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Curriculum Development

The development of curriculum in Singapore

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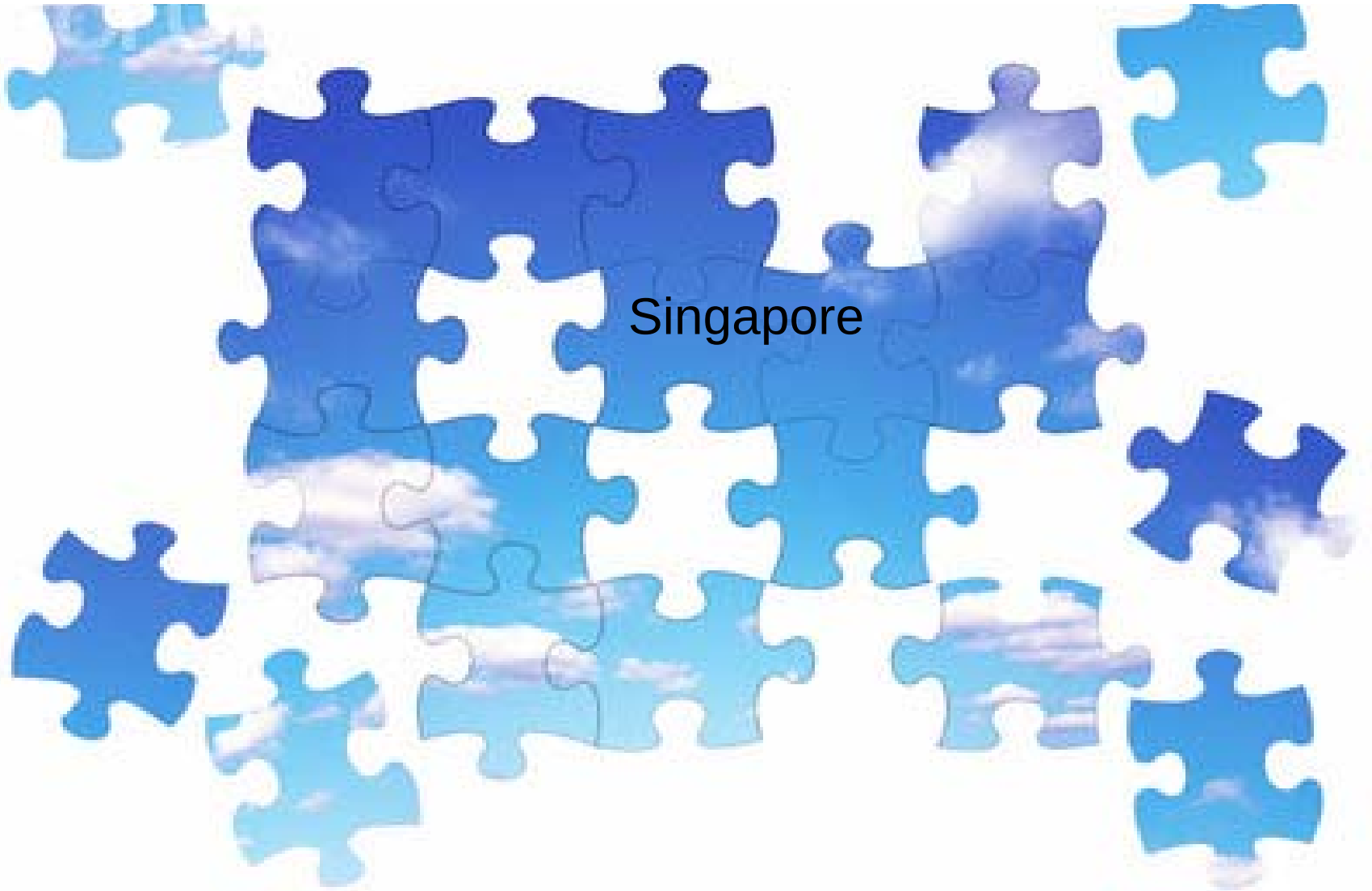
Curriculum Development: Singapore Style



Curriculum Design or Development?

