

In Remembrance of His Majesty

KING BHUMIBOL ADULYADEJ

1927 - 2016



หลักสูตรที่ **สือดคล้อง** กรอบมาตรฐานคุณวุฒิ ระดับอุดมศึกษาแห่งชาติ: ควรเป็น

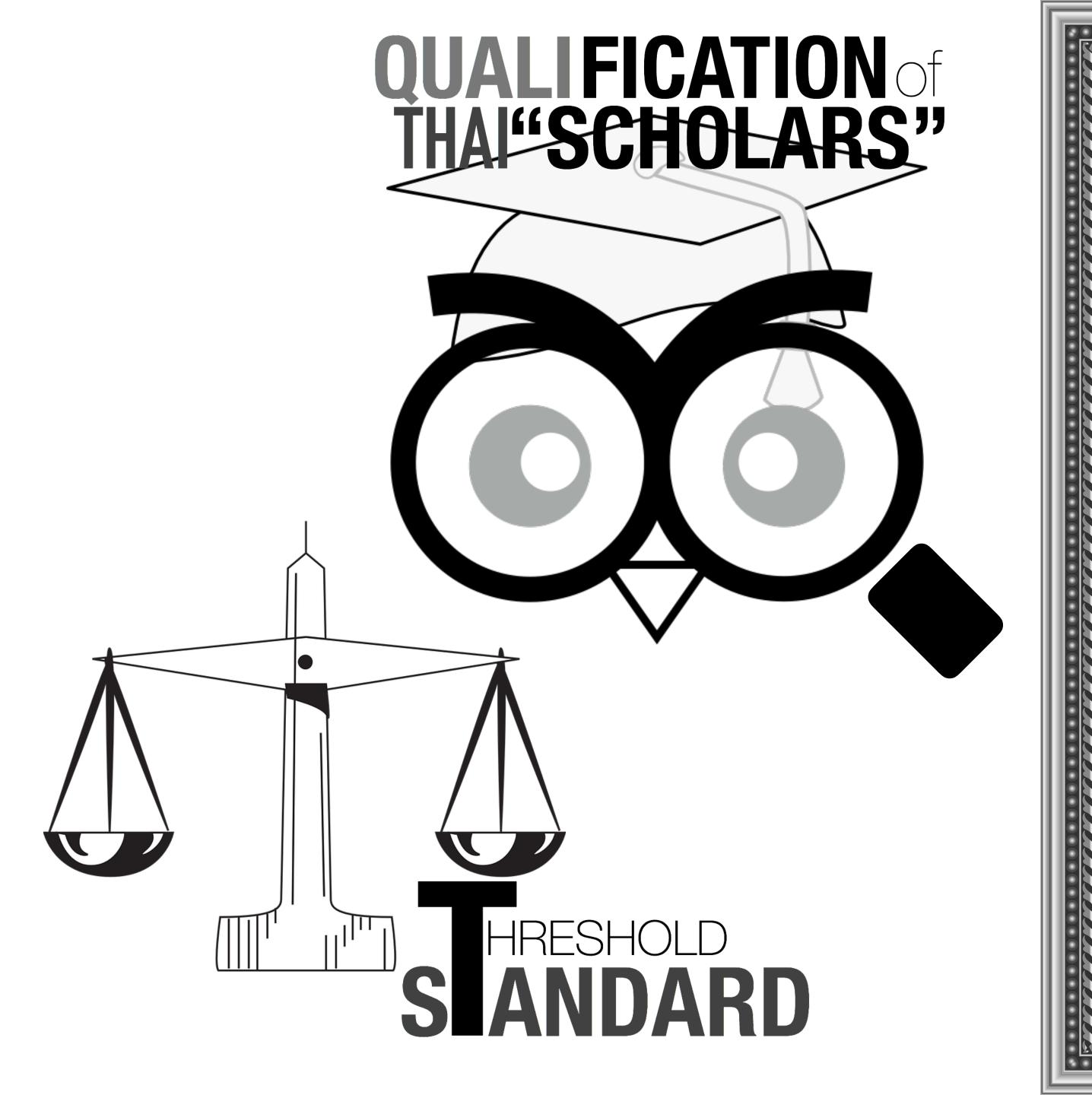
213

This is actually the CONCEPT of TOSE TO TOSE T

MISS







QUALITY

Achievement

of STUDENTS

in all disciplines

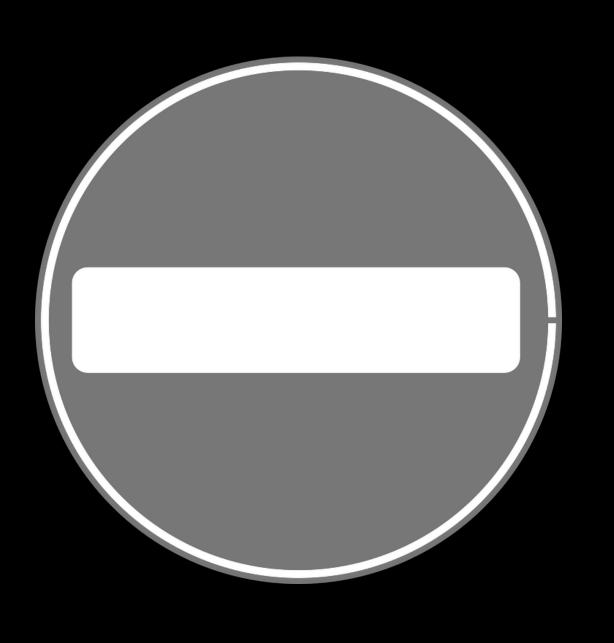
FRAMEWORK

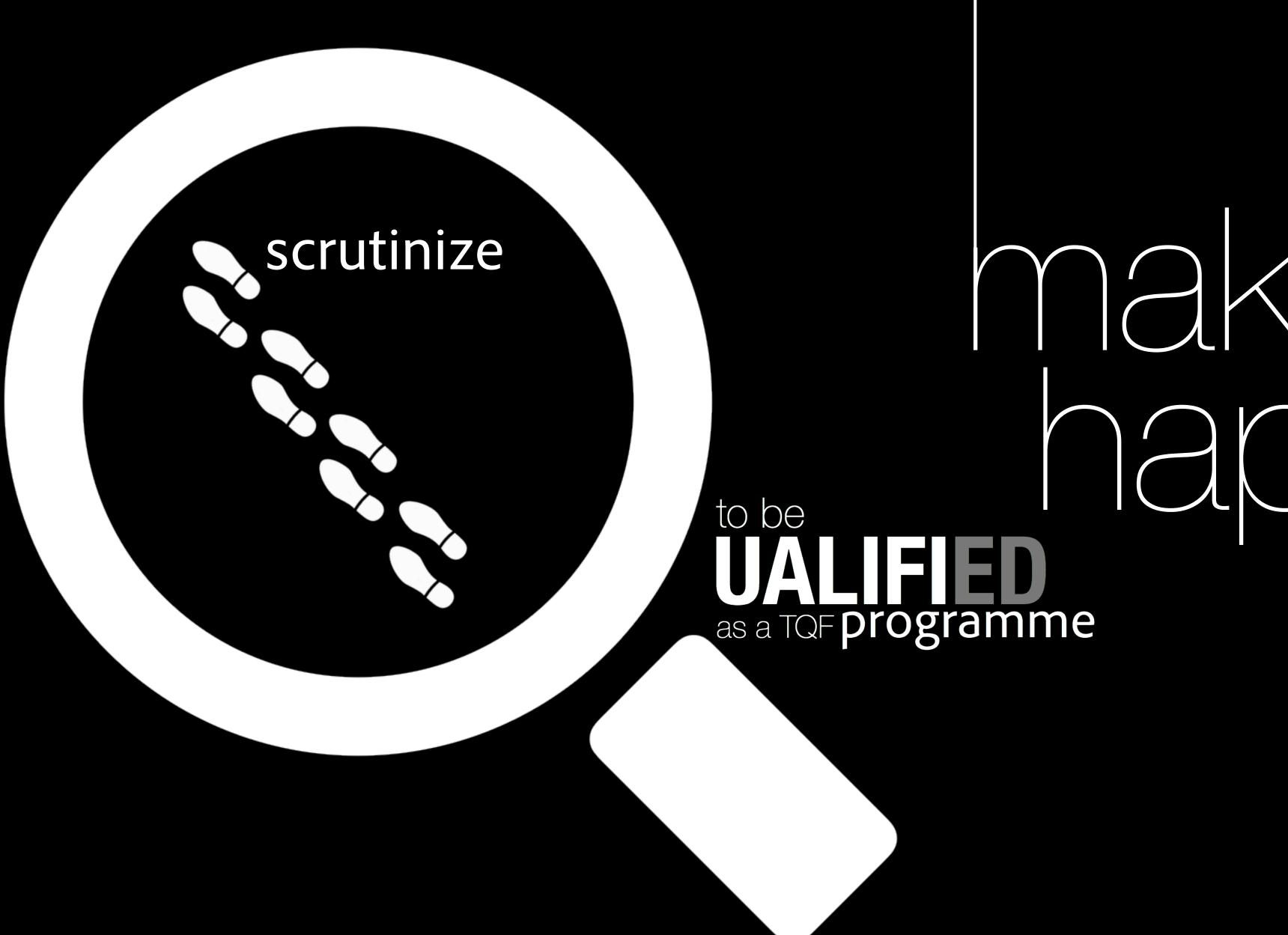


)ผู้ที่จบการศึกษาระดับอุดมศึกษาของประเทศไทยทุก คนในทุกศาสตร์สาขาวิชา**ตัอ ใ**มีข้อกำหนดจำเพาะ (Specification) พื้นฐาน (Threshold) ที่เป็นผลการเรียน รู้อย่างน้อย 5 ด้าน คือด้าน (1) คุณธรรม จริยธรรม (2) ความรู้ (3) ทักษะทางปัญญา (4) ทักษะความสัมพันธ์ ระหว่างบุคคลและความรับผิดชอบ และ (5) ทักษะการ วิเคราะห์เชิงตัวเลข การสื่อสาร และ ใช้เทคโนโลยี สารสนเทศ จึงสมควรเรียกว่า "บัณฑิต" "มหา บัณฑิต" และ "ดุษฎีบัณฑิต"



