**UNIT 4: How to Sequence and Integrate the Teaching of the various Components of Agriculture and Projecting Gender Roles, and issues Relating to Equity and Inclusivity in Curriculum Delivery**

This unit will look at the meaning of sequencing and integration of the teaching of the various components of agriculture and apply that to project gender roles, and issues relating to equity and inclusivity in curriculum delivery.

**4.1 Sequencing of the teaching of the various components of agriculture**

The understanding of the words sequencing is very important.

To sequence means to order, arrange or categorize. In other words, the **sequence** is the order in which the information is presented to the student in the syllabus.

The systems principle of “hierarchy” can serve as the theoretical basis on how to sequence the teaching of the various components of agriculture. The hierarchy principle indicates that there a pecking order or chain of commands in every system.

However, how to sequence the teaching of the various components of agriculture depends on many factors. These include:

* The development of the students cognitively.
* The goals and purpose of the syllabus.
* From the provision of simple-to-complex information. The simpler concepts are presented before more complex ones
* Ensuring pre-requisite learning where certain knowledge must come before more advance knowledge.
* Assuring a chronological learning. The curriculum is sequenced by the order the concept happened historically.
* Whole-to-part learning providing students with an overview of the subject before going into specific details.
* Availability and plans for use of resource materials to support learning experiences.
* The needs of students.
* What students learn each year and builds on what was there before.
* To deliver the necessary learning aligned with what will be done in the workplace.
* To make sure that students successfully go through the agricultural programme in a timely.

**4.2. Integration of the teaching of the various components of agriculture**

Integration is about combination, addition and incorporation.

To integrate the teaching of the various components of agriculture is to connect different topics to the other and/or to relate relevant activities to enable students connect topics to real life or profession.

Integration is also about combining different subject areas teach them as a singular theme or an idea in agriculture.

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4**.4 How to introduce balance in the planning of agricultural curriculum**

**Balance** is a state of equilibrium i.e. from systems perspective. The principle of control indicates that the goal of every system is its desired state, where the system is at rest or **balanced**. In the terms of the curriculum or syllabus, balance can be about equal distribution of weight of aspects of the syllabus such as the depth and breadth of the content of the syllabus; the equilibrium between cognitive, affective and psychomotor learning domains, the needs of the subject, learners and society. In terms of the needs of learners, curriculum studies is also concerned with issues of equity, access, and giving voice to the advantaged and disadvantaged learners

We shall look at balance in the learning domains (**cognitive**, affective and psychomotor) and ensuring the needs of the learners (projecting gender roles, and equity and inclusivity) in curriculum delivery.

**4.4.1** Balancing the cognitive domain in the study agricultural curriculum.

The cognitive domain involves **the development of our mental skills and the acquisition of knowledge**. There are six categories under this domain. The affective domain involves our feelings, [emotions](https://explorable.com/nature-of-emotions) and attitudes. This domain is categorized into 5 subdomains. The psychomotor domain is comprised of utilizing motor skills and coordinating them. There are seven categories under this. In case we want to look at the balance of these that would be a lot of work that could take the whole of semester. Let us focus on the cognitive aspect and check the balance in the study of the curriculum.

Two key areas could be identified with cognitive domain in this syllabus are knowledge and understanding, and the application of knowledge. Knowledge is simply described as the ability to remember or recall materials already learned and constitutes the lowest level of learning.

Specifically, *knowledge* has been defined as the ability to: Remember, recall, identify, define, describe, list, name, match, state principles, facts and concepts.

*Understanding* is generally described as the ability to grasp the meaning of some material that may be verbal, pictorial, or symbolic.

Understanding is specifically been described as the ability to: Explain, summarise, translate, rewrite, paraphrase, give examples, generalize, estimate or predict consequences based upon a trend.

*Application* of Knowledge is ability to use knowledge or apply knowledge, as implied in JHS Integrated Science syllabus. It has a number of learning/behaviour levels. These levels include application, analysis, synthesis, and evaluation.

*Application* is described further as the ability to: Apply rules, methods, principles, theories, etc. to concrete situations that are new and unfamiliar. It also involves the ability to produce, solve, operate, plan, demonstrate, discover etc.

*Analysis* is the ability to: Break down material into its component parts; to differentiate, compare, distinguish, outline, separate, identify significant points etc., recognize unstated assumptions and logical fallacies recognize inferences from facts etc.

*Synthesis* is the ability to: Put parts together to form a new whole. It involves the ability to combine, compile, compose, devise, plan, revise, design, organize, create, generate etc.

*Evaluation* is the ability to: Appraise, compare features of different things and make comments or judgement, contrast, criticize, justify, support, discuss, conclude, make recommendations etc. Evaluation refers to the ability to judge the worth or value of some material based on some criteria.

In pages ix and x of the JHS Integrated Science Syllabus, the dimensions for teaching, learning and testing and their respective weights are as follows: Knowledge and Comprehension 20%, Application of Knowledge 40%, Experimental and Process Skills 40%.

