



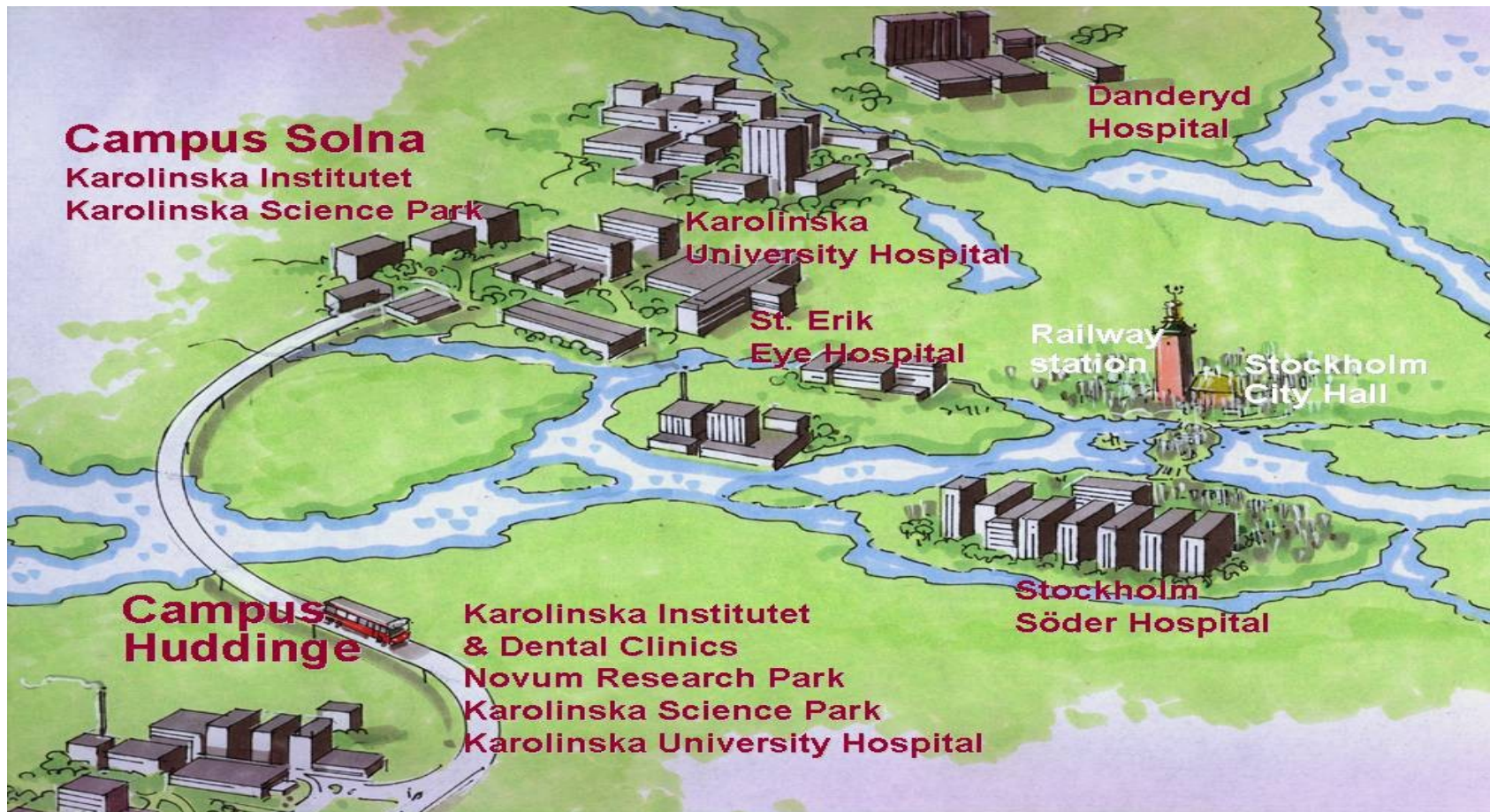
**Karolinska
Institutet**

The new curriculum for undergraduate medical education at Karolinska Institutet

**- a medical university dedicated to improving people's
health through research, higher education, and information**

**Gunnar Nilsson, MD, Professor of General Medicine / Medical Informatics
Dean of Medical Education**

KI is today the only university in Sweden with an exclusive focus on medicine



Medical education in Sweden

- 5.5 years (11 terms) - University
The Swedish Higher Education Ordinance 2007
- 18 months of “clinical practice”
6 months internal medicine, 6 months surgery, 3 months general practice and 3 months psychiatry
- 5-6 years of specialist training
- Licensed by the National Board of Health and Welfare

Goals for medical degree at KI

- Medical knowledge with a focus on a deep understanding of medicine in both biological and human terms
- Professional skills including scientific thinking, communicative capacity and self-awareness
- Interested and respectful attitude towards others, an ability to take responsibility for care in association with other professions and a desire to seek, acquire and share knowledge.