งานเอกสารประกอบด้วย**รายการ**ตามที่กำหนดใน



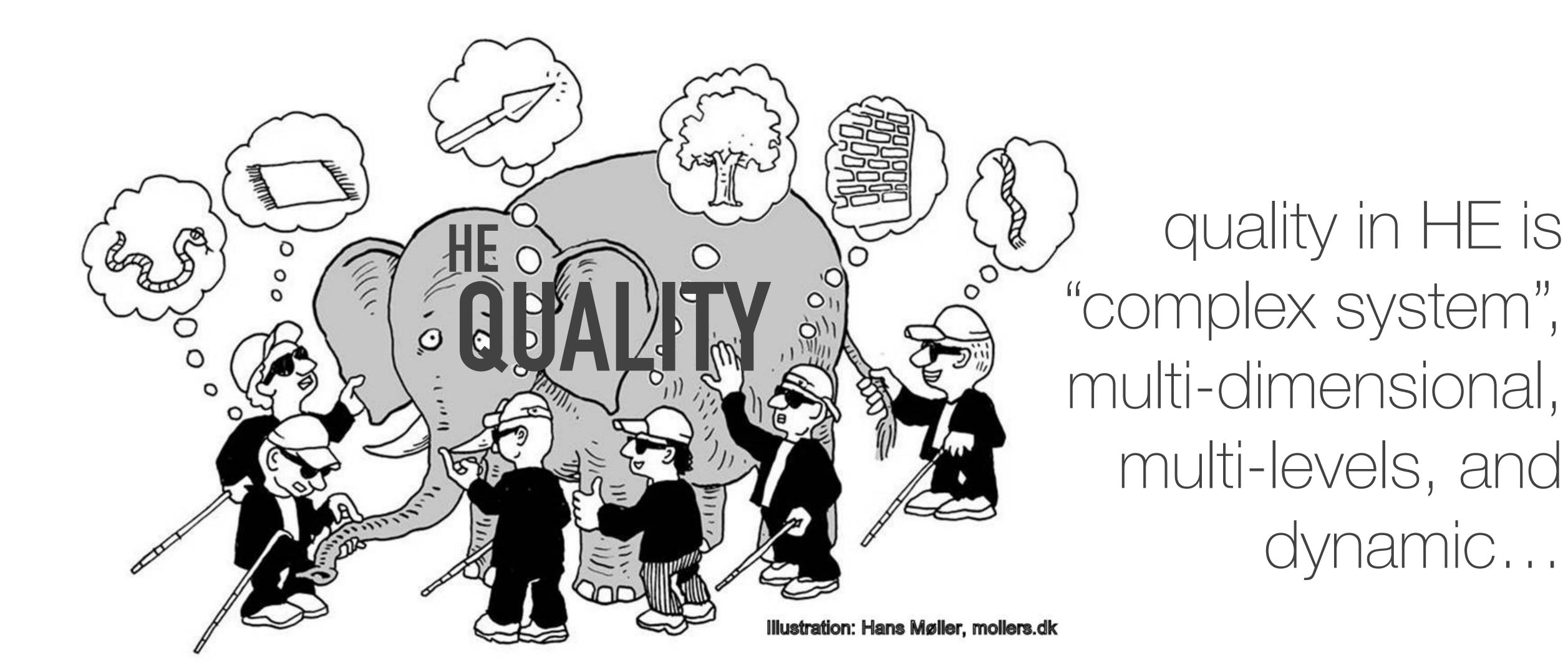


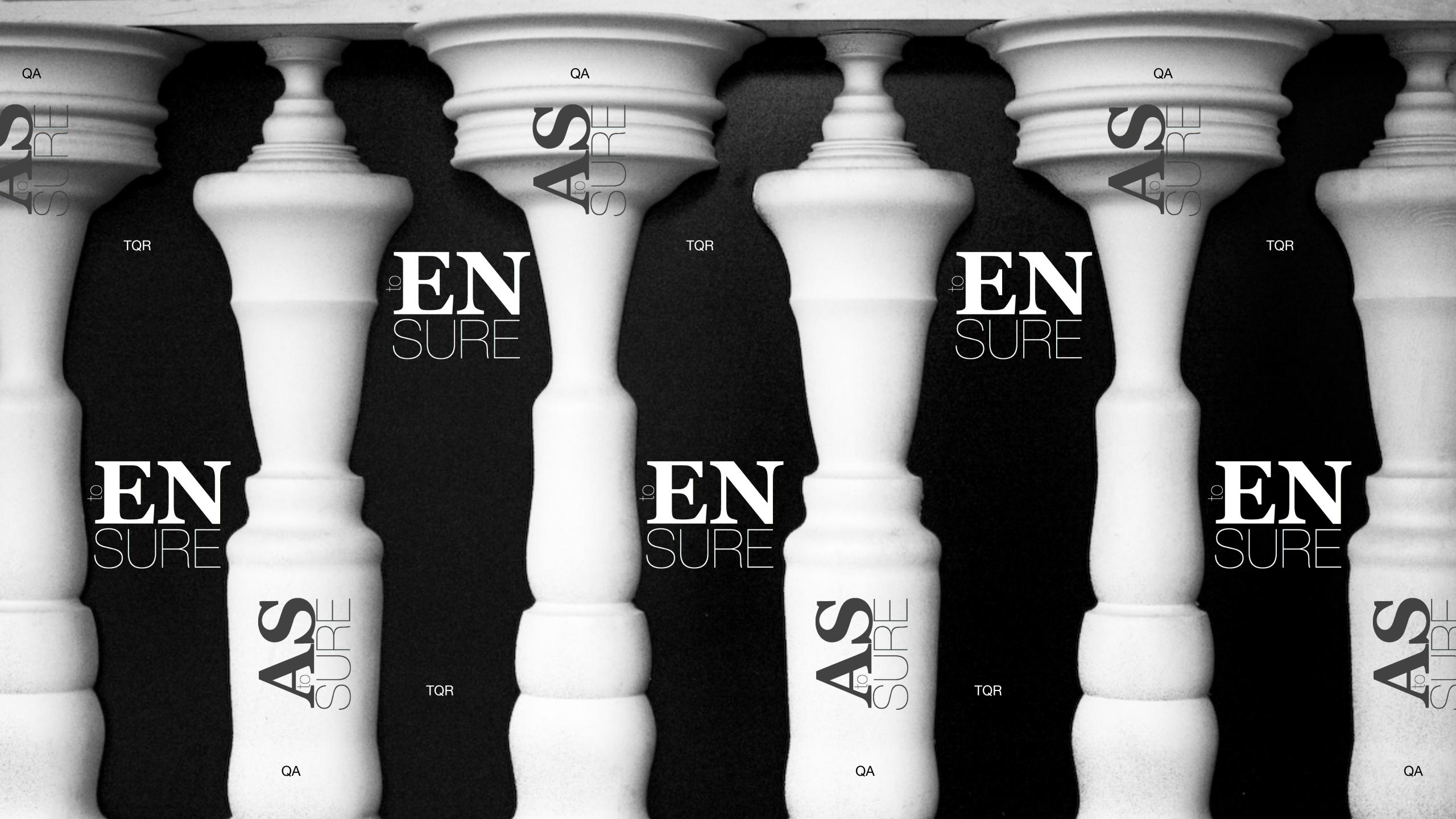
make it happened















the highest degree held by faculty members





number of credits



research

facilities

employment

etc.

SATISFACTION

appear to be

SCHOLAR

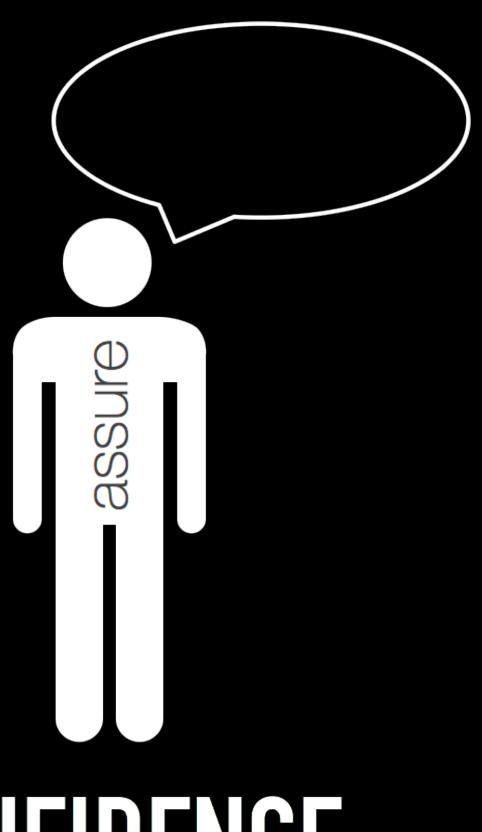


C SUBJECT ONTAINER

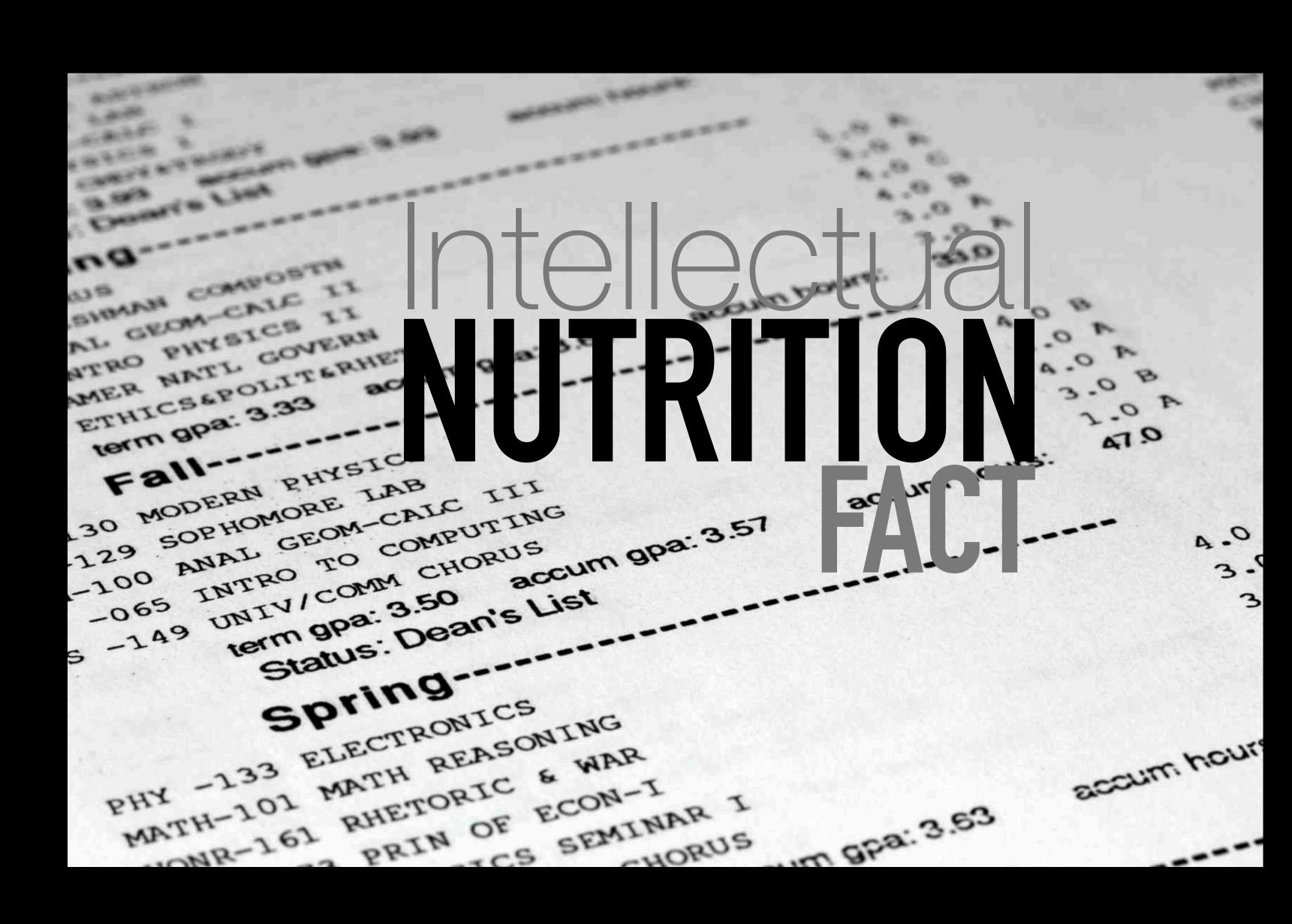
I listen and copy your notes; I memorize the information; I reproduce the information....

SHIANN CCAAPOSTN AL GECM-CRIE II ATRO PHYSICS II AMER NATL GOVERN ETHICS & POLITERHE" term 9pa: 3.33 Fall----L30 MODERN PHYSIC -100 ANAL GEOM-CAIC III 129 SOPHOMORE LAB -065 INTRO TO COMPUTING term gpa: 3.50 accum gpa: 3.57 -149 UNIV/COMM CHORUS 4.0 Status: Dean's List spring--PHY -133 ELECTRONICS MATH-101 MATH REASONING TONR-161 RHETORIC & WAR accum hours 72 PRIN OF ECON-I TCS SEMINAR I um 8pa: 3.63

วาราสาร์ และเพานิชเจริญ คือยพานิชเจริญ



CONFIDENCE



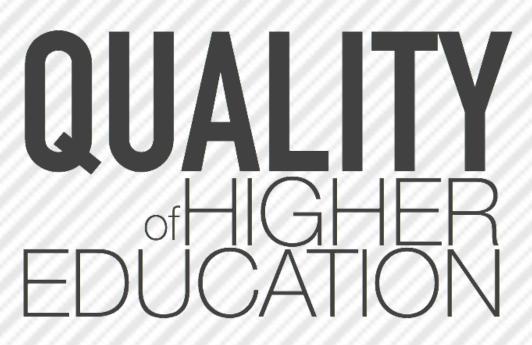
based EDUGATUN

the highest degree held by faculty members



number of credits

research



up-to-date subjects

etc.

