

PRACTITIONER SUMMARY

Can Your Audit Team Effectively Multitask? It Might Depend on How They Communicate

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SUMMARY: This article summarizes [Sidgman, Brown, and Brazel \(2021\)](#) which demonstrates that, when multitasking, the performance of audit teams communicating in-person is greater than the performance of teams using computer-mediated communication (discussion boards and chatrooms). In the audit setting, multitasking is unavoidable and pervasive; in-person communication is not always an option. To facilitate multitasking, engagement team communications have extended in-person interactions to computer-mediated communication (CMC) technologies. However, little is known about the performance of multitasking teams under these alternative modes of communication (in-person, discussion boards, and chatrooms). Contrary to expectations, we find that participants' familiarity with, and preference for, chatroom features (similar to text messaging) may have offset the benefits previously attributed to discussion boards (similar to email). This finding is timely, given the pandemic-induced environment of remote and hybrid work, as it informs practitioners on audit teams' multitasking effectiveness while using CMC.

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I. INTRODUCTION

In this article, we summarize a recent study by Sidgman, Brown, and Brazel (2021) that investigated the performance of multitasking audit teams under alternative modes of communication (in-person, discussion boards, and chatrooms) when working on multiple audit clients during the same day.¹ Sidgman et al. (2021) focused on multitasking through interruptions, as anecdotal evidence indicates that such interruptions are prevalent in the audit setting.

Multitasking is a pervasive and constant feature of modern life (Rosen 2008). Students multitask in the classroom, children and parents multitask in their homes, drivers multitask while driving, and professionals multitask in the workplace. It is common for members of an audit team to be assigned to multiple concurrent engagements (Bhattacharjee, Maletta, and Moreno 2007). Audit team members working on one engagement are frequently interrupted due to the demands of other engagements. In Sidgman et al. (2021), multitasking involves interruptions that redirect the audit team member's attention away from a primary task (e.g., identifying internal control deficiencies for one engagement) to address the demands of a secondary task (e.g., responding to review comments from another audit engagement). This setting contrasts with a multitasking setting in which an individual performs two or more activities at the same time on the same audit engagement.

Research suggests that humans are not mentally capable of effectively multitasking when one task interferes with another (Altmann and Trafton 2002; Anderson et al. 2004; Anderson 2007; Salvucci and Taatgen 2008). Of particular importance is that, when multitasking, if physical or mental cues are not available to recover memory content prior to an interruption, it is difficult to redirect attention *back* to an interrupted task after having paid attention to an interrupting task. In the accounting literature, studies have observed the negative effects of multitasking through increased decision bias in interrupted tax professionals (Long and Basoglu 2016), and through lower decision quality related to financial analysis (Basoglu, Fuller, and Sweeney 2009) and auditing (Long, McClain, and Searcy 2015; Kim, Mayorga, and Harding 2017; Mullis and Hatfield 2018).

II. EXPECTATIONS

Multitasking: Computer-Mediated Communication versus In-Person

Increasingly, the ability to multitask is facilitated by the proliferation of technologies that extend communication beyond in-person interactions (Aral, Brynjolfsson, and Van Alstyne 2012). In the audit context, communication among multitasking team members is often mediated by computer applications involving email, instant messaging, and other proprietary firm-specific software that have features like those embedded in chatrooms and discussion boards (e.g., Brazel, Agoglia, and Hatfield 2004; Agoglia, Hatfield, and Brazel 2009).

¹ Sidgman et al. (2021) use the term "face-to-face" in reference to "in-person" communication. In this manuscript, we use the term "in-person" as online communication can also be "face-to-face."