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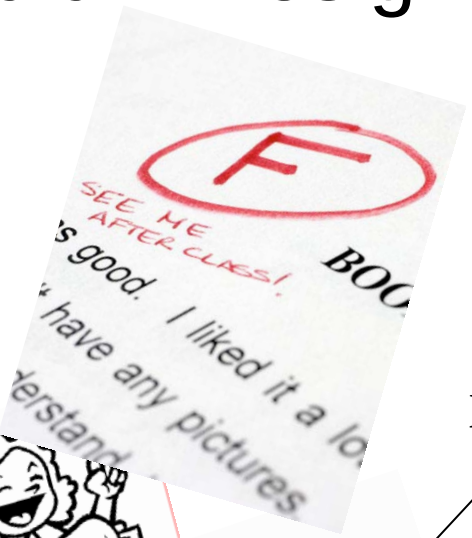
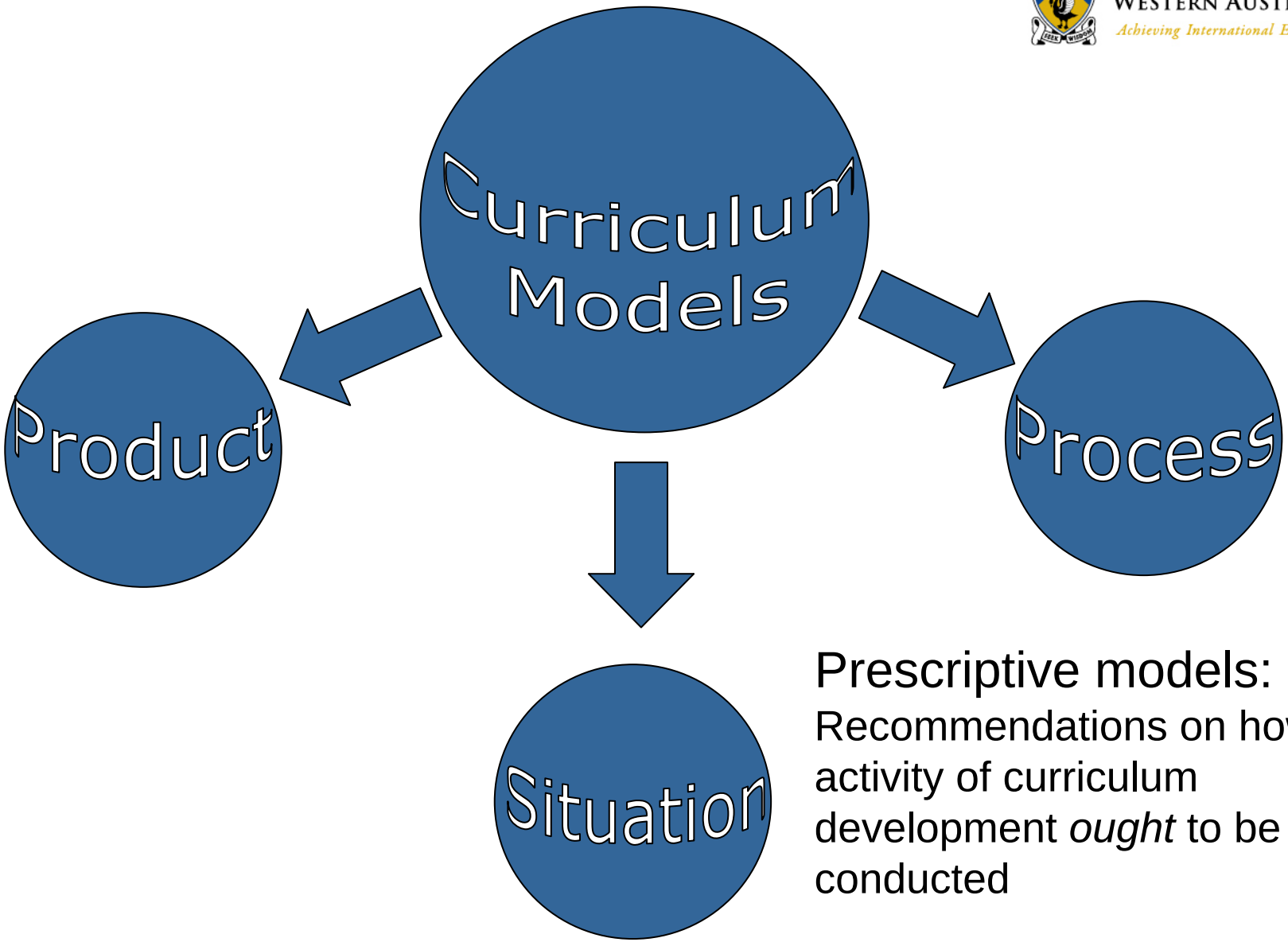


Should we focus on the product of learning or the process of learning?

Product ⟷ Process



Prescriptive models:

Recommendations on how the activity of curriculum development *ought* to be conducted

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Curriculum Development

The contested nature of education in general

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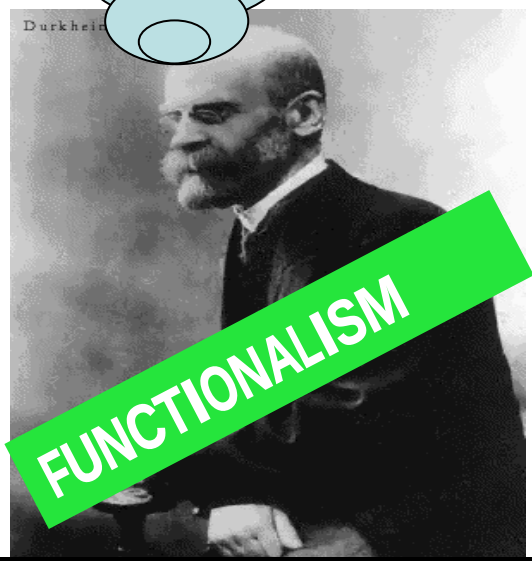
Society can survive only if there exists among its members a sufficient degree of homogeneity; education perpetuates and reinforces this homogeneity by fixing in the child from the beginning the essential similarities which collective life demands.

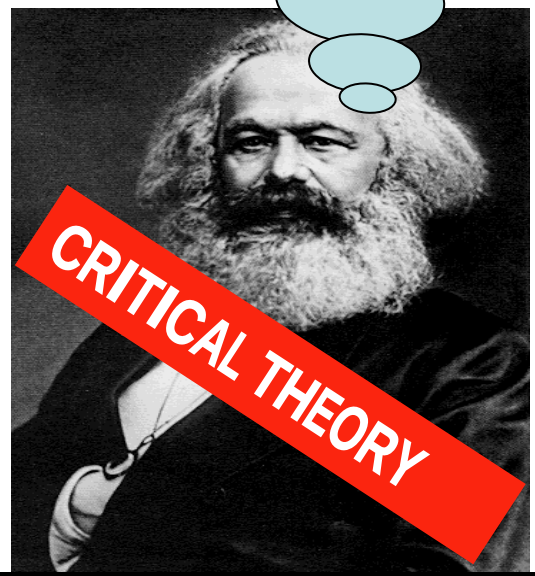
Education promotes social injustice by reinforcing the social and economic inequalities demanded by those who control the means of production.



