REFLECTIVE AND ANALYTICAL THINKING

BLOOM’S TAXONOMY
Many students arrive at theological schools without the ability to think analytically. They were exposed to a parrot type of teaching – just repeating facts. Our duty is to help them to think critically and analytically. Our duty is to help them to reflect intelligently and to be able to solve problems – something so necessary later in their ministries.
Do you agree with this statement?

What is your evaluation of the educational training at secondary level in your country? Does it help independent, critical thinking?
For Dewey, thinking is problem solving and his paradigm has come to be called variously: problem solving, critical thinking, reflective thinking, functional thinking, scientific thinking, the complete act of thought and the method of intelligence.

- Tanner & Tanner, 2007:57
If we follow Dewey, critical thinking is motivated by a problem. It must be a real problem, the student’s own problem. It must be a problem related to his or her life – within their context.
PROBLEM SOLVING – A PEDAGOGIC APPROACH

- Some universities use the Problem Solving Learning as a pedagogic method:
  - A life related problem is formed
  - Students discuss the problem
  - They go to the library/internet to get more information
  - They do field survey
  - They come back to discuss
  - They hand in their dissertations
Reflective thinking implies not only the solving of problems but also includes, for example, the pondering on God’s greatness, the appreciation of the awesomeness of nature, the reflecting on the development of a student in all spheres of life, the discovering of beautiful literature, the meditating of God’s Word, etc.
Dewey (1933) saw reflective thinking as the unifying process in curriculum: the mode of thought so vital to “productive citizenship in a free society.” Students learn the ability to see the whole picture of the curriculum and the training and to see the relationship between the subjects.
REFLECT IN CLASSES

- The idea is to ask so called “open questions” and thought provoking questions in a class situation to stimulate the thoughts of the students.
- Tests and exams (also oral exams), should also serve to help students to develop their higher thinking skills.
BLOOM’S TAXONOMY

Bloom identified different levels of thinking
1. Factual knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation
FACTUAL KNOWLEDGE
Level 1

- Questions require just a factual recall of the material
- This is the lowest form of thinking – just to recall material or facts. This should just form a part of a test or exam or questions in the class
COMPREHENSION
Level 2

Questions require now the student to think more broadly, to show more in-depth understanding, to explain using his/her own words.
APPLICATION

Level 3

- Questions ask the student to apply learning to a new situation
ANALYSIS

Level 4

- Questions are designed to ask students to take the material apart and examine the pieces
SYNTHESIS
Level 5

- Questions attempt to get the student to go beyond our present knowledge
EVALUATION
Level 6

- Questions are designed to require the student to evaluate the ideas according to an explicit and detailed set of reasons. The system of judgment employed must be clearly explained.
What follow are examples of typical questions that one can ask at the different levels.

One should take note that in your Memorandum the answers should also reflect the level of questions!

**Example:** The student should be able to show: comprehension...apply...analyze...evaluate etc.

Marks should be given for the factual part and the level of higher thinking skills demonstrated
FACTUAL KNOWLEDGE
Level 1

- How much is...
- Who is...
- What is...
- When was...
- How did...
COMPREHENSION
Level 2

- Demonstrate the meaning of...
- Paraphrase, in your own words...
- Give an example...
- How are these ideas similar to...
- Explain the meaning of the story...
APPLICATION
Level 3

- What would happen if...
- Apply the formula to the following problem...
- Teach your friend the meaning of...
- Using the story as basis, write...
ANALYSIS
Level 4

- How are...the same, and how are they different?
- List the basic assumptions of...
- Describe the variety of motives...
- Distinguish between theory and facts...
- Separate the major and minor themes
SYNTHESIS
Level 5

- Describe the three major theories, and show how they may be combined...
- Write an essay proposing a new solution to the problem...
- Write a play/paint a picture/construct a formula, etc. which best illustrates a new way to understand...
EVALUATION
Level 6

- Write a careful critique of ...theory. Detail the strengths and weaknesses. Justify your conclusion
- Evaluate the recent decisions by...according to the following expedient principles
- Compare and contrast the approaches to...according to the following ethical principles
- Detail the logical inconsistencies in theory X as an example of an inadequate scientific paradigm.
Typically one will ask lecturers to compile their tests/exams as follow:

- 1st Year - 80% Facts, 20% Insight
- 2nd Year - 70% Facts, 30% Insight
- 3rd Year - 60% Facts, 40% Insight
- 4th Year - 50% Facts, 50% Insight
- Post-graduate – 40% Facts, 60% Insight
REFLECTIVE THINKING HELPS TO BRIDGE GAPS

- Dewey (1916), attacked the separation between thoughts and action, thinking and doing, subject matter and method, content and process, ends and means, Reflective thinking, then, would resolve the dualism between curriculum and instruction (P179 – 192)

- One can say that reflective thinking helps to bridge the gap between theory and practice – so important for our students.
The appeal is then to really make a serious attempt at all our NetACT institutions to rise the level of higher thinking skills of our students – for their own interest as students, for their future ministries and for the Kingdom as a whole.