acrobatiq by VitalSource

The Doer Effect

The Doer Effect is the learning science principle that proves students who do practice questions while reading new content have higher learning gains than those who only read.

Learn-by-Doing and the Doer Effect

The Learn by Doing design approach integrates practice opportunities into learning material at frequent intervals. It is the engagement with these practice questions that creates the Doer Effect.

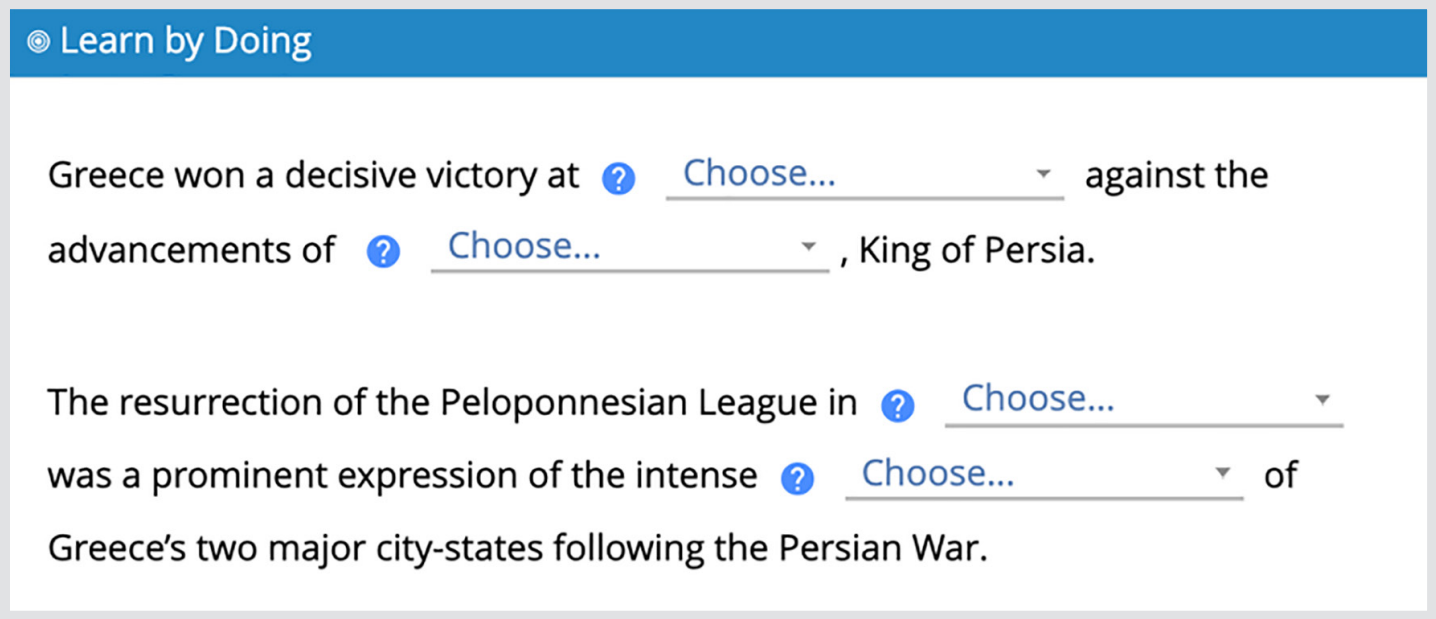
FROM THE RESEARCH

The Doer Effect has been the focus of both academic and industry research. Studies of interactive courseware from Carnegie Mellon's Open Learning Initiative show that students who do more interactive activities have a learning benefit approximately six times that of reading text and three times that of watching video.[1] Follow-up analysis showed this relationship wasn't coincidental: doing caused learning.[2]

Acrobatiq by VitalSource—originally a start-up from the Open Learning Initiative—has replicated these findings in courseware used by its college and university partners. For example, in a recent research study[3], Acrobatiq analyzed data from courseware being used at a major four-year public university. The analysis showed a correlation between the amount of practice students did and their summative quiz scores. The more practice students did, the better their learning outcomes were. Acrobatiq also partnered with a major online institution to analyze courseware engagement data with final exam scores. Results showed the same causal relationship—that doing practice causes learning[4].

LEARN BY DOING: CREATING THE DOER EFFECT

Acrobatiq's courseware—both natively authored and created by our SmartStart process—includes Learn by Doing activities with the content. These formative activities allow students to practice what they have learned shortly after learning it. By doing these practice questions, students are benefiting from the Doer Effect.



[1] Koedinger, K., Kim, J., Jia, J., McLaughlin, E., Bier, N. (2015). Learning is not a spectator sport: doing is better than watching for learning from a MOOC. In: Learning at Scale, pp. 111–120. Vancouver, Canada. http://dx.doi.org/10.1145/2724660.2724681

[2] Koedinger, K., McLaughlin, E., Jia, J., Bier, N. (2016). Is the doer effect a causal relationship? How can we tell and why it's important. Learning Analytics and Knowledge. Edinburgh, United Kingdom. http://dx.doi.org/10.1145/2883851.2883957

[3] Van Campenh out, R., Jerome, B., Johnson, B. G. (2020). The impact of adaptive activities in Acrobatiq courseware: Investigating the efficacy of formative adaptive activities on learning estimates and summative assessment scores. In: Sottilare R., Schwarz J. (eds) Adaptive Instructional Systems. HCII 2020. LNCS, vol 12214. Springer. pp 543–554. https://doi.org/10.1007/978-3-030-50788-6_40

[4] Olsen, J., Johnson, B.G. (2019). Deeper collaborations: a finding that may have gone unnoticed. Paper presented at the IMS Global Learning Impact Leadership Institute, San Diego, CA