

CERTIFICATE IN TEACHING COURSE (CITC)

- M1: Concepts of Teaching & Learning (Dr Chua Tee Tee & Dr Gregory Thong)
- M2: Development of Children & Youth & Employability (CTT)
- M3: Teaching Strategies (CTT)
- M4: Planning for Teaching (CTT)
- M5: Use of Instructional Aids (Dr Chan Kok Eng)
- M6: Assessing Teaching (CTT)
- M7: Assessing Student Achievement (CTT)
- M8: Classroom Management (CTT)
- ***ASSESSING MOCK LECTURES (Dr Chew Sing Buan & CTT)***

MODULE 1: CONCEPTS OF LEARNING & TEACHING

At the end of this module, students should be able to:

1. list out the 7 learning principles;
2. name the 5 axioms of learning;
3. explain multi-sense learning;
4. differentiate between pedagogy & andragogy;
5. describe Sim's Pedagogical Model & Cuban's Teaching Model.

CONCEPTS OF LEARNING



Dr. Gregory Thong

PRESENTATION OUTLINE

1. Introduction
2. What is learning?
3. Manager of learning
4. Cognitive domain of Bloom's taxonomy
5. Learning process
6. Learning sequence
7. Principles of learning

PRESENTATION OUTLINE

(continuation)

8. Axioms of learning
9. Questioning approach to learning
10. Learning and the senses
11. Periods of human development
12. Andragogy *versus* pedagogy
13. Learning phases - single, double and multiple
14. Review



1. INTRODUCTION

- Theory and practice

- When I hear I forget



- Human life-cycle stage of most learning

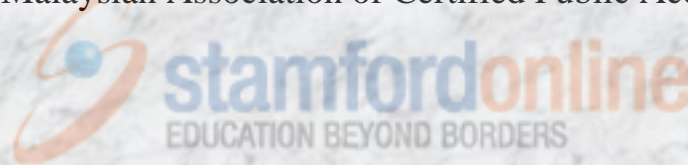
- Teaching is not learning

THEORY AND PRACTICE

- According to Thomas Edison,

**“Practice without theory is empty.
Theory without practice is blind.”**

Source: *A Guide for Students*, The Malaysian Association of Certified Public Accountants, p.g. 4.



- Lenin’s philosophy,

**“Theory without practice is futile,
practice without theory sterile.”**

Source: Taylor, Linda King *Not for Bread Alone*, p.g. 34.

*When I hear I forget.
When I see I remember.
When I do I understand.*



- Have you seen these statements before?
- In your opinion, which statement is the most important? **Why?**

When I do I understand

do → **to understand**

- As you attend this presentation, what can you do to achieve **understanding**?

- Which is better for your students in their studies:
 - to achieve understanding or to memorise the subject content?

do \longrightarrow *understand*
From a, b, c \longrightarrow *x, y, z*

Reverse process

understand \longrightarrow *do*
From z, y, x \longrightarrow *c, b, a*



As a lecturer, have you used the reverse process when you teach?

HUMAN LIFE-CYCLE STAGE OF MOST LEARNING

On the average, at which stage of our life are we achieving the fastest rate of learning?



Why?

TEACHING IS NOT LEARNING

Do you agree or disagree with this statement?



Why?

2. WHAT IS LEARNING?

It should also be remembered that learning is only a concept, a psychological process. As McGehee has pointed out,

No one of you have ever seen “learning.” You have seen people in the process of learning,, you have seen people behave in a particular way as a result of learning, and some of you (in fact, I guess the majority of you) have “learned” at some time in your life. In other words we infer that learning has taken place if an individual behaves, reacts, responds as a result of experience in a manner different from the way he formerly behaved.¹

¹William McGehee, “Are We Using What We Know about Training? - Learning Theory and Training,” *Psychology*, Spring 1958, p. 2.

DEFINITIONS OF LEARNING

■ Learning is said to be a relatively permanent change in behavioural tendency as a result of reinforced practice.

(De Cecco)



■ Learning is a relatively permanent change in behaviour that results from reinforced practice or experience.

(Luthans, F.)

DEFINITION - FOUR POINTS OF EMPHASIS

1. Learning involves a change, though not necessarily an improvement, in behaviour.
2. The change in behaviour must be relatively permanent in order to be considered as learning.
3. Some form of practice or experience is necessary for learning to occur.
4. Finally, it should be stressed that the practice or experience must be reinforced in some way for learning to occur.

