BRB (Be Right Back): Does Multitasking During Chats Prevent Mindful Learning?

Constance E. Wanstreet, Ph.D.
Adjunct Assistant Professor, Workforce Development and Education
The Ohio State University

David S. Stein, Ph.D.
Associate Professor, Workforce Development and Education
The Ohio State University

Introduction

This study examined the literature to investigate the effect of multitasking on learning in online chats. The study presents a conceptual frame that considers multitasking during online course chats through the lens of mindful and mindless learning. Since online learners are up to three times more likely to engage in multiple tasks (Kenyon, 2008), accounting for multitasking gives a fuller picture of the learners' experiences during a chat.

Multiple-task Performance and Mindful Learning

The literature base pertaining to multiple-task performance is rich (Baron, 2008; Kenyon, 2008), and mindful learning has been studied for some time (Langer, 1997; King & Sawyer, 1998). This study extends the literature with an exploration into the learning performance of group members involved in mindful and mindless multitasking during inquiry-based chats.

Joe's BRB (be right back) message to his online study group signaled his intent to multitask during their chat about adult education in America. No one objected, perhaps because they were also involved in multiple activities. Kenyon (2008) notes that online learners are up to three times more likely to multitask during learning activities than are face-to-face learners. This may be because the secondary activity may not require a high degree of cognitive attention (Kenyon, 2008), because of a perception that there is not enough time in the day to accomplish pertinent tasks (Southerton, 2003), or simply because the technology enables multitasking (Baron, 2008). However, what might be the consequences in terms of learning performance of multitasking during inquiry-based text chats?

Discussion that leads to shared meaning is an expectation in many online courses. Stein et al. (2007) suggest that individual meaning can be transformed to shared understanding during chats through questioning and collective exploration as a group. An assumption is that group members who are otherwise engaged are not actively involved in collective exploration and not fully sharing their perspectives. Conscientiously exploring all points of view and integrating them into a group response requires mindful learning rather than automatic, mindless responses (Langer, 1997). How then can we account for multitasking as part of the learning experience in a chat?

Communication involves simultaneously executing multiple tasks (King & Sawyer, 1998). For example, typing answers into a chat while thinking of a response is multitasking. When two tasks require common perceptual or motor resources, doing both at the same time will degrade performance for one or both tasks (Salvucci & Taatgen, 2008). Composing an e-mail message while contributing to a chat discussion would result in poor performance for either or both tasks because both require mindful attention. However, when the tasks use distinct perceptual or motor resources, dual-task performance can be equivalent to single-task performance (Salvucci & Taatgen, 2008).

Method and Procedures

Two research questions were posed to the literature collected: (1) What might be the consequences in terms of learning performance of multitasking during inquiry-based chats? (2) What are the implications of multitasking for instructors designing mindful learning experiences?

We searched three general databases representing the educational and social sciences literature. Databases included Academic Search Complete, Education Full Text, and PsycINFO. Descriptors used were *multiple-task performance, mindful learning,* and *mindless learning.* We also included classic texts, such as Langer's *Power of Mindful Learning.* The search was conducted in November 2008.

Conceptual Framework

Being mindful in a community of inquiry synchronous chat room entails the application of cognitive energy to engage with the thoughts of others, to be open to new information, to challenge one's assumptions, and to concentrate on the differences in viewpoints expressed by others. These qualities address the idea of being attentive (Langer, 1997).

Given that synchronous, text-based chats are not spontaneous encounters because of the delay inherent in formulating, typing, and submitting responses, and given that text-based chats leave a written record of prior statements enabling discussants to catch up with the conversation, it is possible to multitask and still be attentive. However, Wickens (1991) has suggested that multitasking can either impede, facilitate, or not interfere with performance on a primary task. Multitasking is a timesharing of mental and or motor tasks using the available cognitive energy of an individual. Energy is allocated on the basis of a desired level of performance on tasks assigned and the cognitive load of each task. In a text-based chat room, being mindful might require a high level of cognitive energy to produce a unique and critical response to the comments of other learners and to formulate a group response to the issue discussed.

