

*Paper:*

**AN INTEGRATED SKILLS TRAINING  
CURRICULUM: A CASE STUDY OF  
MEDICAL FACULTY - ANDALAS UNIVERSITY  
INDONESIA**

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## 1. THEORETICAL BACKGROUND

There has been a continuous debate on medical education curriculum. The debate has been concerned with the adoption of a discipline-based or integrated curriculum approach. Integration is concerned with teaching matter organization to integrate or combine subjects frequently taught in separate academic courses or departments (Harden, 1984). Muller et al (2008) argued that integration normally refers to interdisciplinary block courses in pre-clerkship years that integrate basic, clinical and social sciences into one course, or merge longitudinal themes across the curriculum. Briefly, Kysilka stated that integration refers to a 'connection' between previous and last content areas and/ or skill areas (Kysilka, 1998).

This study focuses on skills training curriculum that has been designed and implemented at the Medical Faculty of Andalas University – INDONESIA- and exploring whether the skills training at our faculty has implemented an integrated learning strategy. In addition, this paper will draw some policy recommendation for curriculum improvement.

## 2. CONTEXT OF STUDY

The Medical Faculty of Andalas University (MFAU) was established in 1955 with a traditional curriculum in practice for many decades. It has transformed its traditional curriculum to a Competency-based Curriculum (CBC) since the academic year 2004/2005. It has implemented Full Problem Based Learning as a method to stimulate the students' learning process. The Faculty embraced the idea of SPICES method (Student-centred, Problem-based Learning, Integrated teaching, Community-oriented, Elective or Early Clinical Exposure and Self-Directed Learning) as learning strategies (Academic Rule Document, 2008).

Roughly, MFAU recruits 300 new undergraduate students each year. Medical students take three and half year for finishing the preclinical program and one and half year for completing the clerkship program. During the preclinical program, the Faculty applies several learning methods: tutorials, mini lectures, basic practicals, skills training activities, self-study, and plenary discussions. Those learning methods have been implemented in twenty one blocks – mapping of blocks and skills training can be referred at Appendix 1.- which take six weeks for the teaching- learning process per block by dividing student in 9 – 10 small group students.

Regarding the curriculum development, the content of MFAU curriculum is based on the Core Curriculum of Indonesia Medical Education (KIPDI= *Kurikulum Inti Pendidikan Dokter Indonesia*). Since 2006, Indonesia Medical Council has launched Indonesia Medical Standard Competency and Standard of Medical Education Program. These standards are references for curriculum development for all medical faculties in Indonesia, without exception so also for the curriculum of MFAU.

Practically, there is curriculum development commission (CDC) under Medical Education Unit (MEU). This commission determines learning objectives of students' cognitive, skills and attitude for each year program. Then, representative members of CDC discuss formally and/or informally with the block organization/planning groups – that consists of two block coordinators and three to eight block members – to define the content of blocks, including module, lectures, basic practical, skills training and plenary session.

With regards to the skills training program, the block coordinators or selected block members are responsible for developing the skills training activity. They develop the content and type of skills training, student assessments methods, and equipments needed for training program. Unfortunately, there is no evaluation since the new skills training program has been applied at the MFAU.

### **3. METHOD**

- A. Focus group discussion (FGD) during workshop training of trainer for skills lab instructors. There are approximately fifty academic staffs that divided at four group discussion. And facilitated by one facilitator at each group and focusing to elaborate strengths and weaknesses of the present curriculum.
- B. The 21 blocks of skills training curriculum faculty document is analyzed by using a qualitative content analysis. The three following main items are explored. There are:

1). Learning objectives.

Focus question: Is there correlation among learning objectives of cognitive, psychomotor and attitude in one block?

2). Horizontal integration

Focus questions:

2.1. Is there integration skills lab activities in one block?

(Some blocks have more than one skills training, for example, at the 3<sup>rd</sup> Block there are two skills lab activities, i.e. Problem Health Solving and Health Promotion).