Source: Luthans F. (1973) *Organizational Behavior: A Modern Behavioral Approach to Management*, International Student Edition, Tokyo, McGraw-Hill Kogakusha, Ltd., p.g. 362.

DEMONSTRATION

- Invite member of the audience to participate
- Participant asked to close eyes, touch a given small object, and announce what it is.
- Participant asked to open eyes, touch and examine closely, and announce what it is.
- Explanation



TYPES OF LEARNING

- Ostrich-like learning
- Ersatz learning
 - (a) Bulimic learning
 - (b) Ritualistic learning
 - (c) Superficial learning
- Genuine learning
 - Transformative learning



Adapted from: *Malaysian Management Review*, June 1999.

LEARNING - WHAT TWO EXPERTS SAY

LEARNING

According to Lynch and Cross (1991),
*"One pound of learning takes ten
pounds of common sense to apply it."*

Source: Lynch, R.L. and Cross, K.F. (1991) *Measure Up! Yardsticks for Continuous Improvement*, Cambridge, Massachusetts, Basil Blackwell, Inc., pg. 120.

3. *MANAGER OF LEARNING*

From Theory of Organisations:

■ **Classical Theory**

- task-centred
- organisation members
 - passive members primarily
 - capable of performing work by accepting directions
 - not initiating action
 - not exerting influence



■ Human Relations Theory

- relationship-centred
- organisation members bring in attitudes, values and goals
 - need to be motivated
 - induced to participate
 - members' goals and organisation's goals do not mesh well

■ Modern Theory

- task and relationship-centred
- organisation members are
 - decision-makers
 - problem-solvers

MANAGER OF LEARNING (continuation)

Changing role of the lecturer - in keeping with the evolution of education technology:

■ **Traditional or task-oriented phase**

- lecturer is central to the lecturing situation
- a learning authority
- an operative learning resource



■ Group orientated phase

- learning initiative with group of learners
- lacking in direction
- lecturer contributes without giving directional guidance

■ **Task-group orientated phase** (integrated phase)

- learning centred with lecturer as leader
- lecturer as planner, organiser, coordinator and evaluator of learning
- lecturer as **manager of learning**

MANAGEMENT FUNCTIONS AND LEARNING

- The functions of a manager are planning, organising, leading/directing and controlling.
- To perform effectively in his/her role, a lecturer has to do:
 - Planning for learning by determining needs and establishing objectives,
 - Organising - arrange for and relate to learning resources,
 - Leading/directing - motivate and supervise learning by learners, and
 - Controlling - determine effectiveness of learning.

4. COGNITIVE DOMAIN OF BLOOM'S TAXONOMY

- According to Organisation Behaviour theory, cognitions are:
 - thoughts
 - expectations
 - attitudes
 - opinions
 - perceptions

COGNITIVE DOMAIN OF BLOOM'S TAXONOMY (continuation)

- Cognitive component of attitudes and values

- knowledge

- beliefs



- Domain - scope of any subject or area of interest

- Taxonomy - practice or technique of classification

BLOOM'S TAXONOMY

DIRECTION

CATEGORY

LOW LEVEL

1. *Knowledge* - recall and recognise information
2. *Comprehension* - understand and be able to explain specific concepts using own words and images rather than parroting definitions provided by others
3. *Application* - apply what have been learned, and apply it correctly to examples

BLOOM'S TAXONOMY (continuation)

DIRECTION

CATEGORY

MEDIUM LEVEL

4. *Analysis* - analyse the subject by breaking it down into its constituent parts

5. *Synthesis* - synthesise into a unified whole

HIGH LEVEL

6. *Evaluation* - evaluate acquired knowledge critically, come to grips with underlying value issues, and be able to judge the importance of what knowledge have been required

COGNITIVE OBJECTIVES

1. The lowest level in this taxonomy begins with the student's recall and recognition of **KNOWLEDGE**.
2. It extends through his **COMPREHENSION** of the knowledge.
3. To his skill in **APPLICATION** of the knowledge that he comprehends.
4. The next level progress from his ability to make an **ANALYSIS** of the situations involving the knowledge.
5. To his skill in **SYNTHESIS** of it into new organisations.
6. The highest level lies in his skill in **EVALUATION**, so that he can judge the value of the knowledge in realising specific objectives.