Emile Durkheim (1857-1917)

Tension between conservation and change

Two Discourses



Karl Marx (1818-1883)

Social Solidarity

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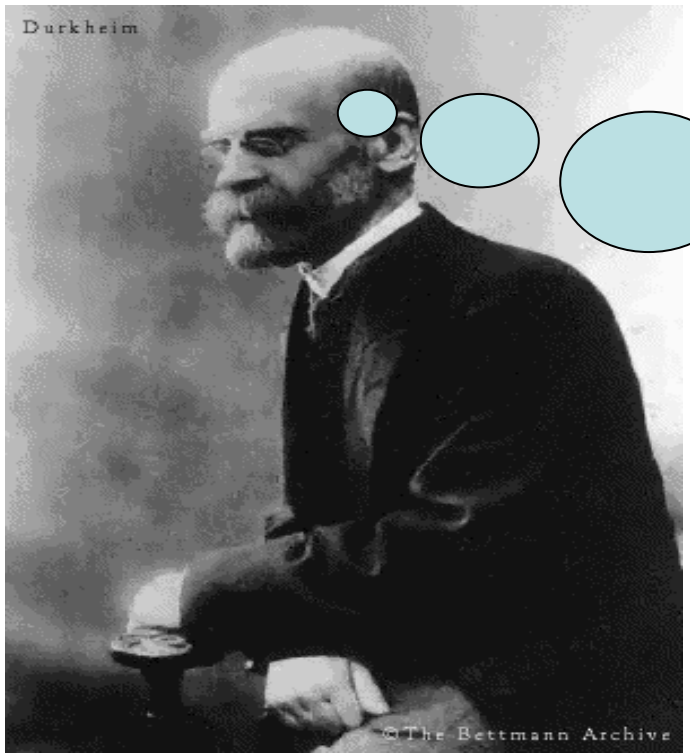
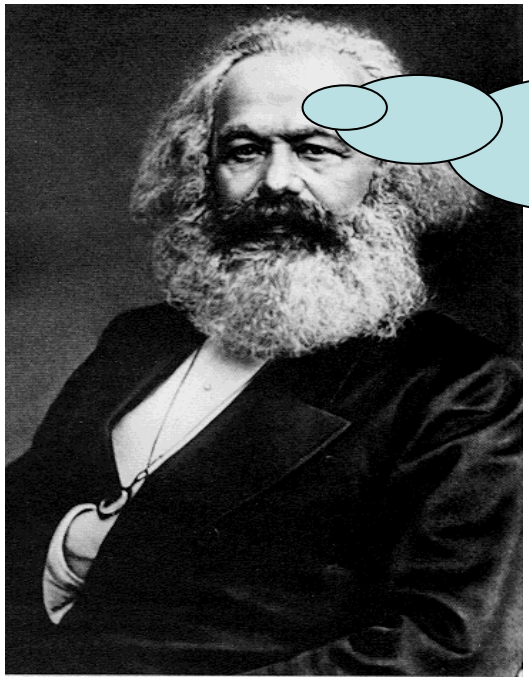
- A Common Educational Curriculum
  - providing shared norms and values
  - promoting self-discipline
  - producing the specialisations within the division of labour



The curriculum should transmit both general values which provide the necessary homogeneity for social survival and specific skills which provide the necessary diversity for social cooperation

Samuel Bowles and Herbert Gintis

- Critical Theorist perspective of education
  - Education does not function to the benefit of society as a whole
  - The major role of education in capitalist societies is the reproduction of labour power



Like me, Bowles and Gintis regard work in capitalist societies as both exploitative and alienating. What education aims to do is provide a hard working, docile, obedient and highly motivated workforce which is too divided and fragmented to challenge the authority of management.

The Correspondence Principle

- The Hidden Curriculum: ‘form’ not ‘content’
  - Student corresponds to worker
    - little power over the curriculum like workers over the content of their jobs
  - Education corresponds to employment
    - a means to an end rather than an end in itself
  - Qualifications correspond to wages
    - undertaken for the sake of ‘external’ rewards
  - Failure corresponds to unemployment
    - an unpleasant consequence to be avoided
  - School subjects corresponds to division of labour
    - fragmentation of knowledge and tasks
  - Education levels correspond to occupational levels
    - competing for qualifications and promotion
  - School obedience corresponds workplace authority
    - Doing what the teacher says and what the boss says

Time to Reflect

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Are we placing too much stress on developing the individual rather than the duties and responsibilities the individual owes to group life in the school and the wider community/society beyond the school?

Are we failing working class students?

