The Impact of Anomalous Information, Personality, and Motivation on Self- Regulatory Processes in a Multimedia Vicarious Learning Environment

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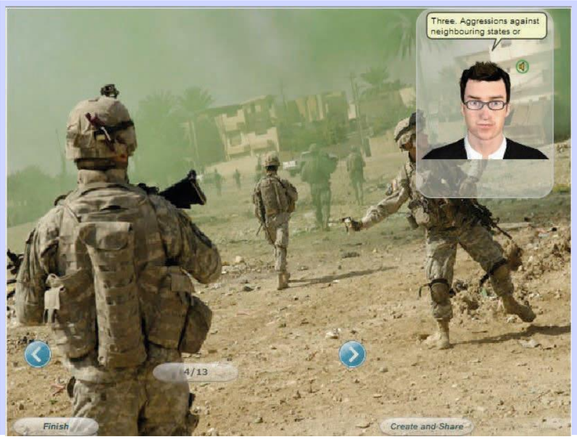
Introduction

Regulating one's learning involves analyzing the learning context, setting and managing meaningful learning goals, determining which learning strategies to use, assessing whether the strategies are effective in meeting the learning goals, evaluating emerging understanding of the topic, and determining whether there are aspects of the learning context which could be used to facilitate learning (Azevedo, Johnson, Chauncey & Burkett, 2011). The focus of this paper is on one specific self-regulatory process: self-questioning.

Self-Questioning

- Believed to play a crucial role in a variety of cognitive faculties
- Consistent with research coming out of self-regulation, the ideal scenario of a curious question asker does not match reality
- Students are unspectacular at monitoring their own knowledge deficits and their question generation is both infrequent and unsophisticated
- An individual student asks only one question in seven hours of class time (Graesser & Person, 1994)



AutoTutor Lite

•The knowledge delivery tool allows for easy presentation of text as verbal content delivered to the learner by an animated agent or avatar. The knowledge assessment component allows developers to easily set up: fill in the blank, matching, and multiple choice as well as interactive essay responses
•AutoTutor Lite is implemented as a client-server application with an Adobe Flash and a server-side semantic engine
•AutoTutor Lite can be differentiated from most other online learning systems in the following aspects:
- It interacts with learners in natural language with avatars
- It is powered by a domain-specific server-side semantic engine
- It builds a student model based on the Learners' Characteristics Curves (LCC) which is derived from individualized assessment of each student

Discussion

- Pro War Cognitive Disequilibrium had highest test anxiety scores which could have lead participants to be more concerned with their task performance→more questions
- Pro War Cognitive Disequilibrium had lowest reading comprehension scores. Based on the AutoTutor interface (i.e., speech bubbles), participants may have had to ask more questions
- Participants in Pro War Cognitive Disequilibrium result in approximately 148 questions every 7 hours!

Methods and Procedure

- Participants completed demographics questionnaire, followed by the Gates MacGinitie Reading Comprehension test.
- Randomly assigned to one of four conditions: 1) Pro War Unedited 2) Anti War Unedited 3) Pro War Cognitive Disequilibrium 4) Anti War Cognitive Disequilibrium
- Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 2001)
- Big Five Personality Test (Costa & McCrae, 1992)

Results

•A significant difference in question asking quantity as a function of condition was discovered, F (3,69) = 4.63, p = .005, η^2 = .168
•Furthermore, a significant difference in question asking was discovered between Pro War and Anti War, F (1,71) = 10.41, p = .002.
•A significant correlation was discovered between test anxiety and questions asked r = .248, p = .035