**Defense Acquisition University**

**FPD 200 Participant Guide**

**Module 2, Case Study 4 (Instructional Strategy)**

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What We Learned in the Previous Case Study 1

Case Study 2: Developing an Instructional Strategy 2

The Case 2

Focus of Analysis 4

Analysis Prompts 4

Analysis Guide 5

How do the learning objectives inform the instructional sequence? 5

What is the relationship among the learner analysis, the cognitive level of objectives, and instructional methods? 6

What We Learned in the Previous Case Study

In the previous case study, we learned how Candace and Victor developed an assessment strategy for their learning asset by identifying the most efficient and effective assessment methods for measuring learners’ performance on the asset’s learning objectives. This allowed them to create an overall assessment plan for measuring mastery of the learning objectives in each lesson of their learning asset. They wrote that plan into an assessment strategy, which they included in their Course Design Document (CDD) and will eventually include in the Course Student Assessment Plan (CSAP) section of the Plan of Instruction (POI) for their learning asset. This assessment strategy is summarized in the following statement:

* “Students will be assessed individually based on their demonstration of the learning objectives for each lesson. Each lesson will include a written examination consisting of objective assessment items that will test learners’ basic recall of the information presented in the lesson as well as at least one essay question or equivalent written assessment item that will measure learners’ understanding of the major concepts presented in the lesson.”

Once Candace and Victor have identified all the objectives for their learning asset and have aligned their assessment methods to those objectives, they are ready to begin working on the final step in the Design phase – developing an instructional strategy. An instructional strategy consists of the high-level sequence of the TLOs and related ELOs that will be covered in the learning asset, as well as the particular instructional methods that will be used to support mastery of those objectives, as measured in the selected assessments in the asset.

Case Study 2: Developing an Instructional Strategy

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 himself see this logic, Victor creates a high-level sequential outline.

* He puts all of the learning objectives that were identified for his learning asset on individual sticky notes, making sure to group the ELOs under their respective TLOs.
* Next, he arranges the ELOs in a sequence so that each ELO supports the ELO that succeeds it and that, collectively, the ELOs support the TLO with which they are associated.

TLO

ELO 1

ELO 2

ELO 3

ELO 4

Simple

Complex

Subordinate

Superordinate

* Then he arranges the TLOs by content scope so that he can more easily define the modules and lessons of the learning asset. In other words, he makes sure that module TLOs are correlated with their respective lesson TLOs.
* Next, he divides the module TLOs, their related lesson TLOs, and each lesson’s set of ELOs into manageably sized units.

Then he considers how best to sequence the lesson TLOs within each module and the ELOs within each lesson. In doing so, he recalls the following general frameworks for sequencing instruction:

* Chronology
* Procedural order
* Categories
* General to specific
* Simple to complex
* Less risky to more
* Known to unknown

In looking at his TLOs and ELOs, he can easily see how he should sequence them according to specific sequencing frameworks. In particular, he decides to organize the lesson TLOs in each module so that they start with simple, general concepts related to Federal Acquisition Regulation (Parts 1-53) and the Defense Federal Acquisition Regulation Supplement (DFARS). Over the course of the lessons, he decides it is a good idea to introduce more complex, detailed ideas and procedures, based on learners’ acquisition of basic conceptual understanding of FAR and DFARS. Likewise, in each individual lesson, the ELOs would be sequenced to begin simple and become increasingly more complex. Further, he chooses to begin each lesson with ELOs and TLOs that the learners already know and then progressively move into unknown territory. In this way, Victor employs multiple sequencing frameworks to arrange the learning objectives for the asset.

While Victor is working on the sequential outline, Candace goes over Gagne’s “Nine Events of Instruction.” Once Victor completes his outline of the content, Candace and Victor use the “Nine Events” as a template within which to structure individual lessons. In particular, they decide to select instructional methods for each lesson based on how well the lesson addresses each of the following instructional events:

* 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 “Nine 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-level cognitive functions (e.g., remembering, understanding) to progressively higher levels of cognitive functioning (e.g., applying, analyzing, evaluating and creating).

***Instructional methods*** are the next thing that Candace and Victor address. They know that instructional methods because effective methods support learner acquisition of the knowledge and skills stipulated by the objectives and measured by the selected assessment methods.

Victor and Candace know that there is an abundance of instructional methods from which to choose. In particular, they consider the following methods in the development of their instructional strategy:

* Lecture
* Readings
* Case studies
* Discussion
* Collaborative learning
* Demonstrations/modeling
* Drawing/illustrations
* Role playing/dramatizations
* Games/simulations

In deciding on the most appropriate instructional methods, Victor and Candace go back to their learner analysis, which helps them determine whether some methods are more suitable for their learners than others are. 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 learners’ attention, so within the framework of Gagne’s events of instruction, they 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 which methods to use. They decide on:

* Lectures and readings, since these methods offer an excellent way to deliver direct instruction.
* Discussions, since they provide a reliable forum for learners to test out and develop their understanding of the objectives with their instructor and their peers.
* Drawings and illustrations to present visuals that may simplify understanding of organizational and task structure.

Now that they have decided on their instructional methods, they fit those methods into the planning of each lesson as guided by Gagne’s “Nine Events of Instruction.”

Focus of Analysis

How does the instructional sequence relate to the TLOs and ELOs, and how do the learner analysis and the cognitive level of the learning objectives affect decisions about instructional methods?

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

How do the learning objectives inform the instructional sequence?

Learning objectives are hierarchical: TLOs 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 their targeted competency. TLOs represent the highest learning level that a learner is expected to achieve upon completion of a lesson, a module, a unit, or an entire 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 advance learners to acquisition of the TLO suggests a sequence of objectives. Let’s take a very simple task as an example.

Let’s suppose that a TLO is:

* The student will be able to add single digit numbers without regrouping.

The ELOs for this TLO 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 student 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. Therefore, they fit the hierarchical criterion that ELOs must be subordinate to the TLO.

The next thing we need to look at are the ELOs; remember that they, too, must be arranged in a logical hierarchical order. 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 TLO 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 second thing** a child must be able to do is recognize numbers from zero to nine. If the child can’t recognize numbers, then how will he/she be able to add numbers?
* **The third thing** a child must be able to do is 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 regrouping.** |  |
| The student will be able to demonstrate joining of discrete objects. | Fourth |
| The student will be able to count from zero to nine using discrete objects. | Third |
| The student will be able to recognize numbers from zero to nine. | Second |
| The student will be able to demonstrate one-to-one correspondence. | First |

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 “Nine Events of Instruction,” which sequences the actual delivery of the content within a lesson.

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

There is a host of instructional methods, a small list of which was provided in Lesson 4. 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 the selection of instructional methods depends largely on context. One example of how context influences the selection of instructional methods involves the role of defined learner characteristics in shaping instruction.

Let’s consider younger learners who belong to the “wired” generation. These are the kids who have never known a world without the Internet, cell phones, etc. Their experiences make them a very different audience than those who completed their assignments in high school with a typewriter. Whatever instructional methods are selected to instruct this audience of learners must make good use of technology. In this way, learner characteristics are variables that should inform the instructional designer about what method of instruction the learner is most likely to respond to most efficiently and effectively.

Other variables that can help guide the designer in selecting instructional methods are the respective cognitive levels specified by the objectives. Say, for instance, the objectives require learners to exercise higher levels of cognitive processing according to Bloom’s Taxonomy. In this case, the selected instructional methods should support learners in performing at those levels. This might require the instructor to include opportunities for guided practice and self-evaluation in the targeted objective. This level of cognitive processing should engage the learner in very different ways than the remembering level, where rudimentary core information is 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.