Challenges in Dental Education

Harmonisation in dental education

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Issues to be addressed:

1. Meaningful goals for the education of dental students
2. The concept of a minimum curriculum
3. The use of competencies
4. Challenge faced in Europe to achieve harmonisation of EEC member countries

Observation 1:
Why variation in education period?
Observation 2: Preparing the future professional for changes?
The graduate

• Has been taught and can perform many basic procedures - not necessarily the most modern
• No hands-on experience with many procedures common in modern dental clinics
  - from where and how can further training be obtained?
• Theoretic knowledge at zenith, from now on less time for reading / question of priorities
• Already from day 1 the science in dentistry advances further - how to stay updated?

Do we prepare future colleagues to change behavior, attitude and techniques in light of new knowledge?

The case of the impacted third molar

RATIONALE: In recent years, several critical outcome studies concerning prophylactic removal of mandibular third molars have been published. These would appear to motivate a more restrictive approach.

AIM: Examine dentists' decisions on the prophylactic removal of impacted mandibular third molars over a 10-year period.

METHODS: 36 cases selected, equal distribution of gender and ages, angular position and degrees of impaction. 26 GDPs and 10 oral surgeons judged the same cases on two occasions 10 years apart.

RESULTS: No difference in the mean number of molars designated for removal between the two occasions. Considerable inter-individual variation in removal rate, between 0 and 25 molars

CONCLUSION: There is no change over the last 10 years towards a more non-interventionist attitude. Dentists seem not to have been influenced by the evidence that this intervention is not cost-effective.

Observation 3: Preparing the future professional for new information?

An Information Explosion

A rapidly changing society

The production of new knowledge in biomedicine is at maximum in historical context
- Tremendous growth in publications
- Related to numbers of physicians and scientists
- Infomercial publications
Dental Journals in circulation

Source: Ulrich's International Periodicals Directory

Do we adequately prepare our future colleagues to consider not only the amount of information, but also the quality of this information?

Dentists' daily situation: An information overload

Meetings/courses  Dental literature  
Adverting - producers - colleagues  
Colleagues  
WWW  Patients & I-groups  
Popular magazines & Media
Information is not synonymous to knowledge and even less so to clinical competence.

Observation 4: Preparing the future professional to be able to critically appraise new information – i.e. to gain new knowledge?

1. Meaningful goals for the education of dental students
Dental education – influenced today by

Quantity:
• The demand and need of oral health care in a given region
• Dentists’ demographics
  – Gender, Age & Oversupply
• Delegation of work task to auxiliaries

Content:
• The prevalence and epidemiological trends of oral and dental diseases
  • Prepared for acting in our age of information and continual changes?

Prepare for Evidence-based Practice:

Individual Community levels

Suggestion: Educational strategy

Premise: Politically difficult to expand curriculum and length of study

• Problem based learning - PBL
• Focus on “why”s instead of “how to”s
• Motivate on need for life-long learning
• Teach critical appraisal of new information
• Prepare how to meet tomorrow’s knowledgeable patients’ needs and requests
Schools of Dentistry applying a PBL approach

- U. Liverpool, England; U. Malmö, Sweden; U. Oslo, Norway; Trinity U., Dublin, Ireland
- Hong Kong U.; National U. Singapore; U Thammasat, Thailand;
- U. of Adelaide, Queensland U, U Sydney,
- U. California, Colorado, Columbia, Harvard School of Dental Medicine, Indiana,
- Pennsylvania , U. Southern California, U. Southern Illinois,

Problems & Barriers

- Resources required
- Instructors (GPs) often selected as tutors
  - Pragmatists
- Learning intensive
  - Students’ use strategies to avoid PBL
- Integration of clinical disciplines versus basic sciences
- Clinical cases ending up as the "problem"
  - not the education need

Create a reflective practitioner

Personal development plan parallel to the progress plan

Training to be critically aware of what is happening
Document evidence to show that they’ve thought about

(Strategy Leeds) Bridging the gap 5+2, UK, 1999
2. Minimum curriculum concept

E.g. Dental directive (EC/78/687): Minimum training
5 years & Core curriculum consisting of:
1. Basic subjects
   chemistry, physics, biology
2. Medico-biological subjects and general medical subjects
   anatomy, embryology, histology, cytology, physiology, biochemistry, pathology, pharmacology, microbiology, hygiene, preventive medicine, epidemiology, physiotherapy, general surgery & medicine, oto-rhino-laryngology, dermatovenerology, general psychology, psychopathology, neuropathology
3. Subjects related to dentistry
   prosthetics, dental materials and equipment, conservative, preventive, anaesthetics and sedation, special surgery, special pathology, clinical practice, paedodontics, orthodontics, periodontics, radiology, occlusion and function of the jaw, professional organisation, ethics and legislation, social aspects of dental practice

Curricula contents

<table>
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<th>USA</th>
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<th>UK</th>
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<td>Commission on Dental Accreditation</td>
<td>Approbations-ordnung für Zahnärzte. Gesetz über die Ausübung der Zahnheilkunde</td>
<td>General Dental Council</td>
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<tr>
<td>Accreditation standards for dental education programs</td>
<td>The Accreditation Process and Education Requirements</td>
<td>The first five years</td>
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Problems with harmonising curriculae
• Optimal teaching method?
• Volume of theoretical vs clinical learning?
• Methods for assessment of competency?

