists of a thesis dissertation.

10. Best practice in education through benchmarking

– exploring the possibility of benchmarking in prosthetics and orthotics education.

Nerrolyn Ramstrand

Introduction

As we look towards strategies for improving prosthetics and orthotics education in Europe, our goal should not be directed toward meeting a consensus status quo, but focused upon continual quality improvement of all educational institutions. This paper explores the possibility of continuous quality improvement in prosthetics and orthotics education through benchmarking. The paper aims to provide a clear definition of benchmarking as it could be applied to prosthetics and orthotic educational programs and to provide general information on the procedures necessary to ensure a successful outcome.

Defining benchmarking

Benchmarking is a total quality management technique that was initially developed in the 1980's by the Xerox corporation (Camp, 1989). Despite its corporate beginnings, the technique has since been adapted for use in education and serves as a means by which one can measure and compare the processes and outputs of one institution to another. Benchmarking should not be misconceived as a means of establishing better or worse performance. It should however been seen as an opportunity to improve ones own practices and performance by learning from the best practices of other institutions.

There are four major types of benchmarking defined in the literature. With a focus on prosthetics and orthotics education, these types of benchmarking can be defined as follows:

1. internal Benchmarking – assessment of the performance or standards of the prosthetics and orthotics department against the performance of other departments within the same educational institution;
2. competitive Benchmarking – benchmarking of the prosthetics and orthotics department of one institution against the prosthetics and orthotics department of another institution who would be considered as a competitor for the same pool of students;
3. industry or Functional Benchmarking – benchmarking against other prosthetics and orthotics schools who would not be considered as competitors for the same pool of students;
4. generic or Process Benchmarking - benchmarking with a focus on work processes rather than prosthetic and orthotic specific indicators.

An additional tool that is common in the educational sector is the use of subject benchmark statements. These are statements that define what can be expected of a graduate in terms of the abilities and skills needed to develop understanding in a particular subject (QAA 2007). They do not specify of detailed curriculum. Subject benchmark statements are of particular benefit when developing new programs and as a means of reviewing and evaluating existing programs. It is important to recognise however that in order to be of benefit for continued quality management the benchmarking statement must be reviewed and revised on a regular basis.

The benchmarking process

In order to begin the benchmarking process it is first necessary to understand your institutes own strengths and weaknesses. There are numerous techniques that could be used alone or in combination to gather this information, for example, conducting focus groups and surveys with staff and students, commissioning an external audit by an independent group or measuring various performance outcomes of current students and graduates. Based upon the results of this analysis you should clearly define your specific benchmarking objectives. Consider why are you benchmarking and what is it that you want to improve? You must begin the process with very clear objectives. (i.e. reduce costs, improve students

communication skills, improve students physical assessment skills). At this stage it is also necessary to determine means by which you can measure each of your objectives. These "indicators" will subsequently be used to measure the performance of your own institution against that of benchmarking partners.

With your objectives clear and your performance indicators identified, it is necessary to identify those departments, schools or organisations that you could benchmark against. If possible look outside your own department and seek benchmark partners removed from your own institution. (Charney, 2006). You should meet with potential benchmark partners and sign a confidentiality agreement if it is felt that this will facilitate open communication and sharing of information. Once a partnership is established, both parties should review and edit the specific indicators to be measured and the means by which information will be collected. Remember that you need not limit yourself to one benchmark partner or limit yourself only to partners within the same industry.

A benchmarking team should be responsible for collecting and analysing the data that is collected from both institutions. It is recommended that this team comprise of individuals that are independent of both organisations. At the end of the process the benchmarking team should document 1/ what they have learned from the process, 2/ actions that they recommend and 3/ the perceived benefits of these actions, (Charney, 2006). If benchmarking is to be a successful quality improvement tool it must be conducted on a regular basis and the recommended actions should be monitored and evaluated prior to the next benchmarking.

Making it successful

There are numerous steps that should be considered when embarking on a benchmarking exercise and particularly when entering a benchmarking agreement with a partner institution. Perhaps the most important and difficult of these is to leave your pride at the door and to enter into the exercise with the right mindset. If you are not willing to communicate fully or to provide information openly and honestly, maximum benefits can not possibly be achieved. Partner organisations are fundamental to the process and it is necessary to respect the working environment and culture of you partners. Communicate fully at the beginning of the partnership to avoid any misunderstandings. Ensure that both parties agree on the benchmarking procedures and that you operate within this framework. Treat the results of benchmarking as confidential to the parties involved unless otherwise agreed and use the information that is obtained only for the purposes agreed with the benchmarking partner.

Conclusions and recommendations

Benchmarking has the potential to be of enormous benefit to both prosthetic and orthotic educational institutions and to public and private facilities. The process allows us to look outside our own institutions, to evaluate the current standards and to strive to exceed them in a process of continuous quality improvement. In the worst case scenario you learn nothing, but at least you have gone through a well structured process of evaluating your own practices.

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11 Introduction to continuing professional development

Rainer Bremer

As it isn't possible to define competencies whilst they develop we need to understand the process of their creation. To realise such empirical research we rely on the developmental theories of Piaget and Havighurst. The basis of any professional competence development builds upon three concepts:

- one of vocational learning (including life long learning);
- one of vocational working (including coping with changes);
- one of vocational co-operation (integration into the community of practice).

All of these concepts should match the sector's requirements.

Research Questions and Hypotheses

- Which concept of learning is built?
Change from a school concept to a professional concept
- Which concept of work is built considering which demands?
Standards of learning vs. standards of profession
- Which (social) concept of integration is followed?
Peer-to-peer versus community of practice

In order to understand competence development it is helpful to refer again to Figure 6, page 22, *Stages involved in developing competencies*. How a particular task is mastered gives insight into levels of competence development and the evaluation of tasks means studying the work processes rather than the actual work itself.

As an example, we can consider the testing of a lamp:

Example: EVA-TASK Avionic

At your manufacturing plant, lamps for the passenger's cabin will be manufactured. One lamp is now available for proofing the procedures. All lamps have to be tested before installing them. You'll be responsible for the test procedure of the lamps.

Your task: create a plan for testing the lamps.

The process can be understood via a rating scheme which rates the solutions:

Rate	Question	Score
1	Does the solution match the problem?	5 → 0
2	Is the solution realizable?	5 → 0
3	Does the solution refer to a client's interest?	5 → 0
4	Is the solution simply derived from knowledge?	5 → 0

Continuing Professional Development

Excellence and expertise cannot be acquired during the period of Vocational Education and Training (VET), but preconditions can be set during this time. The phenomenon of continuing professional development is bound to two dimensions of vocational learning:

- The elaboration of a vocational identity
- The elaboration of vocational competencies.

Vocational identity means that somebody expects to be able to solve tasks for which an expert is needed! A person has to learn to cope with these tasks on an appropriate level to acquire vocational competencies and any solution is a compromise between quality, quantity and profitability.

Once proficiency is reached further development is not dependant on intentionally directed learning processes, but upon changes in technology, organisation, etc. Continuing professional development is stimulated by belonging to specific community of practice. A community of practice can exist over:

- A whole sector

- An enterprise (like Mercedes-Benz or Siemens)
- A single plant
- A single department of a (huge) plant.

The communities themselves define the standards and norms at various levels of expertise: beginner; average member; or as an accepted expert.

To ensure ongoing attitudinal development, the standards should be adopted as part of the community of practice (the sector's standards). We need to know more know more about these standards.

12 Examples of continuing professional development

12.1 Examples of continuing professional development:

Belgium – accreditation of doctors

Francois Sumkay

Belgium is a small country in central west Europe. The surface area of the country constitutes just 0.8% of the EU while the population of 10.4 million constitutes 2.2% of the total EU population. The country can be considered as having three regions. However, healthcare is managed by a National System of Insurance Care of Health and is subsequently federally funded under the "National Institute of Sickness and Disability Insurance". In 2004 Health care expenditure in Belgium expressed as a percentage of GDP (Gross Domestic Product) was 7.7%. In 2003 the number of doctors by 1000 inhabitants was recorded as 3.9. In 2007 the total number of doctors in the country was 42,415.

In 1993 a national agreement was reached regarding the accreditation of doctors in Belgium. The announced objective of the continuing education program is to improve quality and efficiency of healthcare via continuous training. The original agreement states:

"... Accreditation of the doctors:

In order to contribute to the selection of the best care and to guarantee the best conditions of cost, a particular effort must be made in favour of a promotion as well of quality and economy of the care as quality and effectiveness of the reports/ratios of the doctors between them, through an exchange of information concerning the patient, and complementarily of their medical specificity which must in particular avoid the useless repetition of technical acts. An essential element of the promotion of quality resides in the formation continues of the doctor.

The programs of this formation continues which concerns the doctor-general practitioners so much that doctor-specialists, must consequently carry in principal order, on the behavior of the doctors in their choice of the means of diagnosis and treatment... "

The continuing education program is financed within the framework of the National System of Insurance Care of Health. The program has been operating since December 1993 in collaboration with the National Commission Médico-Mutualist, legally charged with negotiating annual agreements with the doctors to obtain a tariff safety of the policy-holders. The program concerns both general practitioners and specialists. It is a nonobligatory system; however, there are financial advantages for those who choose to participate. These include higher and better refunded medical acts and annual flat-rate amounts.

