To TxT or Not to TxT: That's the Puzzle

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Executive Summary

This paper describes the potential use of a SMS crossword puzzle system to promote interaction and learning activities in a large classroom environment. While personal response systems (PRS) have been used in the classroom environment to foster interaction, it is not an ideal tool with respect to cost and functionality. These limitations prompted the need for an alternative solution.

A SMS crossword puzzle system was thus devised. The system consisted of two parts: modem software to interface with mobile phones and a database application to generate puzzles, track users' input and display an updated puzzle view. A pilot evaluation was conducted with three main objectives in mind. First the evaluation intended to determine the motivational potential of the puzzle by assessing the significance of the factors which comprise the constructs of learner motivation. Second, the evaluation intended to identify any differences in motivational factors between a junior and a senior class. Finally, the evaluation intended to assess the potential of behavioral intention to use/play the SMS crossword puzzle in the future. The pilot evaluation also sought to identify areas for improvement and to prepare for future full scale evaluation of the SMS crossword puzzle system.

The instrument used in the evaluation was a survey adopted from Keller's (1987) studies on motivation theory. Using a 5-point Likert scale, the items covered the motivation factors of attention, relevance, confidence and satisfaction. A single item construct was used to assess the behavioral intention to use.

The SMS crossword puzzle was used in two undergraduate information systems classes: a first year foundation course class (the junior class); and a third year elective course class (the senior class). Each class had a separate puzzle to play with a different set of clues. In the subsequent evaluation, participants of Group 1 consisted of 10 students from the junior class, and participants of Group 2 consisted of 15 students from the senior class.

The findings show that students from the junior class found the SMS crossword puzzle much more interesting (attention factor) than students from the senior class, while the senior class found the puzzle much more difficult to play (confidence factor) than the junior class. With regard to the other components of the motivational factors, no significant difference between the two groups was found. Overall the mean scores were significantly above the mean scale score (>3).

Both groups showed significant interest in playing the game in the future signaling the possibility of adoption. The evaluation also identified SMS latency as being an issue in deploying SMS for near real time interactive activities. However, the issue can be resolved with distributed

architecture and collaboration with a telecom operator, or by deploying normalizing strategies to overcome the bottleneck. Finally, the SMS crossword puzzle should be treated as part of a unified service of deploying SMS technology in an educational environment for services such as voting, quizzes, discussion forums, notification of due dates of assignments, examination results, and library services.

Keywords: short message service (SMS); mobile phones; interactive learning; crossword puzzle

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