Brainstorming for evidence

Yes	No

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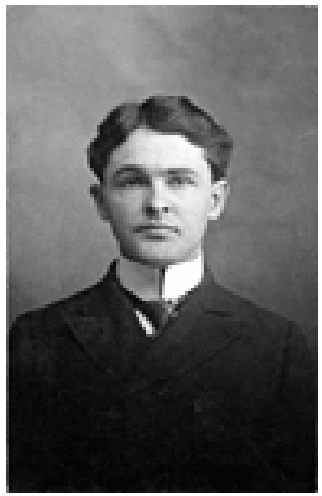
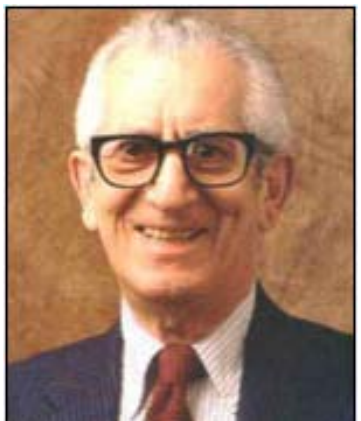
Curriculum Development

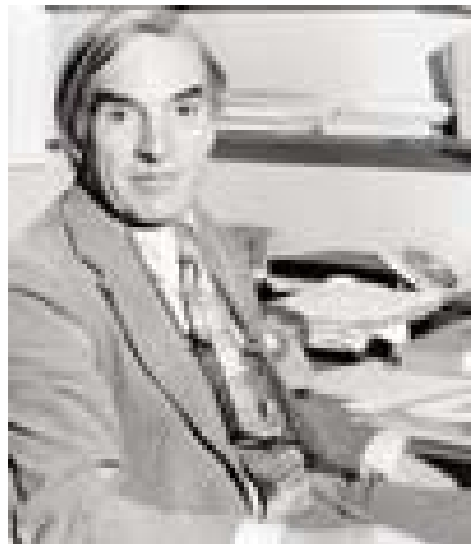
Some central figures in history of curriculum development

Some Central Curriculum Figures

- Johann Herbart
- Franklin Bobbitt
- Ralph Tyler
- Hilda Taba
- Benjamin Bloom
- Lawrence Stenhouse







Johann Friedrich Herbart (1776-1841)

- Herbartism
  - Only large units of subject matter are able to arouse and keep alive the child's deep interest
- Doctrine of concentration
  - The mind can be wholly immersed in one interest to the exclusion of all else
- Doctrine of correlation
  - One subject is made the focus of attention but one sees to it that this subject receives support from related subjects.
- Apperception
  - The understanding of new knowledge based upon already acquired knowledge

"[Herbart held] that the mere memorizing of isolated facts, which had characterized school instruction for ages, had little value of either educational or moral ends" (Cubberly, 1934, in Pinar, et al, 1995, p. 78)

Instructional Procedure

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- Herbartians recognise 5 essential steps as essential in the procedure of instruction:
  - Preparation
    - Teacher arouse interest in new material by calling previous learning experiences to the student's attention
  - Presentation
    - Teachers outlines and summarises new material in concrete form
  - Association
    - New material is compared with what is already known
  - Generalisation
    - New concepts are derived from new information
  - Application
    - Generalisations are given meaning by linking them to specific instances

The Aims of Education

- Herbartians believe that education is:
  - a moral enterprise designed to prepare the individual for ethical action in the affairs of life by promoting:
    - Sympathetic interest (a kindly disposition towards people)
    - Social interest (participation in public affairs)
    - Religious interest (contemplation of human destiny)
- Theories on education exerted very little influence
- Herbart's theories prominent in the work of others

Charles A. McMurray (1857- 1929) and Frank W. McMurray (1862 – 1936)

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- Two Americans who travelled to Germany to study education
- Influenced by the educational theories of Johann Herbart
- Back in the USA
  - Charles worked at the George Peabody College for Teachers
  - Frank worked for Teachers College at Columbia University
- A strong influence on teacher development
  - Between 1900 – 1910 good teachers were expected to have lesson plans based on Herbart's five essential steps for instruction

The McMurrays on Education

- Five basic questions:
  - What is the aim of education?
    - Extended the Herbartian idea of moral action to include good citizenship
  - What subject matter has the greatest pedagogical value?
    - Linked to aims: some subjects important for expressing thoughts while others for developing thoughts
  - How is subject matter related to instructional method?
    - Different subject matter has different demands on the organisation of curriculum
  - What is the best sequence of studies?
    - Subject matter varied according to the age and development of the child
  - How can the curriculum be organised?
    - Knowledge from different subject fields coordinated into a single project or unit of study

Franklin Bobbitt (1876-1956)

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- 'Scientific Curriculum Making'
  - *How to Make a Curriculum* (Boston: Houghton Mifflin, 1924)
    - Step 1 - Analyse human experience
    - Step 2 - Job analysis
    - Step 3 - Deriving objectives
    - Step 4 - Selecting objectives
    - Step 5 - Planning in Detail

Curriculum as a Science

- Industrialisation
- The growth of efficiency
- Scientific Management

Analysing
Training
Cooperating
Planning

FUNCTION	Traveling in the train		
TASK	2.0	Buying a new ticket at the train station using cash	
SUBTASK		ACTION STIMULUS	REQUIRED ACTION
2.1	Go to ticket machine	Intent to travel	Walk up to the machine
2.2.1.2	Choose action	Select One screen	Choose ticket
2.2.1.3	Display fair type options	Choose Trip screen	Choose one way
2.2.1.8	Choose Value	Number of Tickets screen	Choose 1 ticket
2.2.1.9	Insert cash	Pay Balance screen	Insert cash
2.2.1.16	Choose receipt or not	Choose Receipt screen	Choose receipt
2.2.1.18	Receive receipt	Receipt printed	Pick up receipt
2.2.1.19	Receive Ticket/Card	Ticket/card dispensed	Pick up ticket/card
2.2.1.20	Receive change	Change dispensed	Pick up change

Ralph Tyler (1902-1994)

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- Rational Curriculum Making
  - *Basic Principles of Curriculum and Instruction* (Chicago: University of Chicago Press).
    - A deductive approach to curriculum making
      - What educational purposes should the school seek to attain?
      - What educational experiences can be provided that are likely to attain these purposes?
      - How can these educational experiences be effectively organised?
      - How can we determine whether these purposes are being attained?

