

TRAINING AND TEACHING OF CHEMISTRY IN HIGH SCHOOL

The students' protagonism on the learning of chemical or physical transformations: contributions of media literacy

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Today, many teachers try to improve their students' learning by using videos, software and other digital resources to enhance their classes and make them more engaging experience. Besides, such technologies permeate students' lives; this type of approach can motivate them in class, arouse students' curiosity and stimulate fruitful discussions [1]. In this sense, the expression of scientific knowledge requires a sophisticated development of reasoning [2]. The possibility of employing various semiotic modes to express this complex knowledge favours the discussion of the topics by the whole classroom in a peer process accomplished with teacher mediation and, therefore, should facilitate and enhance the learning process. In this context, the present article reports the results of an investigation related to the audiovisual productions of High School students of a public school situated in the metropolitan area of São Paulo City (Brazil). The data presented here came from the analysis of the information gathered during the implementation of a teaching-learning sequence (TLS) concerning the transformation of materials. This TLS aimed to stimulate cognitive conflict situations involving common sense and science knowledge, leading the students to elaborate arguments to answer to everyday problems from their world [3]. In general, the data show that the students focused on macroscopic scale descriptions of the phenomena when their explanations are restricted only to written registers. This approach enabled the students to express dynamic aspects of their mental particle model concerning the material changes during iodine physical state transformation. This approach promotes the involvement of many cognitive processes: in addition to digital integration, the students can use visual resources to communicate their knowledge and thus collectivize their ideas and productions with other students and the teacher, thus facilitating the learning-teaching processes by becoming protagonists of their learning process. A multimodal process approach should lead to the expression of students' knowledge. In this process, the teacher offers its students several ways to socialize their mental models to build a common one.

References

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