Audit teams that communicate using *computer-mediated communication* (CMC) should be able to provide and access cues of higher quality (e.g., chatroom logs and discussion board forums) when multitasking and therefore may perform more effectively than teams communicating in-person. CMC increases the efficiency with which information is delivered to all audit team members and enables team members to concurrently share ideas and arguments up to the moment of interruption. In addition, process-structuring features in CMC maintain a written record of all input created by the team members. This written record comprises the issues considered by the team before the interruption of the team's task. Upon resumption of the audit team's task, the written record makes the prior work of the team available when the team's task is resumed (Murthy and Kerr 2003).²

In a multitasking environment that involves *in-person* communication, a higher sense of accountability and less social loafing are likely to increase the state of alertness and attention of audit team members. Attention levels should rise and mobilize the additional cognitive resources necessary to deal with multiple tasks (Kahneman 1973). In addition, accountability may improve audit team members' capacity to manage interruptions by making more salient the need to make a mental note about what they were doing before turning their attention to the interrupting task (Salvucci and Taatgen 2011). Indeed, Brazel et al. (2004) illustrate that auditors' documentation improves when they feel more accountable to their reviewer/supervisor. The in-person environment is also likely to motivate auditors to prioritize their attention to the most important team task issues to demonstrate that they are making a relevant contribution to the team effort (Adler and Benbunan-Fich 2012). Overall, given the advantages of both CMC (e.g., information access) and in-person (e.g., accountability), it is unclear whether the performance of multitasking audit teams will be better under CMC or in-person.

Multitasking: Chatroom versus Discussion Board

In addition to in-person communication, Sidgman et al. (2021) explore multitasking performance using two alternative modes of CMC: chatrooms (which have similar features as text messaging) and discussion boards (which have similar features as email). Although both modes of communication share common features such as message broadcasting, push notifications, message records, message searchability, flagging of unread messages, and message sender identification, implementation differences can potentially affect how well each platform supports multitasking. For example, a chatroom's capacity to simultaneously deliver input to and receive feedback from audit team members may provide a communication advantage that is not accessible to teams communicating via a discussion board (Murthy and Kerr 2004). Audit team members communicating using a discussion board must submit their input messages before they are able to review the feedback received.

In contrast, the high capacity to gather, aggregate, share, structure, and evaluate information in discussion boards may provide a communication advantage that is not accessible to audit teams communicating via chatrooms (Murthy and Kerr 2004; Dennis, Fuller, and Valacich 2008).³ With

² It should be noted that, in the audit setting, only certain members of a team may be interrupted at any given time (versus the entire team being interrupted simultaneously). Due to the practicalities of performing an experiment with teams and multiple interruptions, Sidgman et al. (2021) interrupted the entire audit team (versus select members). As such, our discussion here describes entire teams being interrupted. However, many of our discussion points would apply to scenarios where only certain team members are interrupted and multitasking.

³ Discussion forums are prevalent in learning management systems such as Canvas LMS, Blackboard Learn, and D2L. These forums are widely used in universities where future auditors are educated.

discussion boards, records not only can be organized chronologically but also using threads with headers that identify their content within “forums”; conversely, chatrooms only allow a chronological organization of records. Forums and thread organization allow audit team members to better search, identify and post answers to specific topics, create new topics when new ideas are presented to the group, and discriminate between relevant and irrelevant recommendations. Such organization is likely to have a positive impact on performance when team members are distracted by interruptions and subsequently return to the team task.

Chatrooms and discussion boards also tag messages differently. When two or more auditors in a chatroom are sending messages simultaneously, messages received may not be flagged as unread. If not flagged, a team member needs to scroll the screen to search for unread messages. In contrast, with discussion boards, all unread feedback in any topic, including the topic under which a message is sent, is immediately flagged once a user submits a message.

Murthy and Kerr (2004) suggest that, for the reasons discussed above, it is likely that audit team members communicating via a chatroom experience both information overload and a decreased attention to important messages conveyed prior to an interruption. This should lead to an increased likelihood of missing unread messages when resuming the team task. As such, Sidgman et al. (2021) posit that, when audit team members are multitasking and using CMC, teams using discussion boards will outperform teams using chatrooms.⁴

III. METHOD

To test their predictions, Sidgman et al. (2021) performed an experiment using graduate and undergraduate accounting students assuming the role of first-year auditors. Participants were randomly assigned to teams of three and charged with identifying internal control deficiencies at a hypothetical publicly traded audit client.⁵ The authors examined the performance of multitasking audit teams under alternative modes of communication (i.e., in-person, discussion board, and chatroom). In the in-person condition, team members sat together at a table and communicated verbally. In the CMC conditions, each team member was assigned a desktop computer in a computer laboratory, with the other team members dispersed throughout the room. This setting simulates the same time/different place scenarios that are common in today’s audit environment (Brazel et al. 2004). The researchers used a customized Desire2Learn (D2L) space to implement chatrooms and discussion boards for the teams in the CMC conditions.

