Alternative Educational Approach to Introducing Cell Biology

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First year medical students usually have a great difficulty to visualize a three dimensional cell. They also present a series of misconceptions related to cell biology that seems to begin in the high school. An alternative educational approach is being tested with high school students in order to minimize these misconceptions, and also increase the pupils interest in the subject. The approach combines theoretical classes with experimental activities, the use of models, games, discussions, and oral presentations by the students at the end of the educational module. In short, the experimental activities are low-cost, easy-to-follow experiments that basically show a few properties of the living cells, such as membrane transport, enzyme action as well as the importance of the membrane integrity for life. A card game relates the functions of the organnels by matching pairs of cards. This game has one card without a matching pair that explains apoptosis; the player that ends up with this card loses the game. The pupils learn while they play the game. A 3D model of the membrane shows the major components and allows the observation of membrane assimetry. After comparing some panels of photomicrographs of cells and organnels, the students are presented to a 3D model of a cell as the teacher tries to relate the panels with a three dimensional visualization. They also have the opportunity to present their own models. The opinion of high school teachers about the different activities will be shown. The aim of this educational module is to promote learning while different abilities, according to Gardners Multiple Intelligences Theory, such as the visual-spatial, bodily-kinesthetic, interpersonal, and naturalistic are being developed. We believe that the diversity of approaches is one of the most important feature of this module as it increases the interest of the students while demystifies the misconceptions observed later in the College. **Support: Faperj**