HOW TO USE COGNITIVE LOAD THEORY WITH YOUR STUDENTS WITH SEND

By teacherCPDacademy.com

Managing students' cognitive load is an important challenge that needs careful consideration. When we ask too much of students' limited working memory, learning slows down and can even stop.

This may be particularly true for students with Special Educational Needs and Disabilities (SEND). They may have a smaller working memory, or require more effort and time to transfer information to their long-term memory. So how should you be using Cognitive Load Theory to your advantage in your classroom?

WHAT IS COGNITIVE LOAD THEORY?

Cognitive Load Theory emphasises the limited capacity of working memory, where all information must pass before moving onto our virtually unlimited long-term memory. It states that working memory can only process so much information at once before it gets overwhelmed and goes into cognitive overload.

When this happens, students become unable to process any more information and cannot transfer information to their long-term memory. Research suggests that the effects of cognitive overload are even worse for students with SEND, slowing down and hindering their learning even more.

There are three main types of cognitive load you need to know about:

1. Intrinsic Load

Essentially, intrinsic load is the difficulty or complexity of a task. The more difficult a task is, the more intrinsic load it has. Students with SEND, who have a harder time retrieving information from long-term memory, may find certain tasks more difficult than their peers.

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2. Extraneous load

Extraneous load is related to instructional and other design choices you make as a teacher, such as how you give instructions and present information.

The clearer your instructions are and the more simply information is presented, the less extraneous load your students will experience. For example, explicit instructions carry low extraneous load, whereas independent tasks carry high extraneous load.

3. Germane load

Germane load is responsible for integrating new information with existing knowledge, which is key to learning. It is about organising learned material and connecting ideas by creating meaningful structures such as schemas for students to rely on later.

HOW TO REDUCE INTRINSIC AND EXTRINSIC LOAD FOR SEND STUDENTS

Intrinsic load varies from student to student, depending on their background knowledge and skills. The same task will hold more intrinsic load for a novice learner than those who are at the expert stage. Extraneous load can be reduced by simplifying the way that information is presented and the way that instructions are given.

Here are ten ways that might help manage either intrinsic or extraneous load:

1. Repeating key information.

2. Filtering out unnecessary details to allow students to focus on the relevant information.

3. Chunking information into meaningful sections to reduce the number of pieces of information students need to hold in their working memory at once.

4. Providing worked examples so students can focus on solving a problem rather than the steps they need to take to solve it.

5. Connecting topics between each other and to real-world scenarios.

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6. Limiting the text and images on your teaching material to only clear, necessary information.

7. Limiting distractions such as PowerPoint animations, unhelpful classroom displays, or the presence of phones in the classroom.

8. Using Dual Coding when appropriate.

9. Frequently checking for understanding and taking breaks to allow your students to process the information.

10. Providing explicit instruction so your students don't need to use as much of their working memory capacity on understanding the task, so they can spend it on processing new information. However, please note that explicit instruction should mainly be used with novice learners.

FINAL THOUGHTS

To enhance learning for all students, you need to prioritise leaving enough space in their working memory for germane load and avoiding cognitive overload. This may be particularly relevant for your students with SEND (though of course it depends on their special educational needs).

However, it is important to note that this isn't all about reducing cognitive load – it's about optimising it. Germane load and a level of challenge are still necessary for learning to occur. You need to find the right spot for you and your students, using the above strategies.

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