employment

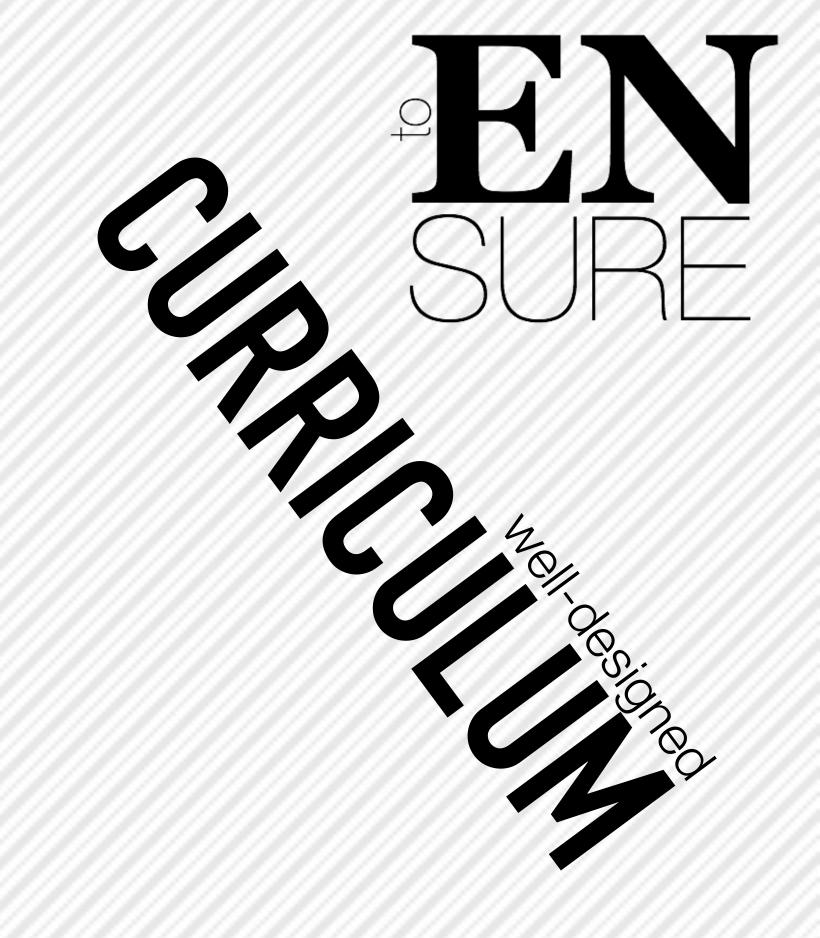
SCHOLAR

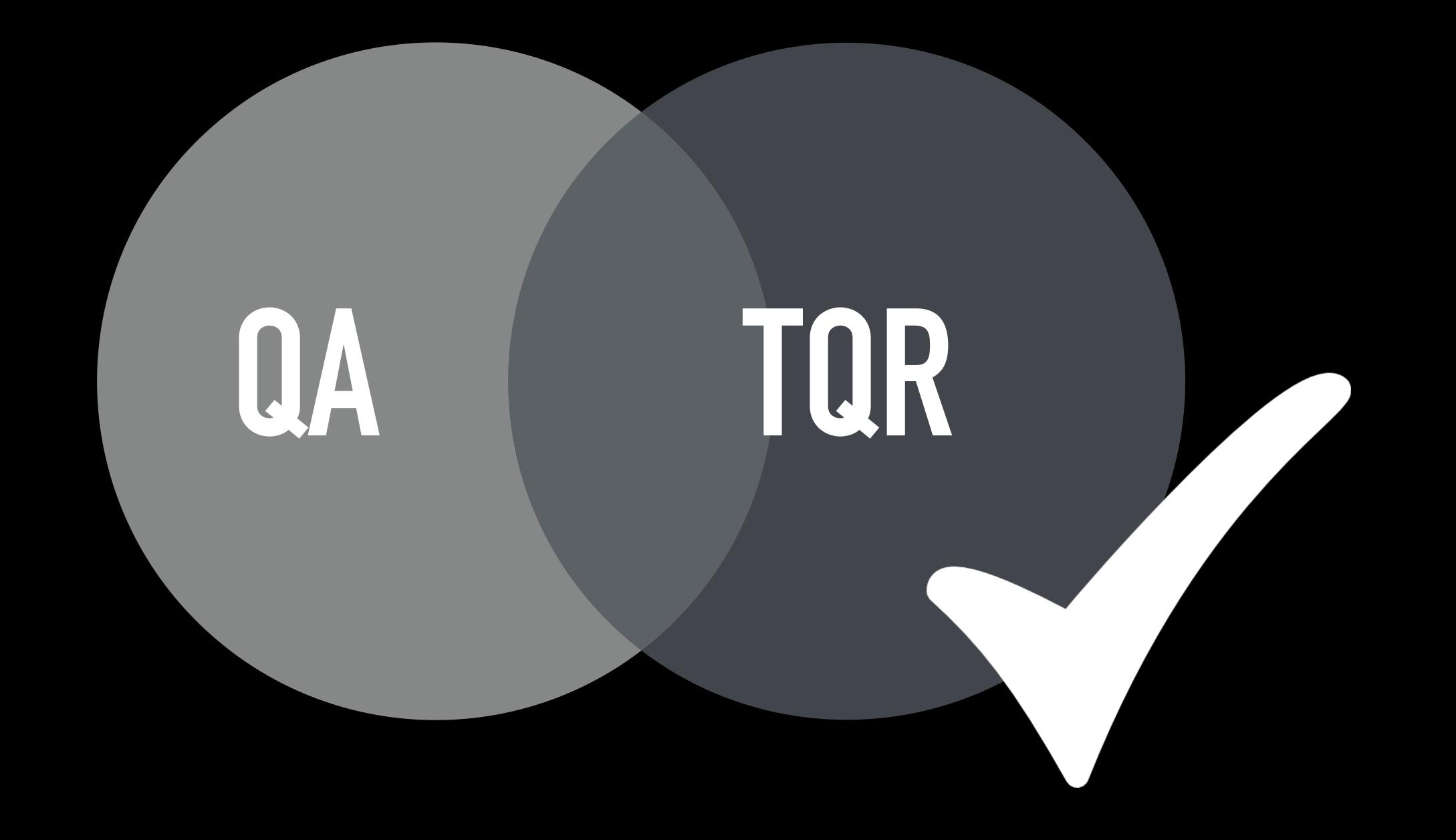
competency of faculty members

learning outcomes_COMPETE

research

learning space EDUCAT













WHAT WE WOULD LIKE TO

based



What are the outcomes of



RESULTS from EARNIG

การเรียนรู้ หมายถึง การเปลี่ยนแปลง พฤติกรรมที่นักศึกษาพัฒนาขึ้นในตนเอง จากประสบการณ์ที่ได้รับระหว่างการศึกษา



BUT NOT EXACTLY LEARNING OUTCOMES

MISS



ปุ กรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาแห่งชาติกำหนด ผลการเรียนรู้ ที่คาดหวังให้บัณฑิตมีอย่างน้อย ๕ ด้าน ดังนี้

(๒) ด้านความรู้ (Knowledge) หมายถึง ความสามารถในการ เข้าใจ การนึกคิด และการนำเสนอ ข้อมูล การวิเคราะห์ และจำแนกข้อ เท็จจริง ในหลักการ ทฤษฎี ตลอด จนกระบวนการต่างๆ และสามารถ เรียนรู้ด้วยตนเองได้

52% c

- Knowledge, the ability to understand, recall and present information including:
 - Knowledge of specific facts.
 - Knowledge of concepts, principles and theories and
 - Knowledge of procedures.

- (๓) ด้านทักษะทางปัญญา (Cognitive Skills) หมายถึง ความ สามารถในการวิเคราะห์ สถานการณ์ และใช้ความรู้ ความ เข้าใจ ในแนวคิด หลักการ ทฤษฎี และกระบวนการต่างๆ ในการคิด วิเคราะห์ และการแก้ปัญหา เมื่อ ต้องเผชิญกับสถานการณ์ใหม่ๆ ที่ ไม่ได้คาดคิดมาก่อน
 - in the second of the second of

- Cognitive skills, the ability to
 - Apply knowledge and understanding of concepts, principles, theories and procedures when asked to do so; and
 - Analyze situations and apply conceptual understanding of principles and theories in critical thinking and creative problem solving when faced with unanticipated new situations.

- KNOWLEDGE is "knowing" but WISDOM is "understanding".
- KNOWLEDGE and WISDOM are "interconnected".
- KNOWLEDGE is "obtained" but WISDOM is "developed".
- Both KNOWLEDGE and WISDOM need "data" and "information.

context independent

Wisdom is the recognition that knowledge patterns arise from fundamental principles and the understanding of what those principles are.



understanding "principles"

Knowledge is represented by patterns among data, information, and possibly other knowledge. These patterns do not provide knowledge until they have been understood.



Information represented by relationships between data and the data sources to make it meaningful.



understanding "patterns"

understanding "relations"

Data

name, collecting, organizing...

Data is an item out of context with no relation with other things.

FACTS
pretty much what we teach our students...

understanding

กรอบมาตรฐานคุณวุฒิระดับอุดมศึกษาแห่งชาติกำหนด ผลการเรียนรู้ที่คาดหวังให้บัณฑิตมีอย่างน้อย ๕ ด้าน ดังนี้

- (๑) ด้านคุณธรรม จริยธรรม (Ethics and Moral) หมายถึงการพัฒนานิสัย ในการประพฤติอย่างมีคุณธรรม จริยธรรม และด้วยความรับผิดชอบทั้ง ในส่วนตนและส่วนรวม ความสามารถ ในการปรับวิถีชีวิต ในความขัดแย้ง ทางความนิยม การพัฒนานิสัยและการ ปฏิบัติตนตาม ศีลธรรมทั้งในเรื่องส่วน ตัวและสังคม
 - Ethical and Moral Development:
 Development of:
 - Habits of acting ethically and responsibly in personal and public life in ways that are consistent with high moral standards.
 - Ability to resolve value conflicts through application of a consistent system of values.

- (๔) ด้านทักษะความสัมพันธ์ระหว่าง บุคคลและความรับผิดชอบ (Interpersonal Skills and Resposibility) หมายถึงความ สามารถ ในการทำงานเป็นกลุ่ม การแสดงถึง ภาวะผู้นำ ความรับ ผิดชอบต่อตนเอง และสังคม ความ สามารถในการวางแผนและรับผิด ชอบในการเรียนรู้ด้วยตนเอง
- Interpersonal skills and responsibility, the ability to:
 - work effectively in groups, and exercise leadership;
 - accept personal and social responsibility, and
 - plan and take responsibility for their own learning.

- (๕) ด้านทักษะการวิเคราะห์เชิง ตัวเลข การสื่อสาร และการใช้ เทคโนโลยีสารสนเทศ (Numerical Analysis, Communication and Information Technology Skills) หมายถึง ความสามารถในการ วิเคราะห์เชิงตัวเลข ความสามารถ ในการใช้เทคนิคทางคณิตศาสตร์ และสถิติ ความสามารถในการ สื่อสารทั้งการพูด การเขียน และ การใช้เทคโนโลยีสารสนเทศ
- analytical and communication skills, the ability to:
 - use basic mathematical and statistical techniques,
 - communicate effectively in oral and written form, and
 - use information and communications technology.
 - Validate Information
 - Synthesize Information
 - Communicate Information
 - Collaborate Information
 - Problem Solve with Information

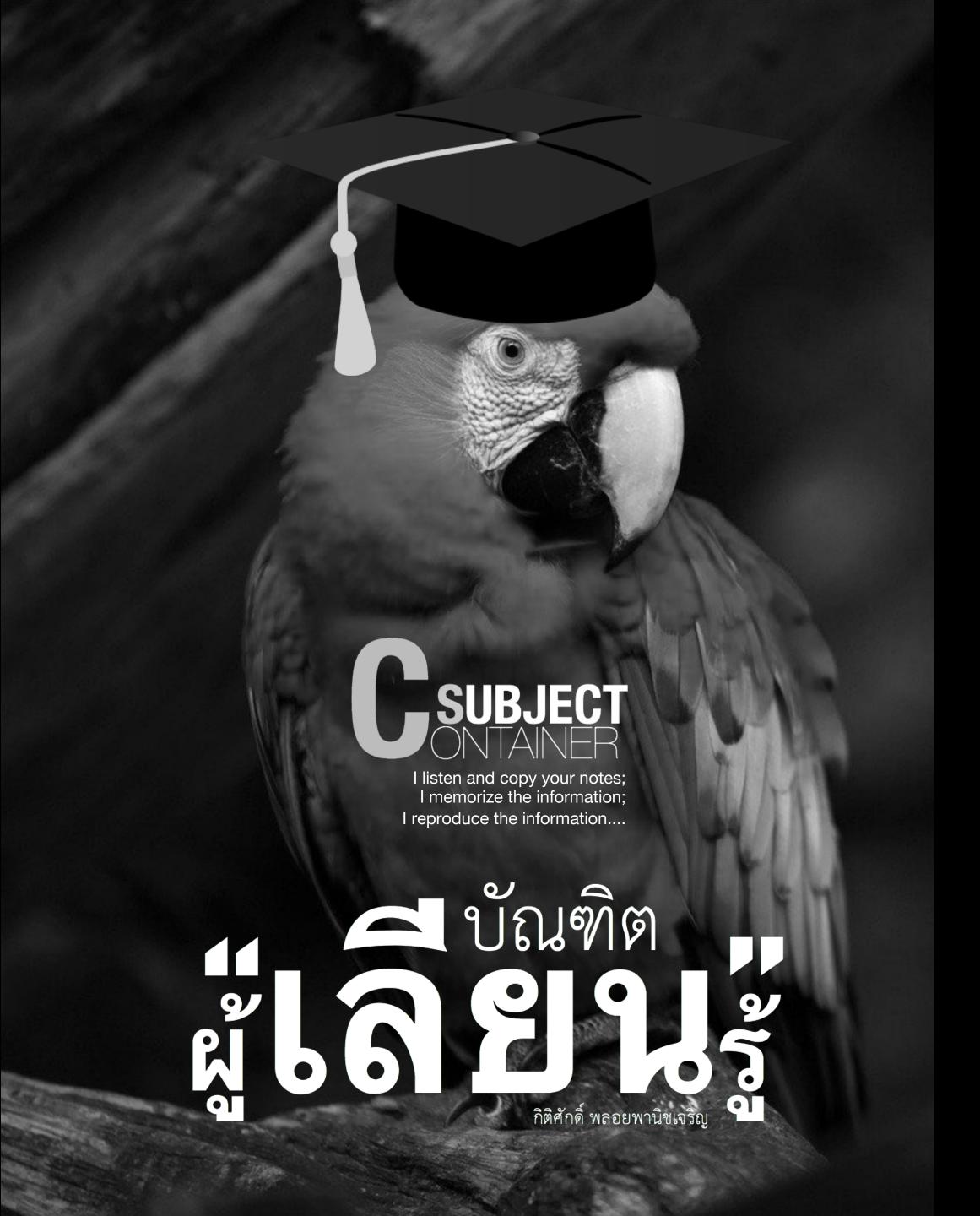
Learning Outcomes

Learning outcomes of ethical and moral development are expected to apply at the level described for all learners, though there are also some field specific items of knowledge that should be known by students in those fields such as codes of ethical practice for medical doctors, accountants lawyers, etc.

