Virtual Reality (VR) and Augmented Reality (AR) have been gradually introduced in the curriculum of schools given the benefits they bring to classical education. We present an experiment designed to expose students to a VR session where they can directly inspect 3D models of several human organs by using Virtual Reality systems. Our systems allow the students to see the models directly visualized in 3D and to interact with them as if they were real. The experiment has involved 254 students of a Nursing Degree, enrolled in the Human anatomy and physiology course during 2 years (2 consecutive courses). It includes 10 3D models representing different anatomical structures which have been enhanced with meta-data to help the students understand the structure. In order to evaluate the students satisfaction facing such a new teaching methodology, the students were asked to fill in a questionnaire with two categories. The first one measured whether or not the teaching session using VR facilitates the understanding of the structures. The second one measured the students' satisfaction with this VR session. From the results we can see that the items most valued are the use of the activity as a learning tool, and the satisfaction of the students' expectations. We can therefore conclude that VR session for teaching is a powerful learning tool that helps to understand the anatomical structures.