Karolinska Institutet - KI

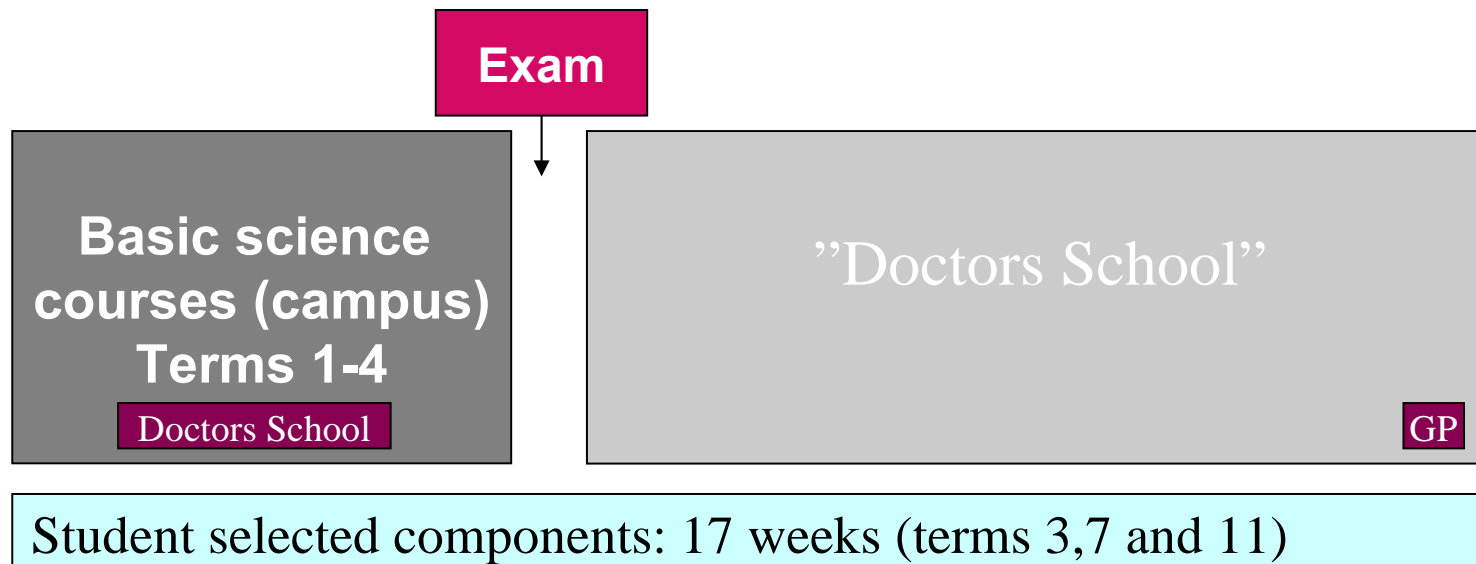
Founded
1810



Alfred Nobel appointed
Karolinska Institutet to
decide who should be
awarded the Nobel Prize in
Physiology or Medicine. 1895



The present curriculum
was implemented
1993
↓



Board of education: Need of renewal of medical curriculum

- Expansion of new knowledge - curriculum overload
- Changes in the health care system
- Demands of the patients
- Need to cover new subjects
- More interprofessional education
- Students demands: integration between the courses, clinical tutoring, more training in scientific thinking...
- Bologna declaration – European Union

First proposal
for a new
medical
curriculum 1999



5 other
proposals
2000-2004...



**Curriculum reform
committee I**
**Aug 2004 - June
2005**



Innovative course development...



**KI 05 - excellence in
education**



Decision regarding the
principals and the
frame of the new
curriculum
June 2005

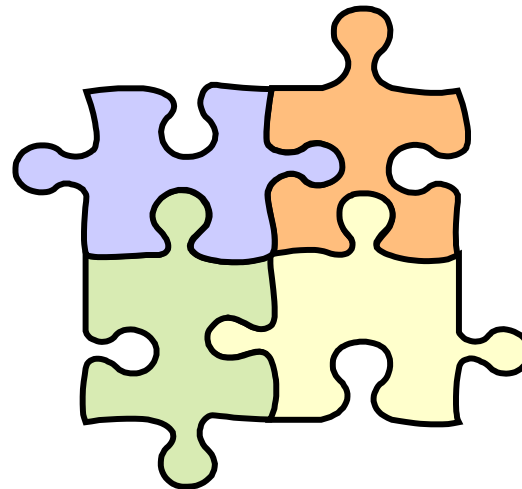


Curriculum reform committee II

11 working groups
Sept 2005- June
2006



The new
curriculum
defined June
8th 2006



Continuing work
The Program committee

**The new curriculum started in
Sept 2007**



**The new curriculum will be
fully implemented in
January 2013**




September 2009: all new courses have be
run at least once


Characteristics of the new curriculum

- 7 themes give the basic structure of the curriculum
- Outcome based, 8 general outcomes, with a total of 41 main goals
- 12 function systems with a total of 107 integrating tasks
- Vertically and horizontally integrated
- Patient contact throughout the education, both hospitals and primary care are used as an arena for medical education
- Clearly defined core competences
- Student selected courses (32 weeks)
- Project work (20 weeks =1 term)
- Components of professional development and scientific thinking clearly defined

Implementation of the new curricula

termin- start	HT 07	VT 08	HT 08	VT 09	HT 09	VT 10	HT 10	VT 11	HT 11	VT 12	HT 12	VT13	HT13	VT14	HT14
HT02	11														
VT 03	10	11													
HT 03	9.1	10.1	11.1												
VT 04	8	9.1	10.1	11.1											
HT 04	7	8	9.1	10.1	11.1										
VT 05	6.2	7.2	8.2	9.2	10.2	11.2									
HT 05	5	6.2	7.2	8.2	9.2	10.2	11.2								
VT 06	4	5	6.2	7.2	8.2	9.2	10.2	11.2							
HT 06	3	4	5	6.2	7.2	8.2	9.2	10.2	11.2						
VT 07	2	3	4	5	6.2	7.2	8.2	9.2	10.2	11.2					
HT 07	1	2	3	4	5	6	7	8	9	10	11				
VT 08		1	2	3	4	5	6	7	8	9	10	11			
HT 08			1	2	3	4	5	6	7	8	9	10	11		
VT 09				1	2	3	4	5	6	7	8	9	10	11	
HT 09					1	2	3	4	5	6	7	8	9	10	11

 modifierad kurs går parallellt med ny kurs

 examensarbete

The curriculum is organized in...

