

# Does instructional 3D animation support learning three-dimensional complex information?

Sandra Berney<sup>1</sup>, Jonathan Groff<sup>2</sup>, Laurence Gagnière<sup>3</sup>

<sup>1</sup> Université de Genève, FAPSE - TECFA, 1205 Genève, Suisse  
sandra.berney@unige.ch

<sup>2</sup> Université de Bourgogne, LEAD-CNRS, 21078 Dijon, France  
jonathan.groff21@gmail.com

<sup>3</sup> Unidistance, Technopôle 5, 3960 Sierre, Suisse  
laurence.gagniere@unidistance.ch

## Abstract.

Today, when considering computer-based learning materials, animations are definitively such educational resources, that have the added value of presenting or displaying three-dimensional (3D) information (content) by means of two-dimensional displays. As opposed to the two-dimensional approach traditionally used to teach anatomy, animations of a three-dimensional rotating model (3D animation) provide learners with spatial information on the anatomical 3D object, which is not available with two-dimensional illustrations. However, the influence of learners' spatial ability in processing 3D animations as well as the need to take into account the spatial relationships between the anatomical object and the three-dimensional body space are challenges to learning. An experimental eye-tracker study was conducted to investigate the interplay between 3D animations and spatial ability when learning functional anatomy. Additionally, retrospective verbal reporting cued by eye-movement replay will be used in order to elicit participants' learning strategies with these new 3D educational resources.

954 caractères