Instruments and methods designed to improve quality and efficiency of care

In order to ensure quality improvement and efficiency of care, a number of methods are used within the continuing education program. This includes a system of quality control between fellow-members (peer review) and an optimal organisation of the medical practice. There are a number of demands placed upon doctors who choose to participate in the program. These include;

1. To practice at a "sufficient" level within the framework of the National Insurance Care (for example. 2.500 patients/year for a general practitioner)
2. Each year:
 - to complete at least 20 hours of "accredited continuous formation";
 - of which at least 3,5 hours is related to "Ethics and Economy";
 - at least twice per year attend a meeting of the GLEM (Local Group of Medical Evaluation), which is designated the responsibility of peer review.
3. Every 3 years:
 - to lodge a request for recognition of accreditation.

To ensure smooth running of the continuing education program, a number of committees have been established with varying responsibilities. These include:

- a Coordinating Committee of the accreditation;
- a Board of appeals;
- a Technical Council of the accreditation;
- a Equality Committee for each specialist (26) of medicine;
- a National Council of the promotion of quality.

The accreditation process is coordinated by a special committee comprised of representatives from the trade unions of doctors, the scientific organizations of doctors and various faculties of medicine.

This committee is designated with the task to manage the system of accreditation and delivers the continuous training. Within the current framework there is also a board of appeals, a technical council and a council for the promotion of quality.

Figure 15 shows the percentage of doctors involved in the accreditation program. As of February 2007 54.54% of doctors were involved. The financial advantages for doctors participating in the program from 2007 is an annual flat-rate amount of 547.14 Euros. In addition they receive higher and better refunds on medical acts. For a general practitioner this equate to a 16.5 % increase. For 2005, the total financial Cost 2005 of accrediting doctors in Belgium was 62.72 million Euros.

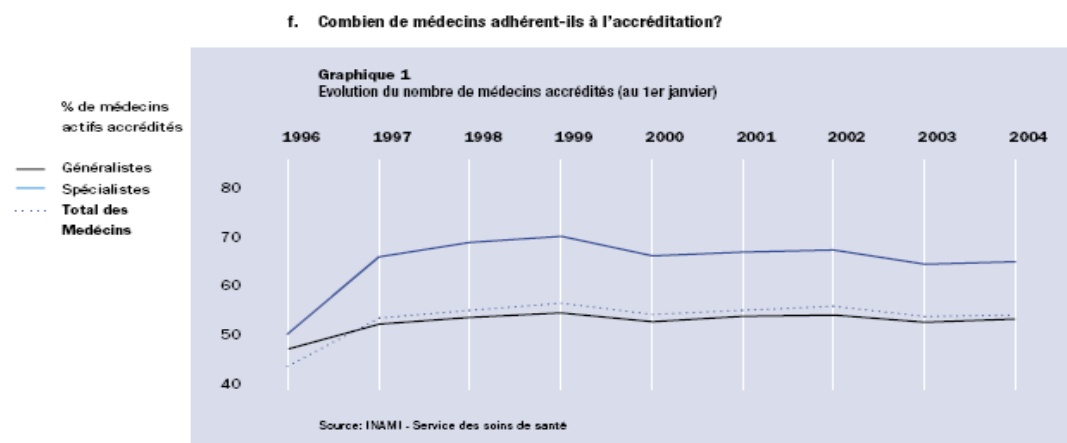


Figure 15: Number (%) of doctors in the Belgian system of Accreditation

Internationalization of the Belgian accreditation for doctors:

Continuous training schemes for the doctors in Belgium are also organised and recognised by organisations of accreditation in many other countries. For example the coordinating committee (GDA) decided to automatically approve international congresses which are approved by an international organization of accreditation.

To date, the EACCME (European Accreditation Council for Medical Continuing Education, authority of accreditation within UEMS = European Union of Medical Specialists) is already recognised by the GDA as an international authority of accreditation. The programmes which are approved by the EACCME and which will take place from January 1, 2007, are automatically approved by the GDA.

For further information visit the accreditation web site at <http://www.inami.be>.

12.2 Examples of continuing professional development:

University of Salford, England, UK

Glyn Heath

Continuing Professional Development (CPD) is essential to allow recent graduates to improve their skills and to sub-specialise. CPD also enables established clinicians and other specialists in the profession to update and reinforce their knowledge base.

In the United Kingdom it is generally recognised that recently qualified graduates will have a basic overall knowledge but further education in specialist areas is necessary. Examples of such may be:

- ICEROSS technique;
- CAD-CAM socket design;
- rare sites of amputation such as Through Shoulder, Through Hip etc;
- administrative procedures;
- legislative procedures;
- training officer's courses.

Continuing Professional Development can be done in many ways including, for example: interacting with experienced colleagues; self directed teaching; conferences; and training courses. Educational establishments tend to concentrate on the three forms of Continued Professional Development, namely conferences, courses and postgraduate degrees

The University of Salford has experience in delivering continued Professional Development in all of these areas.

Conferences

The University of Salford has established a regular conference "Biomechanics of the Lower Limb in Health Disease and Rehabilitation. This conference has attracted delegates from several countries and papers specific to Prosthetics and Orthotics have also been presented.

Courses

Short courses have also been run by the University of Salford; these include training officers' courses, courses on the diabetic foot and a taught MSc in advanced practice. Due to the small numbers of practicing prosthetists/orthotists in the United Kingdom we have also delivered combined courses with podiatrists.

Research degrees

The lecturing staff at the University of Salford currently has two members of academic staff educated to PhD level, with a further four at Masters level. PhD and Masters level supervision are currently being undertaken.

We have excellent facilities for Research degrees including:

- qualysis movement analysis system;
- large new movement analysis laboratory with force platforms, ten camera tracking system, emg and physiological measurement facilities;
- facilities for surface mounted electronic circuits and precision mechanical engineering tasks.

Difficulties associated with continuing education in the U.K.

There are a number of difficulties associated with continuing education in the United Kingdom. A relatively low critical mass (60 million population being served by circa 900 prosthetists/orthotists) is one such problem. Although this may be considered quite impressive when compared to the situation in Finland and the Baltic States we still face a number of difficulties. We also face difficulties related to the fact that the contracting system of the United Kingdom's National Health Service does not encourage long term investment and training by the private firms. In addition, clinicians' work-load makes it difficult for them to obtain remission for study at higher degree level.

The National Health Service has provided funding for continuing education through the Strategic Health Authority to kick-start Continued Educational Development. Maintaining a critical mass appears to be the main problem for providing viable Continuous Education Development.

It may be possible to look at Continued Educational Development at a European level; this would solve problems of critical mass in that specific schools could run European wide courses, which would stimulate the interest of many more professionals. This type of initiative would require extensive organisation and would require each school to ensure that there is no course duplication. By including nations of the Former Soviet Union we could look at "TEMPUS" funding. Future development could see the introduction of a pan-European structure for Continuing Educational Development in prosthetics and orthotics.

12.3 Examples of continuing professional development:

BUFA, Germany

Jens Franke

Structure of German facilities

The German Association of Orthopaedic Technology (BIV) is the federal guild in Germany. As a leader in the field of orthopaedic technology this association was started to ensure quality practice and quality service.

As of December 2005 there were 1914 prosthetic and orthotic Companies within Germany. Within the industry there are 36,366 employees of which 50% are Prosthetists/Orthotists. Germany has a total of 4100 prosthetist/orthotist Meisters, 10650 P&O Technicians, 1,500 P&O Trainees and 8400 Shop Assistants (sale).

Studies have been conducted to determine the percentage of sales of orthopaedic devices within Germany. From this work it can be seen that the most sales are made within the areas of bandaging and corsets (18.18%), compression garments (13.10%) and crutches (13.08%)

Short courses

BUFA is heavily involved in organising and running short time courses for the prosthetics and orthotics industry. Table 9 shows the number of courses offered and conducted over the period 1999 to 2006. From this table you can see that in the year 2006, BUFA offered a total of 148 short courses. Of those courses on offer, 109 were conducted and a total of 1746 participants were involved.

	1999	2000	2001	2002	2003	2004	2005	2006
Courses offered:	67	123	145	175	182	145	138	148
Courses carried out:	63	103	113	134	145	88	111	109
Participants:	1632	2163	2292	1975	1925	1706	1945	1746

Table 9: Short courses offered by BUFA from 1999-2006

Short course are conducted in a variety of areas. Specific examples include:

Prosthetics and Orthotics

Clinical
Measurement / Casting Techniques
Specific P&O Subjects
Material Processing

Clinical Prosthetics, Orthotics, Seating - Support

Interdisciplinary Working
Biomechanics and Medicals
Fitting Skills

Specialized Trade

Bandages
Compression (Lymph)
Breast Prosthesis
Wheelchairs

Management Skills

Economics
Social Law
Leadership
Business Management

Institute for Quality Assurance and Certification

In 2004 the Institute for Quality Assurance and Certification in P&O (IQZ) was established. This institute was assigned the responsibility of accrediting Courses and Workshops, certifying P&O Experts and certifying P&O companies. In order to obtain IQZ certification there are a number of requirements of the lecture or course. For example, the event may not be an advertising event. Topics must concern technical, management and/or marketing aspects and accreditation can only be sought on application to the Institute for Quality Assurance and Certification. Courses must also be in line with the professional concepts for training and the Meister examination in P&O, or the professional concept for the sales assistants in medical shops. They should cover topics relating to orthopaedics or rehabilitation technology or the retail of orthopaedic appliances and must not be economically motivated. No IQZ credit points are awarded for Manufacturers / Company sale events.