- **Stage A: grounds of basic science (80 weeks)**
 - Theme 1 – The healthy person
 - Theme 2 – The sick person
- **Stage B: Basic clinical courses (60 weeks)**
 - Theme 3 – Clinical sciences – focus on medicine
 - Theme 4 – Clinical sciences – focus on surgery
- **Stage C: Specific clinical courses (60 weeks)**
 - Theme 5 – Neuro, senses and mind
 - Theme 6 – Reproduction and growth
 - Theme 7 – Health, society and environment
- **Term E (7) – Scientific project work (20 weeks)**

Schematic figure of the curriculum: 3 stages, 7 themes - and integration

Term	Integration	Stage A
1	Included: Clinical science 10% + PD, SD, PC	Introduction - 4 weeks
2		THEME 1: The healthy body I, II och III - 47 weeks
3		
4		THEME 2: The sick body I och II - 26 weeks
		Exam
		Stage B
5	Included: Basic science 10% + PD, SD, PC	THEME 3: Clinical medicine - 32 weeks
6		Core SSC 5 w Stage A
7		SSC 3 w
		THEME 4: Clinical medicin Klinisk medicin - focus on surgery - 18 weeks
		SSC 2 w
		Stage C
8	Included: Basic science 10% + PD, SD, PC	THEME 5: Clinical medicine - focus on neuro, senses and mind - 15 weeks
9		THEME 6: Clinical medicine - focus on reproduction and development - 15 weeks
10		THEME 7: Health in society and environment - 6 weeks
		Final exam
		SSC 12 w
		Core SSC 5 w - Stage B
		Core SSC 5 weeks - Stage C
		Projekttermin
E		Project work (exam work) - 20 weeks

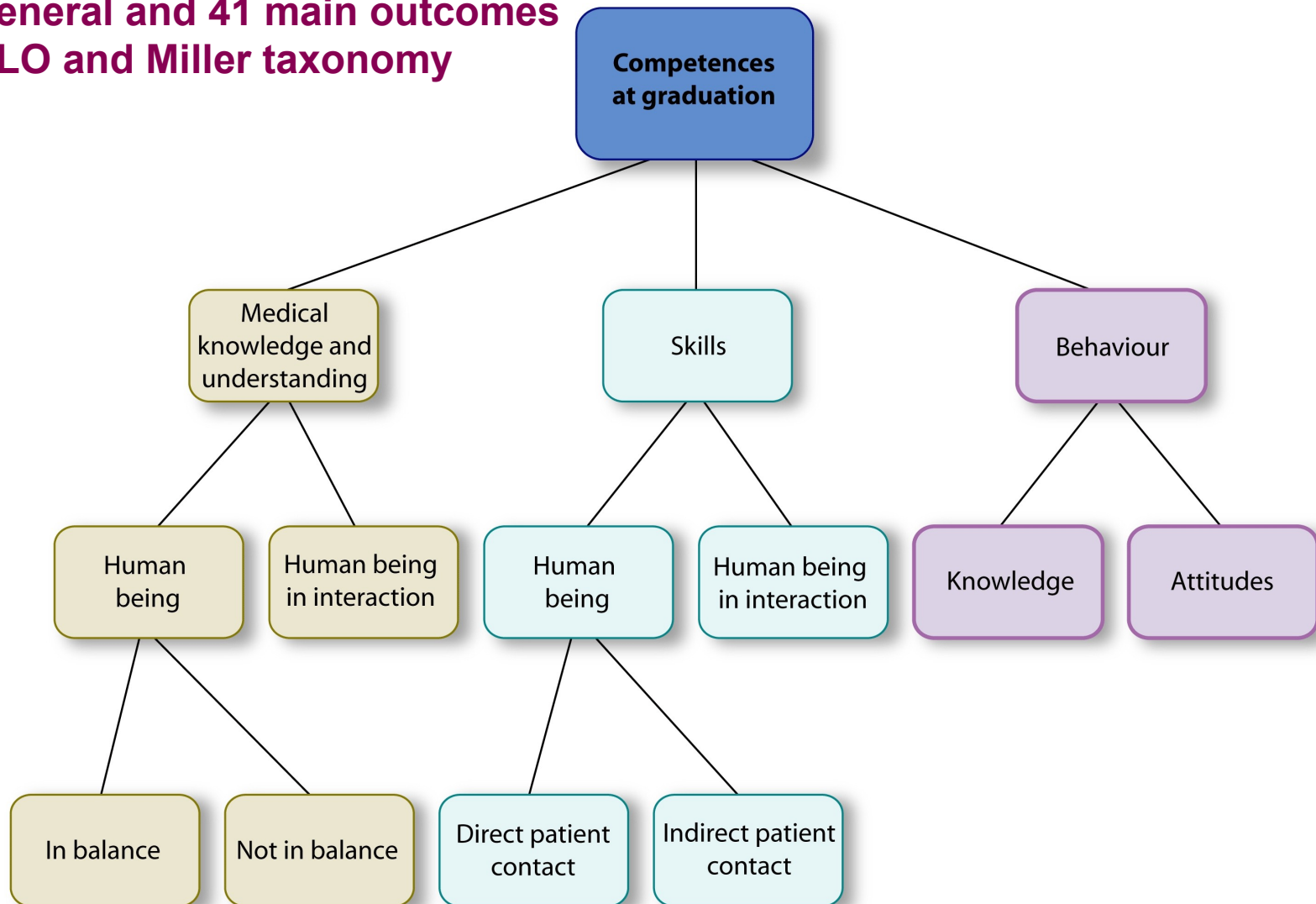
PD= professional development
SD = scientific development
PC = Primary care