Example from the Nordic countries:
Scandinavian Society for Prosthetic Dentistry, Educational Committee

3. Minimum competency concepts

Competencies for the new dentist

USA (AADS)
1997, 2001, 2004
Competencies for the new Dentist.
J Dent Educ

UK (GDC)
1997
The first five years

The Quality Assurance Agency for Higher Education
Subject benchmark statements
Academic standards - Dentistry

UK (GDC)
2002
The first five years
Knowledge, skills, values

- General skills
- Information management
- Practice management
- Communication
- Community resources
- Dept management
- Patient care competencies
  - Diagnosis – treatment planning - treatment

GDC, 2002: Three-circle model (Harden)

1. What the dentist is able to do ("technical intelligencies")
   - Clinical information gathering
   - Treatment planning
   - Treatment procedures

2. How the dentist approaches their practice
   - Clinical reasoning and judgment
   - Communication
   - Health promotion
   - Attitudes, ethical stance and legal responsibilities
   - Information handling
GDC, 2002: Three-circle model (Harden)

1. What the dentist is able to do
   "technical intelligencies"

   - Application of basic clinical sciences
   - Clinical reasoning and judgment
   - Health promotion
   - Information handling
   - Communication
   - Attitudes, ethical stance and legal responsibilities
   - Information handling
   - Personal development
   - The role of the dentist within the health service

   "personal intelligencies"

2. How the dentist approaches their practice
   "intellectual, emotional, analytical & creative intelligencies"

   - Application of basic clinical sciences
   - Clinical reasoning and judgment
   - Health promotion
   - Information handling
   - Communication
   - Attitudes, ethical stance and legal responsibilities
   - Information handling
   - Personal development
   - The role of the dentist within the health service

3. The dentist as a professional
   "personal intelligencies"

   - Communication
   - Health promotion
   - Information handling
   - Personal development
   - The role of the dentist within the health service

A misconception: Competency-based education does not replace a requirement for discipline-oriented training

Example: The military soldier

1. Must be able to handle a weapon
2. Must know how to approach their "practice"
3. Must know how to "fit in"
4. Challenge faced in Europe to achieve harmonisation of EEC member countries

The European Economic Area
Free movement of business, services and workers throughout western Europe
Special regulations on dentistry provide for the mutual recognition of dental qualifications in all 25 member states + Iceland, Liechtenstein and Norway = European Economic Area (EEA) + Switzerland

EU Dental directive
A piece of European legislation which is addressed to member states
Once passed at the European level, each member state must ensure that it is effectively applied in their legal system
A directive prescribes an end result. The form and methods of the application is a matter for each member state to decide for itself
In principle, a directive takes effect through national implementing measures (national legislation)
Recognition of qualifications in EU/EEA

- EU/EEA dental qualifications held by the nationals of EU/EEA countries are recognised in each member state
- Dentists are therefore able to practise throughout the EU and EEA
- Primary dental qualification is needed (e.g. BDS/LDS)
- Dentists must register with the regulatory authority of the country in which they wish to work
- The regulatory authority in the country registers or licenses practise.

The EU directive does not hinder member countries to register dentists from other countries. E.g. UK:

Dental licensure in U.K. per 2004

EU/EEA nationals with EU/EEA dental qualifications
- Eligible for registration by GDC
- Once registered, practise without restriction in the UK
- A language requirement for working in the NHS General Dental Service
- EU/EEA nationals are not required to undertake vocational training for NHS practice unless they have graduated from a UK dental school.

Austria, Italy, Spain, Australia, Hong Kong, Malaysia (1950 - 1962 and U. of Malaya 1997-2000 only), Malta (only up to 1978), New Zealand, Singapore and most South African dental schools.

Special regulations

Other countries
- Not eligible for registration.
- Must either acquire a UK qualification (the Bachelor of Dental Surgery) or pass the GDC's International Qualifying Examination
Change of dental curriculums in EU

Austria curr. 1998 ..........2004
Czeck republic 2004
Estonia 2002
Hungary 1996
Latvia 1993
Lithuania 1994
Poland 2002
Romania 2003
<table>
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<tr>
<th>Year</th>
<th>Vocational training &gt; 1 year</th>
<th>6 years education</th>
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**Note:** The table above represents the number of students enrolled in vocational training programs and 6-year education programs across different years. The data shows a consistent increase in the number of students over the years, with a slight fluctuation in the last two years.
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Thank you for your kind attention.