References

Binks, S. (2026). Why desirable difficulties 'work': A review of the evidence from cognitive and educational psychology and some caveats for the health professions education field. *Journal of Evaluation in Clinical Practice*, *32*(1), Article e70349. https://doi.org/10.1111/jep.70349

Biwer, F., de Bruin, A. B. H., Schreurs, S., & oude Egbrink, M. G. A. (2020). Future steps in teaching desirably difficult learning strategies: Reflections from the study smart program. *Journal of Applied Research in Memory and Cognition*, *9*(4), 439–446. https://doi.org/10.1016/j.jarmac.2020.07.006

Bjork, E. L., & Bjork, R. A. (2011). Making things hard on yourself, but in a good way: Creating desirable difficulties to enhance learning. In *Psychology and the real world: Essays illustrating fundamental contributions to society* (pp. 56–64). Worth Publishers.

Bjork, R. A., & Bjork, E. L. (2020). Desirable difficulties in theory and practice. *Journal of Applied Research in Memory and Cognition*, *9*(4), 475–479. https://doi.org/10.1016/j.jarmac.2020.09.003

Centre for Education Statistics and Evaluation. (2017). *Cognitive load theory: Research that teachers really need to understand*. Centre for Education Statistics and Evaluation.

Clemens, N. H., Boucher, A. N., Vaughn, S., Barnes, M. A., Roberts, G., Fall, A.-M., Miller, J. E., Scammacca, N., & Osbon, M. (2026). A pilot study examining elements to improve generalized word reading skills for students with significant word reading difficulties. *Journal of Learning Disabilities*, Advance online publication. https://doi.org/10.1177/00222194261417589

Cowan, N. (2001). The magical number 4 in short-term memory: A reconsideration of mental storage capacity. *Behavioral and Brain Sciences*, *24*(1), 87–114. https://doi.org/10.1017/s0140525x01003922

Education Endowment Foundation. (2021, July). *Cognitive science approaches in the classroom: A review of the evidence*.

https://d2tic4wvo1iusb.cloudfront.net/production/documents/guidance/Cognitive_science_approaches_in_the_classroom_-_A_review_of_the_evidence.pdf?v=1789563213

Elmore, A. L., & Crouch, E. (2020). The association of adverse childhood experiences with anxiety and depression for children and youth, 8 to 17 years of age. *Academic Pediatrics*, *20*(5), 600–608. https://doi.org/10.1016/j.acap.2020.02.012

Kalyuga, S. (2007). Expertise reversal effect and its implications for learner-tailored instruction. *Educational Psychology Review*, *19*(4), 509–539. https://doi.org/10.1007/s10648-007-9054-3

Moran, T. P. (2016). Anxiety and working memory capacity: A meta-analysis and narrative review. *Psychological Bulletin*, *142*(8), 831–864. https://doi.org/10.1037/bul0000051

Moreno, R. (2010). Cognitive load theory: More food for thought. *Instructional Science*, *38*(2), 135–141. https://doi.org/10.1007/s11251-009-9122-9

Nelson, A., & Eliasz, K. L. (2023). Desirable difficulty: Theory and application of intentionally challenging learning. *Medical Education*, *57*(2), 123–130. https://doi.org/10.1111/medu.14916

Nelson, J. M., & Harwood, H. (2011). Learning disabilities and anxiety: A meta-analysis. *Journal of Learning Disabilities*, *44*(1), 3–17. https://doi.org/10.1177/0022219409359939

Paas, F., & van Merriënboer, J. J. G. (2020). Cognitive-load theory: Methods to manage working memory load in the learning of complex tasks. *Current Directions in Psychological Science*, *29*(4), 394–398. https://doi.org/10.1177/0963721420922183

Passer, M. W., Smith, R. E., Holt, N., Bremner, A., Sutherland, E., & Vliek, M. (2009). *Psychology: The science of mind and behaviour*. McGraw-Hill Higher Education.

Pyke, W., Lunau, J., & Javadi, A.-H. (2025). Does difficulty moderate learning? A comparative analysis of the desirable difficulties framework and cognitive load theory. *Quarterly Journal of Experimental Psychology*, *78*(10), 2181–2195. https://doi.org/10.1177/17470218241308143

Ramirez, G., & Beilock, S. L. (2011). Writing about testing worries boosts exam performance in the classroom. *Science*, *331*(6014), 211–213. https://doi.org/10.1126/science.1199427

Rana, K., Alford, S., Moore, A., & Chimoriya, R. (2026). Cognitive Load Theory-Informed Curriculum Design in Health Sciences Education. *Encyclopedia*, *6*(5), 102. https://doi.org/10.3390/encyclopedia6050102

Renkl, A., & Atkinson, R. K. (2003). Structuring the transition from example study to problem solving in cognitive skill acquisition: A cognitive load perspective. *Educational Psychologist*, *38*(1), 15–22. https://doi.org/10.1207/S15326985EP3801_3

Renkl, A., Atkinson, R. K., & Grosse, C. S. (2004). How fading worked solution steps works — A cognitive load perspective. *Instructional Science*, *32*(1–2), 59–82. https://doi.org/10.1023/B:TRUC.0000021815.74806.f6

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

Sweller, J., & Cooper, G. A. (1985). The use of worked examples as a substitute for problem solving in learning algebra. *Cognition and Instruction*, *2*(1), 59–89. https://doi.org/10.1207/s1532690xci0201_3

Sweller, J., van Merriënboer, J. J. G., & Paas, F. G. W. C (1998). Cognitive architecture and instructional design. *Educational Psychology Review*, *10*(3), 251–296. https://doi.org/10.1023/A:1022193728205

Tarmizi, R. A., & Sweller, J. (1988). Guidance during mathematical problem solving. *Journal of Educational Psychology*, *80*(4), 424–436. https://doi.org/10.1037/0022-0663.80.4.424

Wauthia, E., & Rossignol, M. (2016). Emotional processing and attention control impairments in children with anxiety: An integrative review of event-related potentials findings. *Frontiers in Psychology*, *7,* Article 562. https://doi.org/10.3389/fpsyg.2016.00562