5. LEARNING PROCESS

■ Need

■ Stimulus

■ Response

■ Reinforcement

■ Learning

■ Behaviour



LEARNING PROCESS (continuation)

Acceptance of need by learner

apply Maslow's Motivation Theory

- set and accept objectives
- learning receptivity



Stimulus

- occasion or event
- triggers reaction or response

LEARNING PROCESS (continuation)

Response

- behaviour which results from a stimulus
- from within learner

Reinforcement

- maintains or strengthens response
- external to learner

Law of effect - a response evoked in the presence of a

- stimulus and followed closely by a reinforcing state of
- affairs will be strengthened, and the likelihood of the same
- response occurring to the same stimulus in the future is
- increased.

LEARNING PROCESS (continuation)

Learning

- accept stimulus-response situation
- recall and reference within learner



Behaviour

- human activity

6. *LEARNING SEQUENCE*

- Introduction
- Presentation
 - Input
 - Expound
 - Participation
 - Demonstration
- Acceptance
 - Practice, application
- Test
- Review



LEARNING - ASSOCIATING SEQUENCE WITH PROCESS



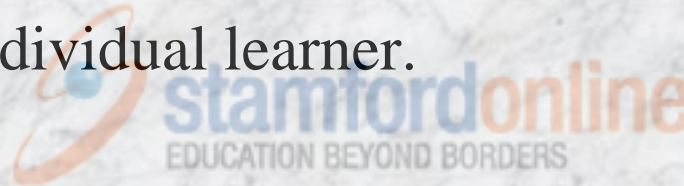
7. *PRINCIPLES OF LEARNING*

1. Learners must **learn for themselves** as individuals.

2. **Learning rates vary** - from one learner to another
- within an individual learner.

3. Learners learn more **effectively** when **step by step reinforcement** is received.

4. **Full mastery of each step** progressively makes learning more meaningful.



PRINCIPLES OF LEARNING (continuation)

5. Given **responsibility for learning** - learners are better

motivated and have higher retention.

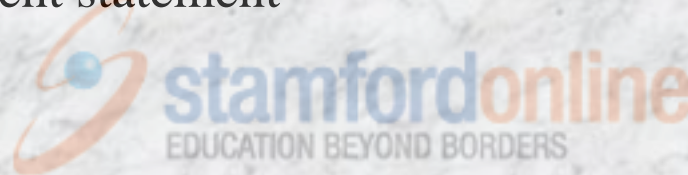
6. Learners generally can only assimilate relatively **small amounts of learning** at any one time.

7. Learners **relate new learning to something learnt previously** and generally follow **a logical approach**.

8. AXIOMS OF LEARNING

Axiom - a proposition, fact, principle, etc., which, because it is long-established, is generally accepted as true

- a self-evident statement



Proceed from

- 1 learned to unlearned
- 2 simple to complex
- 3 concrete to abstract
- 4 observation to reasoning
- 5 overview to detail to overview

9. QUESTIONING APPROACH TO LEARNING

- Learning is an active process on the part of the learner.
- The lecturer takes on the role of a learning catalyst to stimulate responses on the part of the learner rather than acting as a direct imparter of knowledge.
- One most valuable means of achieving learner involvement is the use of questions and discussion.

QUESTIONING APPROACH TO LEARNING (continuation)

A **question** is defined in the *Concise Oxford Dictionary* as “ a sentence in interrogative form addressed by one person to another to elicit information and ... is a form of communication which implicitly stimulates a response.”



FORMS OF QUESTIONS

- May be classified on two fundamental criteria - direction and subject-nature.

- Direction:

Overhead Question - a question addressed to the group as a whole

(Example - “What is meant by participative learning?”)

- Direct Question - a question addressed to a particular member of a group as an individual

(Example - “James, in what way can you use questions in your work?”)

FORMS OF QUESTIONS (continuation)

Subject Nature:

■ **General question**

- a question related to a broad subject area
- stimulating general rather than specific response

(Example - “What processes are involved in learning?”)

■ **Specific question**

- a question concerned with a specifically defined aspect of a subject

(Example - “What part is played by the ‘stimulus’ in the learning process?”)