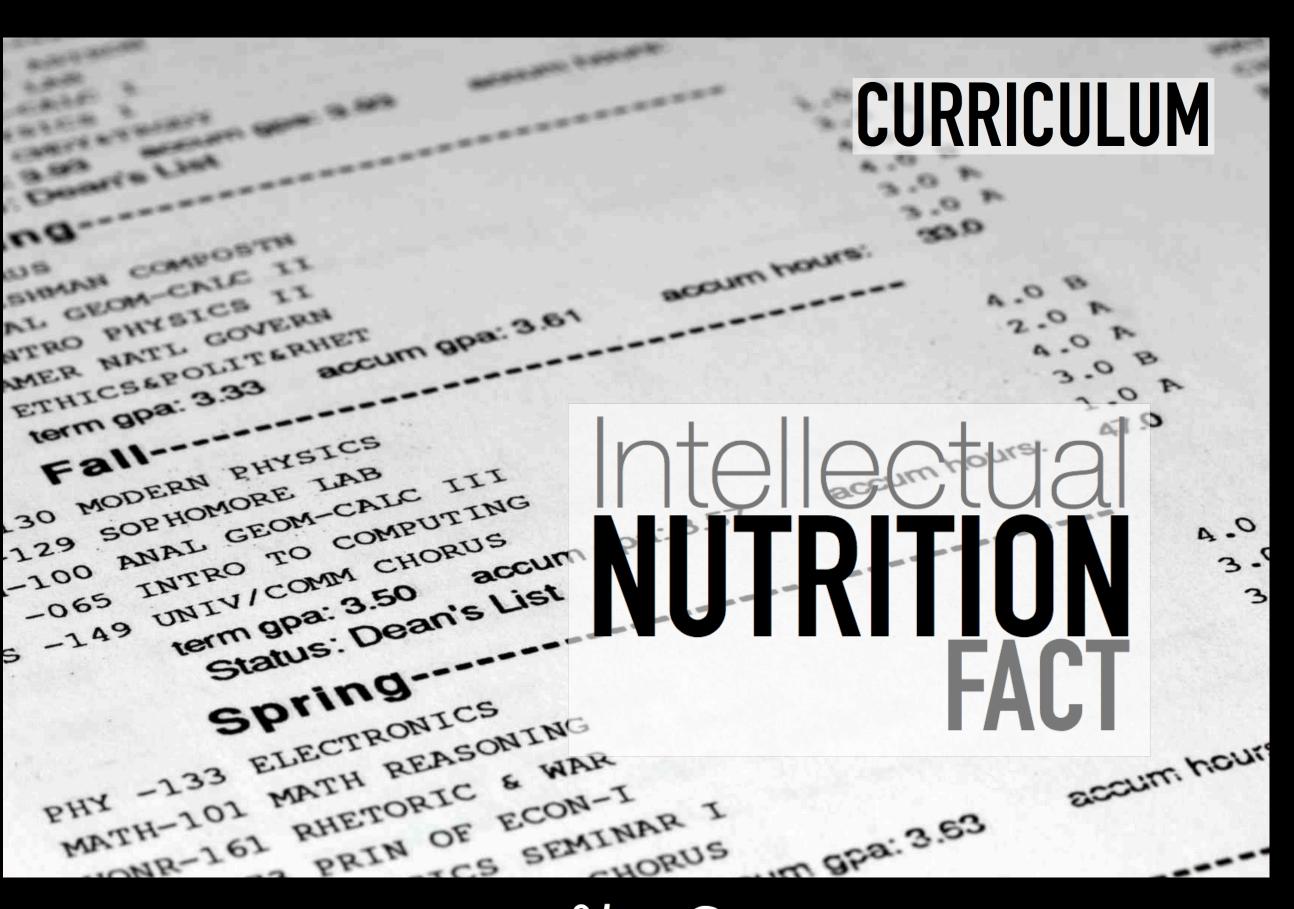
Learning outcomes in the domains of knowledge and for cognitive skills are directly related to the field of study undertaken and details of the knowledge and skill appropriate to those fields should be specified in programme and course specifications.

Learning outcomes for **interpersonal skills** and **responsibility** are intended to apply to all students at the level described regardless of field of study.

Learning outcomes for analytical and communication skills are generic descriptions that should apply to all students regardless of field of study. However when the main focus of student's field of study is in one of these areas a much higher level of performance is expected. For example a student undertaking major studies in IT would be expected to have the levels of expertise in IT described under the headings of Knowledge and Cognitive Skills rather than the more general expectation for everyone described under the heading of Analytical and Communication Skills.

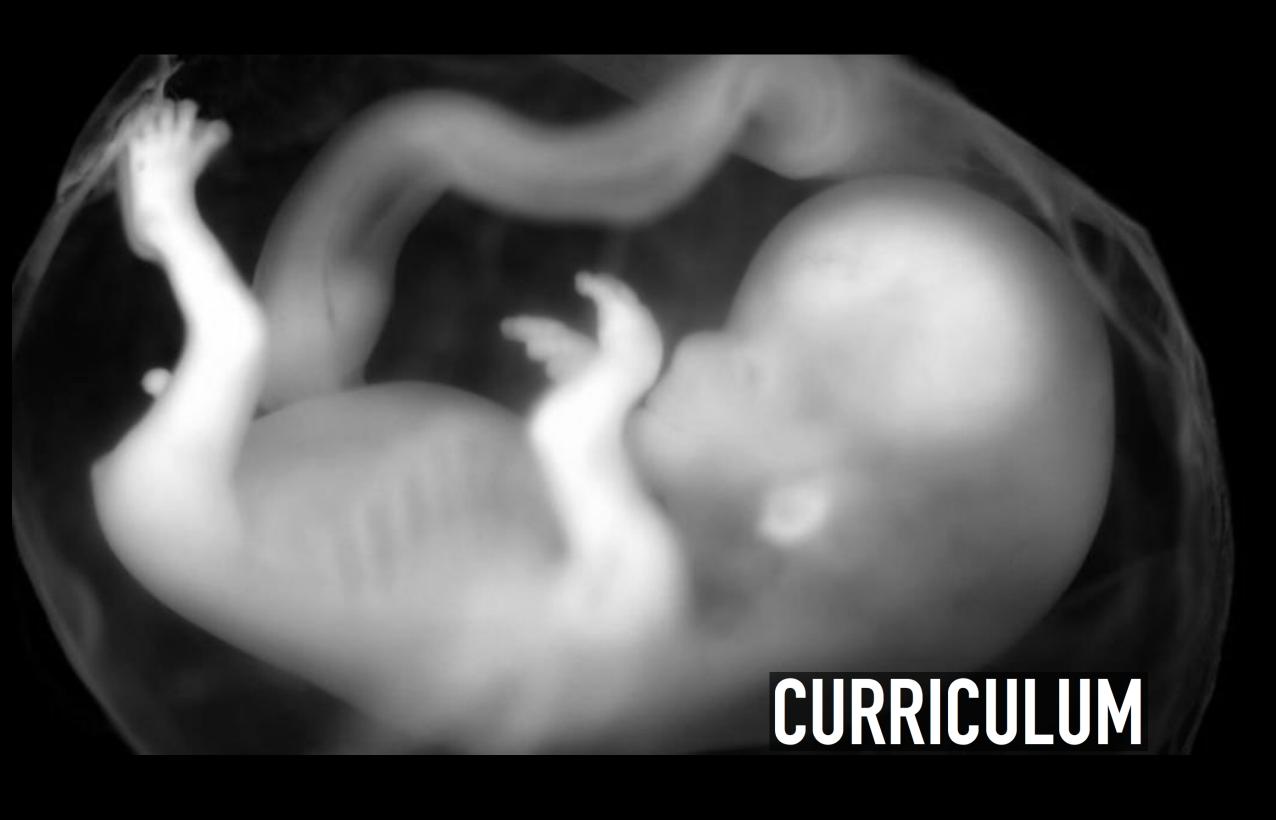












CURRICULUM as PRODUCT





CURRICULUM as PROCESS



RESULTS from The aim of TQF is to facilitate desired

Changes within the Students, by

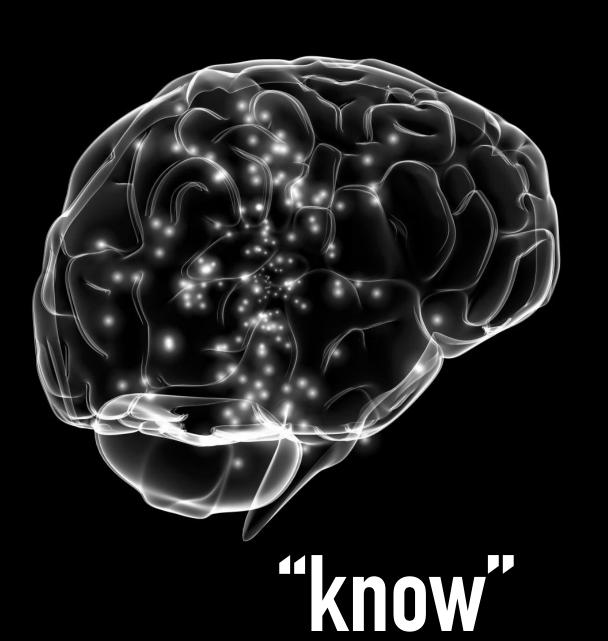
increasing the levels of cognitive skills, developing noncognitive skills and/or positively influencing attitudes, values and judgment...



curriculum must

DEVELOP

learning of students





"value"
"attitude"



"be able to do"
"COMPETENCE knowledge skills attitude"

CURRICULUM MUST BE DESIGNED TO student from learning

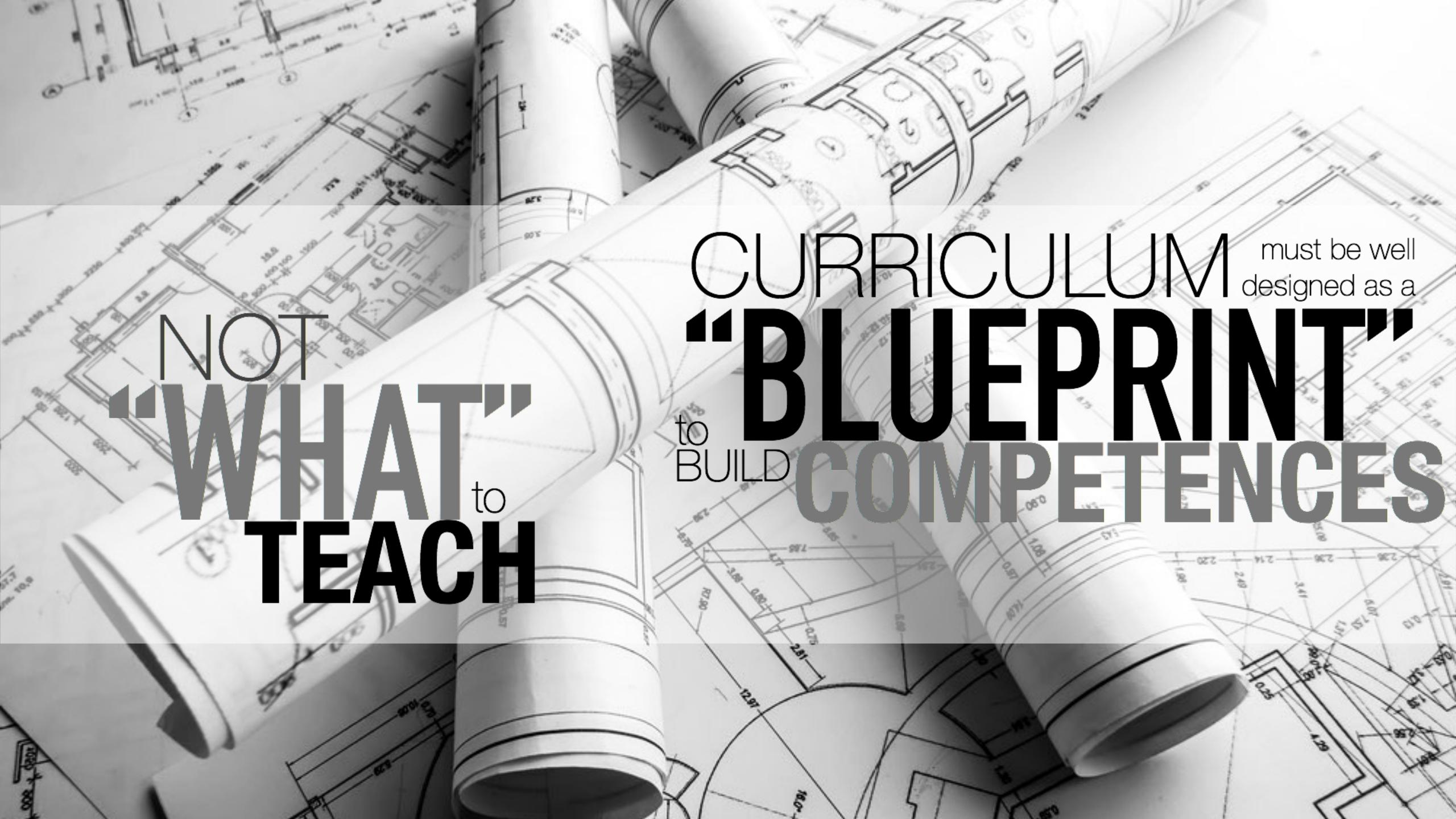
we design "HOW TO" make it happens ...





PROCESS

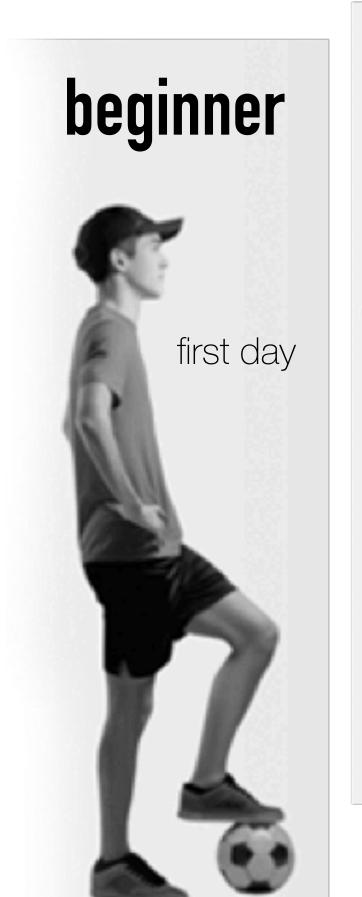
OUTCOME

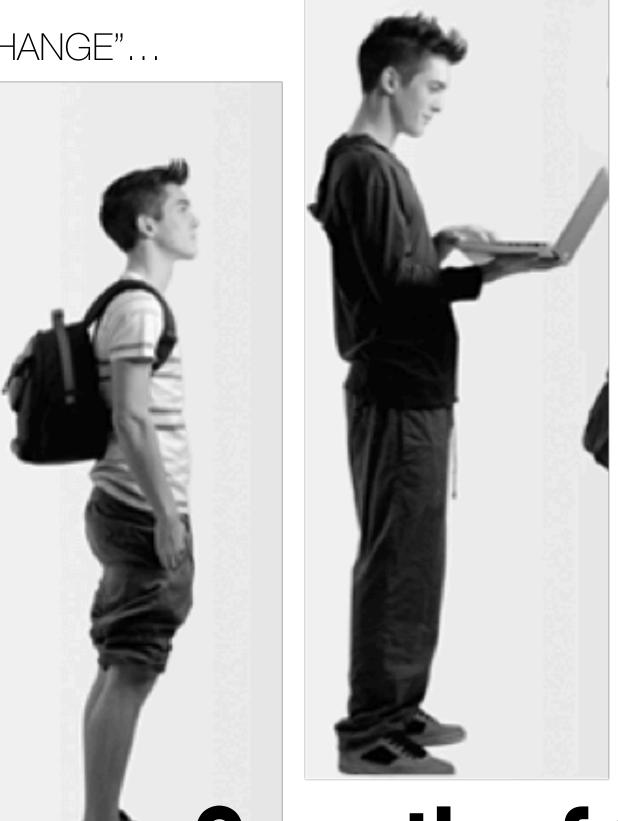


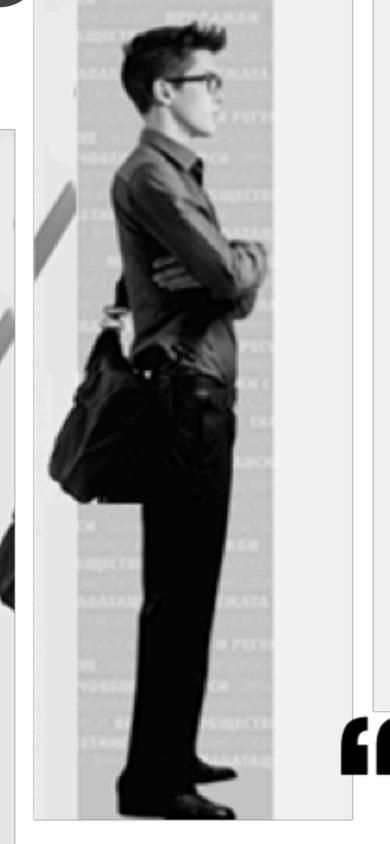
Development Development

what we want to "CHANGE"...