Rational Curriculum Making

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- State Objectives
- Select Learning Experiences
- Organise Learning Experiences
- Evaluation
  - Objectives
    - The content to be learned – knowledge, skills, attitudes.
    - The processes and skills that the learners are to engage in and develop in dealing with that content.
    - What pupils will be able to do after completing the course

Hilda Taba (1902 – 1967)

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- The Eight Year Study
- Advocated a grassroots and an inductive approach to curriculum development
- Grassroots
  - Emphasised teachers:
    - Assessing meaningful learning beyond content acquisition
    - Coordinating curriculum planning with community organisations
    - Linking school subjects to agreed-on powerful themes
- Inductive
  - Producing pilot units
  - Testing experimental units
  - Revising and consolidating
  - Developing a framework
  - Installing and disseminating new units

- Diagnosis of needs
- Formulation of objectives
- Selection of content
- Organisation of content
- Selection of learning experiences
- Organisation of learning experiences
- Determining what to evaluate and how to do it

Benjamin Bloom (1913 – 1999)

- Worked with Ralph Tyler
- *Taxonomy of educational objectives: Handbook 1, the cognitive domain (Bloom et al., 1956)*
- Cognitive operations ordered into six increasingly complex levels
- A subject-independent classification of thinking abilities
- More than a classification scheme - hierarchical ordering of cognitive processes
- A practical tool for formulating evaluation tasks and objectives
- Cognitive (thinking) Domain (summary)
  - Knowledge
  - Comprehension
  - Application
  - Synthesis
  - Evaluation

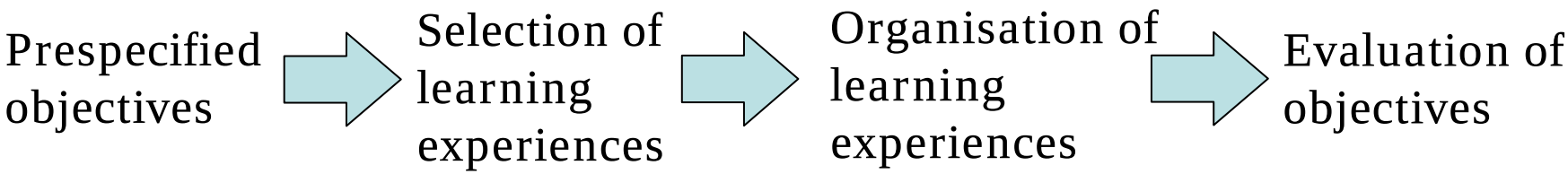
Cognitive Level	Illustrative Verbs	Definitions
Knowledge	arrange, define, describe, duplicate, identify, label, list, match, memorize, name, order, outline, recognize, relate, recall, repeat, reproduce, select, state	remembering previously learned information
Comprehension	classify, convert, defend, discuss, distinguish, estimate, explain, express, extend, generalize, give example(s), identify, indicate, infer, locate, paraphrase, predict, recognize, rewrite, report, restate, review, select, summarize, translate	grasping the meaning of information
Application	apply, change, choose, compute, demonstrate, discover, dramatize, employ, illustrate, interpret, manipulate, modify, operate, practice, predict, prepare, produce, relate schedule, show, sketch, solve, use write	applying knowledge to actual situations
Analysis	analyze, appraise, breakdown, calculate, categorize, classify, compare, contrast, criticize, derive, diagram, differentiate, discriminate, distinguish, examine, experiment, identify, illustrate, infer, interpret, model, outline, point out, question, relate, select, separate, subdivide, test	breaking down objects or ideas into simpler parts and seeing how the parts relate and are organized
Synthesis	arrange, assemble, categorize, collect, combine, comply, compose, construct, create, design, develop, devise, explain, formulate, generate, plan, prepare, propose, rearrange, reconstruct, relate, reorganize, revise, rewrite, set up, summarize, synthesize, tell, write	rearranging component ideas into a new whole
Evaluation	appraise, argue, assess, attach, choose, compare, conclude, contrast, defend, describe, discriminate, estimate, evaluate, explain, judge, justify, interpret, relate, predict, rate, select, summarize, support, value	making judgments based on internal evidence or external criteria

Curriculum as Product

aka: objectives model of curriculum

- A dominant theoretical approach
- Looks at curriculum as a technical exercise
  - Objectives are set
  - A plan is drawn up
  - A plan is implemented
  - Outcomes (product) are measured

aka: the measured curriculum



The Product Model of Curriculum

- Characteristics of objectives
  - Emphasis is placed on the identification of overt student behaviour
  - Implies reference to specific subject-matter content
  - Provides criteria for acceptable student performance
- Arguments for objectives
  - Provide clear-cut end points or goals
  - Facilitate the measurement and evaluation of curriculum outcomes
- Limited to skills development

Vocationalism or Training

- Training assumes a narrower purpose than education
- Preparation of the world of work
- Focuses on occupational competencies
- Needs of society privileged over the needs of the individual
- Knowledge is viewed as objective and public
- Different procedures for deriving training objectives than in formulating education objectives.

