

T4_86 A DIALOGICAL AND CONVINCING APPROACH FOR THE TEACHING OF GALILEAN RELATIVITY OF MOTION: FROM TRANSPARENCIES TO VIDEO AND MULTIMEDIA RESOURCES

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This paper presents an approach, and also specific activities and multimodal resources for the teaching - learning of the topic of Galilean Relativity of the Motion, which is mainly inspired by the Dialogues of Galileo Galilei, but also taking account results of researches on students' science conceptions related this topic (Castells, 1997; Saltiel, 1995; Ramadas et al., 1996) and our experience in teaching this topic. We agree with a dialogical perspective on teaching and learning which consider that the construction of scientific knowledge has to come from the students' ideas and conceptions and from their own ways to argue. The approach has been applied to Initial Training Teachers of Primary Education, but the general lines of the teaching approach and some specific activities and resources can be used at other educational levels, specially, with students of primary and secondary education. We presume that the works of the ancient scientists – the text they wrote and the experiment they proposed or performed - have elements that are near to the common sense knowledge and reasoning and so, appropriated to inspire didactical approaches but also specific activities and resources and perhaps more interesting, arguments to convince students of the scientific world-view that are appropriated to be used in the classes when specific scientific knowledge is build. Among other, we comment about the conception of Motion and of Frame of Reference, and give some activities and resources (in several media) that can be a help in some specific strong difficulties and misconceptions of students regarding this topic of Galilean Relativity. Castells, M.,(1997) Patterns of behaviour of students in solving problems about galilean relativity, and factors that influence in their answers and reasoning. PhD., U.A.B., Bellaterra , Barcelona (only Catalan version) Ramadas et al. (1996) Alternative conceptions in Galilean Relativity; distance, time, energy and laws". In : International Journal of Science education 18 (4), 463-477 Saltiel, E., Malgrange, J.L. (1980) Spontaneous' ways of reasoning in elementary kinematics, Eur. Jour. Physics 1, pp73-80.