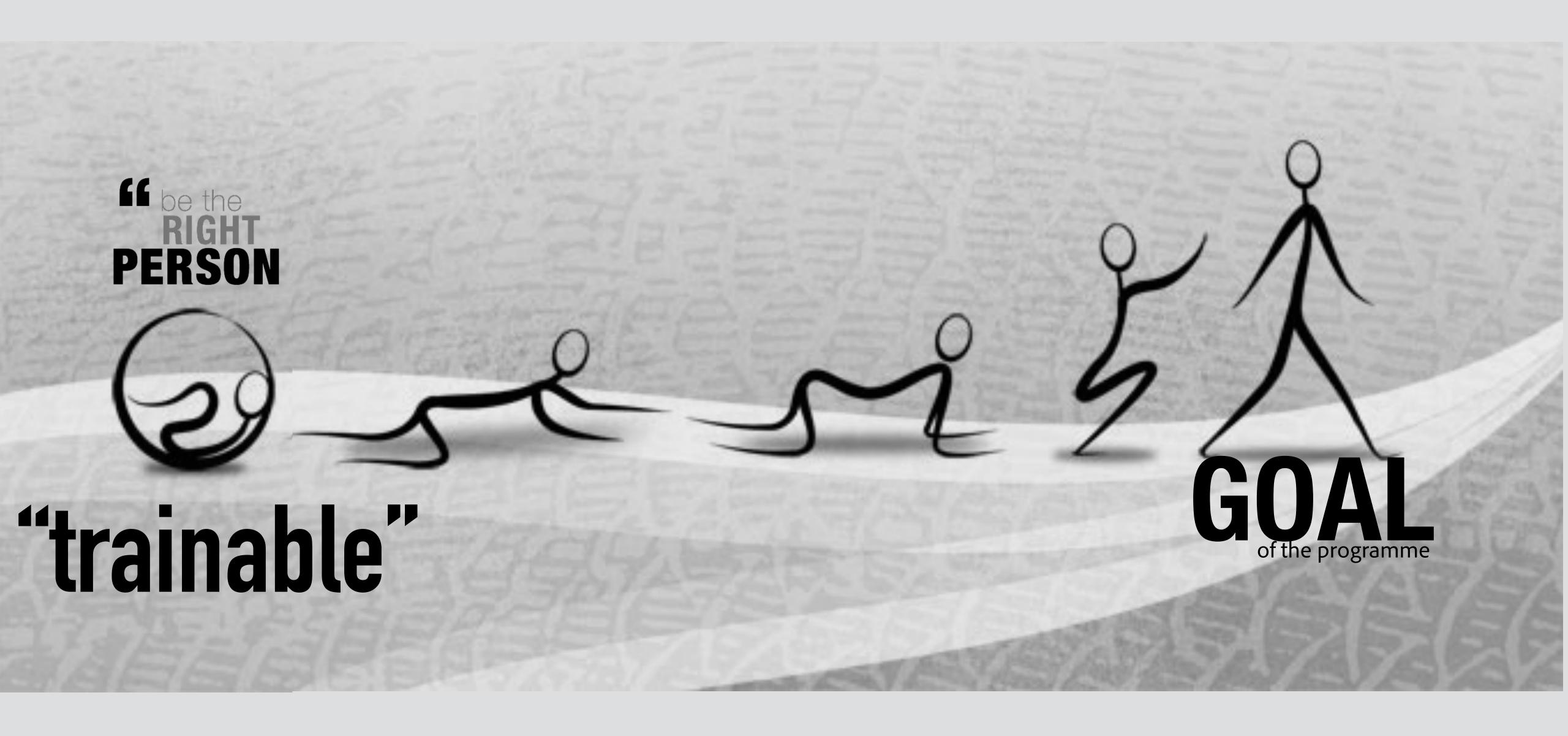








Growth of Student





Spady (2001:30) says:

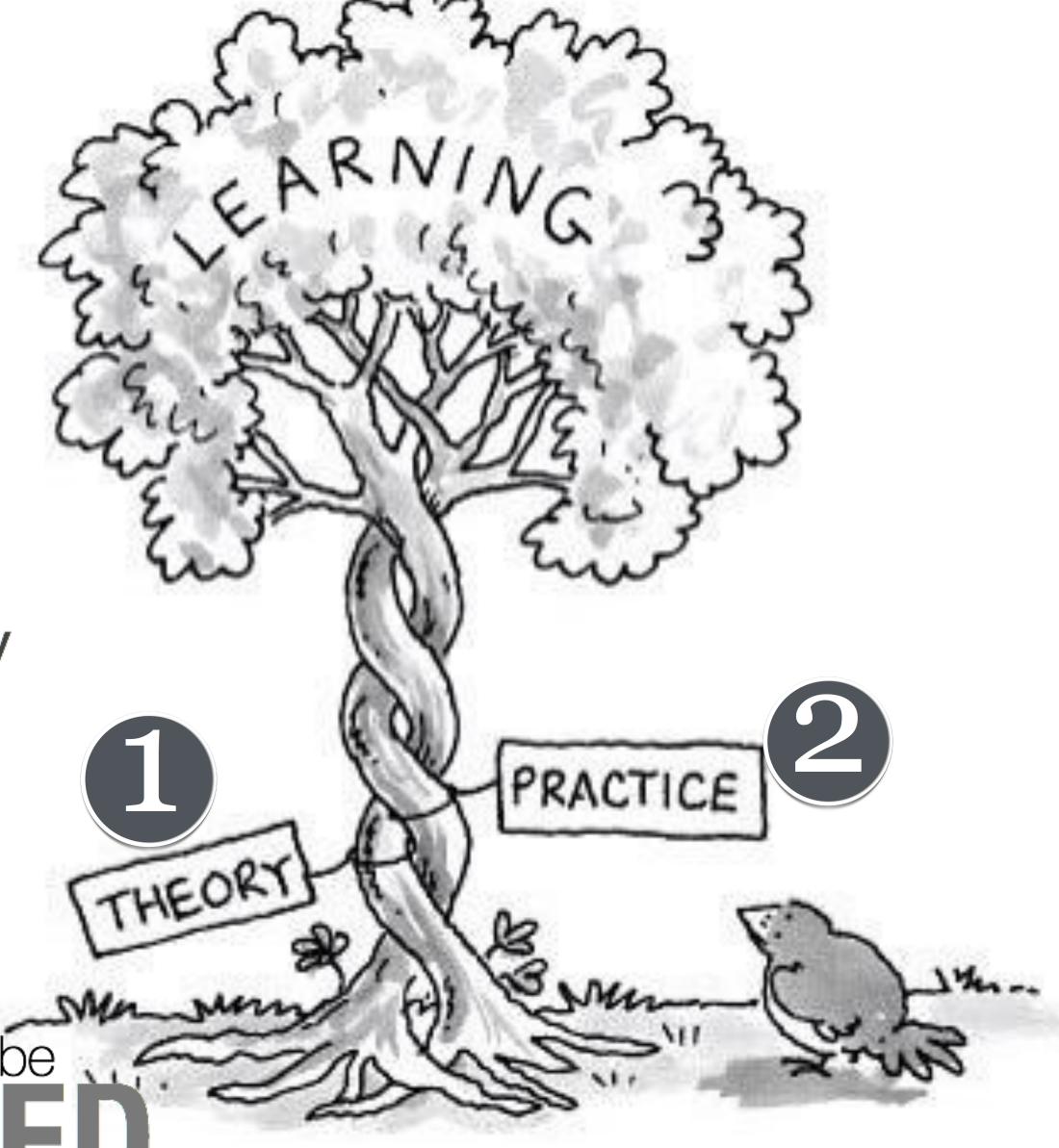
Learning is not just **absorbing content** from printed material; It's an inherent part of living simply because living a continuously unfolding array of new input and experiences –

things that have to be assimilated,

interpreted, and USEC in some useful way

in order for one to **function**. Whatever one

learns becomes a new resource for living — whether one chooses to live the same way or differently.



Student needs to be ENGAGED with LEARNING"...

learning:

- is something that students DO and it is the RESULT of that they do ...
- results in CHANGES in UNDERSTANDING, these changes in understanding enable learners to change their BEHAVIOUR ...
- can be considered as largely a COGNITIVE process (something that involves THINKING) but one that may be linked to the development of SKILLS and which can be influenced by AFFECTIVE (emotional) and contextual factors...
- is a PROCESS and an OUTCOME ...







LEARNING OUTCOMES

expressing

you want students to KNOW and BE ABLE TO DO ASSES! and FEEL in language that is helpful for



"Learning outcomes are statements that describe significant and essential learning that earnershave achieved, and can reliably demonstrate at the end of a course or programme..."



Clearning results that learners have to demonstrate at the end of significant learning experiences ...

what learners can actually DO and FEEL with what they know and have learned...



what assignment and the learning pedagogy and activities will aid learners mastering identified KNOWLEDGE, SKILLS, or ATTITUDE CHANGES ...

3 how to assess the accomplishment of learners ...

learning outcomes must answer this question: "Why

should students take this

course?"...

Characteristics of learning outcome statement:

- reflect essential knowledge, skills, or attitudes;
- focus on "results" of the learning activities;
- reflect the "end" of the learning experience, what the learner will know and be able to do, rather than the means or the process;
- represent the "minimum performances" that must be achieved to successfully complete a course or programme.

Outcomes are about performance, and this implies:

- There must be a performer – the student, not the teacher
- There must be something performable (thus demonstrable or assessable) to perform
- The focus is on the performance, not the activity or task to be performed

Structure of a learning outcome statement:

- an "ACTION" word that identifies the performance to be demonstrated,
- a "LEARNING STATEMENT" that specifies
 - "WHAT" learning will be demonstrated in the performance,
- a broad statement of the "CRITERION" or
 - "STANDARD" for acceptable performance.

Format #1:

To (action verb)
(object) (target)
(modifiers)

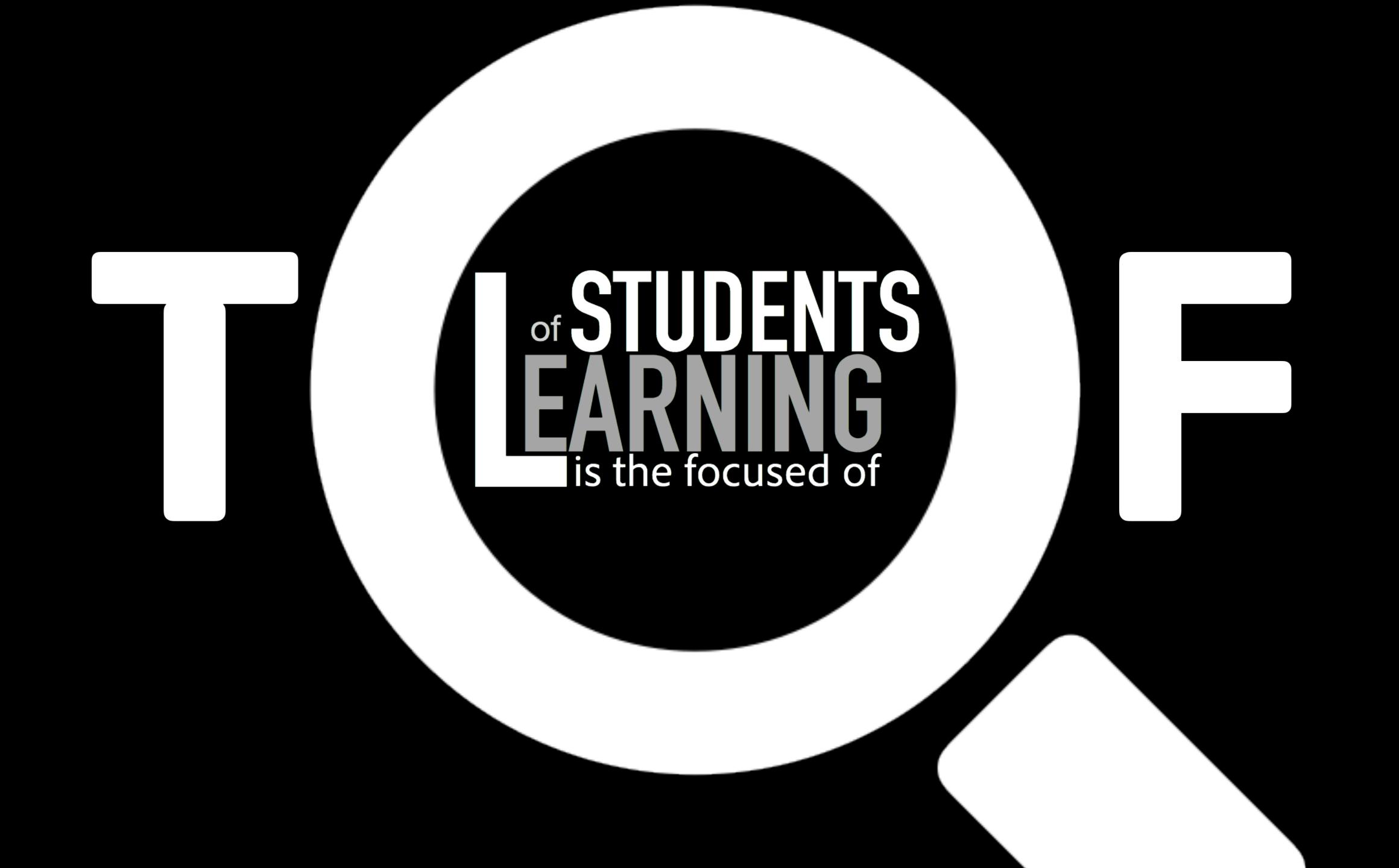
Format #2:

The (target)
(action verb)
(modifiers)
(object)

Generic format of learning outcome:

Action Verb + Object + Qualifying Phrase

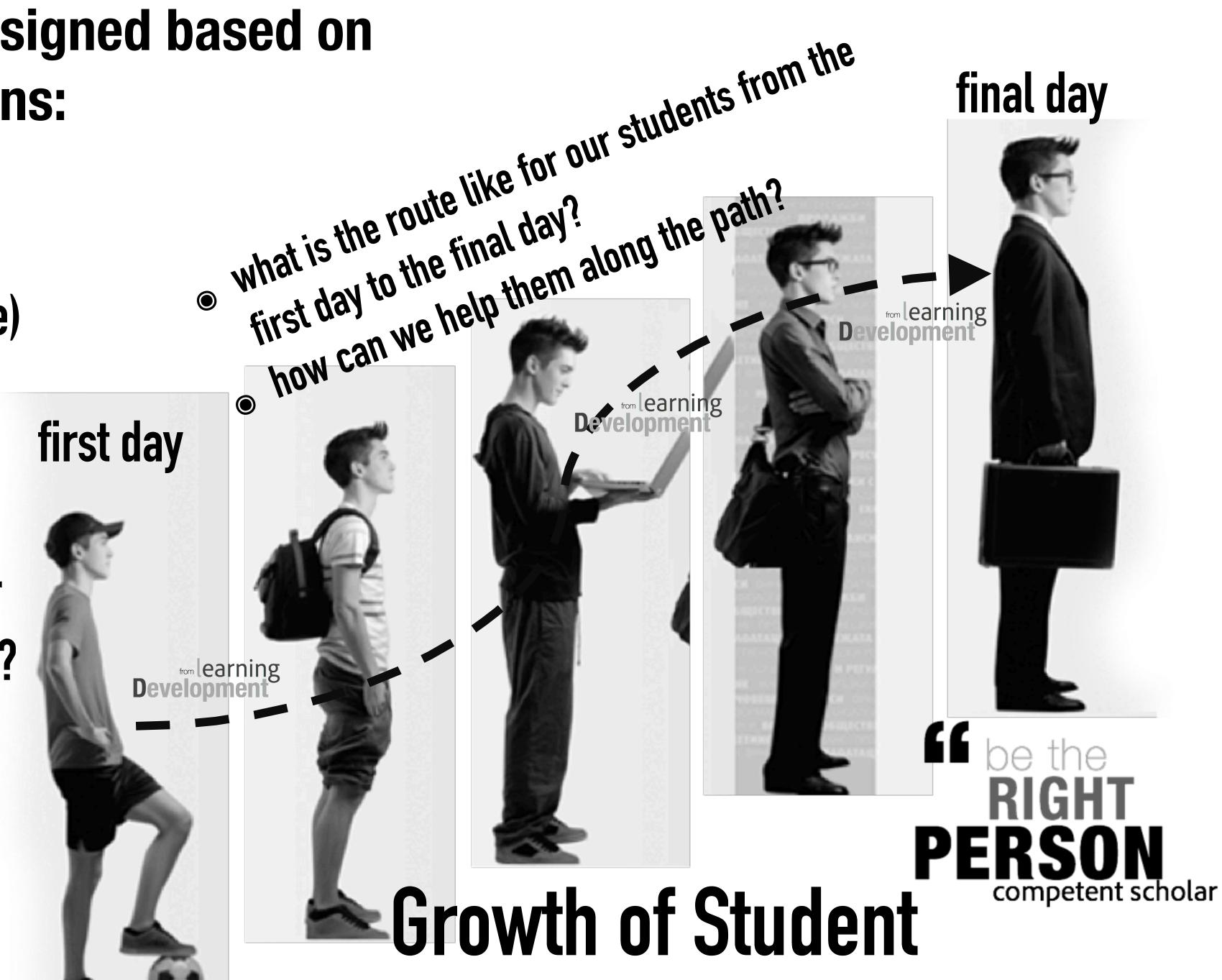


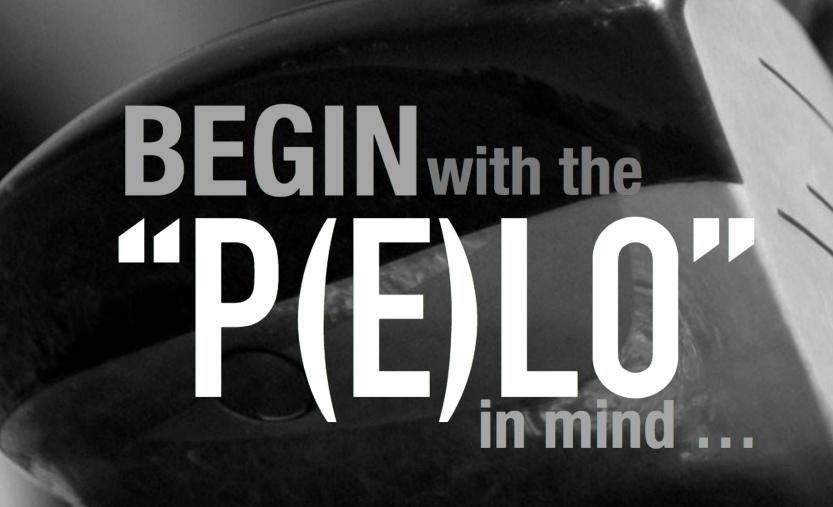


Programme must be designed based on these following questions:

• what are the competences (knowledge, skills, and attitude) gap between each stage?

- how do we know our students are ready for the next stage?
- what is the specification of our academic and supporting staff?
- who are our learners?





"WHAT" is important for

students to be able to do (their

"ACHIEVEMENT").

teacher must design "HOW" to

make sure such learning ultimately

"HAPPENS"

Programme/Instruction designer must have a clear understanding of:



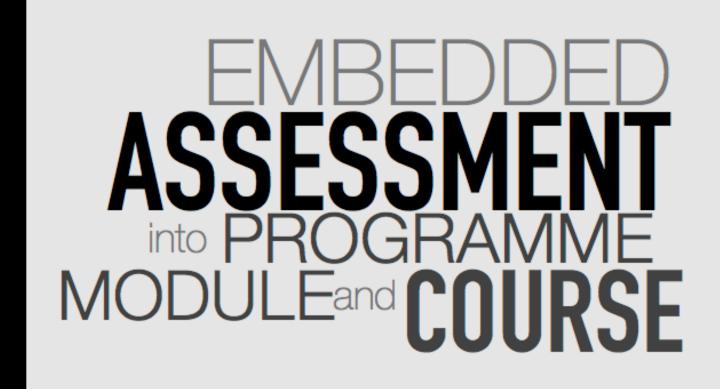


would you like to

"ASSESS"
from your students'

Performance
behaviour
ability"

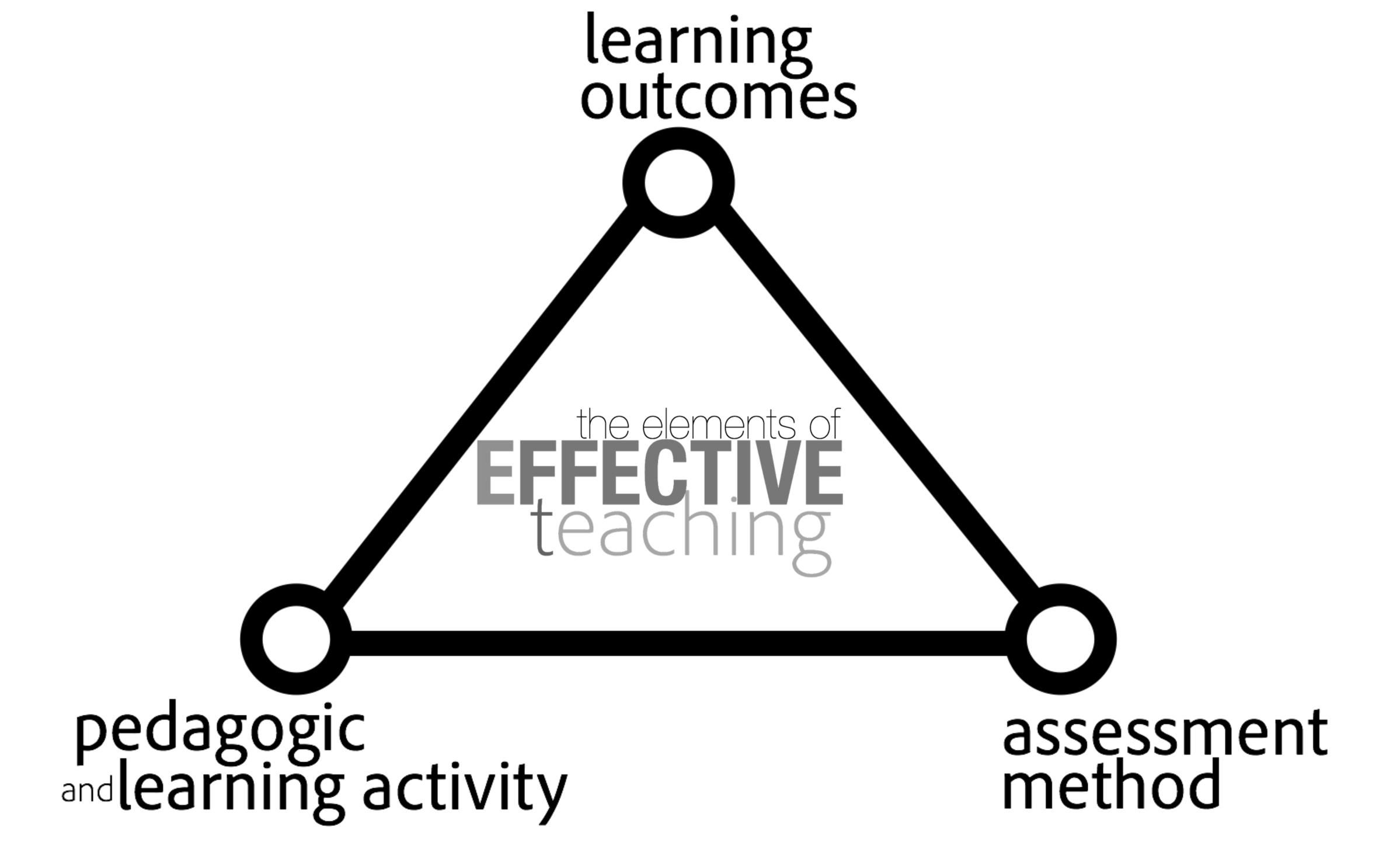
Curriculum or "programme structure" must be designed to answer this question: How does the curriculum or programme need to be structured so that the desired learning outcomes at all levels can be achieved through the application of the pedagogical practices described by the Quality (Effective) Teaching model? ผู้เรียนรู้ WHAT STUDENT STUDENT STUDENT COME"