2.2. Is there relation among skills training in one year?

3). Vertical integration

3.1. Is there correlation between the present skills training with other skills training at year before?

3.2. Is there correlation between the present skills training with other skills training at year after?

### **4. RESULT:**

A. The result of FGD of roughly fifty academic staffs during workshop of ToT for skills lab instructor.

1. strengths of the present curriculum:

- curriculum developed by dynamic and dedicated staffs
- students are more active
- teaching learning are better

2. weaknesses:

- lack of integration, not only overall curriculum but also skills training curriculum
- no clear organization and responsibilities
- no rewards for the staff for their input in the curriculum – a big frustration
- no real concerns for the quality of the education program

B. the result of content analysis of skills training curriculum document:

1. From the table 1, we can see that all of blocks (21 blocks = 100%) integrated learning objectives of cognitive, psychomotor and attitude.

**Table 1. Integration learning objectives of cognitive, psychomotor and attitude.**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	21	100.0	100.0	100.0

2. Meanwhile at the horizontal integration items, firstly, from 20 blocks that have more than one skills training in its blocks, there is 70% (14 blocks) disintegrated skills training ( table 2). Secondly, there is just 5 blocks ( 23,8% ) that skills training at the blocks have correlation between other skills training in the same year. While, the rest of blocks (16 = 76,2 %) have no integrated skills between other skills training in the same year (table 3).

**Table 2. Relation the skills lab activities in one block**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	6	28.6	30.0	30.0
No	14	66.7	70.0	100.0
Total	20	95.2	100.0	
Missing System	1	4.8		
Total	21	100.0		

**Table 3. Relation the skills lab activities among the year.**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	5	23.8	23.8	23.8
No	16	76.2	76.2	100.0
Total	21	100.0	100.0	

3. With respect to vertical integration items, we can see at the table 4 and 5 that the vast majority of the blocks did not develop connection between the present skills training and other skills training at year before (76.2%) also other skills training at year after ( 71.4% ).

**Table 4. Integration between the present skills lab and year before**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	5	23.8	23.8	23.8
No	16	76.2	76.2	100.0
Total	21	100.0	100.0	

**Table 5. Integration between the present skills lab and year after**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	6	28.6	28.6	28.6
No	15	71.4	71.4	100.0
Total	21	100.0	100.0	

## **5. DISCUSSION**

With respect to this study, researcher found that lack of skills training curriculum. Furthermore, learning objectives which were determined by curriculum committee integrated learning objectives of cognitive, psychomotor and attitude. Unfortunately, block coordinators and members did not develop skills training among the blocks and year academic coherently. Not surprisingly, the skills training curriculum at this faculty would be concentrated or fragmented. And there is no board or team who responsible for observe internal coherency at the skills training curriculum.

As quoted by Guldal et al. (2005), many studies investigated that short-term training process will success at the first year training, but it will be forgotten at the upper year as well as useless with the time. Predictably, student who was trained with incoherence skills training has lack of preparation to go clerkship than student who was provided longitudinal training (Remmen et al, 2001).

From a perspective of cognitive theories of learning, an integrated approach is believed to have essential benefits for learning and retention. Because it facilitates contextual and applied learning, promotes development of a well organized knowledge structure as well as effective clinical reasoning (Muller, 2008). In addition, Ormrod (2007) argued that the connection between new information and prior knowledge can be produced only when people actually have knowledge that relates to what they are learning.

For constructive clinical skills of undergraduate medical students, apparently, a spiral curriculum is a useful method because of the iterative revisiting of subjects, increasing complexity of desired skills, new clinical skills are connected to preceding skills and competency as well as self-efficacy of students goes up with each visit to a skill (Harden & Stamper, 1999; Isenberg, 2002). Additionally, educational psychologists justify why a longitudinal approach to gain knowledge and skills are very essential. Firstly, the longitudinal approach allows students to learn in a more innovative ways and understand the subject thoroughly. Secondly, by reviewing the same information repeatedly, especially in different

context, students form more and stronger association with other things in memory; as a result, they can more readily recall the information when needed in a future time. And finally, continued practice will promote automaticity (Ormrod, 2007).