Integration – vertical and horizontal

- Stage A must include **minimum 10% clinical aspects** and stages B and C must include **minimum 10% basic science**
- Primary care - an arena (13 weeks)
- Professional development (11 weeks)
- Scientific development (5 weeks)
- Integrating tasks seminars

The curriculum outcome model

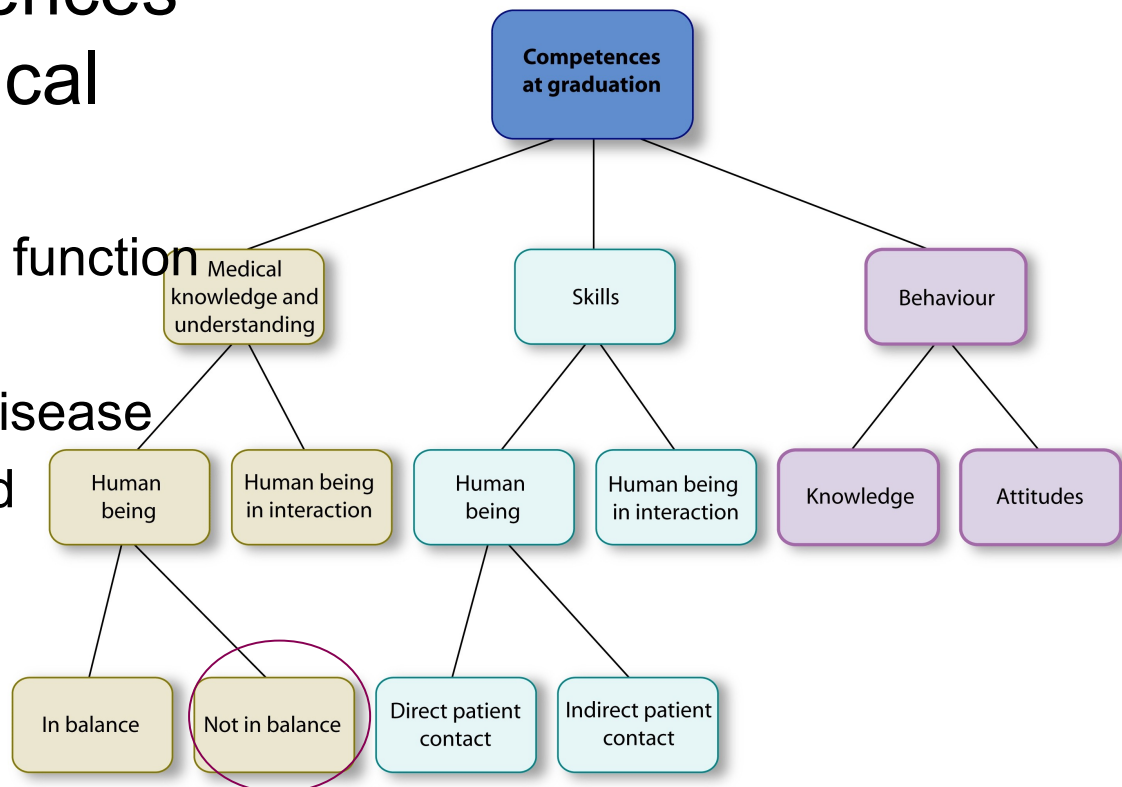
- 8 general and 41 main outcomes
- SOLO and Miller taxonomy



Example: Medical knowledge and understanding - human being - not in balance

- Students competences regarding theoretical knowledge about:

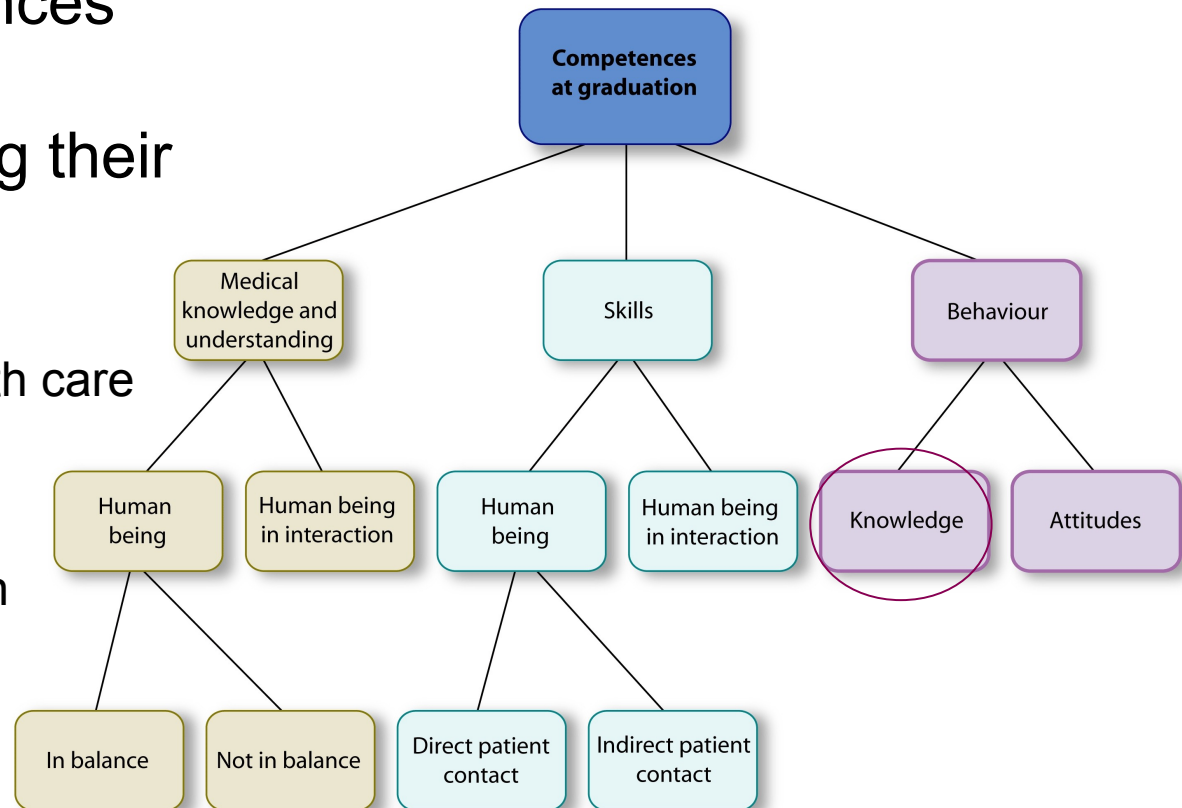
- Altered structure and function
- Causes of a disease
- Normal course of a disease
- Examinations needed
- Treatment options