The multitasking setting involved activities that required participants to switch audit tasks after relatively lengthy periods of execution. That is, the authors induced multitasking by interrupting all the team members, on two separate occasions, while they performed the primary team task related to the identification of internal control deficiencies. During each of the two interruptions, all of the team members worked individually and independently on secondary tasks that required addressing review comments from a prior engagement. Figure 1 further illustrates the experimental design used in Sidgman et al. (2021).

Based on a solution set that was reviewed and vetted by practicing auditors, audit team performance was measured as the total number of correct unique internal control deficiencies

⁴ With the advancement of online technologies such as Zoom, Microsoft Teams, and Webex by Cisco, and their increased use during the COVID-19 pandemic, it is likely that the aforementioned differences between discussion boards and chatroom applications are now unnoticed by users as they may move back and forth between these platforms.

⁵ Given that the participants were all students, each team was a team of peers (versus a hierarchical structure with staff, senior, manager, and partner).

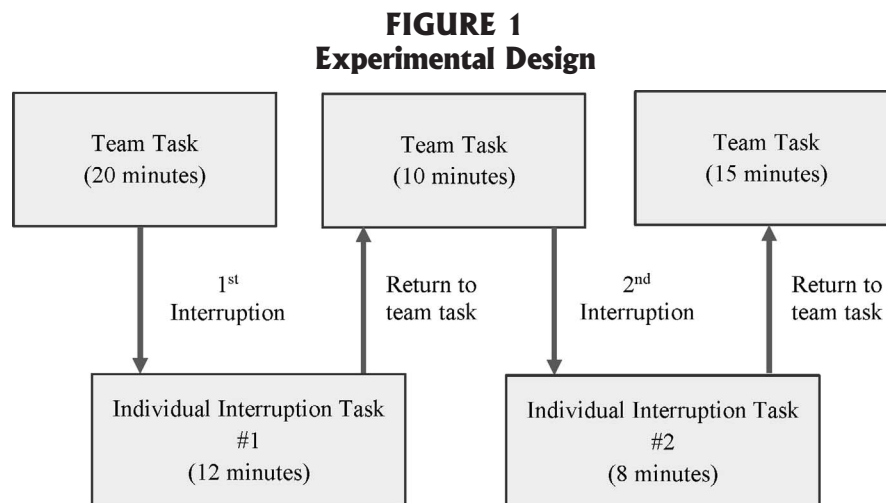


Figure 1 presents the experimental design described in [Sidgman et al. \(2021\)](#).

identified by the team (*PERFORM*).⁶ A deficiency identified by a team was deemed correct if it matched a corresponding item on the solution set. After completing their team task, participants individually responded to post-experimental questions that measured several process variables (e.g., accountability, social loafing) that were expected to aid in understanding the results.

IV. RESULTS

As depicted in Figure 2, on average the in-person teams correctly identified 5.47 unique internal control deficiencies, while the CMC teams only correctly identified 4.11. This difference is statistically significant ($p < 0.01$). Additional analyses found that multitasking audit team members appeared to be more accountable and less inclined to engage in social loafing when communicating in-person.

Team performance was similar using both discussion boards and chatrooms (both *PERFORM* means = 4.11). This result suggests that the positive attributes of discussion boards identified in prior studies may not carry over to the multitasking audit team setting. Additional analyses revealed that participants' familiarity with, and preference for, chatroom features may have offset the benefits prior studies have attributed to discussion boards (e.g., [Murthy and Kerr 2004](#)).⁷

To further explore the impacts of communication method on audit team performance, [Sidgman et al. \(2021\)](#) conducted an additional experiment that included in-person and CMC teams that completed the study's experimental materials *without* multitasking/interruption tasks. They observed that *PERFORM* for the in-person, no multitasking condition was 5.32, which is not statistically different from that observed in the in-person, multitasking condition (5.47). In comparison, *PERFORM* in the discussion board, no multitasking condition, and in the chatroom, no multitasking condition were 5.55 and 5.37, respectively. These levels of *PERFORM* are both significantly better than that observed for discussion board and chatroom in the multitasking

⁶ The solution set was vetted by two audit partners from a Big 4 firm, as well as a senior manager and an audit senior from a non-Big 4 firm.

