Aligning Assessment Questions with the Educational Goals of Theological Education.

Dr Richard E Seed

i. Identify the learning objectives for a course.

We have seen that the role that evaluation plays in the academic programme is much more extensive than just giving a student a grade for a piece of work. If we are to use evaluation effectively in our teaching programme, we also need to know what it is we want to evaluate, that is, what our educational objectives are. If we do not know where we are going, we will not know when we have arrived. Setting learning objectives therefore gives us our direction in teaching. They help the teacher to devise the teaching and learning programme and provide a way of testing the student's progress.

Learning objectives are often viewed in three distinct areas. These are the cognitive domain, the affective domain and the psycho-motor domain.

a. The **cognitive domain** is the thinking that takes place around an issue. It includes knowledge, comprehension, and critical thinking. The cognitive domain has been further refined into acquisition of knowledge, enhancing cognitive skills and strengthening problem solving and finding capabilities.
b. The **affective domain** is the way people react emotionally to a topic and leads to empathy, changes in values and attitudes.
c. The **psychomotor domain** is the learning associated with the physical skill and behaviour.

These domains are popularly referred to as, "the head, the heart and the hands" of learning. Benjamin Bloom first advocated these domains in 1956.[1] They have since become known as **"Bloom's Taxonomy".** Taxonomy simply means categories. Bloom's intention was to bring a holistic approach to education by identifying the breadth of learning and teaching objectives that should be considered when constructing education programmes. In the cognitive domain he identified six components:

i. Knowledge
ii. Comprehension
iii. Application
iv. Analysis
v. Synthesis
vi. Evaluation

This taxonomy has had a huge influence on current educational practice. It grades cognitive skills from **lower order skills** (memorisation) through **middle orderskills**to

[1] B. S. Bloom (ed.) *Taxonomy of Educational Objectives: The Classification of Educational Goals*. New York: McKay, 1956.

higher order skills (analysis, synthesis and evaluation). While Blooms initial work was related to learning in the school setting many have transposed it to learning at the University level. This is evidenced in the table 1 presented earlier. The fact that the cognitive skills desired of a good university student today are seen as the ability describe in a concise but comprehensive manner and the ability to engage in analysis, synthesis and evaluation, shows the extent of the influence of Bloom's taxonomy.

Others have subsequently built on Bloom's work.[2] Robert Mager used Bloom's taxonomy and added certain suggested verbs for stating learning objectives. Rosemary Caffarella the adult educator took it further by listing verbs for five major categories of learning.[3]. We will return to these verbs in table 4.

While Bloom concentrated on describing learning at school Biggsconcentrated his energies researching and writing on learning at the university level. He observed that the students structured their particular approach to their studies according to what they thought the lecturer wanted from them.[4]Approaches students took to their studies differed from student to student. These differences led to different learning outcomes. From this Biggs devised the **SOLO Taxonomy**. This is a model that is used to describe the increasing complexity in the structure of understanding of a subject. SOLO taxonomy stands for:

Structure
Observed
Learning
Outcomes

In this model, the greater the complexity in the way understanding is constructed, the deeper is the level of outcome. It describes the levels through five stages. Each level includes the previous levels, but adds something new. Neither all learning nor all teaching will include all five stages

The five stages are:

- **Pre-structural:** here students are simply acquiring bits of unconnected information, which have no organisation and make no sense. The task is not attacked appropriately; the student hasn't really understood the point and uses too simple a way of going about it.
- **Uni-structural:** simple and obvious connections are made, but their significance is not grasped. The student's response only focuses on one relevant aspect.
- **Multi-structural:** a number of connections may be made, but the meta-connections between them are missed, as is their significance for the whole.

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[2]Lorin W. Anderson, David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard E. Mayer, Paul R. Pintrich, James Raths and Merlin C. Wittrock (eds.) *A Taxonomy for Learning, Teaching, and Assessing : A Revision of Bloom's Taxonomy of Educational Objectives* (Addison Wesley Longman, 2001).

[3] Rosemary Caffarella, *Planning Programmes for Adult Learners* (San Francisco: Jossey Bass, 2002*).*

[4] John Biggs, "Levels of Processing : Study Processes and the Quality of Recall." In MM Gruneberg, et al (eds) *Practical Aspects of Memory*. London: Academic Press.1978

The student's response focuses on several relevant aspects but they are treated independently and additively. Assessment of this level is primarily quantitative.

