# Inferring Cognitive Skill in Concept Space

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**Abstract :** This research presents a learning assessment theory of Cognitive Skill in Concept Space (CS2) to measure the assessed knowledge in terms of cognitive skill levels of the concepts. The cognitive skill levels refer to levels such as if a student has acquired the state at the level of understanding, or applying, or analyzing, etc. The theory is comprised of three constructions: Graph paradigm of a semantic/ ontological scheme, the concept states of the theory and the assessment analytics which is the process to estimate the sets of concept state at a certain skill level. Concept state means if a student has already learned, or is ready to learn, or is not ready to learn a certain skill level. The experiment is conducted to prove the validation of the theory CS2.