Example: Behaviors – knowledge

- Students competences regarding general knowledge affecting their own behaviors

- Scientific thinking
- Laws regulating health care
- Professional values
- Life long learning
- Managing information

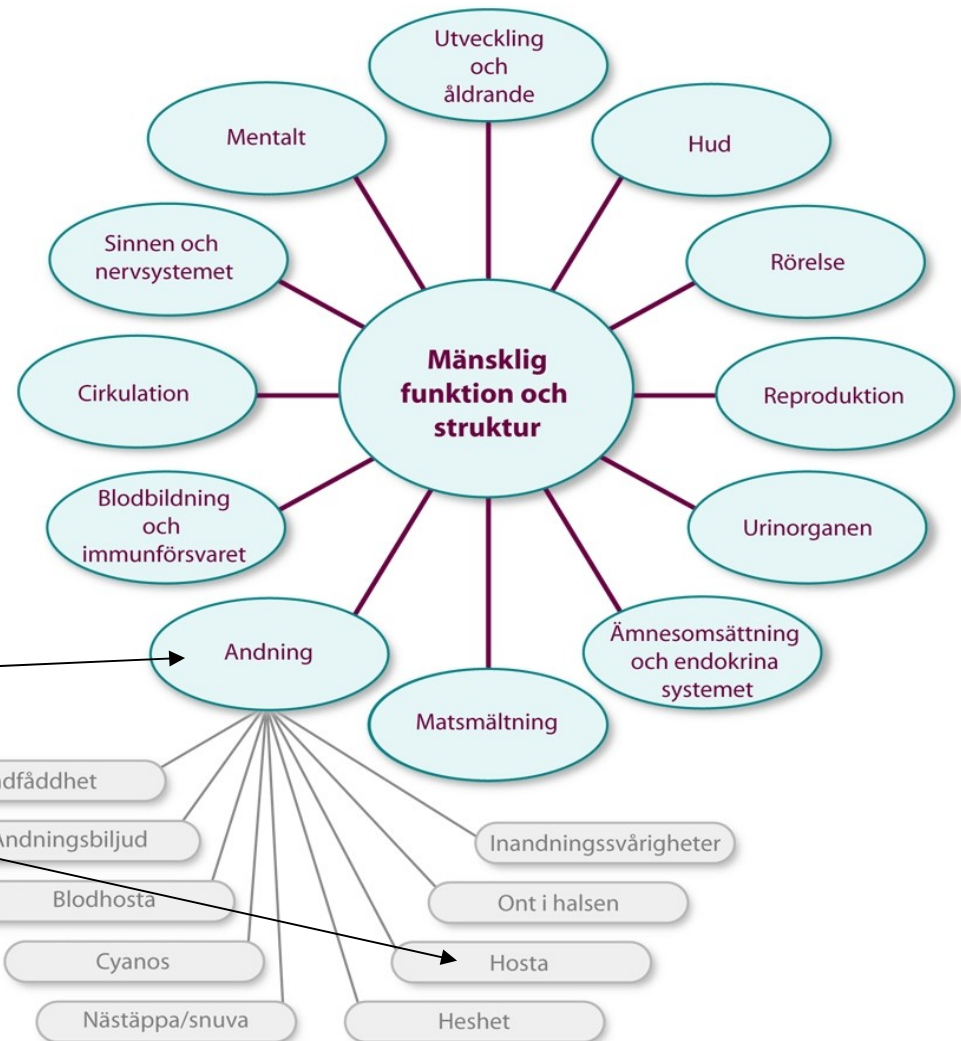


The curriculum content is defined by body functions according to ICF_



The curriculum content is defined by body functions according to ICF:

12 body functions
107 integrating tasks



Respiratory system

- Cough
- Sore throat
- Hoarseness

Professional (PD) and scientific development (SD) Primary care (PC)

