The External Representations in the Teaching and Learning of Biochemistry

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Visual Literacy can be defined as the ability to understand, use, think, learn and express themselves through images. Considering that the use of images is essential for Biochemistry teaching and learning, this research aims to investigate the development of abilities of reading and interpretation of images by students from a Biochemistry undergraduate course of the Federal University of São João Del-Rei. The Visual Literacy level was assessed using a questionnaire validated in a previous educational research. This diagnosis questionnaire was elaborated according to six visual abilities identified as essential for the study of the metabolic pathways. Results showed that the most of the students evaluated presented difficulties in the Ability 1 (identification of chemical reactions). These students were unable to identify the reversibility of chemical reaction. Similarly, for the ability 5 (comprehension of dynamic and integrated processes in metabolic pathways) was observed a deficiency in understanding of schematic representations of metabolic cycles (less than 30% of correct answers). However, it was verified that to the ability 2 (identification of substrates and products of chemical reactions) the students demonstrated satisfactory performance (over 50% of correct answers). In the other abilities evaluated the number of correct answers varied according to the progress of students in the course (30 to 80% of correct answers). These results showed that the questionnaire used is an interesting tool for the investigation, indicating that Visual Literacy level necessary to understand the metabolic processes can be enhanced with the progress of the students along the undergraduate course.

Word Keys: Visual Literacy, Learning, Biochemistry