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Current Research in Cognitive Science at Educational Testing Service (ETS)

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Abstract: The Cognitive Science Research group at ETS conducts research and development at the forefront of educational assessment, using cognitive theory in the design of assessments, building cognitive models to guide interpretation of test-takers' performance, and researching cognitive issues in the context of assessment. Moving beyond traditional (e.g., multiple-choice) tests, the group explores assessments that use innovative, highly interactive digital environments such as online games, virtual labs or other simulations, and human-agent conversation-based interactions. Researchers also investigate how to draw appropriate inferences about test-takers' knowledge and skills from complex data sources such as eye-movements, interaction logs, and other sequential information. I will provide an overview of the group's research, including the use of cognitive models to interpret test-takers' actions within interactive assessment tasks and empirical studies on how test-takers externalize their knowledge when problem solving in domains such as science inquiry, inter-cultural competence, and mathematics argumentation.