Topics

• What is Curriculum and characteristics
• History of Medical Curriculum
• Approach in Curriculum Development
• What is competence-based education for health profession?
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What is Curriculum?

• The curriculum is all the learning experiences that students have under the guidance of the university to achieve the graduates’ competencies.
Characteristics of Curriculum

• Outline of different phases (objectives of each phase, learning units within each phase, and the sequences of the units)
• Outline of educational strategies employed
• Outline of each unit:
  – Objectives of each unit
  – Global description of the content
  – The potential links with other units
  – Core discipline involved
Comparison

• Curriculum is the blueprint for the building
  (at macro and meso level – membuat bangunan)

• Instructional planning is the process design interior
  (at micro level)
Topics

• What is Curriculum and characteristics
• **History of Medical Curriculum**
• What is competence-based education for health profession?
• Approach in Curriculum Development
• Principles of Curriculum Development
The Apprenticeship-based model

- 10th Century: in Baghdad
- 13th Century: in Europe
- 18th Century: in USA

Characteristics:
- Basic science – little use
- Clinical science – two semesters
- Repetition and memorisation as the main learning strategy
- Educational format: note-taking and class-rooms attendance
- No Relation with higher education institution
The Discipline-based Curriculum

• 15th Century-today: in UK, later French, Germany
• 1871-today : in USA
• Characteristics:
  – Medical schools in the University
  – Discipline specific departments
  – Educational strategy: memorisation
  – Educational format: classroom lecture and clinical instruction
  – Hypothetico-deductive = scientific reasoning
  – Basic science is important as the foundation of clinical science: two years
The Discipline-based Curriculum

• Disadvantages:
  – Separation of preclinic-clinic -> impede the professional maturation
  – Lack of integration with clinical knowledge and experience
  – Department has complete control over the amount of information presented
Integrated Curriculum (organ or system-based)

- **1850**: in UK recommended by GMC
- **1930s**: in US
  - Reduced the amount of basic science to only clinically relevant
  - Integration basic and clinical sciences
  - Curriculum Committee (representative from departments) to devise the educational program
  - Department has less control
  - **1950s** – organ-based system curriculum at Case Western Reserve Medical School
  - Well defined learning objectives
  - Educational strategy: Active learning and problem solving skills
Integrated Curriculum
(organ or system-based)

• Disadvantage:
  – No proper translation by students
  – Did not readily enable students to perform differential diagnosis
Problem-based Learning

- Faculty objectives are translated into a problem, usually consisting of a set of phenomena in need of some kind of explanation. Students analyse these problems, attempting to understand the underlying principles or processes through small-group discussion. During discussion, questions which remain unanswered are identified. These questions or learning issues serve as a guide for independent and self-directed learning (Dolman, 1994)
Self-Directed Learning

Prior Knowledge

Elaboration

Integration of Knowledge

Relevant Context

Problems

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What is PBL?

- Problem
- Project
- Patient
- Practice

Based Learning

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Learning principles

- Construction of knowledge
- Prior knowledge activation
- Elaboration of knowledge
- Organization of knowledge
- Context of learning
- Stepwise transfer across contexts
- Cooperation/collaboration with other learners
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• History of Medical Curriculum
• **Approach in Curriculum Development**
• What is competence-based education for health profession?
A System Approach For Curriculum Development
What is a system approach to curriculum development?

• The system approach to curriculum development is an attempt to use a process of logical development and ongoing monitoring and evaluation in order to: ...
• increase the quality of learning, or the degree of mastery;
• decrease the time taken for learners to attain desired learning outcome;
• increase the efficiency
• reduce costs, without affecting quality;
• increase the independence of learners, and the flexibility of educational provision.
What needs to be learnt?

How can it be learned?

Has it been learned?
Outcome-based Education

• An approach to education in which decisions about the curriculum are driven by the outcomes the student should display by the end of the course.

