

The screenshot shows a Zoom meeting interface. The main content is a presentation slide from Chulalongkorn University Faculty of Education. The slide title is "Methodology of Theory Building: An Application for Music Education Conceptualization". Below the title, it says "วิธีวิทยาการสร้างทฤษฎี : การประยุกต์เพื่อความเข้าใจเชิงแนวคิดทางดนตรีศึกษา" and lists the author as "รองศาสตราจารย์ ดร. นฤธร สุภจิตต์". It also provides contact information for the Faculty of Education and the date/time of the presentation: "วันพุธที่ 22 กันยายน พ.ศ. 2564 เวลา 10:00 - 12:00 น.". On the right side of the Zoom window, there is a grid of participants, including Thawin Lalthong, Kritsipat Uejitmet, Mintra Thuntawech, Wirayu Techamanapong, Sittiporn W., narutt.suttachitt, Dneya Uddaisuk, Pooky Promsuk..., Ong-art Inthani..., and อ้นศักดิ์ วรแสน. The Zoom control bar at the bottom shows options like Unmute, Start Video, Participants (71), Chat, Share Screen, Record, Reactions, and a Leave button.

Theory ทฤษฎี คืออะไร

ทฤษฎี กับหลักการ เหมือนกันหรือไม่

ทฤษฎี คือแนวคิด ใช่หรือไม่

ทฤษฎี เป็นงานวิชาการ ที่คิดแล้วเขียน คิดอะไรต้องเขียน หากเขียนไม่เป็นก็ฝึกเขียน

กระบวนการคิดของมนุษย์ (เท่านั้น) เกิดจากประสบการณ์ แต่ที่ดีคือการเรียนรู้ แล้วเกิดประสบการณ์ แล้ว

คิด // ประสบการณ์ – คิดแล้วได้อะไรออกมา---องค์ความรู้

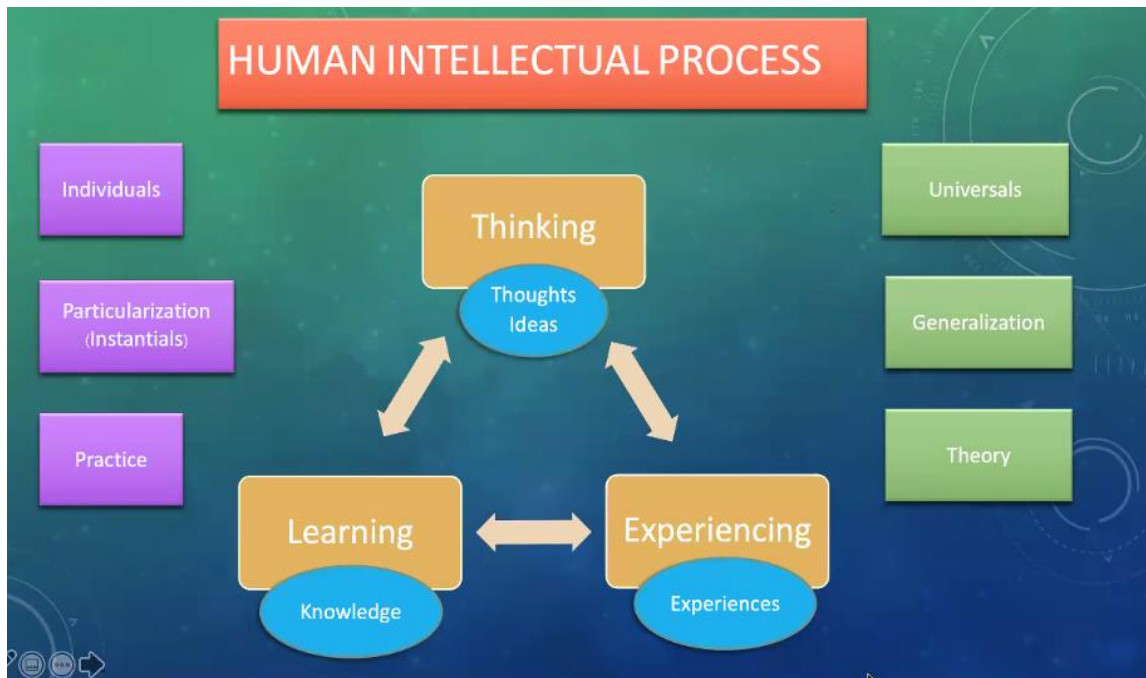
ประสบการณ์---

คิด---อาจได้ความรู้ หรือไม่ใช่ความรู้

เรียนรู้---ความรู้



Particula ---generalization---individul ---universal



มีความคิดที่ตกผลึกแล้ว ถ่ายทอดออกมาด้วยวิธีการเขียน ภาษาจึงเป็นสิ่งสำคัญมาก ต้องอ่านมาก ๆ

