**CASE STUDY: Developing Instructional Strategies**

**Section 1: Introduction**

In the last case study we observed Candace who is the lead IDS and Victor the PLD develop assessment strategies by working backward from the objectives to develop an assessment plan. The logic for developing assessments before the content of the learning asset is that we must be sure that our assessments align with our terminal objectives. Once Candace and Victor have identified the terminal objectives and have aligned the assessments to those objectives, they are ready to begin working on the final section of the design phase; the instructional strategies. At this point the FIPT has developed the scope of the content, which is the content inclusion that is necessary to support the desired performance competencies and the enabling objectives which will support the terminal objectives.

**Section 2: The Case**

* As Candace and Victor begin to develop the instructional strategy for their learning asset, they call to mind two main elements that they must consider:
  + Instructional sequence
  + Instructional methods

* ***Instructional sequence*** is the order in which the instruction is presented. This is an important aspect of developing an instructional strategy because it is concerned with the logic of the instructional placement. To help Victor see this logic, he creates a high level sequential outline.
* He first put all of the learning objectives that were identified for his learning asset on individual sticky notes. He then grouped all the ELOs under their respective TLOs.
* Next he checked to make sure that all the ELOs supported the ELO that succeeded it and that collectively the ELOs supported the TLO with which they were associated.

TLO

ELO 1

ELO 2

ELO 3

ELO 4

Simple

Complex

Subordinate

Superordinate

* Then he arranged the TLOs by content scope so he could more easily define modules and lessons.
* Next he divided the ELOs into manageably sized units.

Once he made his decisions about how to organize the TLOs and the ELOS he could easily see how he should sequence them (e.g., chronological, procedural, general to specific, specific to general etc.)

* While Victor is working on the sequential outline, Candace goes over Gagne’s 9 events of instruction. Once Victor has completed his outline of the content, Candace and Victor will use Gagne’s events as a template within which to structure individual lessons.
* Gain learners’ attention.
* Share the learning objectives of the session.
* Get learners to recall prior knowledge of the subject.
* Present the content.
* Provide learner guidance to enhance understanding.
* Give learners an opportunity to practice and demonstrate what they know.
* Provide feedback.
* Assess performance.
* Provide job aids or references to ensure that learners retain and transfer what they have learned.

Victor and Candace rely on Gagne’s events because Gagne purposefully related each event to identified internal learning processes. He sequenced his events of instruction to coincide with a sequence of internal conditions of the learner that have been shown to enhance learning.

As Victor and Candace develop each lesson they are careful to place enabling learning objectives into the lesson in a way that is consistent with Gagne’s sequence and to move from the simple to the complex. They double check to make sure that each ELO supports the ELO above it. In doing so, they parallel Bloom’s cognitive processing model; moving from lower levels cognitive functions (e.g., remembering, understanding) to progressively higher levels of cognitive functioning (e.g., applying, analyzing, evaluating and creating).

* **Instructional Method** is the next thing that Candace and Victor address. They know that instructional methods are an important part of developing a learning asset because a good match among the content, the learner and the method will support learner acquisition of knowledge/skills stipulated by the objectives.
  + Victor and Candace know that while there is a plethora of instructional methods from which to choose, they can go back to their learner analysis which will help them decide which methods that may be more suitable for their learners than others. Unfortunately, in this case, the only thing that they know about their target audience is that they are a diverse group of new hires with no previous prerequisite coursework and no experiential or educational requirements.
  + They are also concerned about keeping the learner’s attention so within the framework of Gagne’s events of instruction, they generally choose to use more than one instructional method**.**
  + Since they have scant information about their learners, they rely on their experience to help them decide on which methods to use. They decide on:
    - Lecture: since it is an excellent way to offer direct instruction.
    - Drawings and illustrations: this will present visuals that may simplify understanding organizational and task structure
    - Computers: access to computers reflects one of the purposes of the course as stated in the needs analysis: *“[the] development of a learning asset that would provide foundational knowledge about the Federal Acquisition Regulation (Parts 1-53) and the Defense Federal Acquisition Regulation Supplement (DFARS) to new hires* ***and enable them to work in a web-enabled environment***
* Now that they have decided on their instructional methods, they fit those methods into the planning of each lesson as guided by Gagne’s events of instruction. Victor then refers to page 11 of the POI Part 2 Course Outline (Resident/FOLE) and enters the necessary information about the instructional methods they have chosen to employ.