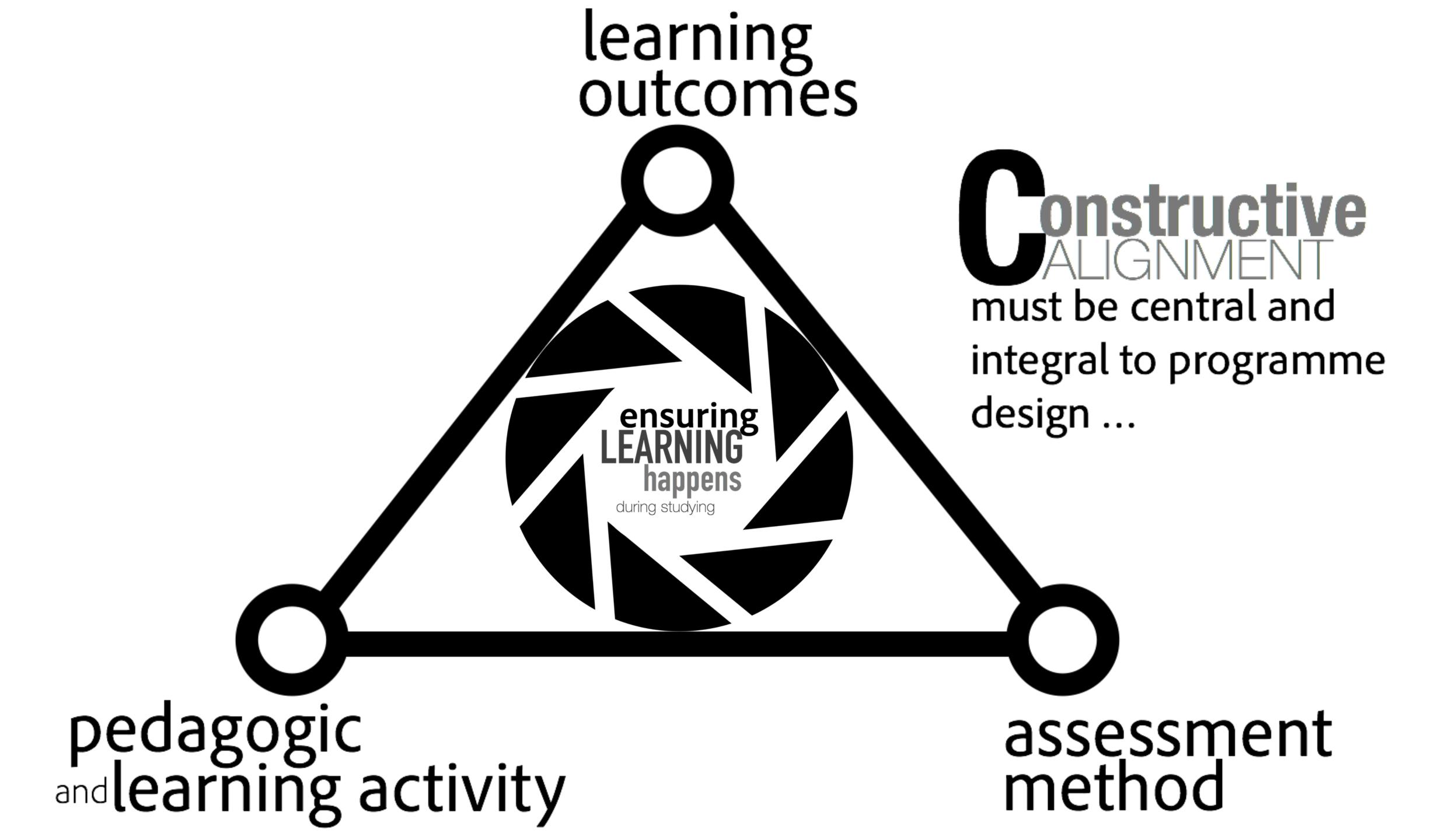


CURRICULUM as a SYLLABUS PROCESS

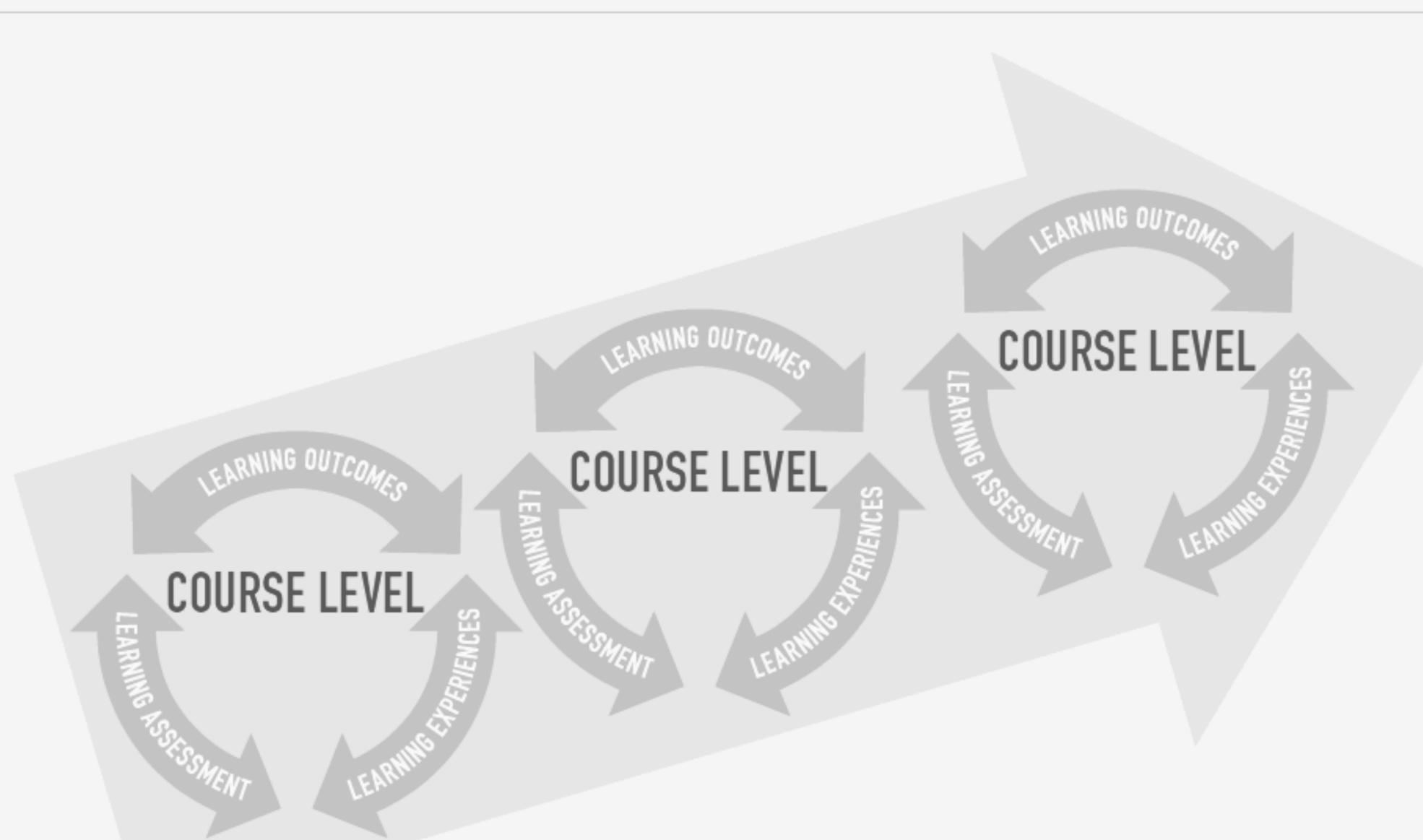
With MATATA activities and HOM to TEACH

HOM to ASSESS





Constructive Alignment at the Program Level



PROGRAM LEVEL

Constructive Alignment at the Institutional and Provincial Level



PROGRAM LEVEL Outcomes

PROVINCIAL LEVEL

Expectations/Accreditation

COURSE LEVEL

REFLECTION AND ENHANCEMENT

the systemic structures within which the activities take placed...

clearly focusing and organizing

EVERYTHING in a teaching

and learning system on what is essential for all

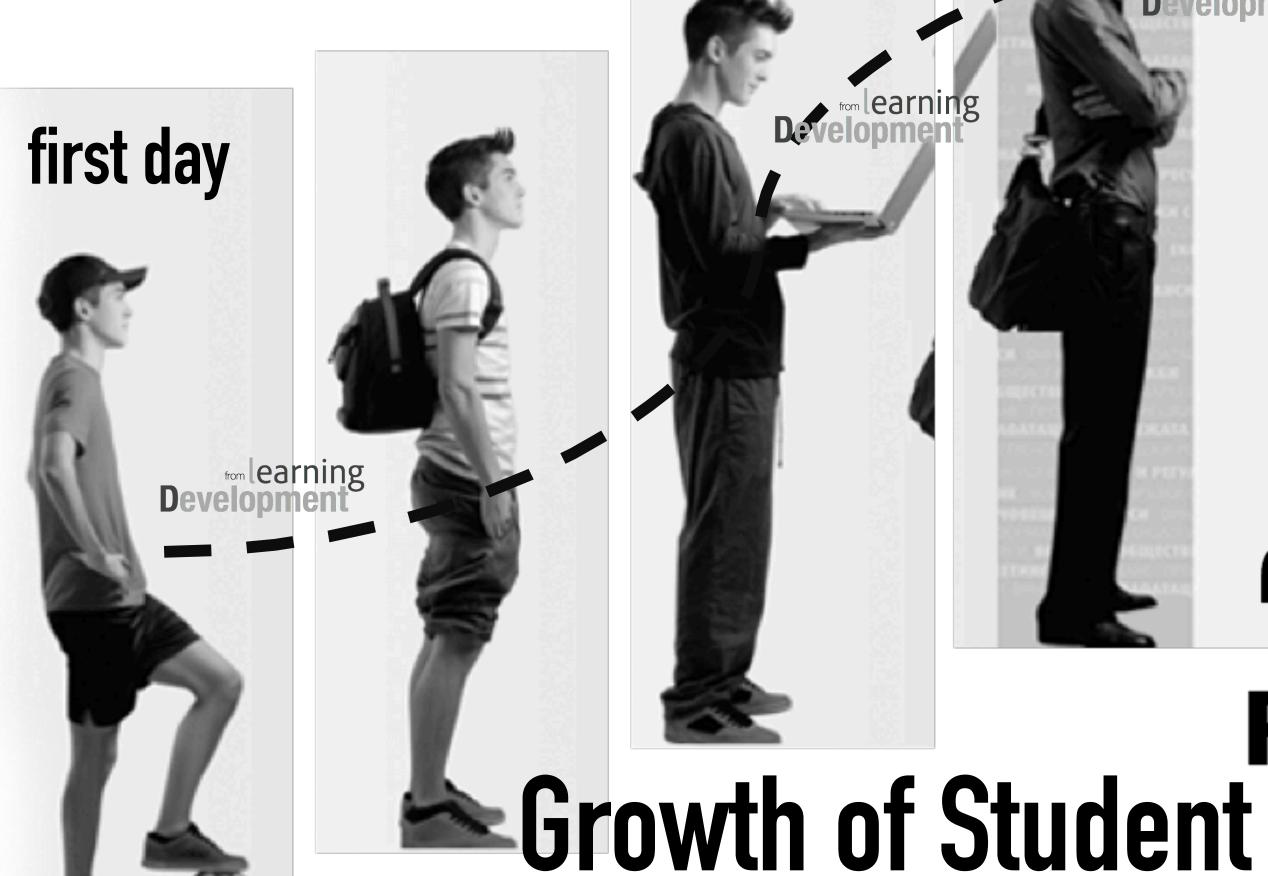
students to be able to CO

SUCCESSFULLY at the **end** of their learning experiences

Source: William G. Spady (1994) Outcomes-based education: Critical Issues and Answers.

The American Association of School Administrators

ASSESSIVENT Summative assessment LEARING Cormative assessment LEARING Student's own sake



final day

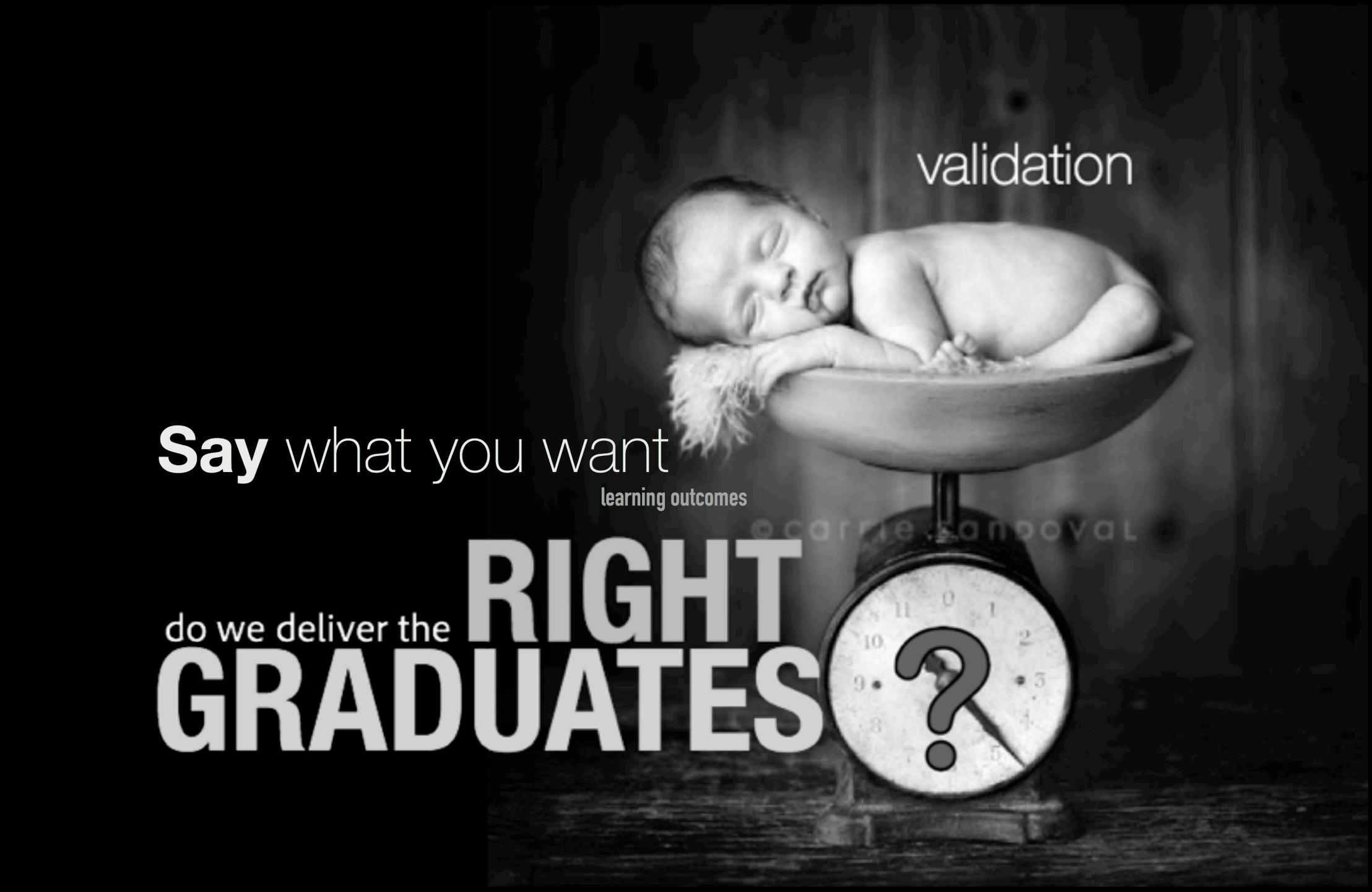


the concept is just...