For the awarding of continuing education points, IQZ accredited courses are categorised under four different levels. These are:

Category A: Lectures and instructions

1 IQZ credit point per hour (45 min)

3 IQZ credit points per ½ day or 6 points
per day

2 additional points if a test has been passed

Category B: Meetings (congresses) lasting several days

3 IQZ credit points per ½ day or 6 points per day; at most 24 points per year

Category C: Professional development where the concept envisages the participation of every individual participant, e.g. in workshops, working group sessions, quality-control groups, etc.:

1 IQZ credit point per hour (45 min);

at most 4 points per ½ day or

8 points per day,

2 additional points if a test has been passed

Category D: Structured, inter-active professional development through the Internet, CD-ROMs and/or technical journals with proven qualification and evaluation of the learning success in written form;

1-2 IQZ credit points per unit; at most 24 points per year

Authors / speakers are awarded 1 point per talk; at most 10 IQZ credit points per year.

In the awarding of credit points, the initial application must be submitted by the organiser. To do this, the organiser needs to give information on the event's programme including times and topics, and identify the speakers. After the event, the evaluation of participants and the list of participants must be forwarded to the IQZ.

IQZ also offers a pathway for the certification of experts. If an Individual wishes to get such a professional development certificate they are required to accumulate 100 IQZ credit points over a 3 year period in one of the following areas:

- prosthetics, including Ortho-prosthetics;
- orthotics, including Foot Management;
- seating, support and custom-made;
- rehabilitation Aids;
- mobility aids & home care;
- therapy with Medical Compression;
- stockings;
- bandages, corsets, epitheses.

Since the IQZ program began there has been steady growth in the number of accredited providers, the number of courses on offer and in the number of courses on offer (Table 10). We see this continuing to grow and develop.

2004	10 Accredited Providers
	138 Courses
	4,045 Participants
2005	25 Accredited Providers
	249 Courses
	5,933 Participants
2006	31 Accredited Providers
	373 Courses
	6,988 Participants

Table 10: Number of courses on offer

12.5 Examples of continuing professional development:

North America

John Michael

Mandatory Continuing Education (MCE):

MCE is a controversial topic, with passionate supporters and opponents. As it currently stands, more and more professions require MCE in the USA each year. MCE's have been required for Certified Prosthetist Orthotists in the USA since the 1990s and the US experience may be helpful to colleagues who are considering this issue.

Arguments for MCE:

- by choosing a profession, professionals agree to submit to its norms;
- mandates are necessary to protect the public from incompetent or out-of-date practitioners;
- expecting voluntary participation is unrealistic. Those who need it most may be least likely to participate;
- there is some evidence that well-designed programs can influence effective practice.
- MCE can provide equal access to a range of opportunities;
- although imperfect, it is better than alternatives such as examination or practice review.

Arguments Against MCE:

- professionals should be accountable for effective performance, not participation;
- by definition, professionals are supposed to be autonomous, self-managed, and responsible for mastery of knowledge;
- evidence that it results in improved practice is lacking. All that is mandated is attendance, which will not necessarily change attitudes, motivation, or clinical practice;
- programs are not consistently and uniformly available. Many lack quality and relevance to practitioner needs;
- requiring participation may hinder learning by reducing motivation and individual responsibility;
- it violates adult learning principles, such as voluntary participation.

The American Board for Certification web site is an excellent resource for information related to continuing education in the United States (www.abcop.org). Under the American system, MCE requirements are specific to each level of responsibility (i.e. technician, clinicians). The MCE program is well accepted and runs very smoothly.

Continuing education is available on a variety of platforms and points are awarded for different activities that are completed by the individual. For example, credit can be awarded for the following activities (PCE = One hour of didactic or two hours of hands-on instruction);

- learning with scientific or Business content;
- in-person or Distance Learning;
- Category I learning = Supervised or tested, pre-approval by the sponsor required
- Category II learning = self-directed & self-supervised
 - lecturing
 - publishing articles
 - humanitarian work
 - exhibit Hall attendance

Each year over 100 seminars are made available, offering thousands of PCEs across the country, but rarely in rural places. In addition, hundreds of hours of self-directed Category I PCEs are made available via:

- Distance learning on the web, by CD or by DVD
- Enrolling in approved local college courses
- Journal study + examination

- Technical education from manufacturers or distributors is also eligible for approval

Credit can not be given for attending the same course on more than two occasions. To maintain certification must earn PCEs and submit them once every 5 years. The number of points required on a five year basis is dependent upon the professional. Specific requirements are listed in table 11. Failure to comply with the continuing education requirements will result in a 1 year's probation. When this penalty is implemented members receive a registered letter demanding that they must send written pledge within 30 days to correct the deficiency plus a penalty [30 PCEs for CPOs]. From this point forth they are removed from the American Board of Certification (ABC) directory and receive no ABC publications or communications. Members lose their certification completely if they fail to respond to the registered letter or if they fail to correct the deficiency during probationary period. Members are permitted to apply for a leave of Absence for up to two years. Beyond this they may petition the board for special consideration. This typically occurs for diagnosed serious illness or full-time education. During the leave of absence members must pay normal dues but are not held to the MCE requirements.

Professional	Points required	Point requirements
CPOs	100	75 Cat I Scientific
Assistant	65	45 Cat I Scientific
CPed	55	35 Cat I Scientific
Bench technicians	40	<10 Business
Orthotic fitter	30	-

Table 11: Point requirements for continuing education credits.

12.5 Examples of continuing professional development:

INTERBOR

Eddy Deschoolmeester

INTERBOR will celebrate a 50th anniversary in May 2008. Over the years several generations have known INTERBOR and much has happened in those years - both positively and less positively. In the light of the history and experience of the past, INTERBOR has been holding discussions with various working groups about change and strategic planning for the future.

The development of new technologies, especially those that are "high tech", is advancing very quickly. INTERBOR is oriented to socio-economic problems and certainly needs to understand these changes.

INTERBOR has 3 objectives namely:

nomenclature;
education;
para medical Statute.

The International society ISPO, although more scientifically oriented, shares the objectives of INTERBOR. For this reason, INTERBOR intends to work in harmony with ISPO to progress these objectives together. The goal is to work on "Continuing Professional Development" and to further accreditation in the profession of prosthetists and orthotists.

Certainly, these days in Valence and all the previous steering meetings are a first success in this co-operation. The following are potential development areas:

a) International congress

INTERBOR has decided not to organise congresses under their own name but is willing to co-operate in organising and realising a technical program. This for example, can be in collaboration with ISPO International.

b) National congress

INTERBOR has already co-operated in national congresses. For example:

- BIV, Germany, Leipzig
- FEDOP, Spain
- People in Health, St. Petersburg, Russia
- OMI, Hungary
- FIOTO etc

One of the objectives is to present technical-scientific issues in combination with socio-economic interest in the language of the country. It is very important and necessary to continuously develop graduates who are already actively working in the field by organising seminars. This is not only necessary for skilled prosthetists and orthotists but also for candidates at ISPO category III level.

Several companies give their own in-house training to their staff in both ISPO Categories I and III, both with and without the help of various schools and also with the help of the industry.

The Industry is also organising product oriented trainings, but let us not forget that we need the industry for this support training and in several training programs, the industry is a very welcome financial partner.

With the potential realisation of a paramedical status for prosthetists and orthotists in the

future it would be possible to organise, in association with the Universities, refresher courses and seminars with the financial backing of the government. (This already has been realised in a few countries like France, The Netherlands, Belgium, etc.)

In Belgium, for example, a proposal has been submitted to the government (RIZIV) for accreditation for prosthetists/orthotists. With this Accreditation a prosthetist/orthotist can obtain an additional bonus (approximately 2,000€/yearly) when they have accumulated sufficient points. Further financial support in Belgium comes from one of the joint committees who award an amount to the professional bodies according to the refresher courses they have delivered.

Another important development comes from collaboration between national professional federations such as a federation for prosthetist/orthotists and a federation for orthopaedic shoe technicians. After years of consultation these federations have understood that they both fight separately to reach the same goals of recognition from the government. In the last two weeks both federations have joined together in Belgium and now have more power to fight for their rights and goals. Germany and The Netherlands also have this trend.

We warmly welcome these developments.

In conclusion, INTERBOR would firstly like to support “Continuing Professional Development” and our close co-operation with ISPO on an international level. Secondly, we would like to stimulate the organisation of seminars and refresher courses by the national professional associations and ISPO and visa versa.

Finally the INTERBOR has a significant role to play in supporting continuing professional development and the industry, professions and ISPO are stronger together than apart and should foster a positive working relationship.

12.6 Examples of continuing professional development: **Proteor**

Christine Barbon

Introduction to Proteor

Proteor is a company with 630 employees. Of these, 530 are employed within France and 100 in our foreign subsidiaries. The company is involved primarily in two fields of activities. These are:

PROTEOR Handicap Conseil

- providing services to the patients;
- main activity : orthopaedic devices;
- staff : 100 P&O and 200 technicians in 40 agencies and a central fabrication unit.

PROTEOR Handicap Technologie:

- design, manufacture and commercialisation of components for orthopaedic professionals

One of our major challenges within the present French context is a lack of trained professionals (clinicians and technicians).

Continuing professional development for our employees

Our goals in terms of continuing education are to bring an efficient service to the patients, adapt to the evolutions and to motivate our employees. We believe the success and the quality of the services we offer to our patients are based on our employees' competencies. As a result we have predetermined competencies for each professional. We also conduct professional interviews with our employees to assess their competencies and have set continuing professional development as one of our priorities.

