

Introduction to Curriculum: Theory, Issues, Trends

with Associate Professor Dr.
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Session outcome

At the end of the session, participants will be able to explain the basic theories and issues of curriculum in the context of education at tertiary level.

Related speaker experiences

- Chair of committee for developing Guideline of Good Practice for TVET Curriculum Design and Delivery (Higher Education Dept., Ministry of Higher Education)
- Chair of committee for planning for the direction of Education in Engineering Technology Field (Higher Education Dept., Ministry of Higher Education)
- Chair of committee for developing Standard Competency Requirement for Industry 4.0 for SIRIM
- Member of committee for developing Standard Criteria for Adoption of Industry 4.0 for SIRIM
- Deputy Chair of committee for developing BTECH program at MTUN
- Taskforce member for MBOT TTAC manual
- Committee member for COPTFA, MQA
- Committee member for Postgraduate Standard, MQA
- Academic Institution and Program Auditors (MyQuest, MySPEKK, TTAC)
- Director for Academic Planning and Development, UTeM (Planning and development of faculties, institutes and more than 30 academic programs)
- Dean of Electrical Engineering Faculty
- Head of Mechatronics Department
- Speaker on Curriculum Design and Delivery, Industry 4.0 and TVET at various platform



Why?

We need to understand **curricula** as forms of specialized knowledge so that we can develop better **curricula** and improve learning opportunities. It is such goals that give purpose to **curriculum theory** just as it is better treatment and better medicines that give purpose to medical science.

Michael Young (2014)
Institute of Education, University of London (United Kingdom) m.young@ioe.ac.uk

4

What is curriculum?

- Latin Root (Meaning):
Currere (v) (*run (in a race)*);
Curriculum (n) (*race-course (track)*)
- General definition:
The sum of all planned learning experiences in a school or college

5

Elements of a curriculum

Elements	Decision making on ...	Key terms and issues
Why	Purpose and Goals	Traditional vs Progressive Who decides?
What	Content	Scope – How much? - Breadth & Depth - 'the Canon' vs Modern - Standardize vs local control Sequence – In what order? Articulation – Grade to grade, subject to subject
How	Learning Process and Method of Teaching	Method Activities Evaluation, Measurement, Assessment

6

What is theory?

- Theoria (Greek)... Wakefulness of mind, contemplation
- Theory is tentative knowledge of what will work.
- A curriculum theory is ... tentative knowledge of the best way to go about constructing a curriculum.

Purpose of Curriculum Theory

- Describe the proses
- Predict outcomes
- Explain reasons (explain why)
- Guides the process

Main Curriculum Theories

Curriculum as...

Management science	Human development	Intended LO	Social Change	Structuring knowledge
Franklin Bobbit	John Dewey	Ralph Tyler	Paulo Freire, Henry Giroux	Jerome Bruner, Benjamin Bloom
Late 19 th century	Early 20 th century	Mid-20 th century	Late 20 th century	Late 20 th century
Specific subject objectives linked with specific activities	Knowledge must be based in experiences relevant to children	Intended learning is the product of experiences guided by objectives	Learning is experienced in social systems	Students "make meaning" from previous and new knowledge
Constructing curriculum is the proses of breaking subject matter into pieces and connecting those pieces to instructional activities	Constructing curriculum is the process of connecting relevant experience to developmentally appropriate activities	Curriculum is the process of deciding appropriate learning outcomes (considering both the student and the society), selecting and organizing relevant experiences, and evaluating actual outcomes.	Curriculum is the process of prescribing and initiating change in society by use of "critical pedagogy". Critiques the metaphor of "bank": students re depositories and teachers (institutions) are depositors.	Curriculum is the process of deciding learning outcomes, then experiences so new knowledge can be constructed by students.

What is your theory?

10

Main Curriculum Development Model

Machine ← → Organism

Tyler	Taba	Glatthorn 'Naturalistic'	Emergent
Management Driven	Teacher Driven	Process Driven	Individual Driven
Process:	Process:	Process:	Process:
1. Sources	1. Diagnose student needs	1. Survey	- Curriculum is not decided, it evolves
2. Goals	2. Formulate objectives	2. Define context	- Curriculum development is a social process of individuals and institutions interacting
3. Screens	3. Select content	3. Develop constituency and build alliances	
4. Performance objectives	4. Organize content	4. Study knowledge base (subject matter, students, instruction methodology)	
5. Planned experiences	5. Select content	5. Organize content	
6. Evaluation	6. Select learning experiences	6. Plan learning experiences	
	7. Organize learning experiences	7. Plan evaluation	
	8. Plan Evaluation	8. Develop learning scenarios	

Which model is preferable for university today?