- **Relational**: the student is now able to appreciate the significance of the parts in relation to the whole. The different aspects have become integrated into a coherent whole. This level is what is normally meant by an adequate understanding of a topic.
- **Extended abstract** the student is making connections not only within the given subject area, but also beyond it, he is able to generalise and transfer the principles and ideas underlying the specific instance. The previous integrated whole may be conceptualised at a higher level of abstraction and generalised to a new topic or area. The first three levels are the basic levels of knowing things. The third level, Multi-structural, represents the middle range of structural complexity. The highest level of complexity, producing the greatest cognitive outcome and competence is the Extended Abstract. Throughout the period of a student's education there should be a rising level of competence.

It has been practice for sometime to rank the requirements of assessment tasks as requiring, lower, middle and higher order **cognitive skills**. These can be correlated to the SOLO taxonomy

Table 3. Order of cognitive skills and the SOLO taxonomy

ORDER OF COGNITIVE SKILLS	SOLO TAXONOMY	DESCRIPTION OF ASSESSMENT TASK
Lower order cognitive tasks	Uni-structural Multi-structural	One word answers Lists Single Sentences Short descriptive paragraphs
Middle order cognitive tasks	Multi-structural Relational	Simple Paragraphs Descriptive essays
Higher order cognitive tasks	Relational Extended Abstract	Problem identification and solving activities. Long essays that describe, analyse, integrate, evaluate and construct

Biggs suggested levels of cognitive processing that give us a guideline for setting learning objectives and then devising assessment tasks that are aimed at attaining that level of cognitive activity.[5] In theological education we expect students to engage with the material at the highest possible level. This means encouraging them to construct their thinking at the Rational and Extended Abstract levels. The curriculum objectives selected for a course, the teaching methods and the evaluation all need to be geared to achieving the same objective. To help us in this we turn to the verbs used when drawing up the curriculum objectives. The table below gives some examples of how the verbs we use for curriculum objectives and assessment tasks can be aligned to the desired cognitive level.

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[5] J. Biggs ,*Teaching for Quality Learning at University (2nd ed.,* SRHE and Open University Press /McGraw-Hill, 2003

- *Table4 .Verbs for assessment tasks related to the SOLO taxonomy and curriculum objectives*

LEVEL	VERBS FOR EVALUATION QUESTIONS		VERBS FOR CURRICULUM OBJECTIVES
Extended Abstract	create devise formulate generate	hypothesise reflect theorise apply	to change to construct to discover to propose to apply
Relational	account for argue analyse asses relate comment	contrast discuss differentiate explain infer justify prove compare	to analyse to evaluate to diagnose to determine to solve
Multi-structural	list classify enumerate define describe outline	trace summarise state characterise demonstrate	to catalogue to reproduce to express to state to outline to elaborate
Uni-structural	identify label mention name		to recall to tell to recite to name to memorise

We can illustrate that we mean with an example. In a course on Theological Education a lecturer may be covering Theological Education by Extension. Here are some possible curriculum objectives with their assessment tasks for the different levels.

Table 5 . SOLO categories and sample questions

UNI-STRUCTURAL LEVEL	
OBJECTIVE	The student will **recall** the names of the founders of TEE.
TASK	One word objective answers
QUESTION	Name the founders of the TEE movement.

Multi-structural Level	
Objective	The student will**state**the characteristics of TEE learning materials.
Task	Paragraphs or simple essay
Question	**Summarise** the characteristics of TEE learning materials?

Relational Level	
Objective	The student will **evaluate** the appropriateness of TEE for the African Church
Task	Essay
Question	**Assess** the importance of TEE for ministry formation in the African Church.

Extended Abstract Level	
Objective	The student will **construct** his/her own philosophy of Theological Education by Extension.
Task	Essay/Project
Question	**Apply** the philosophy of TEE to your role as a pastor in the local church.

We use formative assessments to help the student to identify the level of his/ her learning and how it may be improved and we use summative assessments to identify how the verb targets are being applied in the context. For this process we have seen that the curriculum objectives are central. In everything, we are always aiming at the highest level. The verbs we use in our objectives and assessment tasks should reflect this. We design our teaching and learning activities to stimulate the higher levels of engagement. This does not mean that lower level objectives are always inappropriate. We select our assessment tasks to tell us how well the student can meet the levels expressed in the curriculum objectives but these objectives will depend on certain considerations:

a) An emphasis on facts may be appropriate in introductory courses. These courses introduce students to new areas of study which may require a firm grasp of foundational issues in order to form a framework for deeper engagement. In this case, lower order cognitive tasks may be appropriate.
b) Students bring with them their experience skills and habits formed by their years in school. These may not provide an adequate base for a deep approach to understanding. This needs to be taken into consideration at the lower levels of tertiary education. It may be necessary to take the students on from where they are when they first enter theological studies. As students move through their theological studies they should be expected to engage with their studies in an increasingly complex way.

c) The priority of the topic being treated. The more important a topic is, the greater the depth of the assessment.Conversely, less important topics may be covered at more superficial levels.