The Training Model

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- Determining occupational targets:
  - Deciding where training needs are required
  - Procedure for identifying where training is needed
    - Existing studies and plans
    - Manpower requirements
    - Current employment
    - Anticipated industry growth
    - Personnel replacement

Training Courses

- Determining the objectives:
  - list all tasks that might be included in the job
    - A task analysis
    - Observation
    - Questionnaires and interviews
    - Critical incident techniques
  - estimate:
    - frequency
    - importance
    - ease of learning
  - list actual behaviours when performing the tasks

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SUBTASK		ACTION STIMULUS	REQUIRED ACTION	FEEDBACK
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Objecting to Behavioural Objectives

- It prepares people for work as it IS rather than as it SHOULD be - focuses on PRESENTISM rather than on likely future conditions
- Demands a high number of statements
- Assumes that one is able accurately to predict what the outcomes of instruction will be
- Bias toward low-level cognitive performance and simple skill
- Evaluation limited to a one-to-one relationship between *unambiguous* statement of intent and student performance
- Does not allow for diversity of achievement and outcome
- Reduce pupils to mechanical objects
- Degrade teachers
- Utopian rather than reconstructionist
- Teaching science in the behavioural objectives way is to teach anti-science

The Question of Objectives

- State long-term objectives
- Be alert for unexpected or unintended outcomes
- Do not allow measurement considerations alone to dictate objectives formulation and teaching practice
  - Instructional objectives
    - Focus upon the attainment of a specific array of behaviours
  - Problem-solving objectives
    - Focus upon the attainment of various solutions to a specific problem
  - Expressive objectives
    - Focus on activities designed to attainment personal responses from students

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Curriculum Development

The contested nature of curriculum development in particular:

Curriculum as Process

Lawrence Stenhouse (1926-1982)

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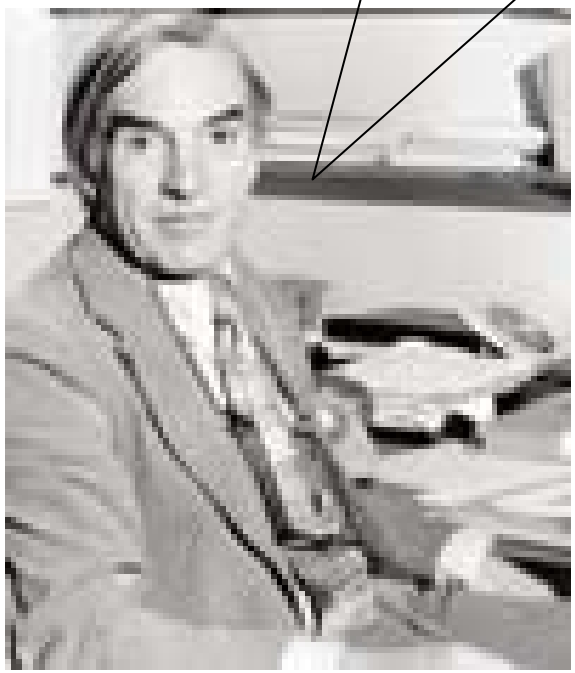
Can there be principles for the selection of content other than the principle that it should contribute to the achievement of an objective?



Curriculum as Process

- Escaping behavioural objectives
- Looks at curriculum not as a physical thing but as the interaction of teachers, students and knowledge
- Curriculum is what happens in the classroom
- Curriculum as an active rather than technical exercise
- The specification of content and principles of procedure rather than pre-specifying the anticipated outcomes

Let us speculate...

- Can curriculum be organised satisfactorily by logic other than that of the means-end model?
- Activities that:
  - are worthwhile in themselves rather than as a means towards objectives
  - are linked to knowledge rather than skills
- What other reasons might an activity in areas such as science, history, literature be worthwhile other rather than as a means to an end?

Worthwhile Activities

- Allow informed choices in carrying out the activity
- Assign active rather than passive roles to students
- Ask students to enquiry into ideas, applications of intellectual processes, or current problems, either personal or social
- Involve students with real things
- Allow students of different abilities to experience success
- Ask students to examine previously studied ideas, processes or problems in a new setting.
- Require students to examine unique and ignored topics or issues
- Involve students and teachers in 'risk' taking – not a risk of life or limb, but a risk of success or failure
- Require students to rewrite, rehearse, and polish their initial efforts
- Involve students in the application and mastery of meaningful rules, standards or disciplines
- Give students a chance to share planning, implementation and outcomes of an activity with others
- Are relevant to the expressed purposes of the students

Stenhouse (1975) on curriculum

- As a minimum, a curriculum should provide a basis for planning a course, studying it empirically and considering the grounds of its justification. It should offer:
  - **In planning**:
    - Principle for the selection of content - what is to be learned and taught
    - Principles for the development of a teaching strategy - how it is to be learned and taught.
    - Principles for the making of decisions about sequence.
    - Principles on which to diagnose the strengths and weaknesses of individual students and differentiate the general principles 1, 2 and 3 above, to meet individual cases.
  - **In empirical study**:
    - Principles on which to study and evaluate the progress of students.
    - Principles on which to study and evaluate the progress of teachers.
    - Guidance as to the feasibility of implementing the curriculum in varying school contexts, pupil contexts, environments and peer-group situations.
    - Information about the variability of effects in differing contexts and on different pupils and an understanding of the causes of the variation.
  - **In relation to justification**:
    - A formulation of the intention or aim of the curriculum which is accessible to critical scrutiny.