Wickens (1991) describes three cognitive processing issues: (1) multitasking can compete for the same levels of cognitive resources, leading to degradation in the primary task; (2) multitasking can lead to confusion when the task elements are similar; or (3) multitasking might not interfere with performance on different tasks when the elements are incompatible with each other. Table 1 presents a conceptual frame for projecting learning performance during multitasking.

Table 1. *Projected Learning Performance During Multitasking*

		Secondary Task	
	Attention Levels	**Mindful**	**Mindless**
Primary Learning Task	**Mindful**	poor	good
	Mindless	poor	poor

The key feature of being able to multitask seems to be the way in which cognitive energy is allocated. If tasks are incompatible or share common information processing, performance may not degrade. However, if the task elements compete for the same cognitive energy, then performance may degrade. Table 1 shows that reading and responding to e-mail, for example, while reading and responding to chat dialogue requires mindful effort for both activities and uses the same cognitive resources. High attention levels on both tasks might decrease and learning performance may be poor. Listening to background music (a secondary, mindless task) while reading and responding to text-based chat messages (a primary, mindful task) may not decrease attention to the main task, resulting in good learning performance. The table also suggests that approaching any task mindlessly will result in a poor learning performance. Being attentive and being mindful may be related to the type of multitasking performed and the level of cognitive energy required for each task.

Support for the Conceptual Framework

Interviews with groups of learners in a course about adult education in America support the conceptual frame. For example, while Anna chats as her primary task, she snacks on crackers or plays with her dog as a secondary task. The chat requires cognitive resources and a mindful learning effort, while the secondary activities use motor resources and are employed mindlessly. Anna’s perception was that multitasking had no affect on the quality of her learning. However, Ray reported a different experience. He was distracted by a telephone call and “and lost track of the chat quickly.” In his case, both activities required mindful effort and led to “an ineffectual contribution” on his part.

Jason’s chat group needed clarification on a definition. He announced that he was leaving the chat to look up the unfamiliar term on an Internet site. In his case, the primary learning task shifted for the benefit of the group from the chat discussion to the online dictionary. Jason rejoined the chat with an answer so the group could move forward. In the same way, Mary checked her text to clarify information related to the chat. During that time, she perceived a temporary decline in her performance as a discussant but made a contribution that ultimately increased the performance of the group.

Instructional Strategies that Address Chat Multitasking

The findings suggest that multitasking need not detract from the process of developing shared meaning during a chat provided the primary learning task is performed in a mindful way and the secondary task is performed mindlessly. Instructional strategies to promote mindful learning are summarized below.

Strategy 1: Have a clearly defined outcome. Stein et al. (2007) suggest that chats that have a clearly defined goal and follow a community of inquiry process (Garrison, Anderson, & Archer, 2000) help build shared understanding, which is an outcome of mindful learning. When learners understand the expected outcomes of text-based chats, such as a posting to the larger class, they are inclined to attend to chats in a mindful way.

Strategy 2: Have a role for every learner. By adopting roles, each group member has a stake in the chat process as well as in the product. Each role requires mindful effort. For example, the moderator facilitates dialogue, engages members in the discussion, ensures equality of voices, calls for a summary, and checks for understanding. The summarizer discerns areas of agreement and integrates comments. The summarizer should state concisely where the group stands on the particular issue under discussion before the moderator moves on to the next topic. The role player can represent alternate viewpoints (Collison, Elbaum, Haavind, & Tinker, 2000). Learners should change roles each week because performing an unfamiliar task will increase mindfulness (Langer, 1997).

Strategy 3: Have a group size that promotes engagement. Brookfield and Preskill (1999) recommend that groups be composed of four or five members when the goal is to discuss issues from reading assignments. In this way, the presence or absence of a group member’s voice is readily noted.

