Tales of a Fourth Grade Quester: Language Sophistication in Quest Atlantis

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A growing number of researchers assert that the use of computer games can be expanded beyond recreational purposes to motivate children and to enhance learning (Barab et al., 2005; Gee, 2003; Prensky, 2000). Computer games are one set of technological tools that educators are using to connect to the new generation of students, sometimes referred to as the Millennials (Oblinger, 2003). Playing certain computer games has also been found to have positive effects on academic performance (Subrahmanyam, Kraut, Greenfield, & Gross, 2000). In addition, there is evidence that children who play such games can improve skills that may eventually lead to computer literacy (Subrahmanyam et al., 2000). However, surprisingly little research has considered the language produced in such environments as evidence of learning.

Quest Atlantis is a 3-D multi-user teaching and learning environment designed for children between the ages of 9-12 (Barab et al. 2005). This study analyzed students’ responses to 'quests' in Quest Atlantis: questions on various topics asking for content findings and personal reflections. The quests are of three types: teacher, class and community. Teacher quests are assigned and reviewed by a classroom teacher. Class quests are voluntary and are reviewed by other students in the class. Community quests are also voluntary; however, reviews may be submitted by any student participating in Quest Atlantis. The goal of this study was to assess the variation in the linguistic sophistication of the children’s quests and reviews.

The data for the study were selected from the Quest Atlantis database. Sixty students representing quests that received both "accept" and "revise" reviews were randomly selected for inclusion in the sample. One teacher quest, one class (if available), and one community quest (if available) were then randomly selected for each student, along with the reviews for each, for an initial sample of 112 quests and 217 reviews. This corpus of data was subsequently narrowed to control for language proficiency and length of time questing.

For the purpose of this study, the analytical approach was structural computer-mediated discourse analysis (Herring 2004). Linguistic sophistication was analyzed according to complexity and standardness. Complexity was measured in terms of word length, utterance length and message length (cf. Hickey 1991). Standardization measures included errors in spelling, grammar, punctuation and capitalization (cf. Ferrari et al. 1998). Gender was also taken into consideration in the analysis, along with the level of difficulty of the quest.

The findings reveal gender differences in the types of quests submitted, as well as in language complexity and standardness. Overall, females submitted more quests than males, and the females used more standard language in all three quest categories. Males, in contrast, submitted more complex teacher quests, and class and community quests of greater difficulty. Gender differences were also found in the reviews. Males submitted more community quest reviews than did females, and used more standard language in those reviews. Reviews submitted by females were more complex, and used more standard language in the class quest reviews.
A proposed interpretation of these findings is one that points to developmental differences, which favor girls, and gender differences in socialization, which favor boys. With regard to the latter, males' greater engagement with and performance on community quests, and choice of difficult quests, can be related to the fact that they received points for these activities, consistent with their orientation towards Quest Atlantis as a competitive game. In contrast, the girls appeared to orient towards it primarily as an educational environment. These observations have implications for understanding not only the educational effects of technologically-mediated environments, but for interpreting gender differences in children's language and writing skills.

NOTE: Inna Kouper and Susan Herring also contributed to this research.

References


