Reflective Teaching as an Internal Quality Assurance Mechanism

Prof. C. Vijayan
Physics Department, IIT Madras
cvijayan@iitm.ac.in

Material prepared together with **Prof. Shreepad Karmalkar**
EE Department, IIT Madras

What is Reflective Thinking ?

Reflective Thinking

A process to expand the awareness of the teaching-learning process leading to an overall improvement in its effectiveness

Learning Objectives:

(What will happen to you at the end of this session…?)

You will be able to

- Recognize the need for feedback and reflection
- List specific steps for quality enhancement through reflection and implement them (*also get better feedback!*)
- Step out with enthusiasm and confidence to enhance the quality of the teaching-learning experience

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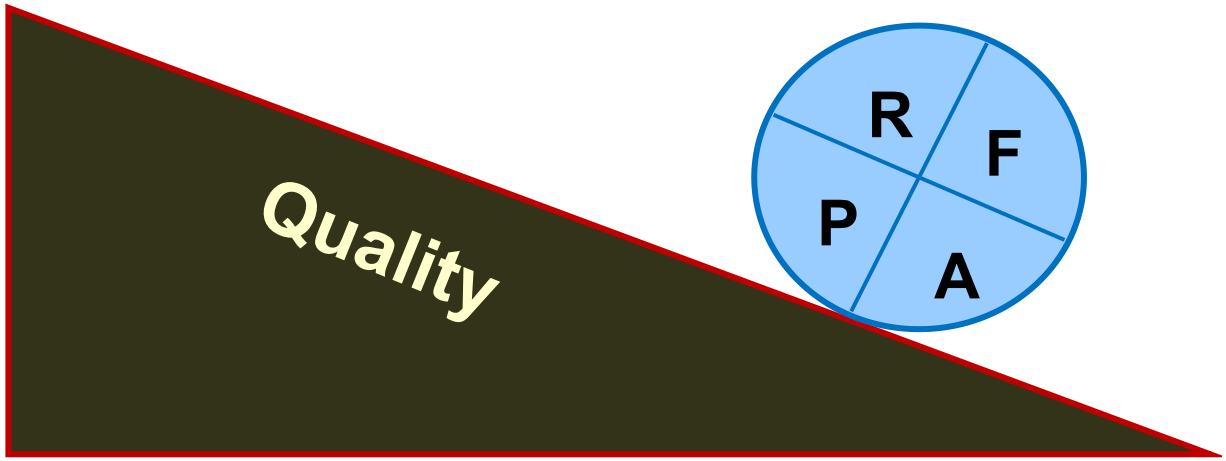
How to Improve Our Teaching Continuously



Action **F**eedback **R**eflection **P**lanning

adapted from

I. Plaza et. al., IEEE Trans. on Education, p. 308, 2013.

How do we practice **Reflective Thinking ?**

What do we actually do?

Interaction – 1

Consider changes that you have made in teaching a course. Select a particularly significant change.

- **What was the change?**
- **What was your basis for making the change ?**

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- **How did you evaluate influences of the change?**

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- **What was the change?**
- **What was your basis for making the change ?**
- **How did you evaluate influences of the change?**
- **If possible, give examples where your intent was not achieved.**

What is reflection?

Reflection is a deliberate and structured self-critical evaluation of our assumptions and practices, directed towards improvement of our teaching

A metacognitive strategy for deeper understanding of own teaching styles, actions, decisions, practices, philosophy

Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are **metacognitive** in nature.

What if I do not reflect ?

(N years experience without reflection) =

(one year's distorted experience) x N

Length of experience does not automatically confer wisdom or expertise

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Which parameter of seniority is a measure of quality?

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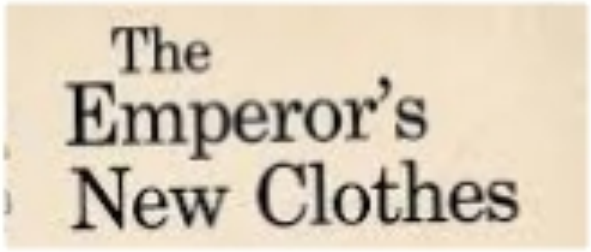
What if I do not reflect ?

I may discover rather late that I was carrying misconceptions all along !



Experience of a '*very senior*' Professor

How to reflect ?

Reflection can be difficult, even threatening, because it forces us to be honest with ourselves and recognize not only our successes but areas needing improvement

Hence, openness to criticism is a must for reflection.