Strategy 4: Have groups establish norms of conduct. Stein et al. (2007) found that groups that established norms mitigated against disjointed thoughts and inconsiderate treatment of one another. Group members may want to recognize that not all of them will be 100% mindful at all times during a chat. They may establish a norm of letting the group know what they are doing that will divert their attention from the discussion, as Jason did when he looked up a definition online.

Strategy 5: Encourage social presence that builds cohesion. Social presence (i.e., using humor, compliments, referring to others by name) helps create a climate for open communication and builds group cohesion, which supports learning (Garrison & Arbaugh, 2007). Open communication allows group members to clear the air of anything that may affect a productive chat and the functioning of the group (Hunter, Baily, & Taylor, 1995a). Checking with members about what may be preventing them from contributing can help the group get re-focused and move toward deep meaning (Hunter, Baily, & Taylor, 1995b).

References

Baron, N. S. (2008). *Always on: Language in an online and mobile world.* New York: Oxford University Press.

Brookfield, S. D., & Preskill, S. (1999). *Discussion as a way of teaching: Tools and techniques for democratic classrooms.* San Francisco: Jossey-Bass.

Collison, G., Elbaum, B., Haavind, S., & Tinker, R. (2000). *Facilitating online learning: Effective strategies for moderators.* Madison, WI: Atwood Publishing.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2-3), 87-105.

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education, 10,* 157-172.

Hunter, D., Bailey, A., & Taylor, B. (1995a). *The art of facilitation: How to create group synergy.* Tucson: Fisher Books.

Hunter, D., Bailey, A., & Taylor, B. (1995b). *The Zen of group: A handbook for people meeting with a purpose.* Tucson, AZ: Fisher Books.

Kenyon, S. (2008). Internet use and time use: The importance of multitasking. *Time & Society, 17,* 283-318.

King, P. E., & Sawyer, C. R. (1998). Mindfulness, mindlessness and communication instruction. *Communication Education, 47,* 326-336.

Langer, E. J. (1997). *The power of mindful learning*. New York: Addison-Wesley.

Salvucci, D. D., & Taatgen, N. A. (2008). Threaded cognition: An integrated theory of concurrent multitasking. *Psychological Review, 115*(1), 101-130.

Southerton, D. (2003). ‘Squeezing time’: Allocating practices, coordinating networks and scheduling society. *Time & Society, 12,* 5-25.

Stein, D. S., Wanstreet, C. E., Glazer, H. R., Engle, C. L., Harris, R. A., Johnston, S. M., et al. (2007). Creating shared understanding through chats in a community of inquiry. *The Internet and Higher Education, 10,* 103-115.

Wickens, C. D. (1991). Processing resources and attention. In D. L. Damos (Ed.), *Multiple-task performance.* Washington, DC: Taylor & Francis, pp. 3-34.

Author Summaries

David Stein received his Ph.D. in adult education from the University of Michigan. He currently serves as an associate professor in the College of Education and Human Ecology at The Ohio State University. Dr. Stein specializes in adult teaching and learning. He has conducted workshops on principles of adult teaching and has served as a consultant to professional associations and other universities on adult education. Presently, Dr. Stein is researching online learning and its influence on adult learning. He has presented at national and regional conferences on adult learning and has written extensively on how adults learn.

Address: The Ohio State University
College of Education and Human Ecology
Workforce Development and Education
PAES Building, A486
305 W. 17th Ave.
Columbus, OH 43210
E-mail: stein.1@osu.edu
Phone: 614-292-0988

Constance E. Wanstreet received her Ph.D. in workforce development and education from The Ohio State University. She is an adjunct assistant professor in the College of Education and Human Ecology. Dr. Wanstreet has developed and implemented training programs for adult learners in workplace settings and has served as a consultant to the Ohio Board of Regents. She has presented at national and regional conferences, primarily on how adults learn in online environments.

Address: The Ohio State University
Longaberger Alumni House
2200 Olentangy River Road
Columbus, OH 43210-1035
E-mail: wanstreet.2@osu.edu
Phone: 614-688-8242