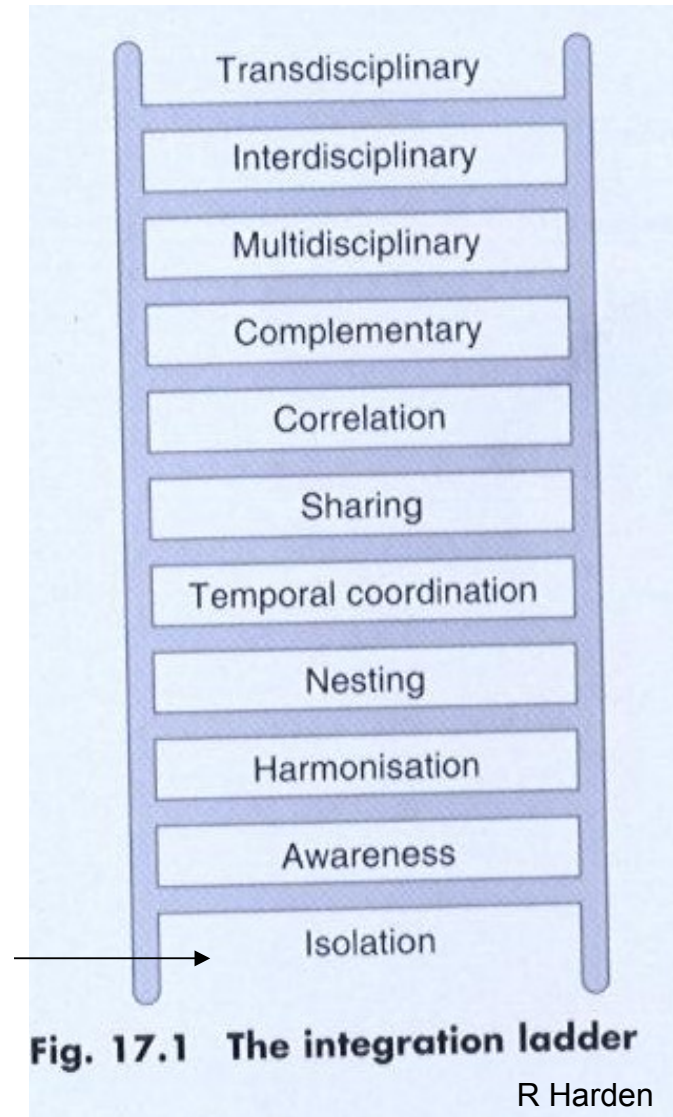
Term	PC	PD	SD	Stage A		
1	1	2	1	TEMA 1: Upptakt - 6 hp	Den friska människan I - 24 högskolepoäng	
2	1	1	1	Den friska människan II - 30 högskolepoäng		
3	1	1		Den friska människan III - 16,5 hp	TEMA 2: Den sjuka människan I - 13,5 hp	
4	2	2		Den sjuka människan II - 25,5 hp	Del T - 4,5 hp	
				Stage B		
5	2	2	1	TEMA 3: Klinisk medicin - 48 hp	Core SVK 7,5 hp Stadium A	
6	2				SVK 4,5 hp	
7	2			TEMA 4: Klinisk medicin - inriktning kirurgi - 27 hp	SVK 3 hp	
				Stage C		
8	1	2	2	TEMA 5: Klinisk medicin - inriktning neuro, sinnen och psyke - 22,5 hp	Core SVK 7,5 hp - Stadium B	
9	1			TEMA 6: Klinisk medicin - inriktning reproduktion och utveckling - 22,5 hp	Core SVK 7,5 hp - Stadium C	
10		1		TEMA 7: Hälsa i samhälle och miljö - 9 hp	Slut T 3 hp	SVK 18 hp
				Project work		
E				Scientific projects - 30 hp (after term 6)		