11

Curriculum Design

Curriculum Development: How curriculum is made

Curriculum Design: Component of curriculum arranged for implementation

Interactive components –

Objectives – Methods/Instructional activities – Evaluation – Content (subject matter)

Related Terminology –

Scope (Breadth & Depth), Sequence, Continuity, Integration, Articulation (vertical, horizontal), Balance

Type of curriculum design:

Subject Centered Design	Learner Centered Design	Problem Centered Design
<ul style="list-style-type: none"> Subject design (fact, concept) Discipline design (e.g. science, engineering method) Broad fields design (combine subjects) Correlation design (relate subjects) 	<ul style="list-style-type: none"> Child/individual centered Experience centered Humanistic design (let student decide) Critical pedagogy (promotes social activism) 	<ul style="list-style-type: none"> Vocational based problems (e.g. TVET Apprentice/industry mode) Social based problems (e.g. SULAM) Environmental based problems

Which design is preferable for university today?

12

Curriculum trends

- Fluid and organic curriculum
 - Convergent, multi/inter/trans-displines
 - Flexible & non-conventional (e.g. micro credential)
 - Industry partnerships
 - Global trends

Refer: Taklimat Kurikulum Tersedia Masa Hadapan Hotel Bangi Putrajaya 6 Disember 2018

13

Curriculum issues (specific)

- Occupational (TVET) vs Discipline based
- Science and Math in English vs Bahasa Melayu
- National vs Global Educational Philosophy

14

What is your opinion?

15

Outcome Based Education: Curriculum Design at Faculty

with Associate Professor Dr.
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16

Session outcomes

At the end of the session, participants will be able to conduct curriculum design and delivery in a structured and systematic manner.

17

Main Principles

- Outcome based education
- Technical and Vocational Education and Training
- Occupational and Program Standard

18

OBE philosophy

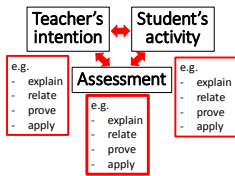
- Content based education focus on finishing delivering of the content. The issue is, we have teach, but have they **understand**?
- Outcome based education then focus on the outcome, that is whether student achieved the intended capability that they should achieved.
- OBE is a **student-centered learning** philosophy that focuses on **empirically** measuring student performance, which are called *outcomes*.
- OBE promotes active learning.

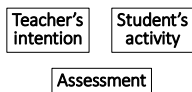
19

Question: How do we get student to learn what we want them to?

Answer: Constructive alignment (John Biggs 1999)

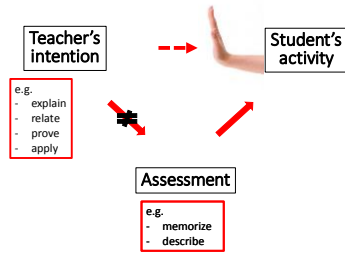
Teacher must take great care in making the assessment and delivery explicitly conform to teacher's intention, to force learning to take place.





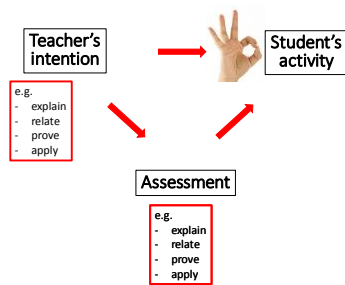
21

Unaligned course



22

Aligned course

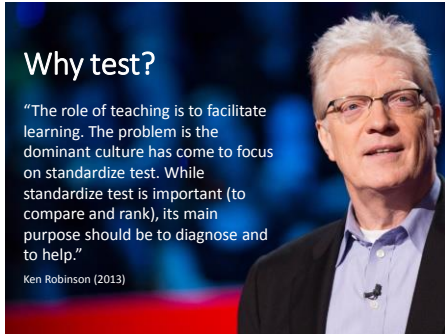


23

Planning and Aligning using Constructive Alignment Table

Learning Outcome	Delivery	Assessment Type, question	Weightage & SLT
1. Identify	...	MCQ: Identify components	20%
2. Relate	...	Essay: Relate	20%
3. Prove	...	Essay: Prove that $E=MC^2$	30%
4. Apply	...	Short answer: Calculate using KCL	30%

24



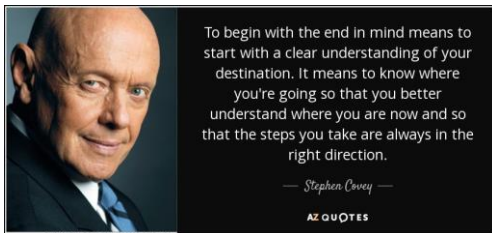
25

Begin with end in mind

How to align the design and delivery of curriculum with industry and society needs?

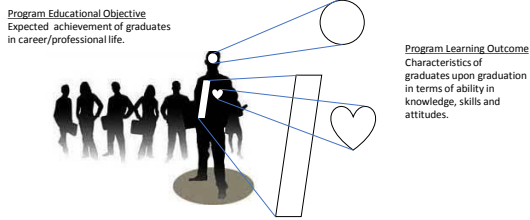
26

Begin with the end in mind



27

The end: Industry and society needs?