In order to facilitate continuing professional education we have successfully implemented a number of processes.

Young professional program

We believe that educational institutions do not make practice ready clinicians, but people with the potential to become one. As a result we have implemented a modular program for young clinicians. This program lasts two years. During this time young clinicians are supervised by an instructor and coached by professionals.

Quality assurance

Our quality assurance processes help us identify the items to be improved and the matching competencies required

Competencies adapted to the evolution of the field

We recognise that the field of prosthetics and orthotics is under constant development and subsequently take care to ensure that our employees are "up to date" with current medical, technologic, products and materials.

Supplement of education and experience recognition

It is possible within the French system, to receive a diploma equivalence with the recognition of experience.

13.1 Conference Programme

Wednesday 28th March 2007

0800-0900	Registration	
0900-1015	Opening of meeting	
	President, ISPO	<i>represented by Dan Blocka</i>
	INTERBOR President	<i>Eddy Deschoolmeester</i>
	Director, Institut Supérieur Technologique	<i>Norbert Kieffer</i>
	Mayor of Valence	<i>Lena Balsan</i>
	WHO Statement	<i>read by Sepp Heim</i>
1015-1045	Overview of outcomes from Dortmund meeting and aims of the current meeting	<i>Sandra Sexton</i>
1100-1130	Discussion regarding the overview of outcomes from Dortmund	
1130-1200	What type of professional do we need?	<i>Nerrolyn Ramstrand</i>
1200-1400	Lunch	
1400-1420	Recognition of the profession - from technical to health care professional	<i>Michel Pierron & Laetitia Chiarelli</i>
1420-1440	Discussion	
1440-1500	How French schools are meeting the challenge of training paramedics - Strategies for schools to achieve expectations of professional associations	<i>Karine Mialon & Norbert Kieffer</i>
1500-1520	Discussion	
1540-1710	Working groups	
1710-1800	Social welcome reception by ISTM	
	Gospel Presentation and Degustation des Produit de la "Drome"	

Thursday 29th March 2007

0800-0900	Presentations of working group discussions	
0900-0930	Discussion	
1000-1100	Understanding the Bologna agreement and tools for its implementation	<i>Sandra Sexton</i>
		<i>Norbert Kieffer</i>
1100-1230	Tour of the school	
1330-1430	How can the ISPO Professional profile (Category I) become the professional standard for Europe?	<i>Rainer Bremer</i>
1430- 1510	European association of crafts and small and medium-sized enterprises (UEAPME)	<i>Ralf Drachenberg</i>
1530 – 1630	Information from different schools – how are European issues being addressed?	
	University of Strathclyde, Scotland	<i>Elaine Figgins</i>
	Katholieke Hogeschool Kempen, Belgium	<i>Dirk Vermetten</i>
	University of Giessen	<i>Joerg Subke</i>
1630-1700	Best practice in education through benchmarking	<i>Nerrolyn Ramstrand</i>
1700-1815	Working groups	

Friday 30th March 2007

0800-0900	Introduction to continuing professional development	<i>Rainer Bremer</i>
0900-1030	Report of working groups	
1130-1230	Reflections on the recognition of the profession and training of prosthetists & orthotists	<i>Francoise Grosstête</i>
1230-1330	Lunch	
1330-1500	Examples of continuing professional development	
	University of Salford, England	<i>Glyn Heath</i>
	The Belgium medical association procedure	<i>Francois Sumkay</i>
	BUFA, Germany	<i>Jens Franke</i>
	North America (video conference)	<i>John Michael</i>
	INTERBOR	<i>Eddy Deschoolmeester</i>
	Proteor	<i>Christine Barbon</i>
1550 – 1720	Group discussions related to continuing professional development	
1800 -	Evening activity: degustation d'atoire	

Saturday 31st March 2007

0900-1000	Group feedback and discussion: Continuing Professional Development	
1030-1200	Strategies and recommendations	<i>Dan Blocka & Sepp Heim</i>
1200-1230	Closing statements	<i>Eddy Deschoolmeester</i>
1230-1330	Farewell lunch	

13.2 Participants List

PARTICIPANTS LIST - EUROPEAN SCHOOL MEETING

Surname	First name	School / Organisation	Country
Aga	Jarle	Oslo University College	Norway
Alonso	Pedro	FEDOP	Spain
Baumanis	Ainars	Center of Prosthetics and Orthopaedics, Riga	Latvia
Bieringer	Stefan	Bundesfachschule für Orthopädie	Germany
Boecker	Dirk	OT publishing house	Germany
Bogucki	Artur	Polish Society for Prosthetics and Orthotics	Poland
Bremer	Rainer	Institut Technic and Education, University of Bremen	Germany
Burger	Helena	University of College for Health Studies	Slovenia
Ciobanel	Paul	B-dul Basarabia	Romania
Caforio	Giuseppe	Senator (Rome)	Italy
Dahl	Mona	Oslo University College	Norway
de Vries	Wolter	SVGB	Netherlands
Desprez	Frederic	Proteor	France
Drachenberg	Ralf	UEAPME	Belgium
Dumez	Florence	Lycée Polyvalent d'Alembert	France
Figgins	Elaine	University of Strathclyde	United Kingdom
Guillaume	Richard	Blatchford	United Kingdom
Heath	Glyn	University of Salford	United Kingdom
Holtkamp	F.	Fontys University of applied Sciences	Netherlands
Hornak	Lubomir	APTO	Slovakia
Klaus	Lambert	SVGB-OSLO	Netherlands
Krumins	Marcis	Center of Prosthetics and Orthopaedics, Riga	Latvia
Kyöstilä	Juha	Helsinki Polytechnic	Finland
Lagis	Karlis	Riga Stradins University	Latvia
Landauer	Franz	Chairman, ISPO - Austria	Austria
Lechler	Knut	Össur	The Netherlands
Meeus	Philippe	Institut d'enseignement supérieur paramédical	Belgium
Mialon	Karine	Institut Supérieur Technologique	France
Michael	John	CPO Services, Portage, Indiana	USA
Nagler	Georg	German Association for Orthopaedic Technology (BIV).	Germany
Ramstrand	Simon	Jönköping University	Sweden
Rauch	Christiane	Otto Bock	Germany
Rodriguez	Manuel Puente	I.E.S.	Spain
Romanova	Ilona	Riga Stradins University	Latvia
Sochorova	Hana	Zdravotne - socialni fakulta, Ostravska univerzita	
Starholm	Inger Marie	Oslo University College	Norway
Subke	Joerg	University of Applied Sciences	Germany
Sumkay	Francois	Direction Médicale ANMC	Belgium
Toulzat	Annie	Lycée Polyvalent d'Alembert	France
Urseau	Isabelle	Handicap International	France
Vermetten	Dirk	Katholieke Hogeschool Kempen	Belgium

Wagner	Robert	APTO	Slovakia
Weyer	Marja	Otto Bock	Germany
Weymans	Marja	Fontys University of applied Sciences	Netherlands
Wolfova	Marketa	Zdravotne - socialni fakulta, Ostravska univerzita	Czech Rep.

Interpreters:

Surname	First name	Country
Grandone	Anna	France
Popa	Cristina	France

Organising Committee:

Surname	First name	Country
Barbon	Christine	France
Blocka	Dan	Canada
Chiarelli	Laetitia	Italy
Deschoolmeester	Eddy	Belgium
Franke	Jens	Germany
Heim	Sepp	Germany
Kieffer	Norbert	France
Lissac	Jean Pierre	France
Pierron	Michel	France
Ramstrand	Nerrolyn	Sweden
Schmidt	Karen	Denmark
Sexton	Sandra	United Kingdom
van Rollegheem	Jacques	Belgium

13.3 Syndicate Questions

Syndicate Groups Session A Discussion questions

There are differences within Europe regarding the classification of the prosthetics and orthotics profession. While some countries classify it as a paramedical profession, others do not. How should the prosthetist/orthotist profession be classified in Europe?

(Syndicates A1, A2)

Does individual school curriculum content reflect the current ISPO professional profile?

Is it necessary to address the professional profile in school curriculum?

(Syndicates A3, A4)

What is the standing of the relationship between schools and service providers?

What should it be?

(Syndicates A5)

Syndicate Groups Session B Discussion questions

What action can be taken to facilitate co-operation between schools for quality improvement?

(Syndicate B1)

Should stakeholders have a strategic involvement in P&O schools?

If yes, what benefits could stakeholders receive by cooperating and becoming involved in strategic development with schools?

(Syndicates B2, B3)

Which key clinical competencies should a candidate have at graduation?

Prioritise the top five competencies

(Syndicates B4, B5)

Syndicate Groups Session C Discussion questions

What action is being taken to update the practices of presently qualified and practicing professionals? How could this be facilitated?

(Syndicates C1)

In relation to continuing education, what is the relationship between schools, professional organisations, service providers and industry?

(Syndicates C2)

In which way can the profession guarantee the maintenance and renewal of the competencies of individuals?

(Syndicates C3, C4)

Describe a framework for a continuing professional development for Europe (Note: In this instance continuing education refers to enhancing the practices of qualified clinicians.)

(Syndicates C1, C5)

13.4

Summaries of syndicate and plenary discussions

13.4.1 Plenary discussion following *Overview of outcomes from the Dortmund meeting and aims of the current meeting*

A question was raised regarding ISPO's position on prescription. It was indicated that although the situation is different in various countries a Category I prosthetist/orthotist should have the skills to perform a differential diagnosis and generate an appropriate prescription.