5W1H

I keep six honest serving-men

(They taught me all I knew);

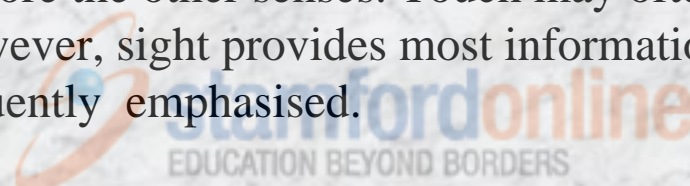
Their names are WHAT and WHY and WHEN
and HOW and WHERE and WHO.

Source: Kipling, Rudyard *The Elephant Child*.

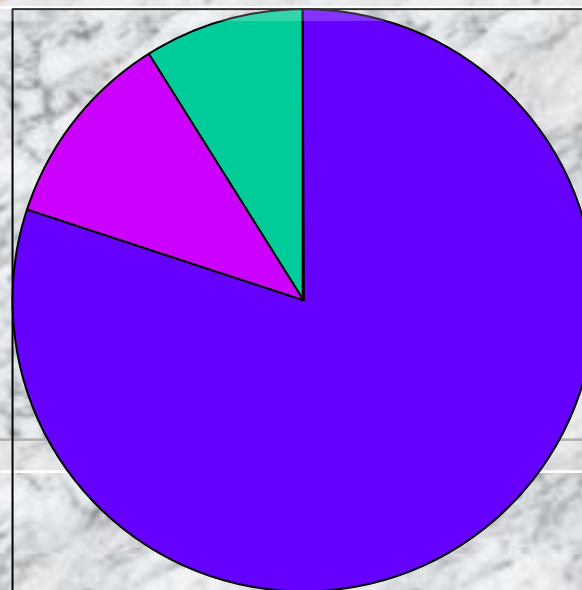
10. LEARNING AND THE SENSES

Multiple-sense Learning

Authorities suggest that of the information a person takes in, approximately 80 per cent is obtained through sight, 11 percent by hearing, and 9 percent by the other senses combined. Therefore, to achieve maximum input to the students, a lecturer must use two or more of the senses. Usually, the lecturer can use sight and hearing, but do not ignore the other senses. Touch may often be the crucial sense. For most learning, however, sight provides most information to students, and visual aids are consequently emphasised.



The Senses Pie Chart



■ Sight

■ Hearing

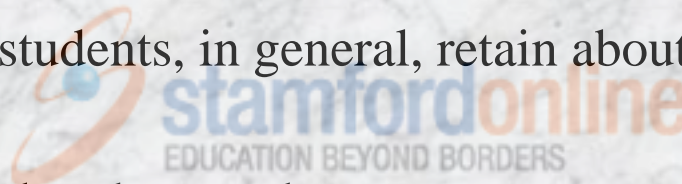
■ Other Senses

Multiple-sense Learning (continuation)

The ability to choose the right method for the job is the work of the professional and is part of the set of skills lecturers must develop to achieve competency in lecturing.

Research indicates that students, in general, retain about:

- 10 percent of what they read;
- 20 percent of what they hear;
- 30 percent of what they see;
- 50 percent of what they both hear and use;
- 70 percent of what they say; and
- 90 percent of what they say and do.



Multiple-sense Learning (continuation)

Though these percentages are only approximations they indicate that:

- participants learn faster by seeing and hearing than by hearing alone,
- participants learn even faster when doing is added to seeing and hearing,
- participants retain more of the things they do than the things they are told.

ACTIVITY, INVOLVEMENT AND LEARNING

We tend to remember

Our level of involvement

10% of what we read
receiving

20% of what we hear

30% of what we see

50% of what we hear
and use

70% of what we say

90% of what we
both say and do



Verbal

Visual receiving

Receiving and
participating

Doing

11. PERIODS OF HUMAN DEVELOPMENT

- Prenatal Period (Conception through birth)
- Infancy (The first two years)
- Early Childhood (3 to 5 years)
- Middle Childhood (6 to 11 years)
- Early Adolescence (12 to 14 years)



PERIODS OF HUMAN DEVELOPMENT

(continuation)

- Late Adolescence (15 to 19 years)
- Early Adulthood (20s and 30s)
- Middle Adulthood (40s and 50s)
- Late Adulthood (60 and above)

Source: Rice, F.P. (1998) *Human Development*, New Jersey, Prentice-Hall, Inc.



