

ABSTRACT ONLY**PROPOSAL FOR TEACHING ASTRONOMY IN
BRAZILIAN MIDDLE SCHOOLS BASED ON
GAGNÉ’S LEARNING THEORY**T. F. Vieira¹, M. C. Batista², O. R. Santos², M.
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Qualified teaching of Physics requires alignment between a learning theory (psychological, descriptive) and grounded methodologies (SILVA FILHO; FERREIRA, 2009). Gagné’s theory, developed in the transition between behaviorists and cognitivists-during the behaviorist AND cognitivist transition (MOREIRA, 2022), frames learning as hierarchical information processing. This structure involves: **a. Discrimination** (distinguishing stimuli), **b. Concepts** (classifying objects), **c. Rules** (applying symbols like math), and **d. Higher order rules** (problem-solving). A Brazilian high school Astronomy course (13 hours, six modules) operationalized this theory through nine instructional events, focusing on gravitation via reflective, theory-guided activities. Students synthesized learning by creating mental maps, analyzed using Novak and Gowin (1984) criteria: concept hierarchy, thematic scope, original ideas, and technique application. Results demonstrated that most students successfully organized concepts and established relational dependencies. The integration of Gagné’s theory with the methodology promoted hierarchical, meaningful learning with critical and interdisciplinary components. Key indicators-autonomy, conceptual relationships, and hierarchy-validated the approaches effectiveness, supported by complementary epistemological and methodological frameworks. This case underscores the value of theory-driven pedagogy in fostering structured, engaged learning.

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