Growing as a reflective teacher…

The Rolfe Reflection Model

What? Description,

So What? analysis

Now What? action plan

How to reflect…

Growing as a reflective teacher…

The Rolfe Reflection Model

How to reflect…

- Teacher diary
- Peer observation
- Recording
- Student feedback

A suggested Quality Assurance Mechanism :
Professional development Journal : PDJ

Left-hand page	*Right-hand page*
Time/date/contextual details	Reflection
Description of the session	Analysis and e
Describe critical incidents	Reference to theory (if appropriate)
Initial feelings	Thoughts added during review or tutorials

This will surely make a difference…

A lot of web resources….
‘Richard Felder’, ‘tomorrow’s professor’

Actually there are Several Resources;

The question is, are we using it properly?

Interaction – 2

List questions which arose in your mind after teaching a course:

Interaction – 2

How do we reflect?

List some of the questions that came to your mind after teaching a course

Your responses:

Did I cover the content?

How well did the students follow my lectures?

Were contents sufficiently clear ?

How many students were interactive?

Did my course add value to their lives?

Could I take most students along?

How did you find answers to these questions?

How to reflect ?

Ask a doubt or a question such as:

- **Why and how do I do things in the class?**
- **Is my teaching effective and efficient?**
- **Am I explaining complexity or revealing simplicity ?**

in situ Quality Assurance

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in situ Quality Assurance Mechanisms