Say what you want learning outcomes Do what you say pedagogy & learning activities Measure assessment Improve

continuous improvement

RPD. SAYwhat you want





พิจารณาผลลัพธ์การเรียนรู้ระดับหลักสูตร (Program - level Learning Outcomes; PLO)

Stakeholders Requirements

- 21 st Century
- Industrial Requirements
- Professional Standard (กว. มคอ.1 ABET)
- KMUTT Student QF (TQF)
- etc.

 \forall

PLOs have been clearly formulated and aligned with graduate attributes and philosophy.

PLOs cover both subject specific and generic (i.e. transferable)
learning outcomes.

PLOs clearly reflect the requirements of the stakeholders.

คุณลักษณะ ของบัณฑิตที่จบ จากหลักสูตร

Graduate Attributes ปรัชญาและ ความสำคัญ ของหลักสูตร

Philosophy

วัตกุประสงค์ ของหลังสูตร

Objectives

ผลลัพธ์การเรียนรู้ ระดับหลักสูตร

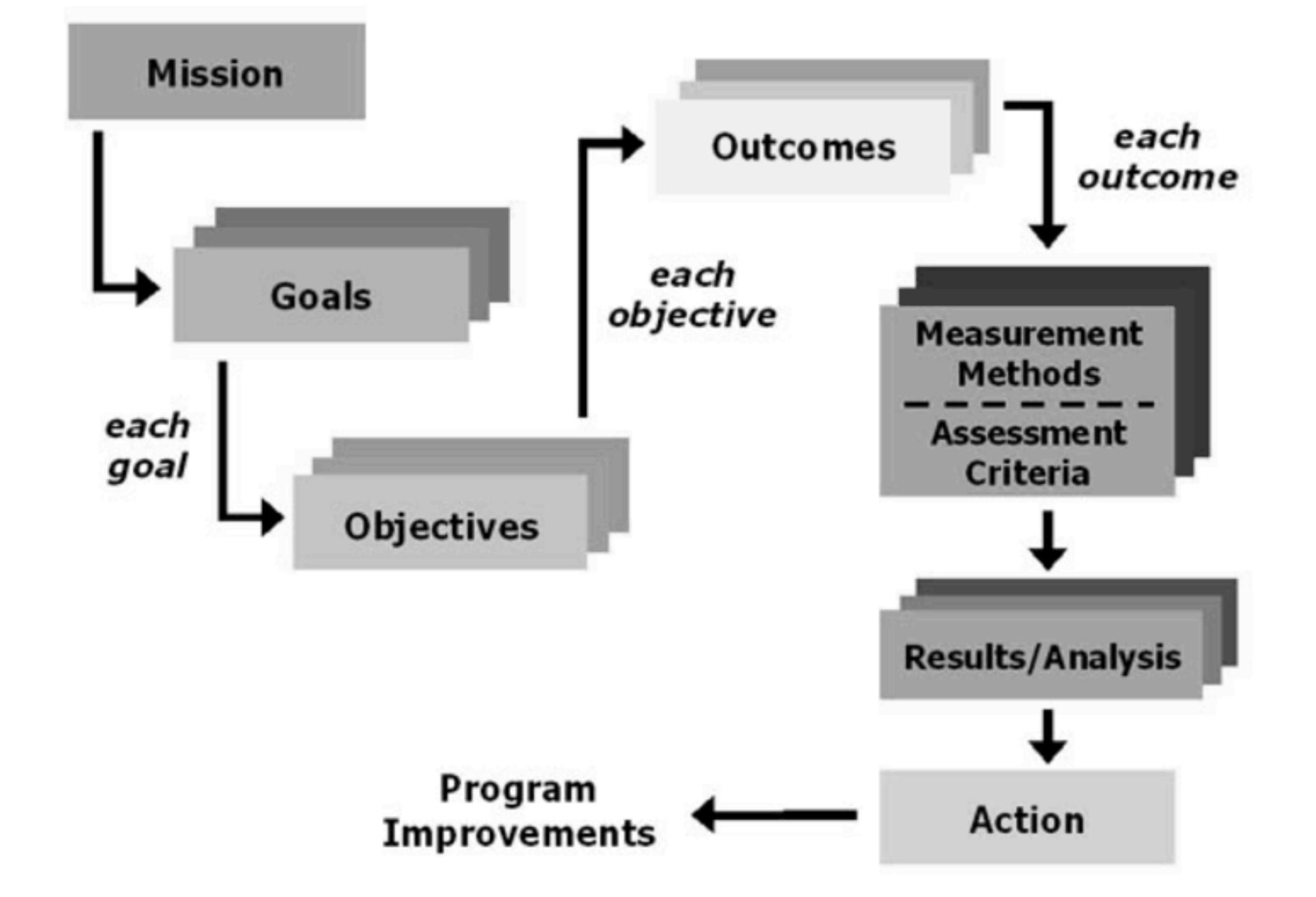
Program - level Learning Outcomes (PLO)











DESIGN BACKWARD Intended Intended Learning Learning Learning Outcomes Outcomes Outcomes Outcomes of the Unit of the of the of the Academic Institution Lesson Course Program DELIVER FORWARD

Elements of the Programme Specification

Aims of the Programme

Learning Outcomes of the Programme: Competences (Professional and Generic)

Process informed by:

University Level Descriptors

Professional/Statutory **Bodies Requirements**

Subject Benchmarks

Trigger Questions:

What's the purpose of the programme?

What should students know and be able to do on completion?



Programme learning outcomes broken down by level to ensure incremental attainment over duration of course

Module Learning Outcomes

Outcome for Level Attained through:

Module Assessment

Assessment Criteria

Grades Attainment verified by: awarded according to: Curriculum or "programme structure" must be designed to answer this question: How does the curriculum or programme need to be structured so that the desired learning outcomes at all levels can be achieved through the application of the pedagogical practices described by the Quality (Effective) Teaching model? ผู้เรียนรู้ VIHERE TO

LOOK Curriculum

constructive alignment/LOs is just "ADD-ON" to the course design.. but not the "CENTRAL" of programme/ curriculum design...



assume that "each picture" you see representing "long-term/ significant learning outcomes of each learning unit/course and or modules of learning...

what is "wrong" which this picture?



INTEGRATION:

within-subject knowledge...

across-subject knowledge...

focusing on long-term generalized outcomes . . .



which programme structure should be appropriate? ...



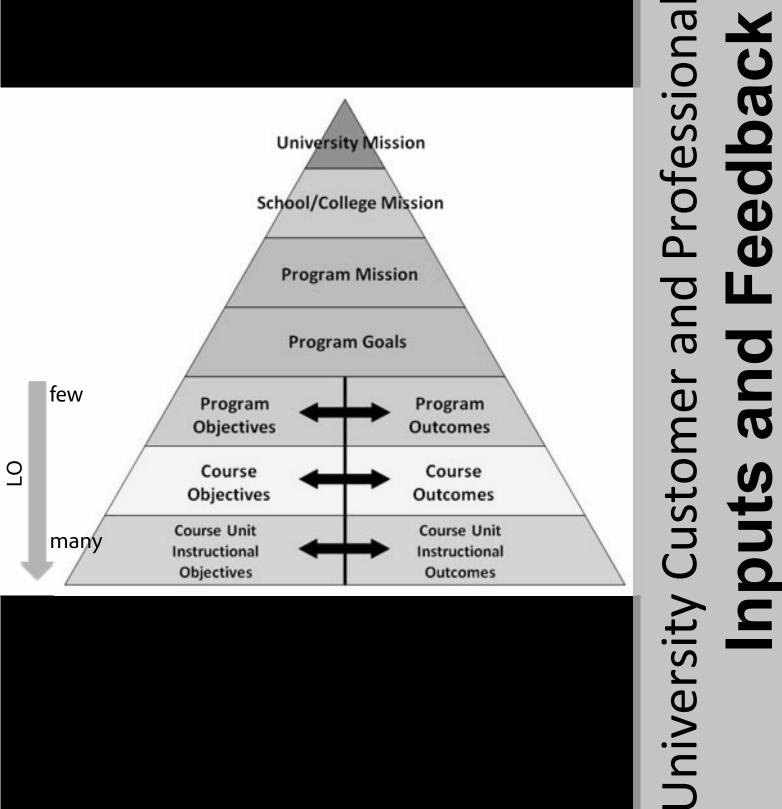
what you say

to make students



Measure it

assessment Improve it continuous improvement



Outcomes Faculty University mprovement Mission/Vision Quality PEO (Program Educational Objectives) Student Outcomes **Course Planning** and Delivery Syllabus Courses Pedagogy Learning Learning Activities

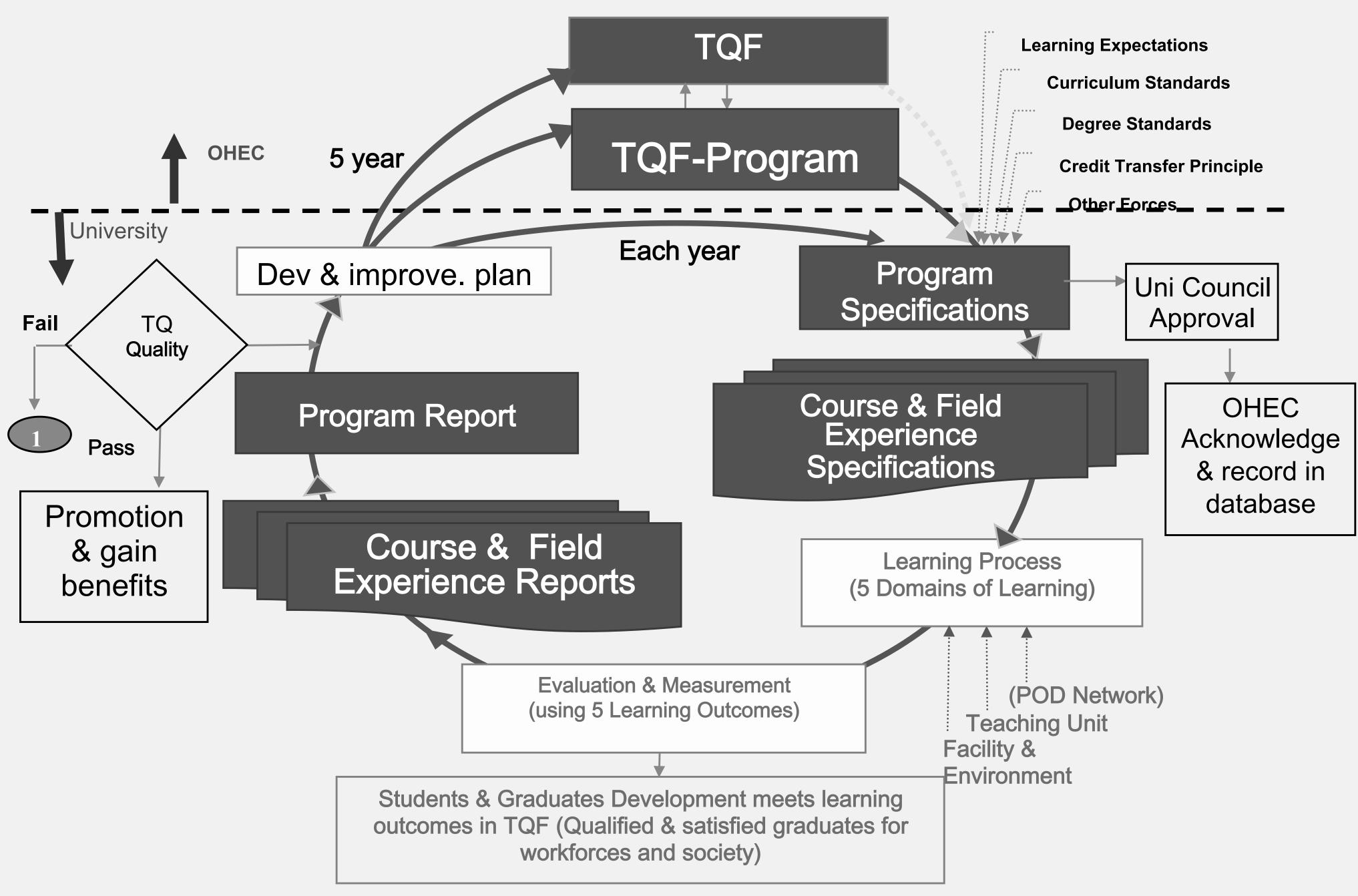
Outcomes

Assessment and Evaluation University and Faculty Assessment Programme Assessment Course Assessment

OBE Framework

Assessment Tools

From Policy to Practice



goal concept of student achievement

outcome-based education

- focus on "LEARNING"
- begin with "learning outcomes"
- individual teaching and learning
- assessment is a key
- learning outcome is fixed, time variable
- teacher as facilitator and guide
- curriculum as a "process"

traditional education

- focus on "TEACHING"
- begin with "teaching objectives"
- "one-size fit all" teaching and learning
- assessment is a secondary
- time is fixed, learning outcomes variable
- teacher as guardian of curriculum
- curriculum as a "product"

"The greatest enemy of understanding is coverage. As long as you are determined to cover everything, you actually ensure that most students are not going to understand."

-Howard Gardner

"It's not university education that's an endangered species — it's the lecture."

-Geoffrey Garrett

UNIVERSITY is the path, not the POINT...