There was a proposal to develop a position statement on prescription.

- Prescription was suggested to be a difficult area and in need of a clear definition in the context of prosthetist/orthotists.
- A question was raised regarding if there is any country in which the prosthetist/orthotist may prescribe
 - Several countries indicated that the prosthetist/orthotist has prescription rights for the provision of a device. These include; UK, Netherlands, Sweden and Norway (design prescription rights for 5 years).
- Comment that we need to remember that the role of a prosthetist/orthotist is prescription of design.
- In Poland only a doctor can prescribe a medical device but the technician can prescribe, for example, the socket after the doctor makes the initial prescription.
- It is important that the same person who prescribes, performs the examination and reviews the result.

A proposal was made to better define the term technician. In Poland it means someone who is educated to a medium/middle level. It was suggested that we should avoid the word as it can be confusing in different languages. In French it can mean a high level of education, in English it is person educated to national certificate, rather than degree level. This is why ISPO and WHO prefers the term Category I, II and III.

Comment that it is necessary to find a new word to describe this job. Who or what group of people are able to develop new ideas and construct new devices?

- Other delegates suggested that this was covered in the ISPO categories and that this contains all the levels we need
- A further suggestion was to put title to the ISPO categories
- Middle and high level graduates – This is difficult to define as different countries traditionally have different levels. We need to accept that a bachelor level degree is that required for Category I.

13.4.2 Plenary discussion following *What type of professional do we need?*

This is an important step since the last school meeting. A number of schools have increased their efforts to increase quality of training. Progress has been evident. If we were to renew the survey in 10 – 15 years to see the changes in education, that would be an important follow up to define progress and change.

- What does “study” refer to?”
- This refers to the time spent in formal education (not specifying a level)
- Does this refer to divisions between bachelors, masters and doctorates?
- The categories were diploma, bachelors, masters and doctorates. The aim was not to determine what high to middle level education was.
- What about the terms prosthetist and orthotist and the division – maybe we need to better define the divisions in practice.
- International Standards (ISO) already exist defining the terminology prosthetist, orthotist, prosthetics, orthotics etc
- The question of the name of the professional is complex since legislation is specific to each country. The ISO standard terminology should be adopted for application to the European situation.

13.4.3 Plenary discussion following *Recognition of the profession - from technical to health care professional*

- A delegate raised some concerns that he has with the French model. In particular his concern was related to the fact that medical doctors are not permitted to fit orthotic devices. “You state that to fit orthoses for a knee you must be a CPO. I am a medical doctor does this mean that I can not fit a knee orthoses?”

Responses

- In the UK there is a model called “extended scope of practice” which makes it is possible for a person who is not a P&O to receive training in how to use the device. If they have received training then they may fit the device.
- We must recognise that the situation is different in each country. In France the P&O is the only person permitted to fit the device.
- One of the objectives of this meeting is to define the borders between the medical profession and P&O. It is not within the interest of the P&O profession that the surgeon fits this device.
- A medical doctor can not sell the device but should be permitted to fit it.
- In the UK medical doctors fit the devices only if they are trained to do so. This is simply for the protection of the profession.

- So an orthopedic surgeon can only prescribe an orthoses but can not fit or change the fitting if needed?
 - It is considered unethical for a surgeon to do so if they are not trained appropriately.
- In Slovenia the medical profession has recognised that there are already people trained to fit an orthoses so it has been removed from the medical education as it was deemed unnecessary.
- In Germany doctors are only allowed to say that a person needs an orthotist to manage a particular problem. It is then the orthotist who is responsible for the product and liable if something goes wrong.
- There was interest in the French definition of a P&O. Does it include functional assessment?
 - Yes this is the recommendation of INTERBOR.
- There is a sense that everyone is defending the practice of their own individual country. It is important to recognise that differences do exist but it is important that we look beyond this and focus on working together to improve the quality of practice.

13.4.4 Plenary discussion following *How French schools are meeting the challenge of training paramedics – Strategy for schools to achieve expectations of professional associations*

- A delegate wished to have a definition of medical and paramedical professions. In Poland he indicated that paramedical professionals may not have contact with patients.
 - It was acknowledged that there may be differences across countries
 - In the UK a paramedical is an ambulance driver and a P&O is termed as an allied health professional
- What was meant by the term legislated diploma?
 - It is a state diploma that is recognised by the government
- The problem with developing the P&O profession and programs in France was highlighted – the previous education was under the administrative control of the department of education. The curriculum for this program was introduced in 1975 and little change had been made since this time. At the time the syllabus was introduced prosthetics and orthotics was production oriented. Now that it is recognised that P&O in France is a “paramedical” profession, the desire is to move the administrative control from the ministry of education to the ministry of health which guarantees quality of health care. There have been many problems in making this shift and gaining recognition as a paramedical profession. Another problem is that persons trained under the health ministry will demand a greater salary.

13.4.5 Plenary discussion following *How can the ISPO Professional profile (Category I) become the professional standard for Europe? (Most recent developments in vocational education and training at a European level)*

- Important to compare and see what the competency is in each individual country. We also need to know the outcome and see how this information is used in the work process later on.
- Can you explain a little more about the way in which you compare competencies?
 - We study the sector and identify a typical task and a typical environment. Then we give the task to the novices to try and solve the problem. We test to see if the solution is working. We don't expect that they can solve the problem but we hope that it will allow us to identify the problems. This is not test of individuals but a method of gathering information about the success of the system.
- What are the costs associated with such a program?
 - Perhaps the most important question is not what it costs but who is prepared to pay. I can suggest that this area is very attractive to the European market and funding is available.
- It is important to recognise that we can not have a single system in Europe but to achieve harmonisation we need to test outcomes. This model fits very well with the goals of the European community.
- It is important to establish research networks.
- What is the duration of such projects
 - It is best to follow the same individuals over a period of five years. Of course this costs money. I would say that you need it for at least three years.
- How many countries need to be involved?
 - It is difficult as there are many variables to consider. If we look to the EU they are not interested in having representative from every country what they do want is to look to have representatives from a number of countries with diverse differences.

13.4.6 Plenary discussion following *Most recent developments in vocational education and training at a European level.*

- Positive to see a model that is recognising transfer of labour force across boundaries.
- Perhaps this model is most appropriate for our Category III training.
- How many member states have signed
 - There is no legal requirement to sign however there is a very strong political mandate.
- What happens in the case that an education is not fitting into the defined models, e.g.: Meister.

- All vocational qualifications have been placed in all of the levels. Where the top three levels, 6, 7 and 8 used to be filled only by bachelor, masters and PhD level education respectively. They can now be filled by someone with for example a German Meister qualification. It depends however on the outcomes. It is up to the individual countries to decide at which level one should set the education.
- There is no professional reason for this. It is just to achieve equilibrium. I feel it is destructive. It is not done to improve competencies it is just to permit transfer of labour force. This is an economical decision and missing a number of dimensions.
 - If you document professional competencies then there is not reason why you can not compare competencies.
- So far ECTS is based on learning input, it wouldn't be a bad thing if we look to learning output as well.

13.4.7 Plenary discussion following Introduction to continuing professional development

- It is certainly challenging for us to increase the competence of people working in the field. A recognised framework for continuing education is not currently available. We need to be clear before embarking on continuing professional development what we want to achieve. If competencies are to be achieved, a clear definition of the goal is necessary and individual outcomes need to be assessed to see if the goal of development has been achieved.
- Key questions:
 - are there various ways to increase the competencies of clinicians working in prosthetics and orthotics?
 - how can we ensure a continued challenge for the prosthetist/orthotist?
 - are we really doing the right thing for the patient/user?
- The key to solving the problem is in the enthusiasm and professional mentoring of the teacher. It is important for the students to understand that they will become the teachers' peers in the future. This was not obvious in the presentation. What are your feelings on the teacher quality and what about the enthusiasm and mentoring in achieving the results?
- The evaluation task was to evaluate the teacher and student. The teacher is not a constant. Skeptical that we choose a research method without evaluating the teachers. The assumption that teacher is excellent is flawed. If you combine the sector study with an evaluation study – go the empirical way. Share ideas about excellence in sector and this is not found by teachers in schools. Professionalism of teaching is different from professionalism in the sector. Competencies are different for teaching and learning. The teacher can help, but can't substitute the learning.
- How did you remove the variable of the teacher?
- Answer: will soon do this in France. Did not do this in Germany.
- Don't we need a certain number of experts?
- Answer: no ideal solution
- We have to transfer the technical focus to the patient focus. We need a solution of strategies for education.
- We need to do more research. The situation in the field seems complex and would be complex to measure. We need to be part of a community of practice.
- Do we need the expert (researcher?) within or from outside the practice? Earlier you stated that we don't need experts.
- If the system includes treatment of humans who are all individual and unique, then experts are required within the system. They will only develop in practice, not in academic training.
- If we could standardize the person and have people with the same characteristics then we could remove experts, but we will always need experts because there are so many variables in the person.

13.4.2 Syndicate Groups A Feedback

Discussion question A1 and A2

There are differences within Europe regarding the classification of the prosthetics and orthotics profession. While some countries classify it as a paramedical profession, others do not. How should the prosthetist/orthotist profession be classified in Europe?