THEORY: THE ORIGIN OF THE WORD

- Derived from the Greek *Theoria*: contemplation or speculation quora.co
- Contemplation: thoughtful or long consideration or observation
- Speculate: to form opinions about something without having the necessary information or facts; to make guesses dictionary.cambridge.org
- Speculate: to think about the various aspects of a given subject; meditate; ponder; esp., to conjecture (predict, guess)
- Speculation: a supposition, theory, or opinion arrived at through speculating colinsdictionary.com

ทฤษฎีในบางครั้งอาจต้องคิดนอกกรอบ

HISTORY OF THEORY

- Theorizing was going on before 470 B.C.
- Birth date of Socrates



Socrates (470–399 BC)

Socrates (470–399 BC) was a Greek philosopher from Athens who is credited as a founder of Western philosophy and the first moral philosopher of the Western ethical tradition of thought

ปรัชญา ---- อภิปรายอย่างมีวิจารณ์ญาณ

WHAT IS PHILOSOPHY?

- From Greek $\phi\lambda\omicron\sigma\sigma\phi\acute{\iota}\alpha$, *philosophia*, literally "love of wisdom" is the study of general and fundamental questions about existence, knowledge, values, reason, mind, and language. Such questions are often posed as problems to be studied or resolved.



Pythagoras
(c. 570 – 495 BC)

ระบบความคิดที่ดี ระบบการเขียนที่ดี ฉะนั้นต้องภาษาดี

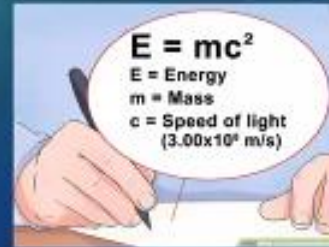
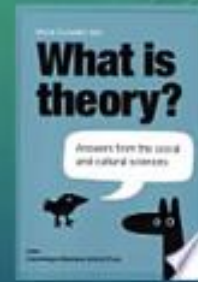
WHAT IS THEORY?

In one of Albert Einstein's revolutionary scientific papers published in 1905, $E=mc^2$ was introduced; where E is energy, m is mass, and c is the speed of light in a vacuum. $E=mc^2$ has become one of the most famous equations in the world. The equation represents the correlation of energy to matter: essentially, energy and matter are but two different forms of the same thing. This relatively simple equation has altered the way we think about energy and provided us with numerous technological advances.



Albert Einstein (1879-1955)

<https://www.youtube.com/watch?v=5W53m2>



Theory of Relativity ทฤษฎีสัมพัทธภาพ

MEANING OF THEORY

- A Theory is a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained. "*Darwin's theory of evolution*"
Definitive theory
- A theory is a carefully thought-out explanation for observations of the natural world that has been constructed using the scientific method, and which brings together many facts and hypotheses.
<http://www.feldman.com/blog/what-do-we-mean-theory-science>
- A theory is a **formal** idea or set of ideas that is **intended** to explain something.

Idea: a **thought** that you have about how to do something or how to deal with something

<https://www.vocabulary.com/dictionary/idea>

MEANING OF THEORY

- A **theory** is a related set of concepts and principles
 - about a phenomenon
 - the purpose of which is to explain or predict the phenomenon