As I lecture, how often, and when …

some students start sleeping …

in situ Quality Assurance Mechanisms

As I lecture, how often, and when …

I see smiles of joy of learning …

in situ Quality Assurance Mechanisms

As I lecture, how often, and when …

I see frowning faces …

in situ Quality Assurance Mechanisms

As I lecture, how often, and when …

I see signs of wonder and elation …

in situ Quality Assessment

As I lecture, how often, and when …

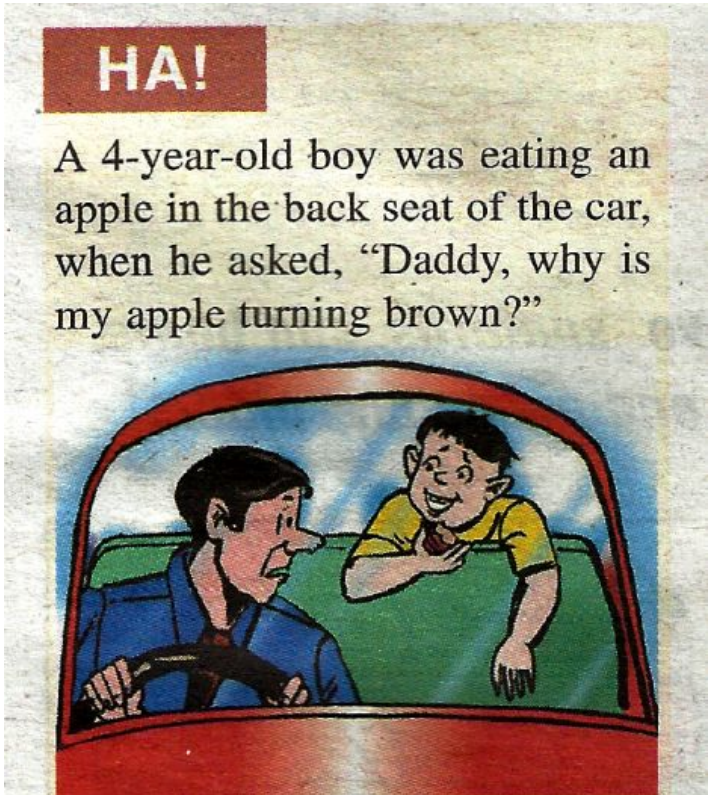
Student glance at their watches …

in situ Quality Assurance Mechanisms

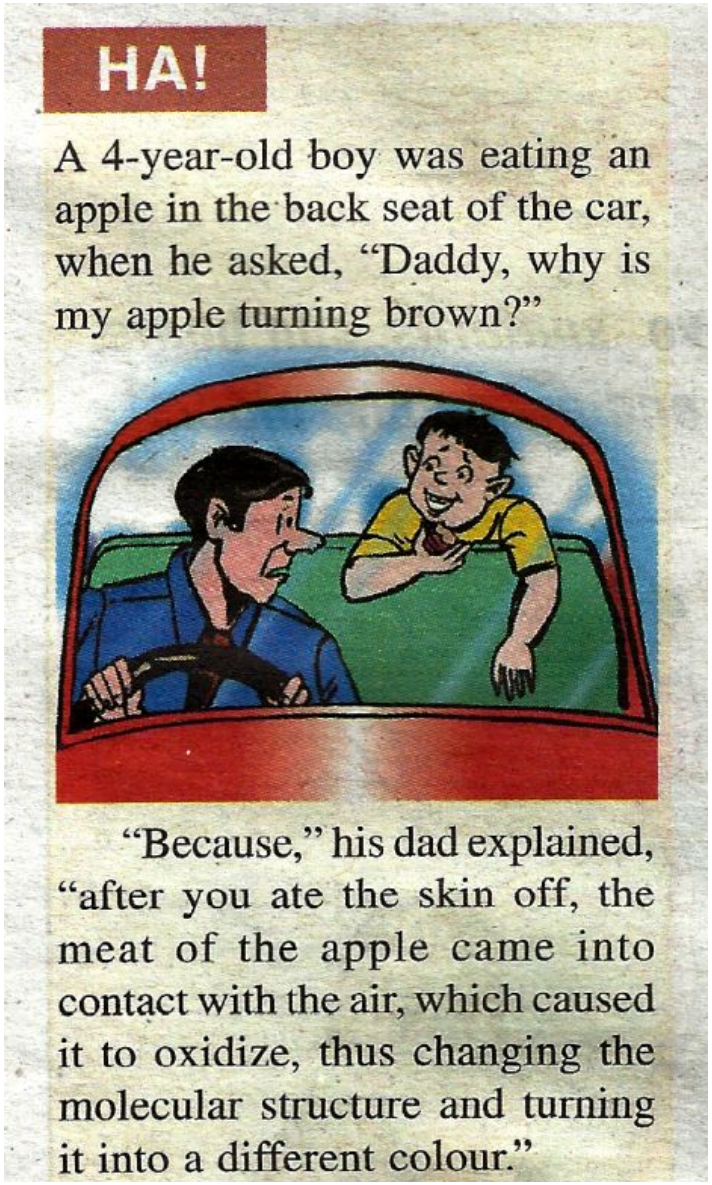
As I lecture, how often, and when …

they start SMS messaging…

Effective Pedagogies



Effective Pedagogies



HA!

A 4-year-old boy was eating an apple in the back seat of the car, when he asked, "Daddy, why is my apple turning brown?"

"Because," his dad explained, "after you ate the skin off, the meat of the apple came into contact with the air, which caused it to oxidize, thus changing the molecular structure and turning it into a different colour."

Effective Pedagogies

Are you talking to me?

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There was a long silence. Then the boy asked, "Daddy, are you talking to me?"

Are you talking to me?

Scintillate, scintillate, globule aurific;
Fain would I fathom thy nature specific.
Loftily poised in the ether capacious,
Strongly resembling a gem carbonaceous.

