

The survey effect: Does administering surveys affect trainees' behavior?



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ABSTRACT

This research demonstrates a survey effect, such that the act of administering surveys alters training effectiveness. Two aspects of survey administration were manipulated: the number of survey questions per training module (ranged from 1 to 30 across experimental conditions) and the type of survey questions (self-regulation or trainee reactions) across two studies focusing on self-administered online training. The number of survey questions had an indirect, negative effect on learning via the amount of time spent responding to survey questions. Furthermore, attrition increased when lengthy surveys were administered and this effect was moderated by pretraining motivation—adding additional survey questions increased the probability of dropping out for trainees who had low (rather than high) motivation to learn. The data quality also declined as the number of survey questions increased. Finally, learning performance was higher and the data quality was better when trainees were asked self-regulation rather than trainee reaction questions.

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1. Introduction

Nowadays, self-administered training has become increasingly commonplace in organizations (Sitzmann, Kraiger, Stewart, & Wisner, 2006). In 2010, Fortune Global 500 companies delivered over 40% of their training content via self-administered programs (Green & McGill, 2011). However, one of the implications of self-administered courses is the responsibility for regulating course engagement shifts from the instructor to the trainees. This implication is particularly important because trainees' attention and effort wax and wane over time in training, impacting whether they obtain mastery of the content domain. To track training effectiveness and trainee engagement, self-administered programs often rely on repeatedly surveying trainees throughout the course. The surveys are typically imbedded in the training programs, which may be disruptive, but this is the only cost-effective method available for understanding the ongoing learning process other than capturing time spent in training, which is an indirect and imperfect indicator of effort (Ely, Sitzmann, & Falkiewicz, 2009).

This trend of imbedding multiple surveys in training occurs in both practice and research. For example, Sitzmann, Brown, Ely, Kraiger, and Wisner (2009) administered surveys at both the beginning and the end of each of 30 modules in a military training program, such that

trainees answered over 1200 survey questions to gauge the strengths and weaknesses of the program. Similarly, Straus and Ward (2011) relied extensively on surveys to gauge the effectiveness of three training programs. Each program repeatedly surveyed trainees with between 27 and 73 questions per survey administration. Repeatedly surveying trainees has also become the state of the art practice for within-person training research (Beck & Schmidt, 2013; Yeo & Neal, 2004, 2006, 2008). For example, Yeo and Neal (2004) had students complete 30 trials in an air traffic control task as well as a task self-efficacy measure in between each of the trials. Vancouver and Kendall (2006) studied undergraduates completing an industrial organizational psychology course. Before each of five course exams, students completed surveys to assess their goals for the upcoming exam, planned and actual study time, and self-efficacy.

However, it is important to recognize that the practice of repeatedly surveying trainees is built upon the assumption that surveying gathers accurate information without altering the learning process that serves as the subject of investigation. The goal of this research is to provide theoretical rationale and empirical evidence demonstrating a survey effect such that the act of administering surveys alters the behaviors that serve as the subject of investigation—namely, that surveying alters training effectiveness. Following Tourangeau, Rips, and Rasinski (2000), we define the survey effect as a phenomenon by which asking people questions about their personal beliefs and behavior affects the subsequent behavior of respondents.

Two studies were conducted to examine the survey effect in self-administered online training. Across both studies, we manipulated two aspects of survey administration: the number of survey questions per training module and the type of survey questions. We surmise

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that increasing the number of survey questions decreases motivation and increases the length of the interruption from learning as trainees complete the survey. As such, we relied on self-regulation (Frese & Zapf, 1994) and interruption (Jett & George, 2003; Speier, Valacich, & Vessey, 1999) theories to clarify the implications of the survey length on two indicators of training effectiveness—learning and attrition—as well as the quality of data collected via surveys. Surveys varying in length from 1 to 30 questions were administered at the end of each training module to mimic the practice of administering multiple surveys for both training program evaluations (e.g., Straus & Ward, 2011) and within-person learning research (e.g., Vancouver & Kendall, 2006).

Second, we manipulated the type of survey questions, such that trainees were either asked about their self-regulatory processes during training or reactions to the training program, in order to demonstrate that surveying trainees may have both positive and negative effects on training effectiveness. Self-regulation is an internal process by which individuals strive for goal attainment over time, including the modulation of affect, cognition, and behavior (Karoly, 1993), whereas trainee reactions refer to learners' satisfaction with their instructional experience (Kirkpatrick, 1996). These survey topics differ based on whether they focus trainees' attention on internal processes (i.e., self-regulation) or the external environment (i.e., the setup of the training program). Based on objective self-awareness theory (Duval & Wicklund, 1972) and the self-regulation intervention literature (Sitzmann & Ely, 2010), we hypothesize that this distinction between the types of survey questions should impact how trainees approach learning situations as well as the propensity to provide quality survey data.

