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## ARE TOO MANY DIGITAL TOOLS HURTING LEARNING?

What New Research Says About Technology Platforms and Cognitive Overload

Excellent Educator, 3(12), 5-6, 2026

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### WHAT RESEARCH FOUND

Digital technologies have transformed education by expanding access to information, enabling flexible learning, and supporting collaboration. Yet researchers are increasingly questioning whether the growing number of educational platforms may unintentionally create new challenges for students. A recent study involving healthcare students examined how the use of multiple educational technology platforms affects well-being and learning experiences.

The researchers found that students who used a larger number of digital learning platforms reported higher levels of **digital cognitive load**—the mental effort required to navigate systems, process information, switch between applications, and manage multiple digital tasks simultaneously. Students frequently had to remember different passwords, learn different interfaces, monitor numerous notifications, and move between various online environments. While each individual task seemed manageable, their combined effect often increased mental fatigue and reduced efficiency.

The study identified a significant relationship between extensive platform use and lower levels of student well-being. Importantly, digital cognitive load acted as a mediator, suggesting that the burden of managing multiple systems partly explains why excessive technology use can negatively affect students. Researchers noted that constantly switching between platforms consumes working memory resources and may contribute to stress, cognitive exhaustion, and reduced attention to learning tasks.

The findings do not suggest abandoning educational technology. Rather, they highlight the importance of thoughtful implementation. Technology is most effective when it simplifies learning, not when it creates additional layers of complexity. Educational institutions may therefore need to evaluate whether students are being asked to manage more digital systems than are truly necessary.

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### WHY THIS MATTERS

Teachers often assume that adding digital tools automatically improves learning. However, students may spend considerable mental energy navigating technology instead of focusing on content. When attention is divided among multiple systems, learning can suffer.

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## CLASSROOM REALITY

Teachers Want	Students Often Experience
Seamless digital learning	Multiple platform switching
Easy access to resources	Numerous logins and interfaces
Greater engagement	Digital fatigue
Efficient communication	Constant notifications
Better learning outcomes	Increased cognitive stress

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## TRY TOMORROW

1. Review how many digital platforms students use regularly.
  2. Consolidate resources into fewer systems whenever possible.
  3. Provide clear instructions for navigating online tasks.
  4. Reduce unnecessary notifications and digital interruptions.
  5. Ask students which technological barriers affect their learning.
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## CAUTION

The issue is not technology itself but the cumulative demands created when multiple systems compete for students' attention. More technology does not always mean better learning.

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## ONE KEY TAKEAWAY

**Educational technology supports learning best when it reduces cognitive demands rather than adding new layers of mental workload.**

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**Keywords:** digital cognitive load, educational technology, well-being, cognitive overload, attention, digital learning

### Reference:

Ibrahim, R. K., Al Marar, Y. A., Salman, M., et al. (2025). *Impact of Multiple Educational Technologies on Well-being: The Mediating Role of Digital Cognitive Load*. *BMC Nursing*, 24, 1028.