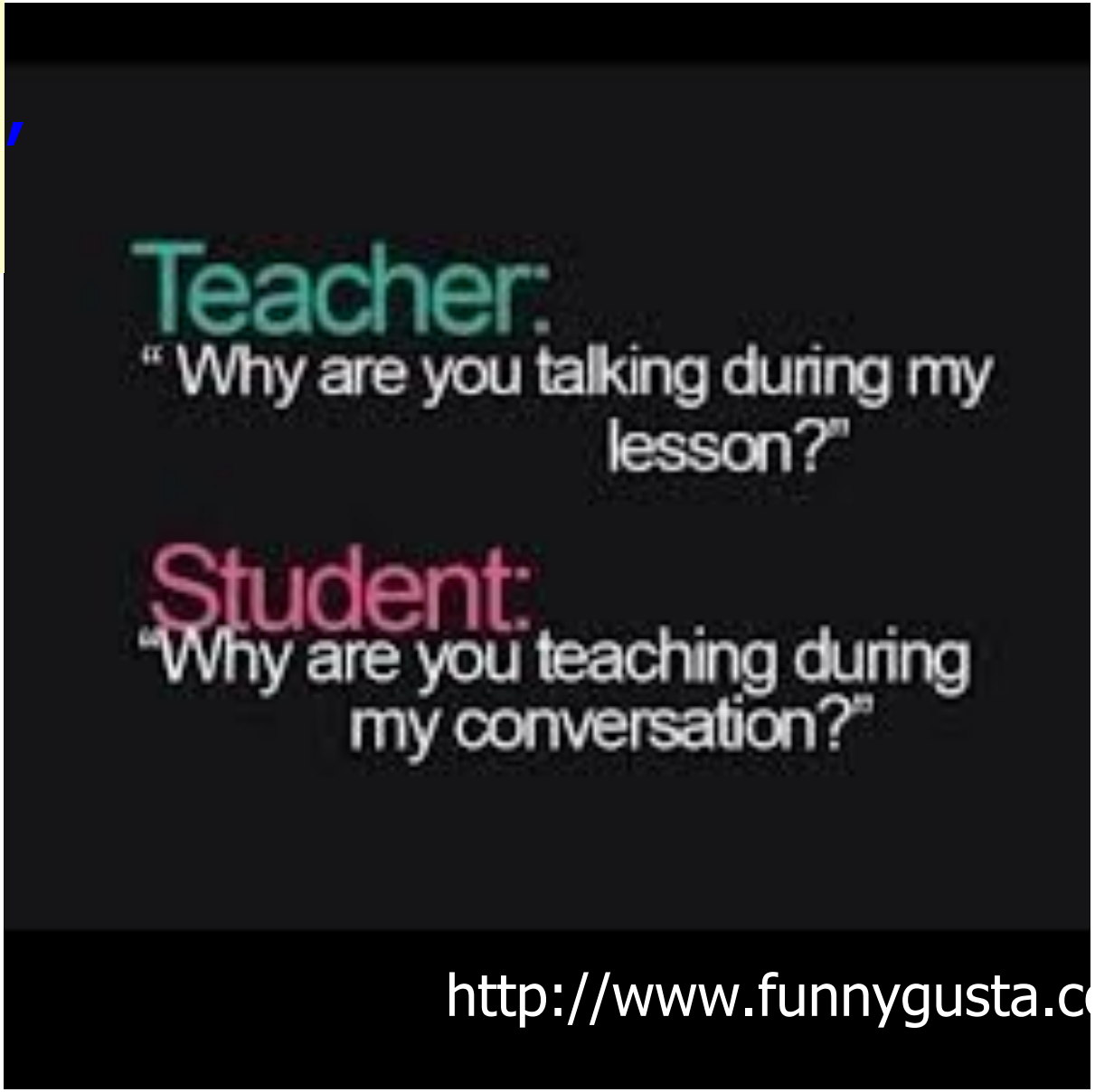
Smoking is injurious to ALL!

Classroom activity

http://pixgood.com

Ask question, start discussion, break monotony, show a clip,
Make them contribute/ work out something …

Paradigm shift,
Generation gap,
disconnect….