Syndicate Group A1 report

Every country should follow his/her local legislation but afterwards we can see which level the graduate reaches at the end of his study. ISPO can't change the school system of the different countries nor can it change the Bologna declaration. It is however important that ISPO monitor/judge/evaluate the content of the courses, and that ISPO monitor/judge/evaluate the competencies of the graduate. (Paramedical profession) ⇔ healthcare professional?

Syndicate Group A2 report

Medical:

- as a doctor; licensed physician, diagnostics, prescriptions of treatment

Paramedical

- *Health professional / health care professional*
- Allied health professional
- Professions for helping doctors

Health professional / health care professional

- Education and / or Competency would be CAT I professional profile.
- Preferred is University or equivalent education (3 _ 4 years bachelor).

Need for licence?

- Everyone working in the business needs a license or certificate given by national health authority / body
 - Private facilities need a license, (Slovakia)
 - CPO is legal professional (Spain)
- With ISPO accreditation, ISPO CAT I certificate is granted
- Origin of classification problem
 - Economical / political

ISPO needs recognition, national government, WHO

Additional clarification and comments

Clarification – discussed minimum of bachelor level education

Discussion question A3 and A4

Does individual school curriculum content reflect the current ISPO professional profile?

Is it necessary to address the professional profile in school curriculum?

Syndicate Group A3 report

We do not know curricula of all different schools

- Do we need a curriculum or do we need an experience?
- Experience part is missing in the curriculum
- We need a system for CPO to be allowed to work all over the Europe
- For students to study all over the Europe
- ISPO Cat. I is the only standard in the world
- We can use ISPO Cat. I or start creating a new one
- We are in favour of accepting ISPO Cat. I as the main standard in EU
- Austria does not accept ISPO cat. I at the moment
- There should be different ways to fulfill the ISPO Cat. I
- ISPO does not prescribe the standard curriculum, only the level with objectives, goals and skills
- Will that be accepted by EU in the future?

Additional clarification and comments

Question: Why does Austria not accept Cat I? Answer: Austria said there is no reason to accept the system since no school accepts this. Fundamental question needs to be posed: *What do I need to do to become category I?*

Syndicate Group A4 report

Schools present in group: Belgium -2 schools (1 Flemish & 1 French)

Respect level Cat 1 profile: (+ High school for Cat 3 in Flemish part)

3 years school +2 years experience → then Health service registration

Also have started Cat 1 for Orthopaedic shoemakers – 3 years total

Year 1 – communal; Year 2 - 50 % common (PO –shoemaker); Year 3 - 100% separate

UK Strathclyde Cat 1 school; Salford Cat 1 school

No Cat 2 or Cat 3 programmes

Professional recognition and protection of title “Prosthetist” and “Orthotist”

Czech Republic Ostrava University

Common act -2 possibilities

a)Healthcare studies programme

(Batchelor Degree) programme started in 2006. (Bachelors) First 15 students

minimal requirement for all AHPs - accreditation of Minister of Health

b)Higher /Tertiary Education Paramedical College (DiS)

Like Cat 1 BUT previously Pathology NOT necessary (will be included in future)

FRANCE - 3 schools: Valence; Paris (Level Cat 1, 2 & 3 training); Castres- Industrial placement model. All 3 years in duration & same basic curriculum

Practices are changing (from 1975 movement now happening)

BUT now Ministry of HEALTH Approval is being sought with NEW curriculum reflecting CAT 1

Netherlands 2 options

Middle education (BETWEEN Cat 1 & Cat 2) (4 Days Workshop + 1 day school)

Higher Education -2000 Fontys University Bachelor degree 4 years in cooperation with BELGIUM

Romania 1 school CPO from 2003: 3 year programme for Cat 1 (DIPLOMA)

Work with Handicap International +Valence+ Ministries for Health and Education and Work
 Year 1 -1448 hours classes. 928 Theory, (Anatomy, Maths, IT, Mechanics, Material & Tech Drawing)
 520 Practical (4 modules Technology, metals/leather/plastics and special technology)
 Year 2 -the new subjects Biomechanics, applied Physics, kinesiology, pathologies for PO and rehab and surgical pathologies)

Year 3 Management, psychology for disability, rehab for prostheses. Registrations, professional ethics,
 Each year one third theory two thirds practical within industry.

At end theory exam, practical exam and write paper ---- DIPLOMA given

Romania 1 school CPO from 2003

From 2007 **Cat 2** = 1040 hour

760 hours practical +280 theory

Cat 3 = 760 hours

520 practical + 240 theory

Practice is carried out in the companies/industry

Option to move from Cat 2 to Cat 1 with additional modules to make up the hours

16 students on programme from **2003**

ALL CAT 1 entry (4 were orphans- disadvantaged): ALL have just completed

This year new entry for Cat 2+3

2008 next entry for Cat 1+2+3

It is necessary to address the professional profile in school curriculum

- We need the professional profile FIRST
- We need this level of confidence
- Depends who looks after, is responsible for, or influences the CURRICULUM
 - The government
 - The education system
 - Professional bodies and/or Associations
 - Companies/workshops

(Some directly and some indirectly)

Discussion question A5

What is the standing of the relationship between schools and service providers?

What should it be?

Syndicate group A5 report

- No representatives of service providers
- Representatives of schools of different countries : Belgium, Czech Rep., Germany, Lithuania, Norway, Sweden
- School's point of view : The situation in their countries
- Services providers (SP) = Employers (private and public sector)

Similarities and interests Dialogue with the SP

- knowledge of the market needs,
- SP needs,
- evolution of training
- Cooperation with different companies - national and international;
 - external teachers;
 - fields of clinical practices for students;
 - participation to final examination;
 - *Development of continuing education course*

Different practices

- P&O school versus Paramedical school (P&O department)
- SP within board schools / SP asking for P&O training
- Regular survey to assess P&O needs and evolution and orientation of studies / No market research before going to BSc –employment, customers needs etc...
- Focus group discussion with stakeholders including SP to identify the future for P&O professionals and job description evolution
- Partnership model with companies (implementation of yearly weeks of practices for students) / Development of criteria to "categorise" offer of placement for students within SP / Training of supervisor (joint evaluation of student)
- SP "business oriented", no interest for training / Payment for clinical placement!
- Continuing Education program organised between school and SP

What should it be?

- Some type of partnership, formalised exchanges, agreement...
- Receive real feedback of SP / Implement questionnaire of satisfaction?
- Clarify expectations of SP regarding job profile (technical or clinical P&O? Future = P&O computer oriented?)
- SP has to accept educational practices of training school (time to learn, experiment, research...)

- Financial support to Research (with the problem of confidentiality if donor=SP)
- And also don't forget
- Contact with professional associations
 - All schools should be "opened to the external P&O world" / Implementing international exchange program (Europe and more ; students and teachers)
 - P&O very young and small population / To increase P&O with Master level and PhD (for Training and Research)
 - Network Research between different educational programs seems important
 - Also to promote outcome studies and research with patients to measure results and benefits of training

13.4.3 Plenary discussion A

- Why is Austria against ISPO Cat 1? ISPO don't offer a system to upgrade from Category II to Category I. It would be important to organise a system to upgrade to category I. 8 million inhabitants so does not make sense to make own training
- In one example the professional specialized in medical rehabilitation, and then did a 1 year's course training in prosthetics and orthotics which is then hopefully recognised as prosthetist/orthotist. Cat III clearly has no contact with patients but Cat II professionals seems more about practice than education – people with good experience and don't need to push education. Cat II is for craftsmen.
- ISPO should make a process for individual recognition of competence rather than only recognition
- Documents presented for the meeting makes it clear – clarify classification of ISPO categories to describe the professional and not the school. The outcome of training would be that the resulting professional would be recognised as a Category I professional. The outcome is important in focussing on what the patient needs. The questions were intended to gauge whether the training programmes meet the international standard rather than the institutional classification.
- Concern about a country focussed on financial interests (payment of salary). The patient (and country) needs Cat I – perhaps they cannot afford to train them but there is a possibility to bring the professional up to a Cat I level.
- But Cat I is not "needed" – European law will not state Cat I.
- It is hoped that the European health administration in Brussels will eventually recognise legally the profession and will eventually take the professional profile based on a job description and not a title.
- Cat I is for us in Europe and is not to be confused with Cat II which was intended as a compromise for developing countries. Examples of developing country development – that time is over and the time is right in developing countries to implement Category I. The compromise was to create a Cat II who is partly trained e.g. limited training for Cat II on arms/trunk. Don't take the compromise to Europe since this degrades the professional role.
- There are ways to implement ISPO Cat I through different strategies.
- Difficulty is that people work at different Category levels in Europe – in different countries and companies. So developing country focus does not reflect the reality in Europe where the categories could be used. In the profile we could look at Cat II and Cat III to give those people.
- Clarification – every country should have Cat I since the patient deserves Cat I.
- Certain roles develop as category II or III – independent practitioners should be Cat I. Cat II muddies the picture in Europe.
- Are the assistants really Cat II – suggest they are only assistants.
- Problems in a country when many people work below Cat I and cannot deliver or initiate the final device.
- Always different levels in different countries. Cat II in developing countries – 3.5 years + 2 years of clinical experience
- Could be interesting for ISPO to classify the lower training possibilities in Europe. Need to look into training for a job description. Schools should not classify themselves.
- Other professionals work in field of P & O which is a health profession and not a business. Problem for education minister. Perhaps the key is, who is responsible for the treatment of the patient.
- Technical aids experts in the field perhaps have a greater future. Need to expose clear way to expand our profession in Europe.
- Variety of professionals exist in Europe: Cat I, III, single discipline etc. We need to educate for the local demands of countries. Extended scope and specialist clinicians also exist. We should consider subdividing the profession as well as the profession itself. Need to address the national issues as well as the ideal category levels and use this as a basis for categories. Too many areas and people do not fit the current ISPO Cat I, II and III categories. Need subdivisions.
- Majority of people here are educators. People working in the field might have a different position.
- The profession in each country should have a strong unification between schools and services to make sure that people are treated at the appropriate level. Successful collaborative models agree on the professional profiles. In Europe there is a "mish-mash". As a unified landscape, we need a professional profile. Developing world is moving to Cat I. other parts of the profession between the clinical and technical practitioner. ISPO Cat II is not useful in Europe as a classification since this is inappropriate.
- Discussion with stakeholders should happen in each countries