⁷ Statistical analyses (e.g., results from a Generalized Linear Model) documented in [Sidgman et al. \(2021\)](#) confirm that the evidence supports these conclusions.

FIGURE 2
Results for *PERFORM*

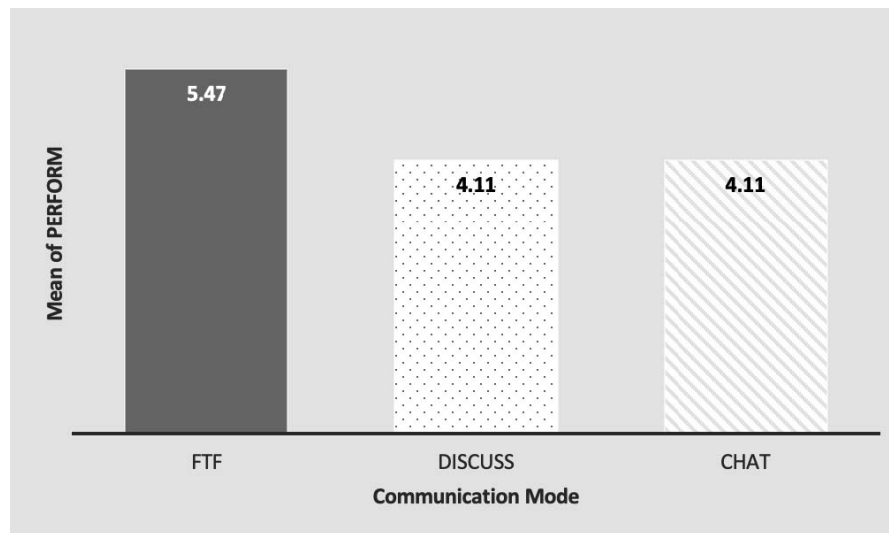


Figure 2 presents the mean values for *PERFORM* in each of the three experimental conditions reported in Sidgman et al. 2021. *PERFORM* is measured as the total number of *correct* internal control deficiencies identified by the teams.

condition ($p = 0.028$ and $p = 0.058$, respectively). These results suggest that in-person communication mitigates the negative effect of multitasking on performance.

V. IMPLICATIONS FOR PRACTICE

The results of Sidgman et al. (2021) extend our understanding of multitasking and communication modes in the audit setting and have implications for practice. Since multitasking in an audit team setting is likely unavoidable, the results of Sidgman et al. (2021) suggest that there are performance advantages to audit team members communicating in-person. However, all communication cannot be in-person. The recent COVID-19 pandemic has created a large demand for communication that relies on CMC (Tysiac 2020). The findings of Sidgman et al. (2021) illustrate that improvements in CMC technologies that enhance accountability and discourage social loafing are needed to reduce the negative impacts of multitasking on audit team performance. These goals could be accomplished, for example, by audit firms encouraging “camera on” interactions to provide the benefits of both in-person and CMC interactions.

Future research could contribute to better understanding the impacts of these technologies. Given the familiarity of current generations with text-like technologies, researchers may want to study how to effectively incorporate the organizational features present in discussion boards/email into chatroom/texting technologies. The continuing evolution of CMC options and functionality suggest the need for continuous study.

In their experiment, Sidgman et al. (2021) chose to interrupt the entire audit team. It may be that disruptions of a single team member are not as problematic in terms of team performance as was discovered by Sidgman et al. (2021). It may also be that the impact of multitasking of some team members is more problematic than others. Participants in the study were all undergraduate students which, for purposes of the experiment, were assigned the role of first-year auditors. It may

be that disruptions of more experienced, senior-level auditors have less harmful impacts on team performance. Additional research is necessary to determine if the findings of Sidgman et al. (2021) generalize to other audit settings.

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