Our two-study approach is invaluable for cross validating the survey effect across training situations. The first study focused on adults dispersed across the United States who voluntarily enrolled in online Microsoft Excel training. Voluntary online training is an ideal environment for examining the survey effect because people have complete discretion over their behavior in these courses. Moreover, this setting mimics how training is often delivered in organizations to establish the external validity of the survey effect. The second study focused on training delivered in a controlled environment where participants completed the course to obtain external incentives (i.e., extra credit) to ensure variability in pretraining motivation to learn. As such, we examined whether the survey effect established in Study 1 accounted for variability in training effectiveness beyond that predicted by pretraining motivation. Further, Study 2 examined pretraining motivation to learn as a potential moderator of the survey effect.

A theoretical model of the effects of the number and type of survey questions is presented in Fig. 1. For the sake of clarity, only hypothesized relationships with the study manipulations are represented in the figure. The model suggests that increasing the survey length has deleterious effects on two indicators of training effectiveness—learning and attrition—as well as the quality of data collected. The survey length is

hypothesized to indirectly affect learning via the amount of time spent responding to survey questions and to directly affect attrition and the survey data quality. The model also suggests that learning performance and the survey data quality will be better when questions focus on self-regulatory processes rather than reactions to the training program. Finally, adding additional survey questions should increase the probability of dropping out of training for trainees with low pretraining motivation to learn. In the following sections, we will provide theoretical rationale for these relationships, beginning with a discussion of the effects of the survey length followed by a discussion of the effects of the survey type.

2. Literature review and hypotheses development

2.1. Survey length

Boredom, survey fatigue, and interruptions to the learning process are unintended consequences of administering surveys to monitor trainee engagement and training effectiveness.

Specifically, completing surveys during training may serve as an interruption from processing course material and may reduce trainees' motivation for completing the course. Management scholars define interruptions as events that impede progress as employees attempt to complete work-related tasks (Jett & George, 2003). In the case of training evaluation, surveys prevent trainees from mentally rehearsing the course content and making progress toward completing the course.

Interruptions are a self-regulation obstacle—they make it challenging to engage in goal pursuit and regulate goal progress (Frese & Zapf, 1994). Moreover, they break attention from learning and force trainees to redirect their attention toward the interruption (Speier et al., 1999). This causes cognitive interference and information overload (Jett & George, 2003; Speier, Vessey, & Valacich, 2003). In text-based courses, surveys and reviewing the course material both utilize the same sensory channel for processing, which should exacerbate the effect of survey interruptions on learning (Jett & George, 2003). As trainees finish the survey and turn their attention toward recalling course material, they need to re-access information that may have been lost while completing the survey (Speier et al., 1999). This may lead to a decline in the accuracy of information recall, inevitably having a detrimental effect on learning performance (Sitzmann, Ely, Bell, & Bauer, 2010). Further, lengthy interruptions impair learning to a greater extent than brief interruptions (Fischer & Glanzer, 1986; Hodgetts & Jones, 2006). Thus, the effect of the survey length on learning performance may be indirect via the amount of time spent responding to the survey. Specifically, the longer the survey, the more time trainees will devote to responding. In turn, trainees will experience greater cognitive interference when they spend more time responding to survey questions, which will hinder learning.

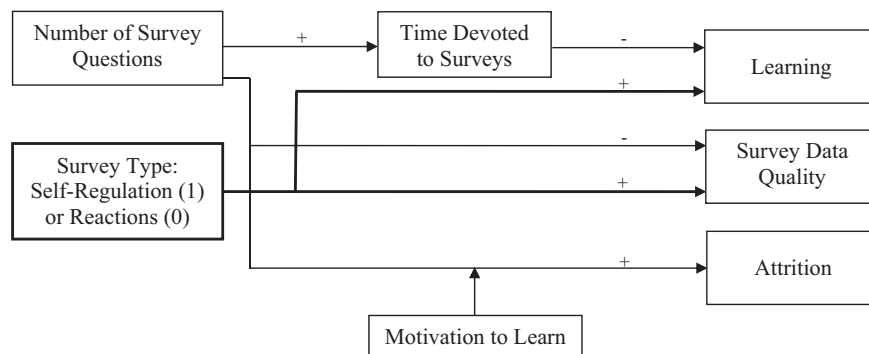


Fig. 1. Theoretical model of the effects of the number and type of survey questions on trainee engagement.

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