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Four types of knowledge: definition and application to online courses

What are the four types of knowledge identified by Andersen and Krathwol and how to apply them to eLearning?

In order to define the objectives of an online course, it is not enough to know the **training needs** of the learners, but it is also important to understand the way they learn. "Know your learners" is one of the most used slogans in eLearning and in fact is the starting point to develop the content they need in the format preferred by the learners.

Revisiting Blooms' well-known taxonomy, **Andersen and Krathwol** in 2001 identified four types of knowledge to keep in mind precisely to define training objectives and activities in line with your audience's preferences. Here's what they are and how they can be used in eLearning.

What are the four types of knowledge?

In 2001, Andersen and Krathwohl updated **Bloom's taxonomy**, which hierarchically organizes knowledge levels based on what learners are capable of doing.

At the base of Bloom's pyramid is the ability to remember, and going up are more complex cognitive skills, such as the ability to analyze, evaluate, and create knowledge.

Andersen and Krathwohl's four types of knowledge are:

1. **Factual knowledge** - refers to terms, facts, and detailed information that must be learned to understand a subject or solve a problem.
2. **Conceptual knowledge** - refers to classifications, principles, and theories that are specific to a subject matter.
3. **Procedural knowledge** - a set of directions on how to do or solve something.
4. **Metacognitive knowledge** - is everyone's awareness of how they learn and what knowledge really is.

Let's look at these types of knowledge in detail to see how they can be applied in an online course.

Factual knowledge and gamification

Factual knowledge encompasses the basics that characterize any discipline, starting with terminology. In eLearning, this type of knowledge can be conveyed through gamification. For example, a **video game** about safety, can teach what the names of the various types of fire extinguishers are. Fact-based quiz questions are used to apply the terminology learned to a real-world problem.

Conceptual knowledge and simulations

With more in-depth study, students learn to make connections, categorize information based on **established patterns and principles**. In an online course, conceptual knowledge can be applied through simulation. Listening to a **podcast** about marketing strategies and then writing an email to potential customers through a hands-on exercise is one way to apply the model learned to a likely situation in the workplace.

Procedural knowledge and video courses

Procedural knowledge, answers the question "**how to put knowledge into practice**". The goal is then to learn how to solve problems by following learned procedures. Video tutorials and other interactive guides can make an online course a practical way to assimilate and apply procedures, perhaps triggering the video when needed.

Metacognitive knowledge and self-directed learning

Achieving metacognitive knowledge means being aware of one's own learning journey, **strengths and weaknesses**. Students can then create their own learning path, selecting the resources available in their **LMS**, monitoring their own progress and setting their own goals. Students can also communicate what they have learned by involving them in the **creation of content** for eLearning courses.

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