• Decisions about content, educational strategies, teaching methods, assessment procedures depend on learning outcome.
What is competency-based medical education?
Building a Competency-based Education

• problem, task, setting
• Identify essential competencies for practice
• Determine competency components: objectives and performance levels
• Identify learning activities and strategies
• Develop assessment tools and standards for competency (Criterion-Reference)
Competencies

- Integrates related knowledge, skill and attitude objectives
- Draws from multiple disciplines relevant to the practice
- Related to an actual task in the field – contextualised
- Driven by professional practice and values
- Defines a level of ability for an observable outcome
Definition of Competence

Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice to improve the health of the individual patient and community:

– What you know
– How you use what you know
– How you add to what you know

Epstein and Hundert, 2002, JAMA
Definition of Competence

Knowledge

Emotions

Values

Communication

Reflection

Technical skill

Clinical reasoning

DAILY PRACTICE
LEVELS OF CLINICAL COMPETENCE

PREREQUISITES  KNOWLEDGE  SKILLS  ATTITUDES

COMPONENT CLINICAL ABILITIES

COMPOSITE CLINICAL PERFORMANCE

COMPETENT CLINICAL PRACTICE

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Ken Cox & R Bandaranyake, 1991
LEVELS OF CLINICAL COMPETENCE

1. Pre-requisites - PRIOR CONDITIONS
   • Anatomical, Physiological, Pathological knowledge.
   • Skills of Communication, Observation, Measurement.
   • Respect, Honesty Persistence.

2. Partial Tasks - COMPONENT ABILITIES
   • Skills of history taking, physical examination.
   • Generating diagnostic explanations.
   • Planning investigations.
   • Establishing rapport and trust.
LEVELS OF CLINICAL COMPETENCE

3. Patient/Problem - COMPOSITE ABILITY
   • Selective search, studying whole patient and problem, leading to diagnosis and management plan.

4. Performance in Practice - COMPETENCE
   • Habitual behaviour in managing a succession of patients.
   • Relations with colleagues.
   • Records, efficiency, communication.
1. Technical effectiveness in using knowledge and skills.
2. Positive effects on the disease process, seen in outcomes of care.
3. Positive effects of the doctor’s behaviour on the patient.
4. Efficiency in using finite resources.
How to formulate competences?

- Personal Diary
- Observation
- Job analysis
- Critical Incident Technique
- Expert Judgement
Roles and Functions of Health Professional

Competencies required for performance of roles/functions

Knowledge, skills, attitudes, emotions, values, reasoning for acquisition of competencies

Assessment

Assessment

Assessment

Assessment

Assessment

Assessment
Practice Setting

- Hospital
- Community-family
Competency-based Curriculum

• Curriculum defines outcomes for proficient practice
• Integrative
• Assessment of actual performance – towards mastery learning
• Criterion-based
Evidence suggests that expertise is predicated upon problem-specific knowledge: educators need to carefully select and focus upon problems most consistent with the mission of the training institutions.
Problem- and knowledge-specific nature of expertise strongly suggest the need for well-defined learning objectives to ensure that the most relevant knowledge necessary for diagnosing and treating common and important patient problems is mastered by the students.
Identify problems that will be dealt by graduates
Priority health problems
B=Burden of Disease

- B = M (F+QD+CB)
- M = magnitude of the problem (morbidity and mortality)
- F = Case fatality rate
- Q = Degree of deviation from normal health (disability, distress, discomfort, dissatisfaction, cost)
- D = duration of the deviation from health
- CB = effects to other individuals and community
Steps to Design

- Determine what the graduates should be able to do
- Break down into tasks (learning outcome)
- Decide the educational strategy
- Decide the assessment system
- Outline the blueprint phase and select the relevant learning outcome
- Outline the learning unit and select the breakdown of learning outcome
- Develop the instructional planning for each learning unit
GMUSM Approach in Competence-based Curriculum Development
Three levels of curriculum design

- **Curriculum** (Macro)
- **Year/phase** (Meso)
- **Block/module/unit** (Micro)
Three levels of coordination

Curriculum coordinator

Year coordinator

Block coordinator