

The Individual Differences Principle

Theory

The individual differences principle emphasizes the **influence of prior knowledge** and learner's **cognitive resources** to results of learning.

Design effects are stronger for learners with little prior knowledge than for learners with high prior knowledge. Prior knowledge implies at least partly developed schemata due to which students with prior knowledge have more free cognitive resources than beginners when learning from same material.

Design effects are also stronger for learners with high-spatial ability than for learners with low-spatial ability.

- *"High-spatial learners possess the cognitive capacity to mentally integrate verbal and visual representations from effective multimedia representations; in contrast, low-spatial learners must devote so much cognitive capacity to holding the presented images in memory that they are less likely to have sufficient capacity left over to mentally integrate visual and verbal representations."¹⁾*

Practice

In practice, individual differences mean that more experienced learners will not fully exploit their potentials when learning from materials designed for learners with no prior knowledge. They will also be able to compensate for lack of guidance with their prior knowledge.

Also, multimedia learning will be more beneficial for learners with cognitive capacities capable for exploiting its potentials.

Research status

¹⁾

[Mayer, Richard E. Multimédia learning. Cambridge University Press, 2001, p 161.](#)

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