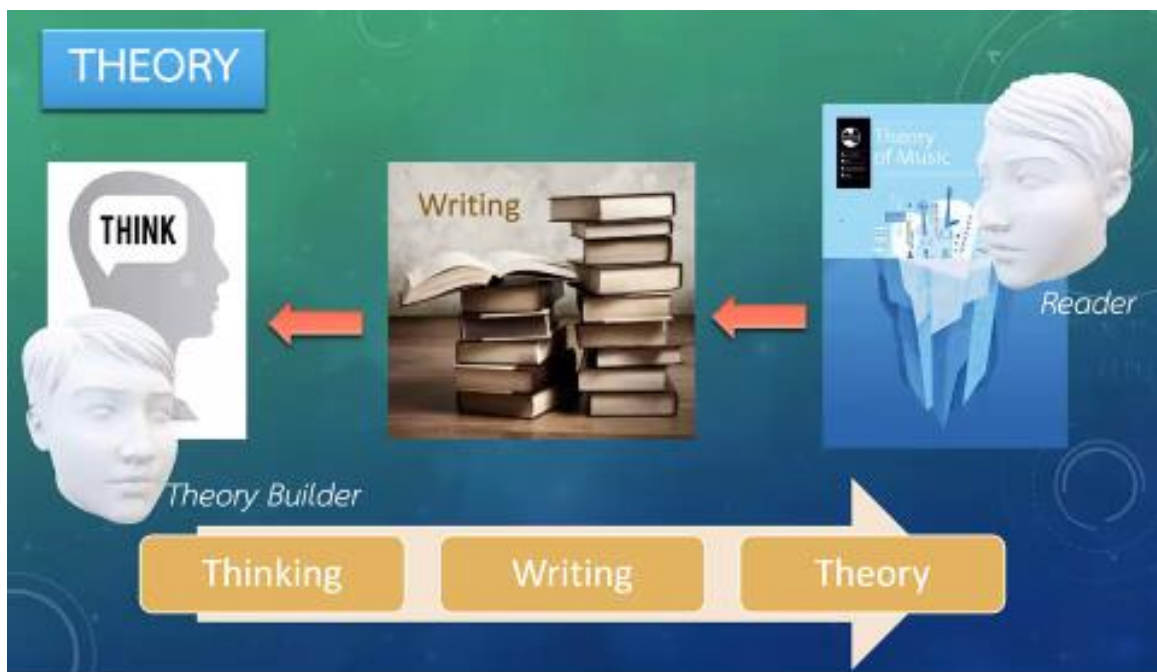
A **concept** is a symbolic representation of an actual thing - tree, chair, table, computer, distance, etc.

Construct is the word for concepts with no physical referent - democracy, learning, freedom, etc.
Language enables conceptualization.

A **principle** expresses the relationship between two or more concepts or constructs.

<http://faculty.lsu.edu/mleslie/principles-theory.html>

แนวคิด → หลักการ → ทฤษฎี



THE IMPORTANT OF THEORY

- 1. Theory provides concepts to name what we observe and to explain relationships between concepts. Theory allows us to explain what we see and to figure out how to bring about change. Theory is a tool that enables us to identify a problem and to plan a means for altering the situation.
- 2. Theory is to justify reimbursement to get funding and support - need to explain what is being done and demonstrate that it works - theory and research
- 3. Theory is to enhance the growth of the professional area to identify a body of knowledge with theories from both within and without the area of distance learning. That body of knowledge grows with theory and research. Theory guides research.
- "The theory also helps us understand what we don't know and, therefore, is the only guide to research. Relating to theory, it increases its ability to solve other problems in different times and different places." (Moore, 1991: 2)

<http://files.eric.ed.gov/fulltext/ED367096/theory.html>

THEORY

With more than 70 years of industry experience, Dr. Steiner has been recognized as professor emeritus at Indiana University since 1990. Prior to her retirement, she served as an honors professor from 1985 to 1990, professor of women's studies from 1973 to 1990, and professor of educational science and research methodology from 1967 to 1990.

Prior to these appointments, Dr. Steiner worked as a professor of philosophy at the University of Louisiana at Lafayette from 1966 to 1967, professor of research methodology at the Ohio State University from 1961 to 1966, assistant professor of philosophy at Marietta College from 1957 to 1960, lecturer of philosophy at the University of Southern California from 1956 to 1957, and instructor of philosophy at the University of Manitoba from 1953 to 1954.



Professor Elizabeth Steiner, PhD

Steiner, Elizabeth, 1988. *Methodology of Theory Building*. Sydney: Educology Research Associates.

MEANING OF THEORY

Theory is a systematically related set of statements, including some lawlike generalization.

- Some of the students wanted themselves to construct theory, but most wanted to be in a position to be intelligent consumers of theory.
- They want to use the best of theory in their lives. To these students' wants my teaching of the methodology of theory construction was and is dedicated

Steiner, Elizabeth, 1988. *Methodology of Theory Building*. Sydney: Educology Research Associates.

LANGUAGE

Logic of Language

- Pragmatics (Functions)
- Content, meaning (Semantics)
- Form, rules (Syntactics)

The functions of language: communication, the expression of identity, play, imaginative expression, and emotional release.