The above explains the Knowledge and Comprehension, and Application of Knowledge. The experimental skills involve the enquiry/investigative process of planning and designing experiments, carrying out case studies and field studies to be able to compare phenomena or to observe phenomena closely to be able to identify causes and reasons for the occurrence of phenomena and develop practical solutions to problems and tasks.

Process skills involve demonstration of practical manipulative skills using tools, machines and equipment for problem solving in science. Process skills also involve the processes of observation, classification, drawing, measurement, interpretation, recording, reporting, and expected scientific

conduct in the laboratory/field.

You will notice that Application of knowledge and Practical and Experimental Skills have equal weight that is higher than the weight for Knowledge and Comprehension.

Study the curriculum by noting the balance of cognitive domain in the agriculture component of JHS Integrated Science syllabus. The action verbs and the definitions provided in the explanations of the three profile dimensions should help you to structure your teaching such as to achieve the effects needed. Select from the action verbs provided for your teaching, in evaluating learning before, during and after the instruction.

Use the action verbs also in writing your test questions. This will ensure that you give your students the chance to develop good thinking skills, and the capacity for excellent performance in integrated science and in examinations. Check the weights of the profile dimensions to ensure that you have given the required emphasis to each of the dimensions in your teaching and assessment.

**4.4.2 Balancing the planning of agricultural curriculum - projecting gender roles, and issues relating to equity and inclusivity in curriculum delivery.**

One of the main objectives of the course is identifying the approaches that would be used to delivery this course to prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. We are also to introduce balance in the planning and teaching of learners. It is therefore important to understand these terms before appropriate approaches are identified and used.

*Gender* is responding to the needs of both males and females in class during the instructional period.

*Equity* is giving everyone what he or she needs, so as to succeed with others.

*Equality* is treating everyone the same by giving them equal opportunity.

*Inclusivity* is broad and is about ensuring equal access, participation and learning for all learners from diverse backgrounds and abilities. In an agricultural class you are likely to encounter learners with different linguistic, ethnic, geographical, religious, and socio-economic backgrounds.

The question is how do you ensure that there is balance such that learners such as the gifted and the talented, learners with learning difficulties and disabilities, boys and girls, learners with social, emotional and behavioural difficulties, and marginalized learners (e.g. orphans and vulnerable children, street children) are all paid special attention?

We have indicated that, an important component of the curriculum study is pedagogy which is most commonly understood as the approach to teaching or how knowledge and skills are imparted to learners.

What approaches will be important to deliver the agriculture component of JHS Integrated Science syllabus to ensure that equal weights are put on gender and inclusivity? It is important to study those teaching and learning approaches that could be used to achieve the specific objectives specific objectives of the agricultural components of the syllabus. Let’s familiarize ourselves with following:

*Question and Answer Method*: Tutor encourages the use of questioning to solicit responses from learners.

*Lecture/Lecturette method*: Tutor uses the Lecture / Lecturette methods to present information, facts and principles about a topic to students.

*Demonstration method*: This involves showing, telling and doing something that can be observed by group of learners. There are two aspects results and method demonstration.

*Work-based learning* *method* is used to help students apply real-life work experiences with academic and technical skills and develop their own strategies to teach agriculture effectively.

*Discussion method***:** Tutor uses the discussion method to get student-teachers to discuss topical issues or themes relating to the topic under discussion. It involves exchange of ideas, facts, opinions and experiences about topics in the syllabus.

*Use of Educational Drama/Role playing method*: Tutor organizes the students to use educational Drama to teach certain topics that enable learners to practise a newly learned behaviour or act out a real situation or experience new perspective.

*Use of Resource Persons*: Tutor makes effective use of Resource Persons to teach certain agricultural topics that the tutor is not skill enough or have limited knowledge. In some cases, the resource person is used to enable the learners have access to certain equipment that tutor may not have.

*Group Work***:** Tutor puts student-teachers into groups and assign them tasks to perform, based on the topic. This is to encourage involvement and participation of all learners in the lesson

*Study Visits/Field trips*: Tutor organizes students to go on study tour to places outside the classroom to observe real situations to reinforce what students have learnt.

*Use of ICT*: ICT is a tool that is used for creating, storing, retrieving, sending, manipulating and receiving digital information. ICT tools include Computers, Mobile Phones, Tablets, Internet, Broadcasting Devices like Radio, Television, Wi-Fi, etc. Power Point Presentation, interactive quizzes, download of audio-visual stories/techniques, visit to blogs and websites on specific topics

*Brainstorming:* Tutor uses the brainstorming method to get student-teachers identify and generate alternative solutions to issues.

*Problem Solving* – Students make inquiries to find solutions to problems. It also ensures that tutors generate pool the knowledge, wisdom and experience of attendees and to identify the best possible solution to the problem.

*Assignment*: Tutor gives assignment to students to find the meaning of the key concepts

*Independent study:* Guide students to look at the meaning, merits and demerits of the above approaches and how to use them to teach topics in the syllabus.