The integrated curriculum has been widely adopted by many medical faculties across the world for many reasons; it diminishes the fragmentation of medical courses, motivates the students and constructs attitude as a future doctor, improves educational effectiveness of teaching, promotes cooperation among academic staff from different department, and brings about a rationalization of teaching sources (Harden, 1984; Muller et al., 2008).

Regrettably, although integrated is one of principles in problem-based learning (Dolmans & Schimdt, 1996; Hmelo, 2004), it is not easy to be implemented in the curriculum. Moreover, for faculty in which radically change their conventional to competency-based curriculum, as the MFAU, such process is very difficult and full challenges. By comparing traditional discipline-based curriculum, in integrated curriculum a greater degree of structuring is required. In a course disciplines-based, concepts and key ideas can be defined by the well-organized approaches existing in the disciplines. Meanwhile, in an integrated curriculum, concepts and key ideas from several disciplines must be collaborated in some logical way (Prideaux, 2005).

Therefore, to prevent misunderstandings, irritation and time consuming at later stage, it is sensible to ask all planning group members (consists of block coordinators and block members) to propose their ideas on the blueprint during the initial discussion of the block construction process. Afterward, the planning group must communicate with the teachers who are involved in the implementation stage, and provide instructions regarding their roles and the objectives that are to be achieved by the various activities (Snellen-Balendong & Dolmans, 2005).

To attain coherency curriculum at the skills training program, it is important to provide some following improvement, i.e. first, develop the spiral curriculum at the overall and skills training curriculum; second, provide a team in which responsible for design coherency skills training program; third, develop effective communication between curriculum committee, planning group and the team in design stage of block construction.

## **6. CONCLUSION**

From focus group discussion and a content analysis of MFAU document was found that a lack of integration in the skills training curriculum of MFAU. The result of this analysis is that there is a lack of horizontal and vertical integration inside the skills training curriculum. The study draws some recommendations for the curriculum improvement.

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APPENDIX: YEAR 1					
1. Learning in Medical Education	2. Medical Ethics and Humanism	3. Community Health Problems	4. Cellular Biology	5. Organ System 1	6. Organ System 2
Communication	1. How to make inform consent and other statement.	1. The steps of problem solving.	1. How to use microscope	1. Temperature and respiratory rate examination	1. Pulse rate, jugular vein pressure and blood pressure examination.
	2. How to make visum et repertum	2. Health Promotion	2. Examination of colour blind test	2. Physiologic reflexes and sensibility examination.	2. Splints and bandage
YEAR 2					
7. Growth and Development	8. Technology and Medical Research	9. Immunology and Infection	10. Neoplasia and Geriatrics	11. Hematolymphopoeitics	12. Hormone and Reproduction
1. Antropometry of children under five years.	1. To develop research proposal	1. Skin test and Mantoux Test.	1. Self -breast examination.	1. Prick test	1. Physical examination of thyroid gland
2. Denver Test		2. Gram and Fast Acid Staining.	2. Mini mental test	2. To make blood film	2. Physical examination of pregnancy
				3. Blood routine test	
				4. Rumpel Leed test	
YEAR 3					
13. Nutrition and Digestion	14. Neuropsychiatry	15. Cardiovascular	16. Respiration	17. Urogenital System	18. Musculoskeletal
1. General Physical examination of abdomen.	1. Examination of consciousness level	1. Physical examination of heart (the margin of heart and heart sound).	1. Physical examination of thorax.	1. Urethra catheterization.	1. General Physical examination locomotoric system
2. Specific Physical examination of abdomen.	2. Cranial nerves examination	2. Examination and interpretation of ECG	2. Specific examination of respiratory system.	2. Intra venous canulation	2. Local examination of orthopedics cases
	3. Psychiatry interview	3. CPR (Cardiopulmonary Resuscitation)			
YEAR 4					
19. Special senses	20. Family Health	21. Elective			
1. Visual acuity, corneal reflex and pupil reflex examination	1. Identification of family health problems	1. Health Examination of athlete candidate			
2. Examination of dermatologic condition	2. Prescription	2. Management of sport injuries			
3. Physical examination of ENT	3. Wound care and suture	3. Health examination of manpower candidate			
		1.Patient safety. 2.Disaster management			

