

AI-02064 Lumosity vs TikTok vs Sudoku

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What is lumosity? Explain the science. List examples

Lumosity is a web-based and mobile program that offers a variety of brain-training games and exercises designed to enhance cognitive abilities. The program, developed by a team of neuroscientists, aims to improve key cognitive areas such as memory, attention, flexibility, speed of processing, and problem-solving. With a large user base, Lumosity provides personalized training programs based on an initial "fit test" that establishes a user's baseline cognitive performance. 🧠

The Science Behind Lumosity

The scientific basis for Lumosity's approach is rooted in the concept of neuroplasticity, which is the brain's ability to change and reorganize itself by forming new neural connections throughout life. By engaging in targeted mental exercises, the platform aims to strengthen these connections in specific brain regions.

While the company has faced legal issues regarding unsubstantiated marketing claims about preventing or delaying age-related cognitive decline, they state that their games are inspired by established cognitive and neuropsychological tasks. The difficulty of the games is designed to be adaptive, meaning it adjusts to the user's performance to keep them consistently challenged. Lumosity has also partnered with external researchers to study the impact of its games on cognitive performance.

Examples of Lumosity Games

Lumosity offers a diverse range of games that target different cognitive skills. Some examples include:

1. Memory Games:

- Memory Matrix: Users must quickly memorize the location of a group of tiles on a grid.
- Pinball Recall: Players must remember the locations of bumpers before a pinball is launched.

2. Attention Games:

- Train of Thought: Users must quickly direct a train to the correct station by following a specific sequence.
- Trouble Brewing: Players have to fill multiple coffee orders at once, training their divided attention.

3. Problem-Solving Games:

- Pirate Passage: Users plan a route to find buried treasure, exercising their planning skills.
- Masterpiece: Players fit pieces of a mosaic together to train their spatial reasoning.

4. Speed Games:

- Speed Match: Players must quickly determine if a flashcard symbol matches the one that appeared just before it.
- Highway Hazards: Users race through a desert while quickly dodging obstacles, training their processing speed.

Is sudoku a type of exercise with lumosity context? What other games out there ?

Yes, Sudoku can be considered a type of brain exercise within the context of Lumosity's approach to cognitive training. While it's not a game found on the Lumosity platform itself, it targets many of the same skills.

Sudoku and Lumosity's Context

Sudoku is a logic-based number puzzle that requires players to use reasoning, memory, and planning skills. To solve a puzzle, you have to:

- Remember which numbers are already in a row, column, or square (working memory).
- Reason about the possible consequences of placing a number in a certain cell.
- Plan ahead by considering what the next moves will be.

These are all cognitive functions that Lumosity's games are designed to improve. So, while the format is different, the mental workout provided by Sudoku aligns with the principles of brain training.

Other Brain-Training Games and Apps

The field of "brain training" is quite large, with many apps and traditional games offering cognitive challenges. Here are some of the most prominent examples:

1. Other Digital Brain-Training Platforms:

- Elevate: This app focuses on improving communication and analytical skills, with games that target reading, writing, speaking, and math.
- Peak: Similar to Lumosity, Peak offers a variety of games to train memory, attention, problem-solving, and mental agility. It has a colorful interface and a competitive element, allowing users to compare their scores with others.
- CogniFit: This company provides comprehensive cognitive measurement and enhancement tools. It offers a range of brain games and personalized training programs designed to target specific cognitive areas.
- NeuroNation: This app focuses on personalized brain training with games designed by neuroscientists to improve concentration, memory, and logical thinking.

1. Traditional Puzzles and Games:

- Crossword Puzzles: A classic brain exercise that improves vocabulary, language skills, and memory recall.
- Chess: A highly strategic game that requires extensive planning, problem-solving, and foresight, which can enhance executive function skills.
- Jigsaw Puzzles: Engaging in jigsaw puzzles can improve short-term memory, spatial reasoning, and visual-perceptual skills.

- Solitaire: This classic card game can improve strategic thinking, focus, and decision-making.
- Word Games (e.g., Scrabble, Wordle): These games help with vocabulary, quick thinking, and pattern recognition.
- Kakuro: Often called "mathematical crosswords," this puzzle game combines elements of Sudoku and crosswords, requiring both logical reasoning and arithmetic skills.

Is watching and clicking TikTok a type of exercise with lumosity context?

This is an excellent and very nuanced question. The short answer is no, watching and clicking on TikTok is not a type of brain exercise in the same context as Lumosity. In fact, many neuroscientists and cognitive researchers believe that excessive use of platforms like TikTok can have the opposite effect on the brain. Here's a breakdown of why, using the same principles of neuroplasticity that Lumosity is based on:

The Principle of Neuroplasticity

Both Lumosity and TikTok do, in a way, leverage neuroplasticity—the brain's ability to change. The difference is what they are training the brain to do.

- Lumosity's Goal: Lumosity's games are designed to strengthen specific neural pathways related to skills like working memory, sustained attention, and problem-solving. It's about training your brain to work harder and more efficiently on specific cognitive tasks.
- TikTok's Effect: TikTok's algorithm trains your brain to expect and crave constant, instant gratification. The endless, rapid-fire stream of short videos conditions your brain to be highly receptive to novel stimuli and to switch tasks very quickly. This can strengthen neural pathways for things like rapid task-switching and immediate dopamine seeking, but it can weaken those for sustained focus and deep thinking.

Attention and Focus

This is the most critical difference.

- Lumosity: The games require sustained, focused attention to succeed. You must concentrate on a single task, like remembering the location of tiles or

planning a route, to earn a good score. This practice is meant to improve your ability to ignore distractions and stay on a task for longer periods.

- TikTok: The entire design of TikTok is to encourage divided attention and task-switching. The continuous scrolling and clicking from one video to the next trains your brain to have a very short attention span. Over time, this can make it more difficult to engage in activities that require sustained concentration, such as reading a book, studying for an exam, or even having a long conversation. This phenomenon has even been referred to as "TikTok brain."

The "Reward" System

Both platforms provide rewards, but they do so in fundamentally different ways.

- Lumosity: The reward is the sense of accomplishment from completing a challenging task and seeing your "cognitive performance index" improve over time. The reward is tied to effort and skill development.
- TikTok: The reward is an immediate and constant hit of dopamine with every new, engaging video. This "dopamine loop" can become addictive and can condition the brain to seek out easy, instant rewards rather than putting in the effort for delayed gratification.

Conclusion

While a quick scroll on TikTok can be a form of passive entertainment and might briefly engage your attention, it is not considered a cognitive "exercise" in the way that Lumosity's games are. Think of it this way: Lumosity is like doing a workout at the gym, training specific muscles for strength and endurance. Watching and clicking on TikTok is more like grazing on junk food—it might be temporarily satisfying and addictive, but it's not providing any meaningful nutritional value for your brain.