

Why children can't pay attention to the task at hand

Researchers closer to understanding why kids 'over explore'

Date: August 26, 2024

Source: Ohio State University

Summary: Scientists have learned that children find it hard to focus on a task, and often take in information that won't help them complete their assignment. But the question is, why? In a new study, researchers found that this 'distributed attention' wasn't because children's brains weren't mature enough to understand the task or pay attention, and it wasn't because they were easily distracted and lacked the control to focus. It now appears that kids distribute their attention broadly either out of simple curiosity or because their working memory isn't developed enough to complete a task without 'over exploring.'

FULL STORY

Scientists have learned that children find it hard to focus on a task, and often take in information that won't help them complete their assignment. But the question is, why?

In a new study, researchers found that this "distributed attention" wasn't because children's brains weren't mature enough to understand the task or pay attention, and it wasn't because they were easily distracted and lacked the control to focus.

It now appears that kids distribute their attention broadly either out of simple curiosity or because their working memory isn't developed enough to complete a task without "over exploring."

"Children can't seem to stop themselves from gathering more information than they need to complete a task, even when they know exactly what they need," said Vladimir Sloutsky, co-author of the study and professor of psychology at The Ohio State University.

Sloutsky conducted the study, published recently in the journal *Psychological Science*, with lead author Qianqian Wan, a doctoral student in psychology at Ohio State.

Sloutsky and his colleagues have done several studies in the past documenting how children distribute their attention broadly, and don't seem to have the ability of adults to efficiently complete tasks by ignoring anything that is not relevant to their mission.

In this new research, Sloutsky and Wan confirmed that even when children successfully learn how to focus their attention on a task to earn small rewards such as stickers, they still "over explore" and don't concentrate just on what is needed to complete their assignment.

One goal of this study was to see if children's distractibility could be the explanation.

One study involved 4- to 6-year-old children and adults. Participants were told they were going to identify two types of bird-like creatures called Hibi or Gora. Each type had a unique combination of colors and shapes for their horn, head, beak, body, wing, feet and tail. For six of the seven body parts, the combination of color and shape predicted whether it was a Hibi or Gora with 66% accuracy. But one body part always was a perfect match to only one of the creatures, which both children and adults quickly learned to identify in the first part of the study.

In order to test whether children were easily distracted, the researchers covered up each body part, meaning the study participants had to uncover them one by one to identify which creature it was. They were rewarded for identifying the creature as quickly as possible.

For adults, the task was easy. If they knew the tail was the body part that was always matched perfectly with one of the two types of creatures, they always uncovered the tail and correctly identified the creature.

But the children were different. If they had learned the tail was the body part that always identified a creature perfectly, they would uncover that first -- but they would still uncover other body parts before they made their choice.

"There was nothing to distract the children -- everything was covered up. They could do like the adults and only click on the body part that identified the creature, but they did not," Sloutsky said.

"They just kept uncovering more body parts before they made their choice."

Another possibility is that children just like tapping on the buttons, Sloutsky said. So, in another study, they gave adults and children the opportunity to make just one tap on an "express" button to reveal the whole creature and all of its parts, or to tap on each body part individually to reveal it.

Children predominantly chose the express option to just tap once to reveal the creature to make their decision of what type it was. So, the kids weren't just clicking for the fun of it.

Future studies will look at whether this unneeded exploration is simple curiosity, Sloutsky said. But he said he thinks the more likely explanation is that working memory is not fully developed in children. That means they don't hold information they need to complete a task in their memory for very long, at least not as long as adults.

"The children learned that one body part will tell them what the creature is, but they may be concerned that they don't remember correctly. Their working memory is still under development," Sloutsky said.

"They want to resolve this uncertainty by continuing to sample, by looking at other body parts to see if they line up with what they think."

As children's working memory matures, they feel more confident in their ability to retain information for a longer time, he said, and act more like adults do.

The future research should resolve the question of whether the issue is curiosity or working memory, Sloutsky said.

This study was supported by a grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development.

Story Source:

Materials provided by **Ohio State University**. Original written by Jeff Grabmeier. *Note: Content may be edited for style and length.*

Journal Reference:

1. Qianqian Wan, Vladimir M. Sloutsky. **Exploration, Distributed Attention, and Development of Category Learning**. *Psychological Science*, 2024; DOI: [10.1177/09567976241258146](https://doi.org/10.1177/09567976241258146)
-

Cite This Page:

 MLA APA Chicago

Ohio State University. "Why children can't pay attention to the task at hand." ScienceDaily. ScienceDaily, 26 August 2024. <www.sciencedaily.com/releases/2024/08/240826131209.htm>.

Explore More

from ScienceDaily

RELATED STORIES

How Does Social Attention Develop in Autistic Children?

Jan. 13, 2024 — As they grow, children increasingly focus their attention on social elements in their environment, such as faces or social interactions. However, children with autism are often more interested in ...

How to Stay on Task

Nov. 28, 2023 — Our ability to pay attention to tasks—a key component of our everyday lives—is heavily influenced by factors like motivation, arousal and alertness. Maintaining focus can be

especially ...

Preschool Children Can't See the Mountains for the Cat

Nov. 30, 2020 — Imagine seeing an image of a cat in front of a wide scene of mountains and being told just to remember the mountains if you saw them in a later picture. As an adult, that's not hard to do. But a new ...

Hydration May Affect Cognitive Function in Some Older Adults

Dec. 12, 2019 — Among women, lower hydration levels were associated with lower scores on a task designed to measure motor speed, sustained attention, and working memory. They did not find the same result for ...