Dr. J. J. G. Jones

Logic of Language

Pragmatics

semantics

Syntactics

METHODOLOGY OF THEORY BUILDING (CONSTRUCTION)

- Definition of **method**
- 1: a procedure or process for attaining an object: such as
- a (1): a systematic procedure, technique, or mode of inquiry employed by or proper to a particular discipline or art
- (2): a systematic plan followed in presenting material for instructionthe lecture method
- b (1): a way, technique, or process of or for doing somethingoften slow in their business methods

<https://www.merriam-webster.com/dictionary/methodology#ymanyrte>

Method คือ วิธีการ ความหมายเล็กกว่า methodology

Methodology คือ วิธีวิทยา

METHODOLOGY OF THEORY BUILDING (CONSTRUCTION)

- Definition of **construction**
- 1: the act or result of construing, interpreting, or explaining
- Definition of **building**
- 1: a usually roofed and walled structure built for permanent use (as for a dwelling)
- 2: the art or business of assembling materials into a structure

ห่วงโซ่ความหมาย

DEFINITION CHAIN

- The system of defining a term by explicate to words or subterms orderly

Example

- Term (Word) : word1...word2...word3...
- 1. Word 1: word 1.1 ...word 1.2....
 - 1.1. Word 1.1: word 1.1.1...word 1.1.2
 - 1.1.1 Word 1.1.1: word 1,1,1,1...word1.1.1.2
- 2. Word 2: word 2.1...word 2.2.....
.....
- 3. Word 3: ...
.....

Variables/terms

primitive term

Theory of Education by Steiner

1. Education: System consisting of subsystems of teacher (T), student (S), content (C), and context (X)
 - 1.1 System: Complex of components in mutual interaction
 - 1.2 Subsystem: System within a system
 - 1.3 Teacher: Actor whose aim is guiding learning of another
 - 1.4 Student: Actor whose aim is his or hers guided learning
 - 1.5 Content: Structures for psychical development
 - 1.6 Context: Position for learning
 - 1.4.1 Learning: Psychical development
 - 1.4.1.1 Psychical Development: Formation of mental structures

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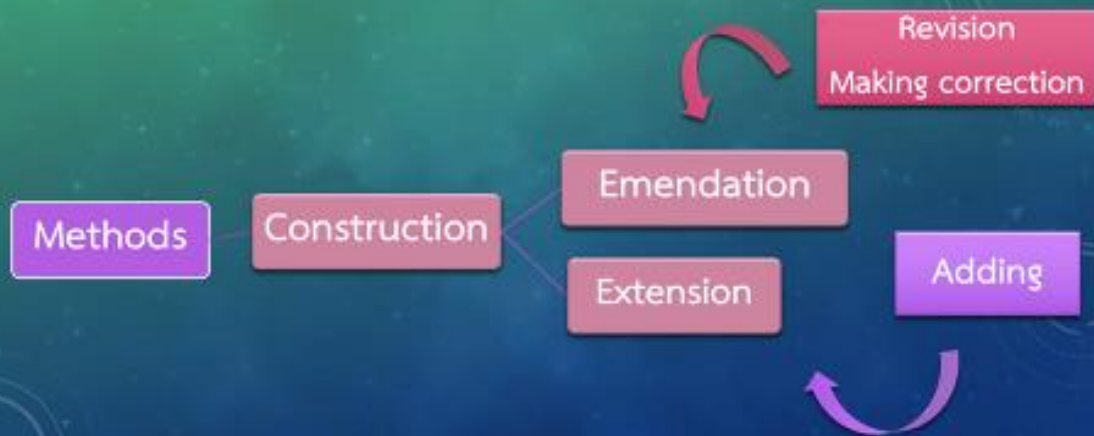
METHODOLOGY OF THEORY BUILDING



METHODOLOGY OF THEORY BUILDING



METHODOLOGY OF THEORY BUILDING



THEORY: CRITERIA

• Semantic:

- Exactness
- Exclusivity
- Exhaustiveness
- External Coherence
- Extendability

• Syntactic

- Equivalence
- Chaining
- Substitution



MUSIC THEORY

- Why do the opening notes of Beethoven's famous "Symphony No. 5" sound strong and driving rather than leisurely and soothing? The answer can be found by turning to music theory, the study of the concepts and compositional methods involved in the creation of music. Music theory examines musical qualities such as timbre, tone, pitch, and texture, as well as compositional elements such as rhythm, dynamics, tempo, and much more. And do you have perfect pitch like Mozart? If you do you can usually hear a melody, then sit at the piano and tickle the ivories or strum the strings of a guitar and play it by ear. A song—or any piece of music—is made up of two or more parts, or sections, which together create the whole of the composition. A ritornello, for instance, is a melodic sequence that "returns" multiple times throughout the composition. Harmony, the musical scale, how chords are formed, and the musical notation necessary to allow other musicians to play a piece of music are all parts of the musical education you'll need to be a pro in the field.