Paradigm shift,

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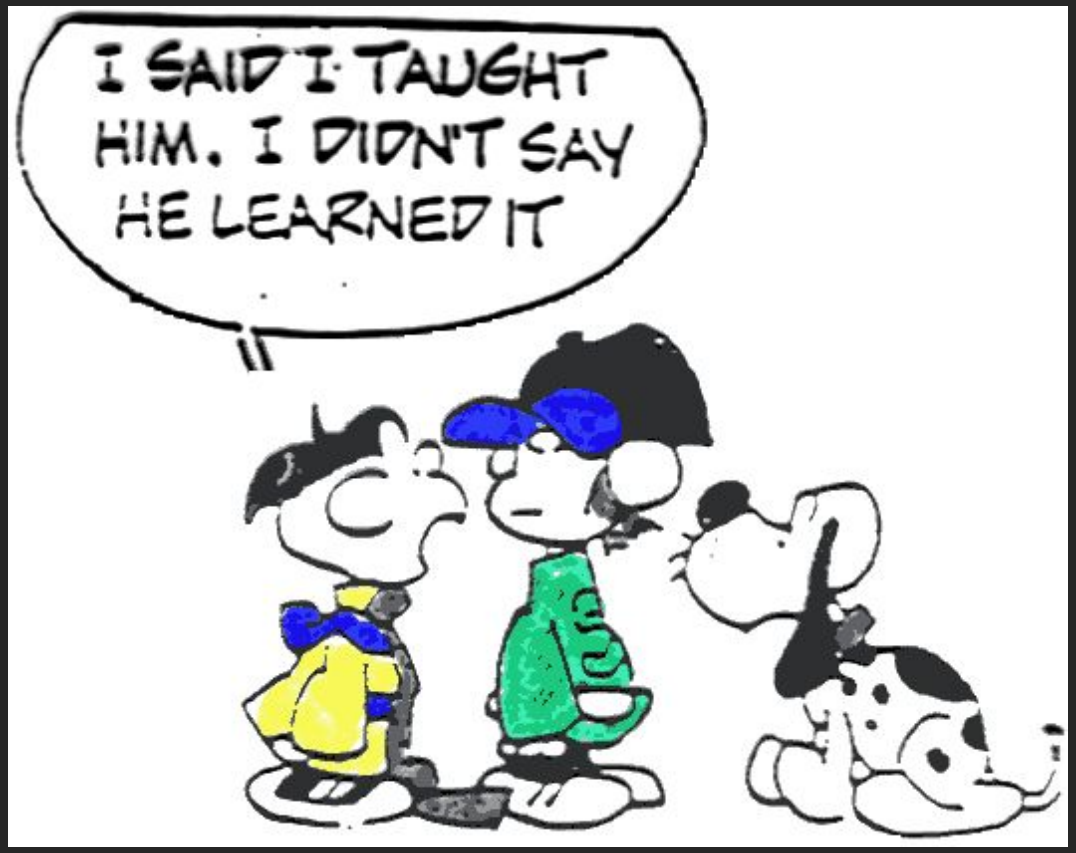
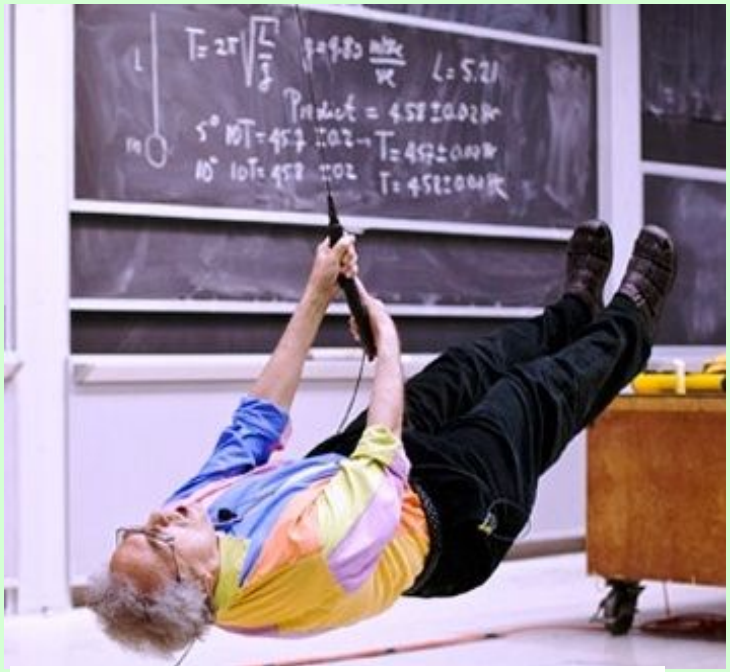


Getting Inspired towards Great Performance

Growing as a reflective teacher...

The paradigm shift in your pilgrimage to become a good teacher .....

Richard Feynman
Role model for
Physics Teachers and Researchers



Walter Lewin
Megastar of Physics Teaching

I wonder why.
I wonder why I wonder
I wonder 'why' I wonder why.

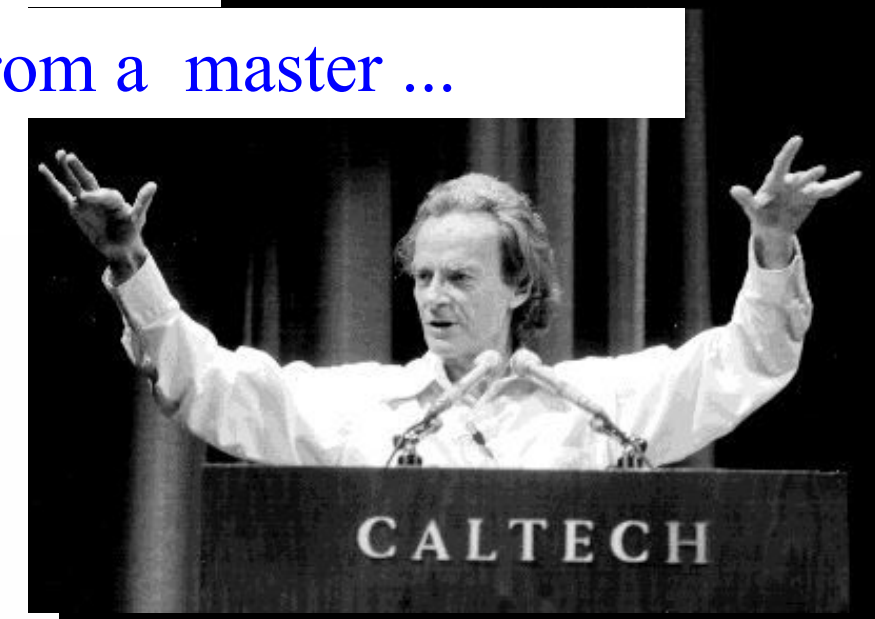
Strategies on pedagogy from a master ...