BEME

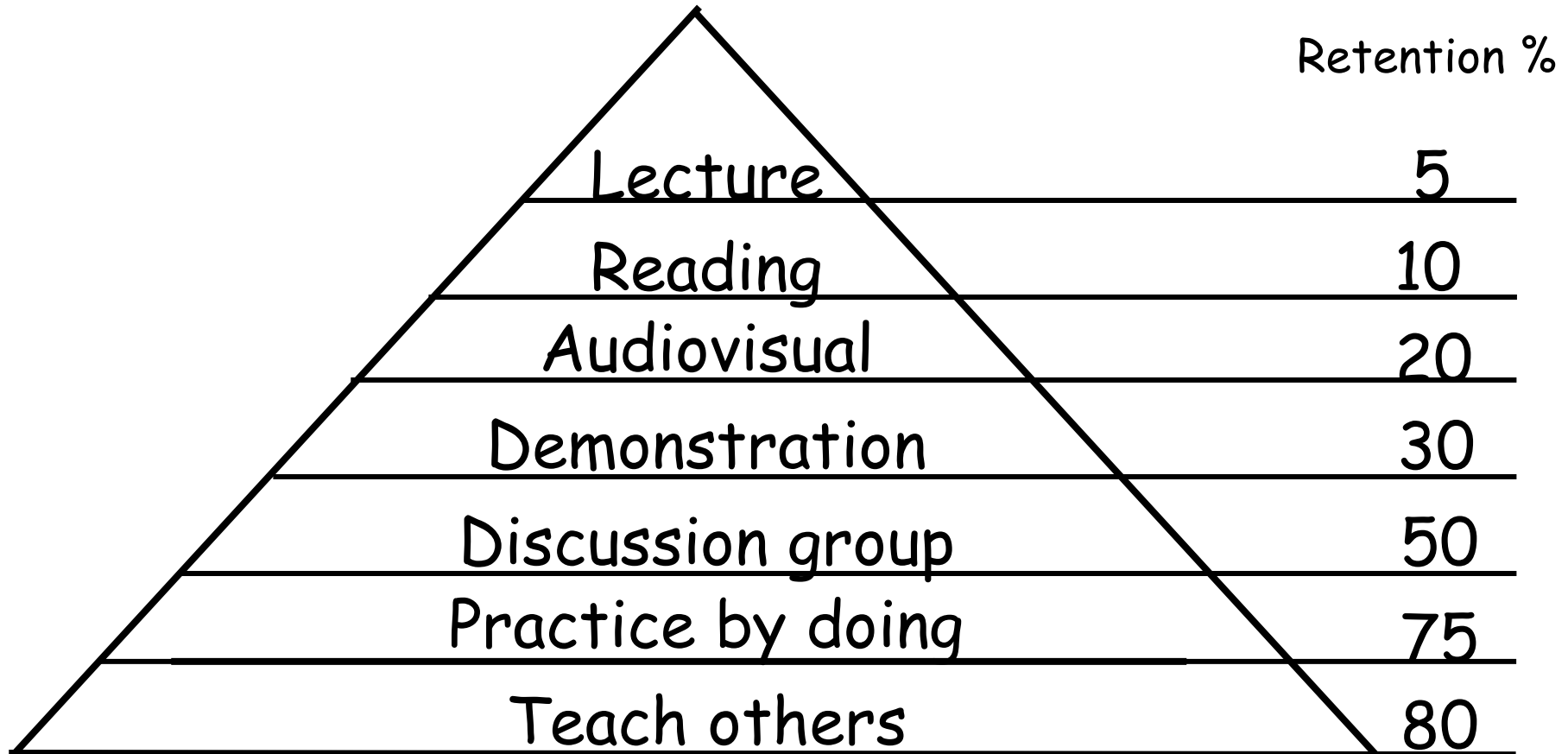
Best
Evidence
Medical
Education

Integration

- Traditional model:
start with basic science
followed by clinical science
> the student integrates
(hopefully)
- Integrating tasks are helpful
– but everything does not
have to be integrated



