Using Text Messages to Support Complex Learning Tasks

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Introduction

Situation in which learning occurs (context) affects performance

• Education can fail to provide robust knowledge by not connecting learning to the real-world.[2]
• Learning can increase when it is connected to the situation in which the knowledge will be used.
Mobile phones connect learners who are outside of formal educational systems

• Adoption rates of mobile phones are high in communities that often lack formal educational settings.
• Mobile phones support hard-to-reach learners (e.g., dropouts, homeless).[3]
Text messaging is ubiquitous and enables complex interactions

• Text messaging is one of the most compatible communication formats.
• Complex interactions occur through text messages despite short length (<160 characters).[1]

Research questions

• Can learning in a real-world setting improve retention as compared to a laboratory setting?
• Can learning through mobile phones yield similar learning outcomes as traditional methods?
• Can a useful learning experience be created through the use of simple messages consisting of less than 160 characters each?

Method

Participants

• GT undergraduates (n=35)
• Experienced mobile phone users

Method

• Technology adoption survey[1]
• Pre-test[2]
• Tutorial
• Training activity (see ‘Training Design’)
• Delayed post-test[2]

Training Design

• 2 x 3 between subjects
• Collected data about the number of people at a café.
• Analyzed data assuming a Poisson distribution.
• Solved problems using info.

Content Context Condition

• Contrived: viewed video of café in a lab and counted people.
• Authentic: visited café and counted actual people.

Content Delivery Condition

• Activity: instructed to collect two sets of data and analyze them with Poisson equation (materials: instructions, timer and calculator).
• Textbook: same as ‘Activity’, also received a fact sheet to help with concepts.
• Phone: same as ‘Textbook’ but received all information through text messages (materials: phone). (Tuning and calculations performed through phone)

Results

Learning in the real-world

No significant difference between contrived and authentic learning conditions.

• FIG.24: F = 0.0668, p = 0.935
• Contrived: M = 0.923, SD = 0.107
• Authentic: M = 0.930, SD = 0.108

Learning with mobile phones

No significant difference between delivery method conditions.

• FIG.25: F = 0.2457, p = 0.784
• Activity: M = 0.908, SD = 0.108
• Textbook: M = 0.927, SD = 0.111
• Phone: M = 0.939, SD = 0.107

Satisfaction with phone learning[6]

Sample responses shown below:

• Only participants in phone condition (n=12)
• Cronbach’s alpha = 0.840

References