The Humanities Curriculum Project

- A curriculum providing a discussion-based approach in which students critically examine evidences on controversial human issues
- Aim:
  - to develop an understanding of human acts, of social situations and of the problems of value which arise from them (no attempt was made to translate the aim into a specification couched in terms of behavioral objectives)
- Nine themes for study and experimental development:
  - war
  - education
  - the family
  - relations between the sexes
  - people and work
  - Poverty
  - living in cities
  - law and order
  - race relations.

From Aim to Practice

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- Focuses on the logical consistency between aim and classroom process (materials and strategies)
- The Discussion
  - Teachers Role
    - Neutral-chairperson who submits to neutrality
    - Committed to *educational values,* such as rationality, concern for evidence and sensitivity to others rather than publicising his or her own views
    - Deepener of understanding
  - Premises for Discussions
    - Teacher as neutral
    - The main teaching strategy
    - Divergence of opinion is supported

The Discussion

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- Teacher responsibilities
  - quality and standards in learning through enquiry
  - knowing the materials
  - providing evidence
  - keeping the discussion on a coherent track
  - opening up as wide a range of alternatives on an issue as possible
  - observing group processes

Teacher Development

- Stenhouse's argument:
  - Process model is opposite to a top-down factory model
    - Centrally imposed curricula
    - Prescriptive blueprints
    - Inhibit autonomy
  - Teachers need autonomy for professional judgment
  - Teachers need advice, consultancy and support
  - Teachers are in the position to create good teaching
  - Process model supports lifelong learning
    - Curriculum tested out in the classroom
      - Teachers take more control of their professional lives
      - Researchers of their own practice
    - Recognises the importance of centralised innovations and the importance that they be adapted by teachers at the school level
      - Teacher try out, experiment

Criticism of Curriculum as Process

- Not overly criticised
  - Avoids extravagant claims – leaves room for objectives
  - Deals with teachers' concern for context
  - Assumes the autonomy of teachers
- Student assessment
- Teacher competency
- Lack of uniformity

Product and Process

Curriculum as Product	Curriculum as Process
Disciplinary origin: Behavioural Psychology	Disciplinary origin: Philosophy of Education
What to teach: a package of materials to be accepted and covered	What to teach: an idea cast as an hypothesis to be critically tested in practice
Learning: one-size-fits-all package of learning	Learning: tested and verified in the context of practice
Behavioural objectives and methods are specified in advance	Content and means are developed as teachers and students work together
Focuses on the teacher - learners portrayed as objects to be acted upon	Focus is on learning – teachers and learners as partners in meaning-making

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Curriculum Development

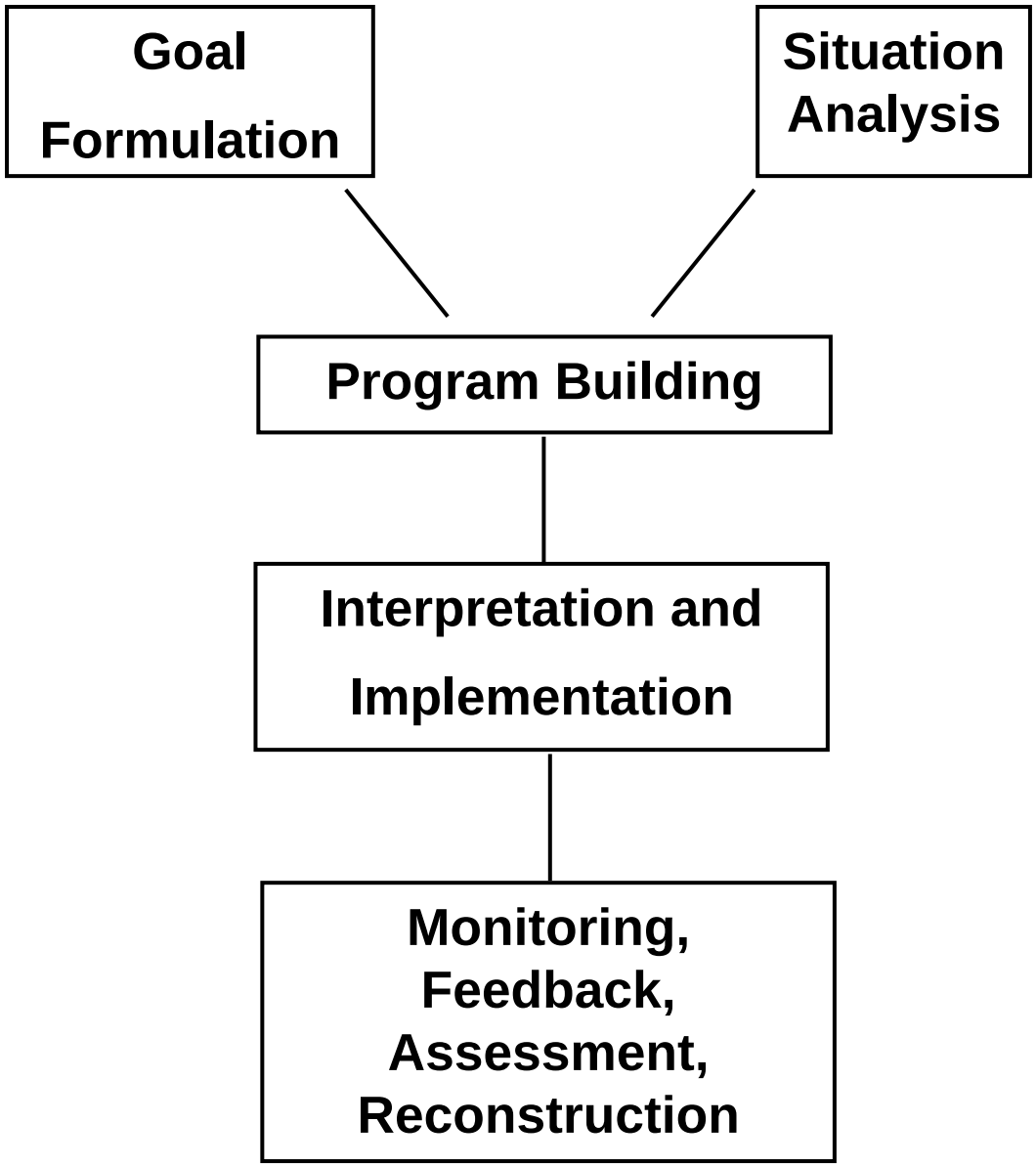
The contested nature of curriculum development in particular:

Curriculum as Situation

A Situational Model

- A cultural approach
- Curriculum development located within a cultural framework
- Acknowledges the value-laden nature of curriculum development
  - The political character as pressure groups and ideological interests seeks to influence the process of cultural transmission
- Focus on the individual school and its teachers
- Sees school-based curriculum development as the most effective way to promote change at the school level

A Comprehensive Framework



Situational Analysis

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- External
  - Cultural and social changes
  - University-system requirements and challenges
  - The changing nature of the subject matter to be taught
  - The potential contribution of tutor-support systems
  - Flow of departmental resources
- Internal
  - Students' educational needs
  - Teachers' values, attitudes, skills, knowledge, experience, special strengths and weaknesses, roles;
  - Department ethos and political structure
  - Material resources
  - Problems in existing curriculum

The other components...

- Goal Formulation
  - Decisions aimed at modifying the situation
- Program Building
  - Selecting, sequencing and resourcing subject matter for learning
- Interpretation and Implementation
  - The Parameters of Change
  - Successful and unsuccessful innovations:
    - Reasons for Failure
    - Characteristics of Success
    - Acceptance of an innovation
    - Persist
- Monitoring, assessment, feedback and reconstruction
  - Ongoing process of assessment

Take a stand

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Strongly Agree

Agree

Curriculum as a product in which objectives are preset, content and activities preselected and organised and evaluation strategies predetermined ensures all students have access to a quality education and therefore should be accepted as the dominant approach to curriculum development for all schools.

Disagree

Strongly Disagree

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Curriculum Development

Locating and identifying curriculum materials that have been development

Curriculum in Schools

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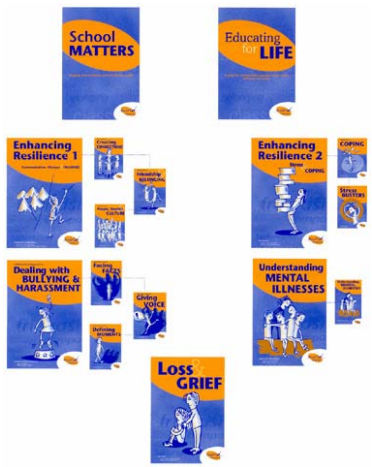
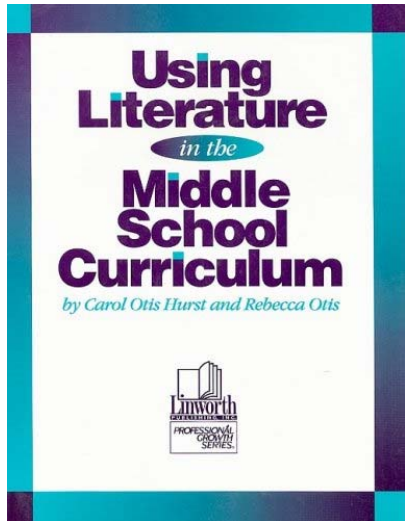
- What's in a name:
  - Curriculum guide, course of study, syllabus...
- Names may signal a different purpose or they may be synonymous
- A curriculum guide 'here' – a course of study 'there'
- It is difficult to predict what will be discovered in any particular curriculum product until it is examined





Suggested Definitions

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- A Curriculum Guide
  - A single course or subject area at a particular grade level (9th grade English)
  - All subjects at a particular grade level (9th grade)
  - A sequence in a discipline (Language Arts)
  - An area of interest applicable to two or more courses or grade levels (Safety)
  - May be called a course of study when it covers a single course but is a teaching aid with helpful suggestions rather than a complete course of study
- A Course of Study
  - A detailed plan for a single course
  - Includes:
    - What to teach - text materials (content)
    - How to teach – suggested strategies and activities
- A Syllabus
  - An outline of topics to be covered in a single course or grade level

Analysing Curriculum Materials

- Man: Course of Study
- In groups analyse “Man: A Course of Study” using the general analysis questions from the analysis scheme
- Think about design (product, process, situational)
- Decide how to share the analysis for the purpose of processing the information
- Build up your response to the questions as feedback to the class

Time to Reflect

Contested nature of Education in general

The development of curriculum in Singapore

The contested nature of curriculum development in particular

The development of curriculum materials