Why does a toy dog move?

What about a real dog?

"It moves because the sun is shining,“
"No. What has that to do with the sun shining?
It moved because I wound up the springs.“

Strategies on pedagogy from a master ...



"What gives you the impression
I was going fast, officer?"

Strategies on pedagogy from a master ...

Why is the sky blue?

Why is the sea blue?

A must-read for all science teachers

Strategies on pedagogy from a master ...

from '*modeling the master*'
to '*mastering the model*'

Einstein on education

Education is that which remains,
If one has forgotten everything
one has learned in school.

From Einstein's lecture on 'Education' at Albany, USA, 1936
quoted in Literary Reader, Functional English, CBSE class XII

Interaction Session 3

Examples, comments,… from masters / own experience

Role of the Teacher …

From Sage on the Stage … to Guide on the Side

A flipped class in progress

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“Has your education empowered you to learn about all else becomes understood ? ”

(yat jnatvaa sarvamidam vijnaatam bhavati…)

Education should
enable,
enrich,
empower

Role of the teacher:

go beyond the text,
help the student unravel the secrets of mother Nature,
to develop a proper, balanced perspective to knowledge.

Science education in the rapidly unfolding scenario

Is today's education

"accumulation of disconnected facts and unexplained formulae which burden the memory without understanding" ?

" Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information? "

I thought and thought ….

Interactive session 4

Information, Knowledge and Wisdom

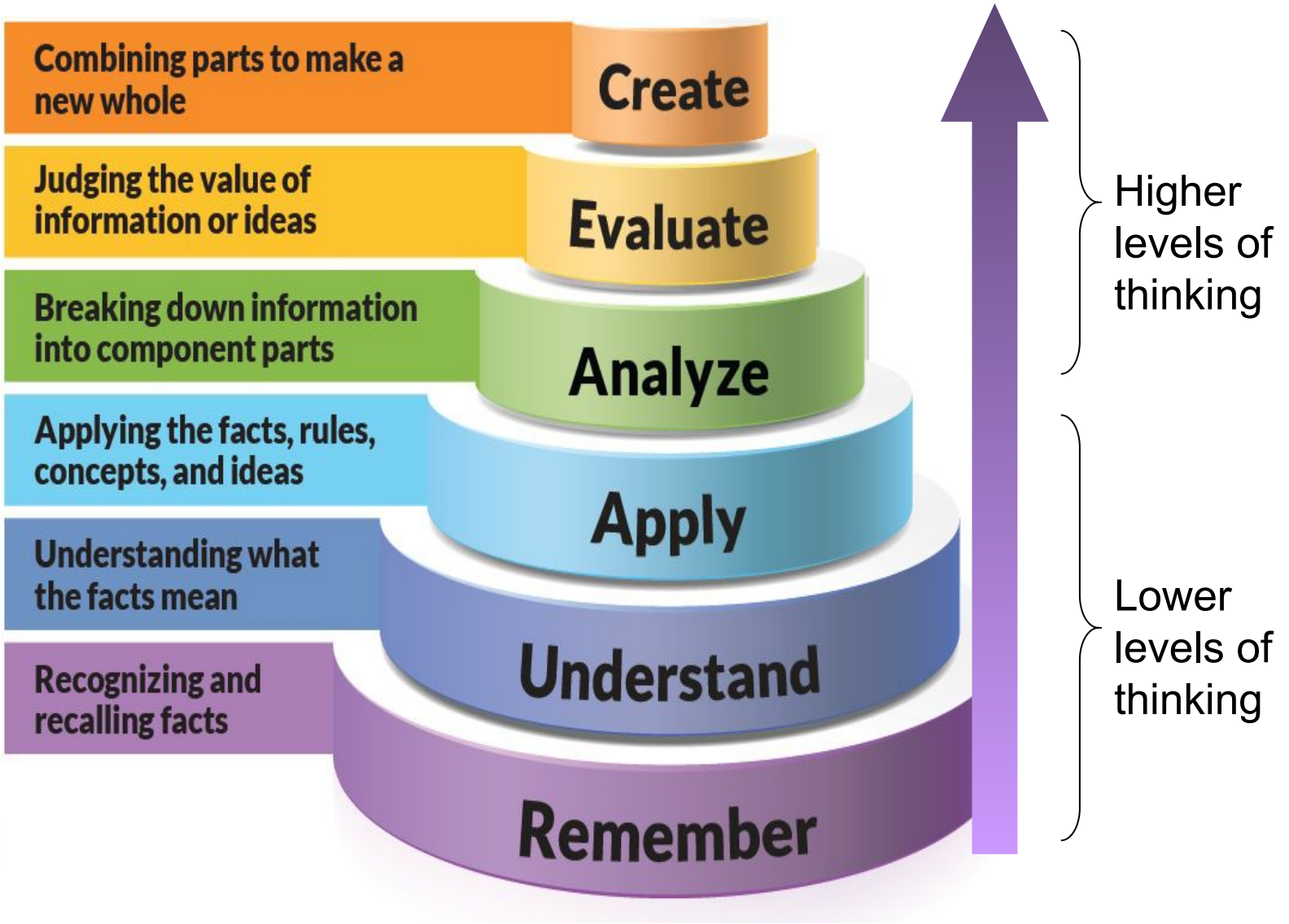
In the context of science/engg education, examples