- Agreement seems more difficult in Europe since we are too reflective and backwards looking.
- We are producing professional who are needed by the service providers in the different services. We need the advisory boards with service providers represented. We are all serving the patient and look more towards the future.
- Example of school strategic management board given.
- We have to listen to the service provider- controlled by the governments ministry of education – still can listen and translate for the educators.
- Professional profile – won't be any ISPO category recognised in Europe, but the named profession prosthetist/orthotist – need to be clear about that. Talk about 10 – 15 year – happen to the future – usually takes 5-6 years. Every country has the chance of 5 to 7 year to put this into national regulation.
- It is clear that we must decide: *What does the patient need?* We need evidence based practice. We also need students to understand that patients need best practice. This is evidence based medicine.

13.4.4 **Syndicate Groups B Feedback**

Discussion question B1

What action can be taken to facilitate co-operation between schools for quality improvement?

Syndicate group B1 report

- Research projects – students and researchers / requires minimal administration (1)
- Students and teacher exchanges (2)
- Exchange of examiners (2)
- Benchmarking (3)
- Common e-learning (3)
- Sharing resources
 - through the web (2)
 - Publications from schools (2)
 - Education based list-servers (2)
- Educational/pedagogic conferences
- Summer schools – combine teachers* - In interesting environments

Problems:

- Finding teachers for schools/ teachers training
- Language
- Cost and time (particularly e-learning)
- Differences in curriculum (exchanges)

Additional clarification and comments

- Teachers should also have the possibility to gain experience in hospitals and facilities.
- Summer school a perfect idea!
- With the credit system, there is a danger that the ECTS system allows differing hours of study. The whole credit system is very interesting – how do we put a value to credits.
- We often talk about time- the number of weeks to sit in a lesson, but this does not reflect quality.

Discussion question B2 and B3

Should stakeholders have a strategic involvement in P&O schools?

If yes, what benefits could stakeholders receive by cooperating and becoming involved in strategic development with schools?

Syndicate group B2 report

Who is a stakeholder?

Institution responsible for education; students; patients; associations; ISPO; INTERBOR; NGO – HI; Business partners; P&O clinics (professional associations); Hospitals; Industry; Insurance companies; Health care system

Have they all the same interest?

- Yes – the patient is central, his satisfaction is the most important goal
- No - reality

Input and output:

Input from clinics: may bring technology; clinical and workshop experience; present real P&O situation

Output: Every stakeholder wants to have good “candidates” with good basic knowledge, skills and attitude

Have they all the same interest?: Schools still have to have autonomy and money; Schools have to be opened to the needs of the market and patients; Curriculum have to be adapted to the pathologies in the society

Schools need to have a Committee of experts – “stakeholders” to get the information from in and outside

Syndicate group B3 report

Stakeholders: Industry; P&O workshops/companies; Professional associations; Administration - health and education; Teachers and students; Patients and carers; Other professions (multidisciplinary team); National quality agency (?); Financing bodies

Differences between schools

Norway: Formal board with the companies; Financing from different sources

France: Representatives in the board; Involvement in exams; Guest teacher; Student placements in workshop

Scotland: Board with stakeholders; Involved in placement committee; Involved in strategy discussion

Spain: Association supports school; Teachers are member of association; Students work in the workshops; Support school with material and tools

Belgium: Teachers from other disciplines; Clinical part takes place in companies; Teachers from enterprises; Stakeholders in the board

Netherlands: Association supports school; Teachers from practice; Students work in the workshops; Associations in the board

Important Stakeholders: Students; Patients; Medical field; Industry/companies;

- students

Difficult to involve

Important to stimulate them

Graduates are interested and important to the school

Invite graduates to the board

- ▶ Get competencies for their professional life

Patients

Prosthesis user groups are involved

Orthosis user groups difficult to involve

Sometimes not organised

- ▶ Get good solutions for there problems

Medical field

- Involved as teachers

- ▶ Get professional colleagues

Companies

- Dilemma quality versus profit
- Implementation of new technology
- They benefit from cooperation on research
- They get the professionals they need
- Important above all the spirit of collaboration, good relations and cooperation with each other.
- Additional clarification and comments to Group B2 and B3
- The autonomy of the school is important, but we have to find a basic level of education for Europe, but in the special areas of practice, the schools have to find their own areas of business because they are in competition.
- What has the credit system to do with stakeholders – more linked to first question, but we get interest from outside into the school.
- Clarify - What is the dilemma between quality and profit? There needs to be a balance in the schools. Don't see the dilemma between quality and profit – the better the quality of the graduate, the better the service. The focus is surely to have a balance between the engagement and interest of different stakeholders. One point was of concern – that the medical field was only involved as teachers.
- It is difficult to get interest from orthopaedic surgeons in prosthetics and orthotics in many countries.
- For the orthopaedic surgeons, the main focus is really on surgical intervention. Many surgical treatment options have been replaced by conservative alternatives and so the work of the orthopaedic surgeons is moving to other areas.
- Perhaps the involvement should be with associations of medics rather than individual medics so that partnership working would be positive in schools.
- We need to use the term orthotic treatment. We often use the term orthosis, but the treatment of the patient is more important the orthosis itself. The most important thing is the outcome of treatment. The process should be dynamic – prosthetic *treatment* and orthotic *treatment* – in this way, learning would be objective and the focus would be on the outcome. Objective knowledge of the product would come from research. Knowledge from the supplier or industry is not necessarily implemented in medical practice; rather the clinician bases their judgment on the research evidence.
- Disagreement - the contact and feedback between industry, the market and the schools is more important than that.
- The patient should be our focus and if we should be working together for the patient and have balance and co-operation between industry and schools to have objective outcomes.

Discussion question B4 and B5

Which key clinical competencies should a candidate have at graduation?
Prioritise the top five competencies

Syndicate group B4 report

- competency = knowledge, skills and understanding
- At some schools not enough clinical competencies – more technical competencies?
- Active listening and observation = good communication
- Functional assessment (global approach):
- Clinical examination
- Patient history – medical, social
- Goals/purpose
- Team working – multidisciplinary
- Implementing basic practice – fundamental, good practice
- Translate medical problem into a solution, evaluation of the outcome (gait analysis)
- Critical evaluation of myself
- Evaluation of knowledge, skills, understanding, motivation, whole personality, lifelong learning, time efficiency, looking at evidences

Syndicate group B5 report

Preamble: Important to connect knowledge with action. Training alone will not make someone a CPO because they are not exposed to enough real problems.

Identifying competences:

1. Being able to integrate all areas of knowledge (both technical and clinical) into the applied tasks and know how to utilise the correct information within the knowledge base to perform each possible task.
2. Being able to understand, listen to and appropriately acting on individual patients' requirements.
3. Being able to interacting at an appropriate level with other allied health professionals and doctors.
4. Being able to utilise your knowledge to justify your actions to other health professionals and patients.
5. Having an appropriate attitude to continued learning and improving his/her professional profile!

Additional clarification and comments to Group B4 and B5

- The importance of bringing together the medical part of prosthetics and orthotics. We have to find ways of bringing research, hospital activity and education closer together. We have also to upgrade the P & Os who are already in the field.

13.4.6 Syndicate Groups C Feedback

Discussion question C1

What action is being taken to update the practices of presently qualified and practicing professionals?
How could this be facilitated?

Syndicate group C1 report

The group began with a review of those actions currently being taken in countries represented in the working group.

- France: after graduation (in course form) complementary of education
- Available for Proteor staff. Equivalent systems can be found by other companies
- Norway: after graduation students must complete two years of internship (as an employee). Here graduates are mentored by authorised personnel in the company. After the period of internship they become authorised by the health department.
- Poland: after graduation students go directly into practice. They may treat patients directly however the doctor is the responsible entity. For example, the CPO needs to have the feedback of the doctor about the result of treatment.
- Italy: after graduation students go directly into practice. They are required however take points in programs in continuing education in medicine
- Germany: this is partly done in school and partly on the job. After a minimum of 3.5 years graduates may apply for Meister.

The group also reflected on the presentation made by John Michael who indicated that continuing education is not mandatory as in the USA

2: How could continuing professional education be facilitated?

- Create an awareness of improving the importance of Continuing Education
- Make continuing education MANDATORY
- Require the clinicians to prove that their knowledge is up to date by participating in courses, seminars, workshops etc.
- Specialise yourself in one of the areas of P&O

- Need for additional kind of training / education after graduation
- Need for a real type of certification (as for pilots and professional drivers)
- Quality insurance system for education
- All stakeholders should be involved
- Need for a portfolio
- No organisation of accreditation not only for schools but also for the individual. P&O person (role for ISPO?) (Poland does not agree, wants exams)
- Set up a register (Throughout of Europe) (by whom?)

