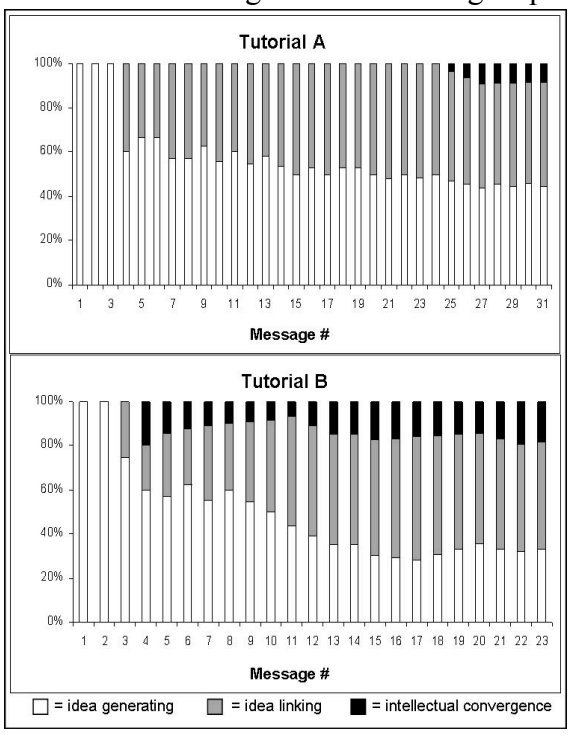
EVALUATING THE DYNAMICS OF INTELLECTUAL COLLABORATION IN A CASE-BASED ONLINE LEARNING ENVIRONMENT

Maria Carlo[1], Wendy Ham[1], Chris Dede[2], Robert Leffert[1], James Quattrochi[1]
[1]Harvard Medical School, Boston, MA, [2]Harvard Graduate School of Education, Cambridge, MA, USA

Purpose: To analyze the dynamics of intellectual collaboration among medical students during an online, interactive case-based tutorial using a quantitative intellectual convergence model.

Introduction: The Interactive Case-based Online Network (ICON) is a learning tool that allows medical students to interact with each other, faculty consultants, and virtual patients, as a means of complementing case-method tutorial meetings[1]. Through ICON, students discuss a clinical case as a team, and their online discussions are recorded in a Brainstorm module. ICON thus provides a unique opportunity to analyze team decision-making dynamics that are otherwise difficult to track in the classroom. Harasim has developed a three-phase model for evaluating online groups' collaboration: 1) idea generating, 2) idea linking, and 3) intellectual convergence[2]. Here we describe a derivative of the model in ICON, providing a quantitative measure of teamwork dynamics that can assist educators to better guide team discussion.

Methods: Three groups of eight students each (n=24) participated in ICON tutorials, consisting of seven cases during a two-month neuroscience course. Each student participates in the care of the patient and contributes discussion of hypothesis and differential diagnosis in their groups' Brainstorm module. Discussions were classified based on content into one of three phases of the model. Patterns of convergence were mapped and analyzed for each case.



Results: Analysis of online discussions demonstrates that the dynamics of intellectual collaboration in a medical case simulation can be quantitatively profiled. The figure illustrates how a difference in the dynamics is captured. While discussing the same case, tutorial A entered the convergence phase later in the discussion, whereas tutorial B reached consensus early on.

Conclusions: ICON provides a unique opportunity to analyze students' intellectual collaboration in the learning environment of medical case discussions. By tracking the progression of team dynamics and problem-solving, educators can obtain information to help better guide class discussion.

Contact information: maria_carlo@hms.harvard.edu
Website: http://icon.hms.harvard.edu

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[2]Harasim, L. What Makes Online Communities Successful? The Role of Collaborative Learning in Social and Intellectual Development. In C. Vrasidas & G. V. Glass (Eds.), *Distance Education and Distributed Learning* (pp. 181-200). Greenwich, CT: Information Age Press.