**Section 3: Focus of analysis:**

* **How does the instructional sequence relate to the TLOs and ELOs?**
* **How do the learner analysis and the cognitive level of the learning objectives affect decisions about instructional method?**
* **Analysis Prompts**
  + How do the learning objectives inform the instructional sequence?
  + What is the relationship among the learner analysis, the cognitive level of objectives and instructional methods?

**ANALYSIS GUIDE**

**Prompt**

* **How do the learning objectives inform the instructional sequence?**

The different types of learning objectives are hierarchical: TLO set out broad learning outcomes that directly reflect the desired performance competencies that were delineated during the task analysis. They have a broad reach in that they most often need many ELOs to support the desired competency.. TLOs represent the highest learning level that a learner is expected to achieve upon completion of the learning asset. ELOs are subordinate to the TLOs and must support not only the TLO but also any ELOs that are hierarchically superordinate. How these ELOs logically build up to the TLO suggests a sequence of objectives. Let’s take a very simple task as an example.

* Let’s suppose that a TO is:
* **The student will be able to add single digit numbers without regrouping**

The ELOs might include the following :

* **The student will be able demonstrate one-to-one correspondence.**
* **The student will be able to demonstrate joining of discrete objects**
* **The students will be able to count from zero to nine using discrete objects.**
* **The student will be able to recognize numbers from zero to nine**

By looking at the ELOs we can see that they are indeed subordinate to the TLO. So that fits the hierarchical criteria that ELOs must be subordinate to the TLO.

Then next thing we need to look at are the ELOs and remember that they too must be arranged in a logical hierarchical order. Let’s take a look at how we would do that with the listed ELOs.

Let’s arrange these ELOs in a hierarchical chart starting with the simplest and moving to the more complex cognitive operations:

* **The first thing** a child must be able to do to achieve the TO is to have one-to-one correspondence. If a child doesn’t understand that numbers represent discrete objects, then they cannot possibly grasp the concept of adding. So let’s put that at the bottom of the chart since without that no other subsequent ELOs can be supported.
* **The next thing** a child must be able to do is recognize numbers from zero to nine. If he/she can’t recognize numbers, then how will they be able to add numbers?
* **The next thing** a child must do is be able to count using representative discrete objects from zero to nine. If the child can’t recognize the ordinal arrangement of numbers he/she will not be able to grasp the concept of larger and smaller collections of discrete objects.
* **Finally,** the child must be able to demonstrate that he/she can join discrete objects to make larger groups; after all, that is the foundational concept upon which addition is based.

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| **TLO The student will be able to add single digit numbers without** | Highest |
| The student will be able to demonstrate joining of discrete objects | Fourth |
| The student will be able to count rom zero to nine using discrete objects. | Third |
| The student will be able to recognize numbers from zero to nine | Second |
| The students will be able to demonstrate one-to-one correspondence. | Lowest |

Notice that when we look at the arrangement of the ELOs from the bottom up, each ELO is supported by the lower ELO; in other words, the ELOs are arranged so that a superordinate ELO is NEVER below a subordinate ELO. All of the ELOs support each other as they move upward and collectively the ELOs support the TLO.

Once you have your content sequenced you can apply that sequencing within the framework of Gagne’s events of instruction which sequences the actual delivery of the content within a lesson.

**PROMPT**

* **What is the relationship among the learner analysis, the cognitive level of objectives and instructional methods?**

There are a host of instructional methods, a small list of which was provided in lesson four. The question arises, “How do I know which instructional method to pick?” Unfortunately, there is no clear cut rule that guides you through the process simply because instructional method is very contextually sensitive. Let’s look at young learners who belong to the “wired” generation. These are the kids who have never known a world without WiFi, cell phones, computers etc. Their experiences make them a very different audience than someone who graduated from high-school using a typewriter. Learner characteristics are one variable that should help inform the instructional designer about what method of instruction the learner is most likely to respond to most efficiently and effectively.

Another variable that can help guide the designer in selecting instructional methods is the cognitive level of the objectives. Say for instance the objectives are in the higher levels of Bloom’s taxonomy, then the instructional method should allow the learners to interact with the content at those levels. This level of cognitive processing should engage the learner in very different ways than the remembering level where rudimentary core information is being presented. For instance, at the higher levels of Bloom’s, jigsaw cooperative learning may be effective where it might be all but useless at the remembering level.

There can be, and usually is an interrelationship among learner characteristics, cognitive level of objectives and the instructional methods chosen by the designer.