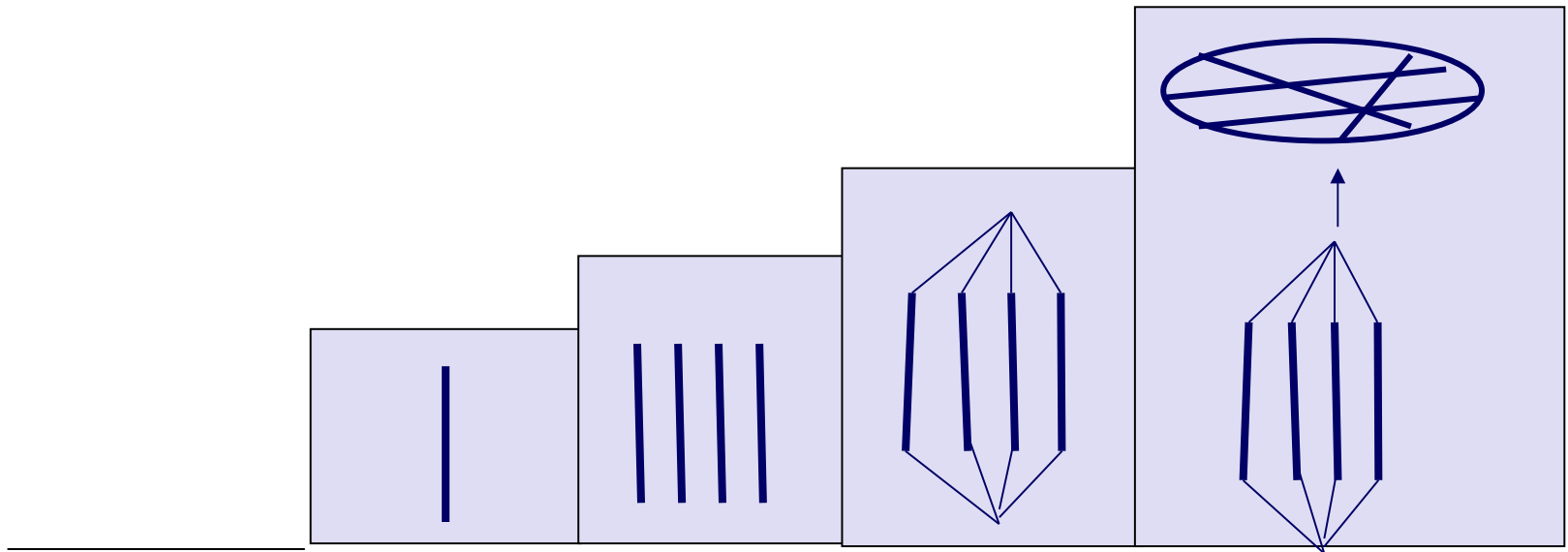
The learning pyramid



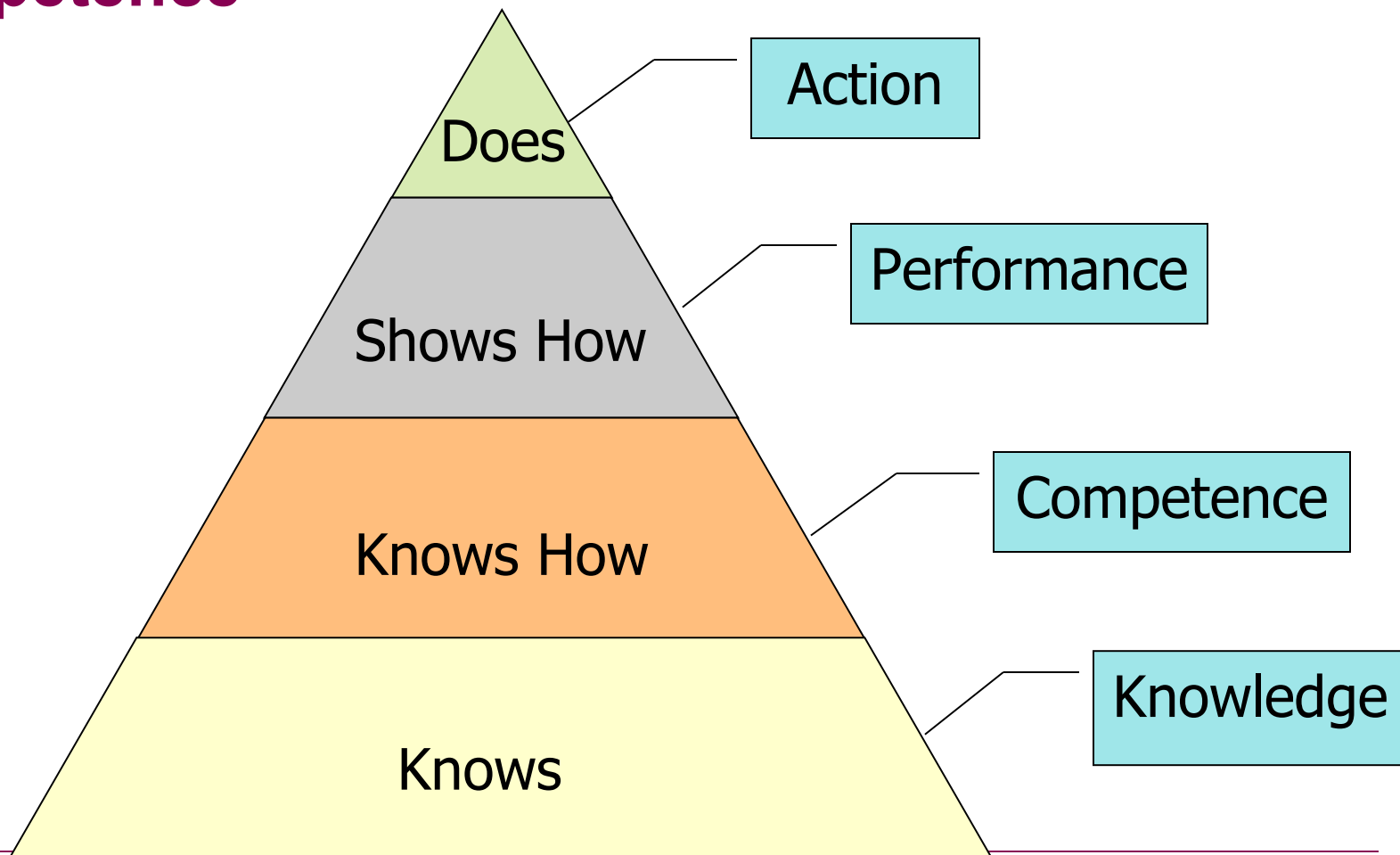
National Training Laboratories, Bethel, Maine, USA

Level of knowledge and understanding

Structures of Observed Learning Outcome (SOLO)
Biggs, 1999



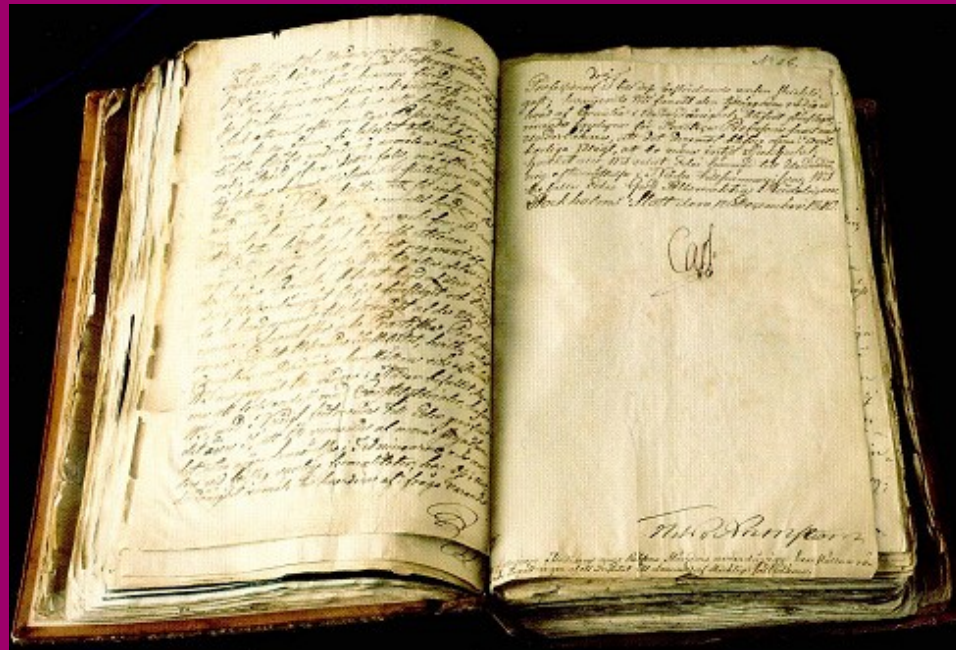
Miller's Pyramid for Assessing Clinical Competence





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Thank you



A letter from King Karl XIII to the *Collegium Medicum* in 1810 authorized the immediate establishment of a "college for the corps of field surgeons".