Discussion question C2

In relation to continuing education, what is the relationship between schools, professional organisations, service providers and industry?

Syndicate group C2 report

Issues raised by group:

What is the current relationship?

- Austria: After vocational education there is no organised system of further education neither for accreditation nor for quality assurance.
- Norway: rather similar to Austria; there is an informal system of cooperation.
- Germany: No compulsory system of further education; public health insurance companies are allowed to demand further education activities as a part of quality-assurance-measures of the prosthetists and orthotists. As a result, from the 1st April an accreditation system will be introduced indirectly
- Belgium: No obligatory system but informal cooperation of the business partners similar to Austria, Norway;
- France: Same situation. Activities to establish a volunteer system of further education:
- Netherlands: Voluntary system of F.E. The professional organisation is involved in stimulating this system.

After reviewing the situation in the countries that were present, the group concluded that for Europe we currently have no obligatory system of continuing education.

What should the relationship be in the future?

- General recommendation of a system of continuing education and accreditation.
- This system should be autonomous and performed by the national prosthetic and orthotic organisations themselves; beware of too much influence of industry.
- ISPO should be responsible for harmonising the national systems on an international level.
- Belgium and others recommend an independent system to keep continuing education, as far as possible, free from major influences of single parts of the branch. In the focus of accreditation there should be a main focus on competence and quality and less on commercial purposes.
- Costs should be refunded by the fees of the courses and the accreditation.

Recommendations

- Common declaration of ISPO on the need of a system of continuing education and quality assurance on the rules described before.
- The meeting should be regarded as a turning point in that field.

Discussion question C3 and C4

In which way can the profession guarantee the maintenance and renewal of the competencies of individuals?

Syndicate group C3 report

Issues raised by the group:

The working group was in agreement on the following issues:

- Credit system for Continued Education (CE) would be beneficial
- A common system in Europe would be desired and possible
- A mandatory system is preferred, but this may not be not realistic as a start
- Accreditation of suppliers of CE; whether universities, companies etc is necessary
- Better that we (professionals) come with a suggestion to authorities than vice versa.

Problems and obstacles were identified as;

- Cost: E.g. employer/employees don't want to pay
- Time: as above
- We do not represent Europe as a whole, big lack of input from southern Europe
- If it is to be a voluntary system – how do we get the “bad” ones involved?
- Penalty/reward system?

Recommendation:

ISPO, INTERBOR, and all of us should take initiative to get things started now!

Syndicate group C4 report

The group began by discussion if a “guarantee” is possible? At the moment we concluded that the answer was no. We further considered possibilities for the renewal of competencies: A number of options were considered, including;

- Congress attendance and presentations
- lectures
- seminars
- practical courses
- papers / publications

The group felt it was very important to implement a form of quality check in the profession. We considered different frameworks for this quality system. Feedback was considered as very important in this situation. The group further discussed how an accreditation system can be implemented. It was agreed that there are both positive and negative aspects related to this.

The group considered means of monitoring the trained individuals and considered if an audit process was possible and would work. A major concern was who would be the responsible party for checking each individual. It was suggested that national groups have more impact than international groups.

The need of an accreditation system was acknowledged and an action pathway considered.

Discussion question C5

Describe a framework for a continuing professional development for Europe (Note: In this instance continuing education refers to enhancing the practices of qualified clinicians.)

Syndicate group C5 report

The group discussed continuing education as two independent but potentially overlapping pathways. One such pathway leading towards specific academic degrees i.e. MSc, PhD and the other leading to maintenance, upgrading and potentially specialisation within the profession. The two pathways are detailed in figure 17 and termed the “academic” and “professional” pathways. It was suggested that on occasions the two coordinating bodies that can come together, when appropriate.

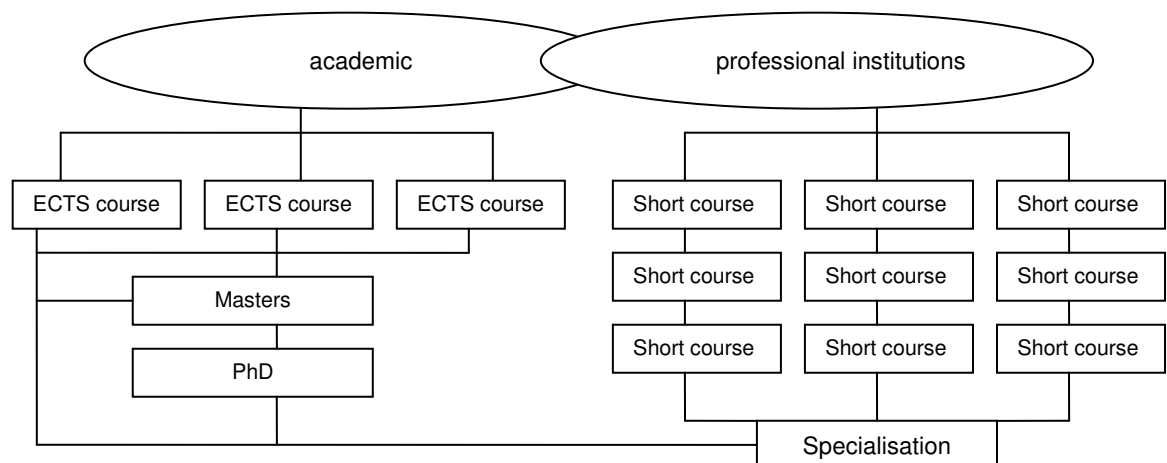


Figure 16: Pathways for continuing education in prosthetics and orthotics

Under the professional pathway clinicians would have the opportunity to maintain their skills and learn new skills. Individuals could choose to acquire a broad range of skills at a lower but acceptable level or look at developing higher level competences but taking progressively higher level courses within a specialist area. This would allow them to eventually acquire a Specialist Status!

It was suggested that we organise a Pan European professional body/academic quality assurance body to coordinate and monitor the processes outlined in the model above. Once established, this would be the European professional association of P and O. It may be possible to either dissolve national associations or make existing national associations a member. To raise funds for education we could levy a fee to every P & O professional/association.

The group indicated that the profession needs to clearly define the areas of specialisation within the profession and outline what is needed to obtain and maintain the specialist status.

This may include a combination of professional and academic education. i.e. E.C.T.S. points could be taken from the academic strain into the professional strain for the specialisation areas.

It was agreed that the academic line is well defined but the specialised line is not yet established within our profession.

In order to encourage clinicians to participate in continuing education the group used the analogy of the Scouts and Guides system of badges. One badge system could be used for academic achievement and the other for professional sub-specialisations. However if we have a reward type system then what

do we do with the rewards? None of the group liked mandatory systems but we recognise that it is necessary to engender enthusiasm.

13.4.7 Plenary discussion C

- I don't think we should cloud the situation of continuing education with higher degrees. This isn't going to help us maintain the standard of all professional and improving the skills of professionals.
- Is there not room for both pathways? One route leading to higher degrees and one aimed at maintaining the skills of professionals?
- I think higher degrees are very important. We need evidence for practice.
- What we need are clinicians who can do the job, not more senior staff. That should be the focus.
- I agree but there are two goals
- We are mixing further education with further learning. We have to see them as two separate things.
- I have not said that one way is necessary and the other is not. Do not mix up maintaining the standards of my profession with improving and advancing my educational level. There are many possibilities with higher education. Improving opportunities is something different to maintaining the capacity of the profession.
- I think we understand that we are operating on two different levels. One level is maintaining and the other is upgrading
- In reality we need to look at the benefits and gains of increasing the knowledge for the profession and not just the individual. In many countries the career structure is very flat. Unfortunately unless there is a reward people will not continue to upgrade their skills. We need a clear definition of the career pathways and a structure that gives an appropriate level of reward.

13.4.8 Summary of discussion in final strategies and recommendations session

Mr Heim's comments were opened to the floor for question and comment:

- Schools in Europe have accepted the Category I processes, but why have so few schools requested Category I registration?
 - You need to accept that the situation is different in a number of countries
 - ISPO will always encourage the Category I level of education but we as a professional group can only lead people to this position and give our professional input. We must have the possibility and the willingness to consult people around this issue.
 - To clarify the process, when someone is accredited there will be a set of recommendations from ISPO. This is very useful to give to the University, regulatory authorities etc. This can be very useful in lobbying for change.
 - Try to think internationally and be flexible in your thinking. Don't hide behind authorities. This is a way we as a profession can influence authorities.
 - Perhaps Category I gives students better mobility. You must have a baseline.
 - If we start looking at Category I in isolation of the Bologna agreement we will limit the opportunities for students to transfer into other educations.
 - Perhaps we should look to see if the Category I profile can fit into the Bologna model. For example, can the recommendations in the profile fit into the 3 year bachelor model?
- Much discussion surrounded the ISPO recommendation of a ratio of 8 students to one staff for practical placements. It was emphasised that the 8:1 ratio was only for practical teaching and is purely a recommendation.

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ORGANISING COMMITTEE

Christine Barbon
Dan Blocka
Laetitia Chiarelli
Eddy Deschoolmeester
Jens Franke
Sepp Heim
Norbert Kieffer
Jean Pierre Lissac
Michel Pierron
Nerrolyn Ramstrand
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Jacques van Rollegheem



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