28

Fluid and Organic Curriculum: Aligning with current needs

- Maximize flexibility by increase the number of elective courses
- Elective courses are not part of main BOK so not compulsory
- Hence, we can change elective course often to quickly respond to current industry need

Table: Example of distribution of courses

	Credit	Percentage
Engineering		
Body of Knowledge courses (Fundamental/Technological)	57	42%
Industrial Training	6	4%
Final Year Project	6	4%
Integrated Design Project	6	4%
Engineering Electives (Application)	15	11%
Total Engineering	90	67%
General Education Component		
MOHE	10	7%
Language	4	3%
Math	6	4%
Electives	25	19%
Total General Education	45	33%
TOTAL	135	100%
Total electives	40	30%

29

TVET Curriculum Design & Delivery

based on JPT TVET CCD Guideline

Based on TVET definition:

"those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to **occupation** in various sectors of economic life".

UNESCO-UNEVOC.TVETpedia Glossary www.unevoc.unesco.org.



Figure: TVET CCD characteristics.

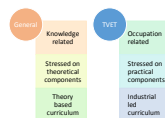


Figure: Main difference between general education and TVET curriculum.

Table: Type of education based on knowledge, occupation, dan description of responsibilities.

Type of education	General education		TVET	
	Science	Applied Science	Technology	Application
Knowledge	Science	Applied Science	Technology	Application
Occupation	Scientist	Science user	Technology user	Application user
Role and responsibilities	Observe nature to find new knowledge	Solve complex problem in any environment by using knowledge in science and mathematics	Solve complex problem in specific environment using knowledge of techniques	Solve problem in specific environment using standard process and operating procedures.
Example of field and occupation	Physics (Physician)	Mechanical Engineering (Mechanical Engineer)	Automotive (Automotive Technologist)	Motoring service (Motoring technician)
	Life science (Biologist)	Medicine (Eye specialist)	Optometry (Optometrist)	Opticianry (Optician)

31

Scope of usage

- a. Topics in a course;
- b. A course;
- c. Elective courses; or
- d. The whole program.

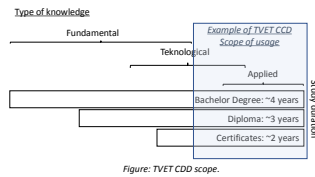


Figure: TVET CDD scope.

32

Cycle of TVET Curriculum Design and Delivery

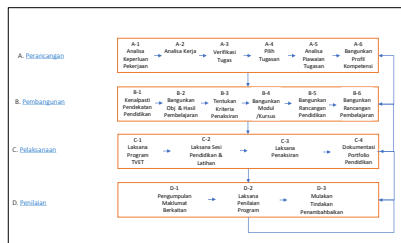
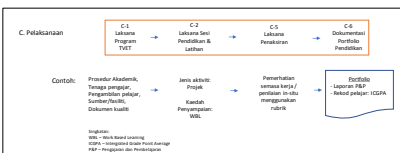


Figure: Cycle of TVET Curriculum Design and Delivery.

33

C. Proses Pelaksanaan



Rajah 7: Contoh proses pelaksanaan program TVET.

Reflection

"When students are asked an open-ended question on an exam and they don't know the answer, they tend to write everything they do know that they weren't asked...and they write and write and write. Why do they do that? Probably for one of two reasons: they hope the faculty member will find the right answer in all their ramblings or they will be given extra "points" for their effort. **Why do we approach program assessment the same way? I can hear it now, "We don't know what the accreditors want, so we will just give them everything."**

This approach always ends up in creating undue work on the part of faculty and, while producing massive amounts of data, produces absolutely no information that can be effectively used to improve the student learning experience. We have lost sight of the fact that **we are assessing the "program" not the student.** Yes, we gather evidence from students but it is not for the purpose of assessing them—we are already doing that in their courses. It is for the purpose of assessing ourselves."

Gloria Rogers, ABET 2011.

40

Good Governance

1. What are the related structure, policy, processes and procedure on the criteria for program quality?
2. Schedule and record the implementation of the governance.

Criteria	Structure	Policy	Proses	Procedure
1. PEO				
2. PO				
3. Academic Curriculum				
4. Students				
5. Academic and Support Staff				
6. Facilities				
7. Quality Management System				

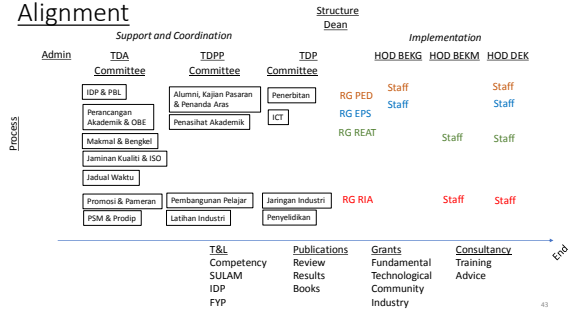
41

TUNAI-STAR Alignment

What is the relationship between
S - Services,
T – T&L,
A - Administration and
R – R&D
activities?



Alignment



Discussion

On the implementation of structured and systematic mechanism for management and governance of academic program at Faculty