Data:
Raw facts, figures, tables …

Information:
Data after collection and organization

Knowledge:
Systemized information, through testing, comparing, analyzing, generalizing … towards understanding

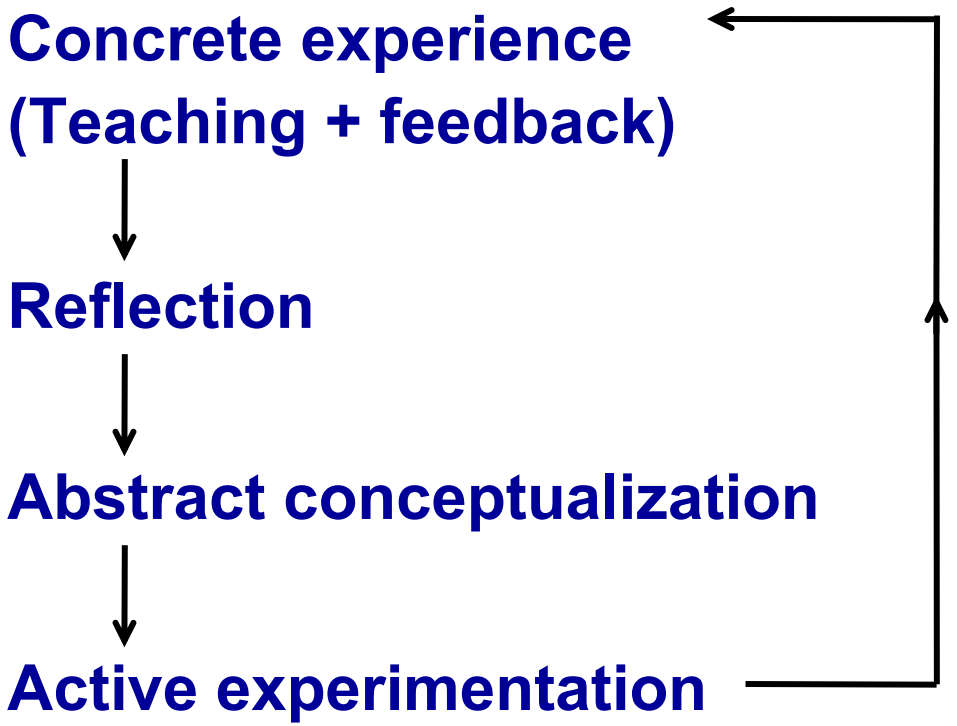
Wisdom:
Information + Knowledge + Insight + Experience --- all in perspective