12. *ANDRAGOGY* versus *PEDAGOGY*

■ Pedagogy

derived from the Greek word *paid*, meaning ‘child,’ and *agogos*, meaning ‘leading’, the art and science of teaching children



■ Andragogy

word coined by Malcolm Knowles of Boston University, derived from the Greek word *andr*, ‘man,’ and *agogos*, ‘leading’ the new discipline of adult education

DIFFERENCES BETWEEN PEDAGOGY & ANDRAGOGY (Briggs & Sommefeldt, 2002, 33)

- | ■ PEDADGOGY | ■ ANDRAGOGY |
|--|--|
| ■ Learner is dependent on the teacher | ■ Learner is:
■ self-directed |
| ■ Teacher is responsible for teaching & learning | ■ responsible for his/her own learning |
| ■ Teacher evaluates learning | ■ self-evaluating |



DIFFERENCES BETWEEN PEDAGOGY & ANDRAGOGY (contd.)

■ PEDAGOGY

- Learner's limited experience as resource for learning
- Teacher's experience is more important

■ ANDRAGOGY

- Learner's greater volume & quality experience
- Adults are the richest sources of info for one another
- Different & diverse experiences

DIFFERENCES BETWEEN PEDAGOGY & ANDRAGOGY(contd.)

■ PEDAGOGY

- Children have to be guided what they have to learn before proceeding to the level of mastery

■ ANDRAGOGY

- Any change is likely to trigger a readiness to learn
- Ability to assess gaps in learning

DIFFERENCES BETWEEN PEDAGOGY & ANDRAGOGY (contd.)

■ PEDAGOGY

- Learning as a process of acquiring prescribed content
- Subject content is sequenced logically

■ ANDRAGOGY

- Learning tasks must have relevance
- Learning is organised around life/work situations rather than subject-matter units

DIFFERENCES BETWEEN PEDAGOGY & ANDRAGOGY (contd.)

■ PEDAGOGY

- Mainly motivated by by *external* pressures, competition for grades & consequence of failure (deferred success)

■ ANDRAGOGY

- *Internal* motivators: self-esteem, recognition, self-confidence, self-actualisation

ANDRAGOGY versus PEDAGOGY

(continuation)

Andragogy

- stresses the role and responsibility of the learner,
- more important, that of the teacher to allow and structure ways for the learner to influence his or her learning process,
- to assess learning needs.

ANDRAGOGY versus PEDAGOGY

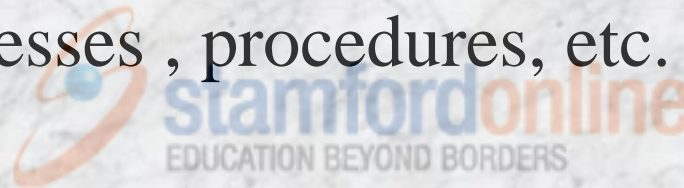
(continuation)

- Knowles pointed out that lecturing may work with children (which is debatable) but not with adults.
- Adult education had to take into account the learning needs of the student and to encourage give-and-take dialogue or in other ways to engage and ensure the learner's involvement.

Source: Ciampa, Dan (1992) *Total Quality: A User's Guide for Implementation*, Reading, Massachusetts, Addison-Publishing Company.

13. LEARNING PHASES - SINGLE, DOUBLE AND MULTIPLE

- The “what” of learning involves the acquiring and applying the knowledge about theory, concepts, principles, processes , procedures, etc.

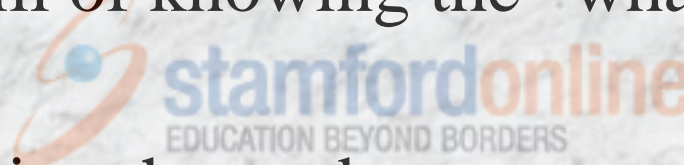


- **Single phase learning** pertains to the **traditional form of lecturing** on “what” is correct, which may or may not achieve good results.

