Ontology-Navigated Tutoring System for Flipped-Mastery Model

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Abstract : Nowadays, in Japan, variety of students get into a university and one of the main roles of introductory courses for freshmen is to make such students well prepared for subsequent intermediate courses. For that purpose, the flipped-mastery model is not enough because videos usually used in a flipped classroom is not adaptive and does not fit all freshmen with different academic performances. This paper proposes an ontology-navigated tutoring system called EduGraph. Using EduGraph, students can prepare for and review a class, in a more flexibly personalizable way than by videos. Structuralizing learning materials by its ontology, EduGraph also helps students integrate what they learn as knowledge, and makes learning materials sharable. EduGraph was used for an introductory course for freshmen. This application suggests that EduGraph is effective.