<https://www.britannica.com/browse/Music-Theory>

THEORY OF MUSIC EDUCATION



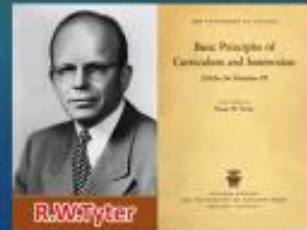
THEORY OF CURRICULUM BUILDING/DEVELOPMENT

Basic Principles of Curriculum and Instruction



In 1949, a small book had a big impact on education. In just over one hundred pages, Ralph W. Tyler presented the concept that curriculum should be dynamic, a program under constant evaluation and revision.

Curriculum had always been thought of as a static, set program, and in an era preoccupied with student testing, he offered the innovative idea that teachers and administrators should spend as much time evaluating their plans as they do assessing their students.



RALPH W. TYLER
(1902-1994)

BASIC PRINCIPLES of CURRICULUM and INSTRUCTION

Ralph W. Tyler

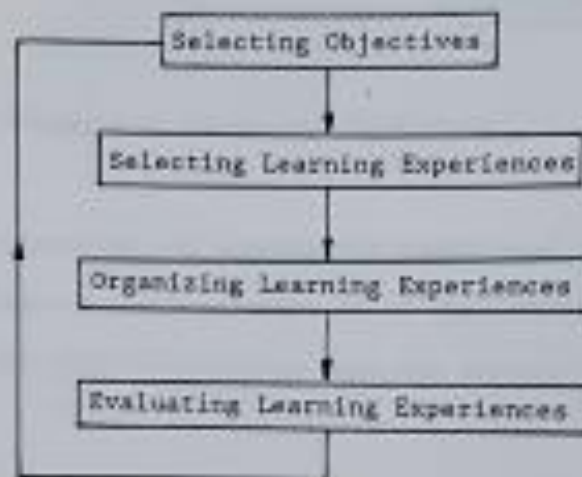
THE FOUR COMPONENTS OF THE CURRICULUM BUILDING/DEVELOPMENT

- Curriculum Aims, Goals and Objectives
- Curriculum Content or Subject Matter
- Curriculum Experience (Learning experience)
- Curriculum Evaluation

- Administrative tasks of the curriculum builders/developers

Explication of Tyler's Theory of Curriculum Construction

1. Curriculum construction -is a cyclical process in which one proceeds from selecting objectives, to selecting learning experiences, to organizing learning experiences, and evaluating learning experiences relative to objectives (p. 1).



Schema 4.1 Process of Curriculum Construction

COGNITIVE LEARNING THEORY

- **Cognitive learning theory** explains how internal and external factors influence an individual's mental processes to supplement learning.
- **Cognitive learning** is an active style of learning that focuses on helping you learn how to maximize your brain's potential. It makes it easier for you to connect new information with existing ideas hence deepening your memory and retention capacity.

COGNITIVE LEARNING THEORY

- Components of Cognitive Learning
- Traditional learning mainly focuses on memorization instead of trying to achieve mastery in a particular subject.
- The following are fundamental aspects of cognitive learning:
 1. Comprehension
 - For cognitive learning to be efficient and benefit you, understand the reason why you are learning a specific subject in the first place.
 2. Memory
 3. Application
 - Cognitive learning discourages cramming of information, which is very ineffective in education. Having a deep understanding of a subject improves your ability to relate new knowledge with previous experiences or information.
- Cognitive learning strategies help you apply new information or skills in life situations. They encourage you as you continue to develop problem-solving skills.

<https://www.valeris.com/hub/cognitive-learning/cognitive-learning-theory>

APPLICATION

HUMAN INTELLECTUAL PROCESS

• Semantic:

- Exactness
- Exclusivity
- Exhaustiveness
- External Coherence
- Extendability

• Syntactic

- Equivalence
- Chaining
- Substitution



Think



Writing

Theory

Semantic

Exactness

Exclusivity

Exhaustiveness

External Coherence

Extendability

Equivalence

Syntactic

Chaining

Substitution