12. LEARNING PHASES - SINGLE, DOUBLE AND MULTIPLE (continuation)

Double phase learning:

- pertaining to getting the students involved in acquiring the skill of knowing the “what” that is incorrect, and
- after that, getting the students to acquire the skill to make the necessary corrections to achieve good/excellent results.



12. LEARNING PHASES - SINGLE, DOUBLE AND MULTIPLE (continuation)

■ **Multiple phase learning :**

- a combination of single and double phase learning,
- pertaining to lecturing on “what” is correct,
- getting the students involved in acquiring the skill of knowing the “what” that is incorrect, and
- after that, getting the students to acquire the skill to make the necessary corrections to achieve good/excellent results.

KNOWING THE “WHAT” THAT IS INCORRECT

- Please refer to the following passage, from *The Star*, August 20, 2001, Section 2, page 9:

“My lecturer is very best and my idola. I like the charisma that she has. She does not angry whatever stupid thing that we does. She never shouted at us because she has no temperature. Rather than the other one, she is really different in the way she teach us. I feel not boring and enjoyable attend her classes every week. She repairs her lessons and she gives a guidelines. I can concentrate even the class is in the hottest afternoon.”

- Example of a comment from a copy of the “Analysis of Examination Results (for CAE)” Report:

“Majority of the students are answered this Question. But only the half of the students did well.”

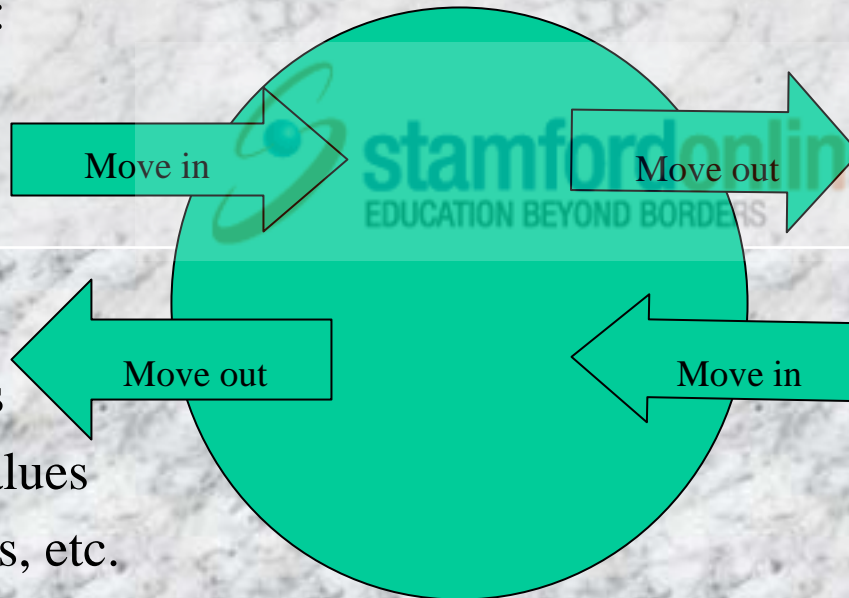
NATURE ABHORS A VACUUM

Winner

* Following the “what”
that is correct,
according to:

- theories
- concepts
- principles
- processes
- procedures
- positive values
- good habits, etc.