Reference : http://tips.uark.edu

Summary

Reflection is a four stage mental activity



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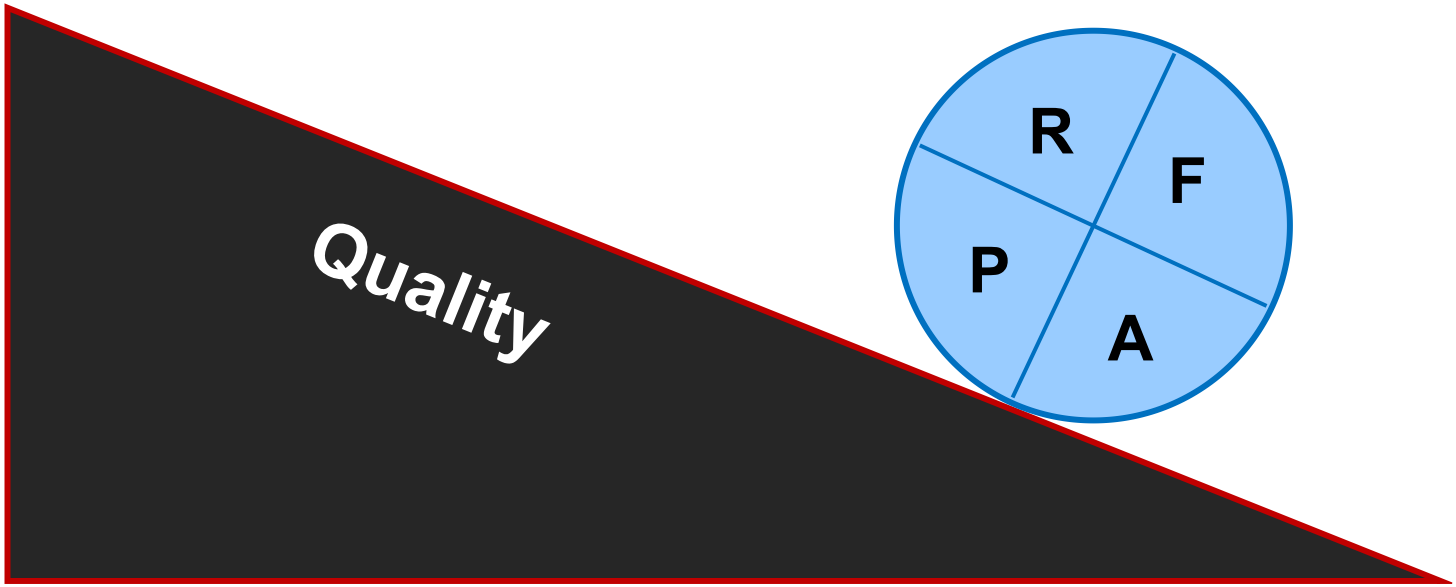

Action Feedback Reflection Planning

Parts of this figure are adapted from

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Learning Outcomes:

(What will happen to you at the end of this session…?)

You will

Recognize the need for feedback and reflection

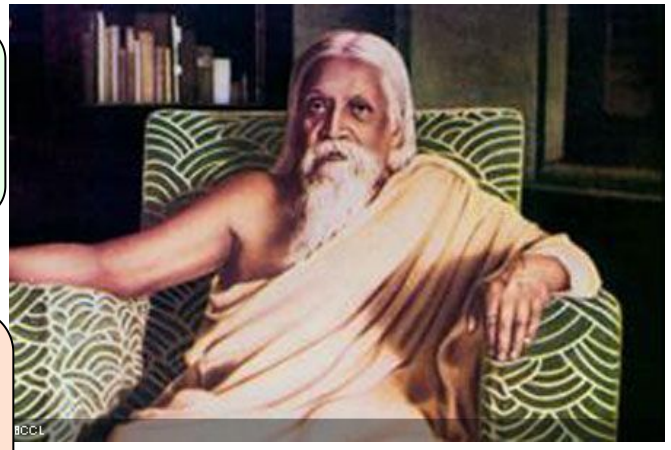
List specific steps to implement Reflective Teaching

Step out with enthusiasm towards Reflective Teaching

… *man* may very well be a laboratory
in which Nature wills to work out *superman*….

Sree Aurobindo

Let us reflect on to what extent we are helping Nature to do this…



which helps us to assess and Assure our Quality!

Thank you !