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**Changing Student Attitudes using Andes, An Intelligent Homework System** BRETT VAN DE SANDE, KURT VANLEHN, University of Pittsburgh, DON TREACY, BOB SHELBY, MARY WINTERSGILL, US Naval Academy — The size of introductory physics lectures often inhibits personal homework assistance and timely corrective feedback. Andes, an intelligent homework help system designed for two semesters of introductory physics, can fill this need by encouraging students to use sound problem solving techniques and providing immediate feedback on each step of a solution. On request, Andes provides principles-based hints based on previous student actions. A multi-year study at the U.S. Naval Academy demonstrates that students using Andes perform better than students working the same problems as graded pencil and paper homeworks. In addition, student attitude surveys show that Andes is preferred over other homework systems. These findings have implications for student attitudes toward, and mastery of, physics. See <http://www.andes.pitt.edu> for more information.

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