

THEORIES

Information Processing Theory in Psychology

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Table of Contents

[Origins](#)

[Types](#)

[Real-Life Examples](#)

[Stages](#)

VIEW ALL 

Information processing theory is a [cognitive psychology](#) theory that studies mental processes involved in acquiring, storing, and using knowledge. It focuses on the flow of information as it is passed from one stage to another within a person's mind.

By examining different types of information processing as well as real-world examples of them in action, we can better understand how our minds work and why certain tasks require more effort than others.

According to this theory, the human mind is seen as an information processor similar to that of a computer. This model suggests that events comprise individual pieces of information that are processed in stages such as encoding, storage, and retrieval.

Read ahead to learn more about why this theory is important and how it applies to daily life.

What Are the Origins of the Information Processing Theory?

The origins of information processing theory can be traced back to [George Miller](#), a cognitive psychologist and computer scientist.

He is known for his seminal paper “The Magical Number Seven, Plus or Minus Two” which proposed that human short-term memory has a limited capacity of seven items plus or minus two. ^[1]

This theory has been expanded upon by other psychologists, such as Ulric Neisser who suggested that information is initially encoded in the sensory register before it moves on through different processing stages. ^[2]

What Are the 3 Types of Information Processing Theory?

Let's take a look at the three types of information processing theory:

1. **Serial Processing Theory:** This theory proposes that information is processed one step at a time in the order received. ^[3] Each piece of information is held in [short-term memory](#) until the next piece of information comes in, and then it is transferred to [long-term memory](#) or discarded if it is no longer relevant.
2. **Parallel Processing Theory:** This theory suggests that multiple pieces of information can be processed simultaneously instead of sequentially. ^[3] It argues against the concept of a limited capacity for short-term memory since various pieces of information can be stored and processed simultaneously.
3. **Hierarchical Processing Theory:** This model suggests that different levels of complexity exist within cognitive processes, with higher-level tasks requiring more complex mental operations than lower-level tasks. ^[4] This theory developed as a result of Miller's work on the limited capacity of short-term memory and has been used to explain cognitive phenomena such as learning, problem-solving, and [decision-making](#).

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What Are Some Examples of Information Processing in Daily Life?

Information processing theory has been a handy tool for understanding the cognitive processes involved in acquiring, storing, and using knowledge.

By studying different types of information processing as well as examining real-world examples of them in action, we can better understand how our minds work and why certain tasks require more effort than others.

1. **Driving:** When [driving](#), you must be constantly aware of your surroundings and use information from all of your senses to respond quickly and accurately to any potential dangers. This requires processing multiple pieces of sensory information in parallel to make safe decisions when behind the wheel.
2. **Learning a Language:** When [learning a new language](#), you must first encode new words in short-term memory before transferring them into long-term memory through rehearsal and repetition. This process involves both serial and parallel processing as you are encoding new words while also rehearsing previously learned words at the same time.
3. **Problem-Solving:** Problem-solving often involves hierarchical processing as different levels of complexity are required for different tasks. For example, when solving a [complex math problem](#), you may need to break it down into smaller components in order to understand each part and how they all fit together.

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What Are the Four Stages of Information Processing Theory?

Information processing theory proposes that cognitive processes happen in four distinct stages, each with its own purpose and functionality.

1. **Encoding:** This is the process of taking in information from the environment and assigning meaning to it. ^[5] It involves perceiving or attending to stimuli before they can be stored in short-term memory.
2. **Storage:** This is when information is held temporarily in short-term memory while it is processed or transferred into long-term memory for more permanent storage. ^[5]
3. **Retrieval:** This stage focuses on accessing previously stored information from either short-term or long-term memory in order to utilize it for a current task. ^[5]
4. **Transformation:** The final stage involves transforming information into a more useful form, such as organizing it in different ways or using

What This Means For You

By understanding these four stages of information processing, we can gain valuable insight into how our minds work and make use of this knowledge to improve educational practices and increase learning efficiency.

Why Is Information Processing Theory Important?

Information processing theory is an important tool for understanding cognitive processes and the way humans [acquire](#), store, and use knowledge.

By examining different types of information processing as well as real-world examples of them in action, we can better understand how our minds work and why certain tasks require more effort than others.

It Can Help Improve Education Overall

This knowledge is invaluable for improving educational practices and designing better problem-solving techniques.

Furthermore, this theory has been used to explain a variety of complex phenomena such as learning, decision-making, and information recall. In short, it provides us with valuable insight into the inner workings of our minds that can be used to improve education in many different areas.

Limitations of Information Processing Theory

It is important to note that information processing theory is not without its limitations and criticisms.

our brains work, which fails to take into account certain aspects such as emotion and [creativity](#).

The theory may be too simple: Additionally, some argue that the four stages are too simplistic and do not accurately represent the complex processes involved in acquiring knowledge.

Despite these critiques, however, information processing theory remains an invaluable tool for understanding cognitive processes and improving educational practices.

How Can We Apply Information Processing Theory?

Information processing theory can be applied in a variety of different ways. For example, it can help provide insight into [how students learn](#) and how best to structure educational material for maximum comprehension.

Additionally, it can be used to improve problem-solving techniques, as well as understand why certain tasks are more difficult than others and develop strategies that make them easier to complete.

Related: [What Is the Psychology of Learning?](#)

How Can I Improve My Information Processing Skills?

Improving your information processing skills requires practice and dedication. Here are a few tips that can help you improve your ability to process information:

Utilize [memory techniques](#) such as [mnemonic](#) devices and chunking in order to better remember the material.

[Take notes](#) while studying or reading in order to reinforce important concepts.

Make use of various [visual aids](#) such as charts, diagrams, and illustrations; these can make complex topics easier to understand.

Stay focused on the task at hand by eliminating distractions and setting aside enough time for adequate [concentration](#).

By following these tips and consistently practicing your information processing skills, you can significantly improve your ability to acquire, store, and use knowledge.

Summary

In conclusion, understanding the principles of information processing theory is essential for gaining insight into how our minds work and making use of this knowledge to improve educational practices and increase learning efficiency.

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6 Sources 



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