Human Mind



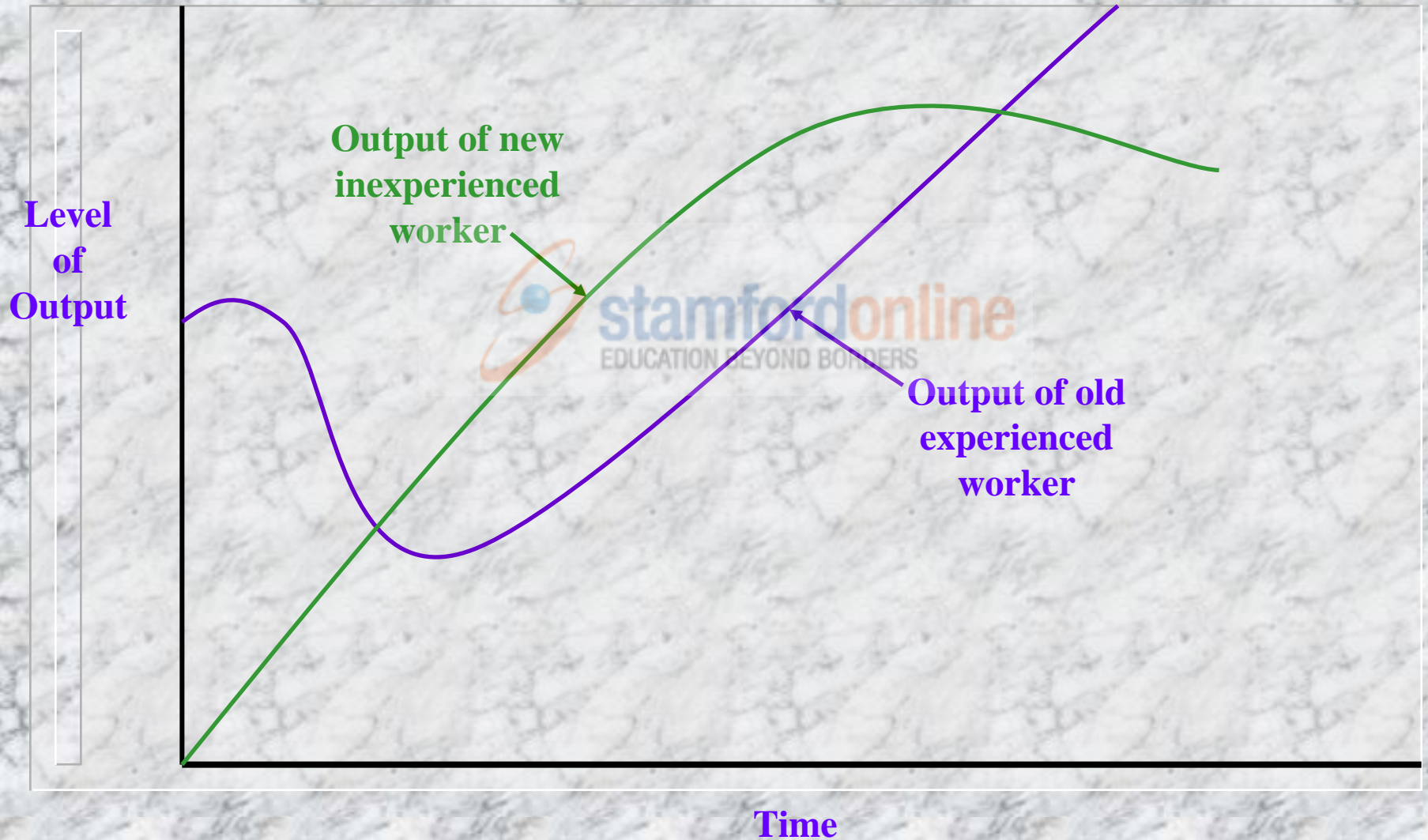
Loser

* Following the “what”
that is incorrect,
according to:

- theories
- concepts
- principles
- processes
- procedures
- negative values
- bad habits, etc

NOTE: Remember the saying, “An idle mind is a devil’s workshop.”

EFFECT OF CHANGE IN WORK METHODS



QUESTIONS

■ Since all lecturers are in the business of learning, is there evidence that most lecturers are good at learning?

Why?



■ Are lecturers creators? Why?

■ How can the academic reputation of Stamford College be enhanced?

A STORY

“Aristotle, the great Greek philosopher, was tutor to the future king, Alexander the Great. One day they were doing a lesson in mathematics which required many calculations. Alexander, always impatient, suddenly threw aside his work and exclaimed: “Why must I go through all these little steps? Why can’t I get the answer immediately? I’m the future king!”

“There is no royal road to knowledge,” answered his tutor.

Source: Reader’s Digest (1973) *Write Better Speak Better*, Singapore, Reader’s Digest Asia Limited, pg. 357.

WHAT DO WE WANT OUR COLLEGE STUDENTS TO LEARN?(Ramsden, 1992, 18)

- 1. ‘knowledge of factual information, technical or manipulative skills, and specific problem-solving techniques’
- 2. ‘specific, content-related changes in understanding, linked to particular disciplines or professions’
- 3. ‘very general abilities ...thinking critically... being able to communicate effectively’

14. REVIEW

1. Introduction
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REVIEW (continuation)

8. Axioms of learning
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