USING EMOTIONAL CUES TO FACILITATE ONLINE LEARNING:
VISUAL OR VERBAL?

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Abstract: Research has shown that by being aware of a student’s emotional state, an instructor can determine the level of interest in the topic at hand such that she can modify instruction to increase student persistence and, ultimately, learning. However, many learning management systems (LMS) are limited in their capacity to provide instructors with information about students’ emotions during an online course. In this paper, the use of an animation tool to communicate emotion as it might occur in a text-based, online discussion board was explored. Preliminary results of an experiment with a small sample of graduate students showed that participants more accurately assessed emotion when viewing simulated facial expressions than when using auditory cues. The findings suggest that simulated facial expressions may communicate emotion more readily than speech in online learning environments.

As more courses develop online, a new pedagogy is being developed to effectively utilize the medium of Internet that takes into account the different learning contexts of students and teachers to facilitate learning and meaning-making. Research has shown that interest in a topic is related to a student’s emotional response, emotion to persistence, and persistence to learning. (Ainley, Hidi, & Berndorff, 2002) To enhance online learning and foster true knowledge acquisition, learning management systems (LMSs) must be designed to provide tools that allow not just verbal communication but also the communication of emotion, via different tools. Such tools to communicate emotion can be used to enhance interactions across learning contexts. Currently, however, many schools that utilize an LMS lack the capacity to provide instructors with information about students’ non-verbal experiences and understandings during online courses. That is, LMSs are typically without any feedback tools for teachers to know the emotional states of their students.

Mayer’s (2001) multimedia learning theory provides evidence and design principles for optimal cognitive processing in multimedia environments, such as is possible over many learning environments. Specifically, the theory posits that learners parse incoming information into two channels, such that written or auditory narrations are submitted into the verbal information processing channel while images and animations enter the visual processing channel. According to the theory, three important steps are involved in cognitive processing: 1) selecting, 2) organizing, and 3) integrating information into the appropriate verbally- or visually-based models. (Mayer, 1997) Several principles have resulted based on Mayer’s (1997) initial work and model that may inform the design of multimedia. In particular, the modality principle states that students learn better when the verbal information is presented auditorily as speech rather than visually as on-screen text both for concurrent and sequential presentations. However, Mayer’s experiments were in regards to learning scientific content, with visual imagery that communicated abstract concepts. In this experiment, I sought to test the modality principle’s application to non-scientific content, i.e. to affective (emotion) content in texts. That is, do people understand the emotional content of a verbal message better when the information is presented as onscreen facial expressions or as auditory speech through verbal cues?

Preliminary results of an experiment with a small sample of graduate students showed that participants more accurately assessed emotion when viewing simulated facial expressions than when using auditory cues. The findings suggest that simulated facial expressions may communicate emotion more readily than speech in online learning environments. The results may impact the design of tools to communicate emotion in learning management systems.
References


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