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## **3D Learning in anatomical and surgical education in relation to visual-spatial abilities**

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## 3D LEARNING IN ANATOMICAL AND SURGICAL EDUCATION IN RELATION TO VISUAL-SPATIAL ABILITIES

*One size does not fit all*

Katerina Bogomolova

1. Stereopsis has a positive effect on learning anatomy when utilized within an interactive 3D environment (this thesis)
2. Visual-spatial abilities cause an aptitude-treatment effect in 3D learning and must be correctly accounted for in data analysis (this thesis)
3. Low levels of visual-spatial abilities can be trained and improved by repeated practice of anatomy (this thesis)
4. Teaching with 3D technology in anatomical and surgical education must be tailored to the level of visual-spatial abilities of an individual learner (this thesis)
6. Visual-spatial abilities should be used as an identification tool rather than a selection tool in surgical training
7. The aptitude-treatment effect caused by visual-spatial abilities is poorly recognized and underestimated in medical educational research on 3D learning
8. Sex differences in visual-spatial abilities in favour of males lose their credibility in the eyes of educational scientists
9. Everyone is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid (*from Aesop JR. An Education Allegory. Journal of Education 1989;L:235*).
10. Follow your own path and you will be rewarded maximally