Is the "Third-Generation Model" New and Is It the Holy Grail of Adaptive Learning?

ALAN M. SAKS
University of Toronto

ROBERT R. HACCOUN
Université de Montréal

Kraiger (2008) argues that Web-based instruction (WBI) is ideally suited and at the core of a "third-generation model" in which greater emphasis is placed on the learner forming understanding through a process of social negotiation and knowledge as socially constructed outcomes. The hope is to achieve adaptive learning that allows trainees to develop competencies with procedures that are self-directed and uniquely pertinent to the styles and preferences of adult learners. In this commentary, we will make the following arguments: (a) Learning through social interaction is not new; (b) learner-centered models and WBI approaches are not always the most effective: and (c) we are on the cusp of a fourth-generation model that combines and integrates all three models.

Is Social Constructivism Really a New Model of Learning?

If social constructivism involves learning and development taking place in a social

and cultural context and interactive learning environments, then many good examples of it are already available. Three examples are action learning, communities of practice, and informal learning.

Action learning (conceived by Reginald Revans over 50 years ago) is an experience-based group process that comprises many of the components of social constructivism described by Kraiger. Students work in small groups and apply knowledge, theory, and concepts to solve real-world problems. In the process, the group develops a social culture of its own in which group members learn with and from each other (Raelin, 1997).

Communities of practice (coined by Etienne Wenger and Jean Lave in 1991) refers to groups of people with common interests and concerns who meet regularly to share their experiences and knowledge, learn from each other, and identify new approaches for working and solving problems. Although communities of practice are informal, self-organizing groups that form naturally on their own, they can be created, fostered, and nurtured in organizations (Wenger & Snyder, 2000).

It has been estimated that 70% of what workers know about their jobs is learned on the job through *informal learning* (Dobbs, 2000). Although informal by nature, some organizations have fostered it by creating

Correspondence concerning this article should be addressed to Alan M. Saks. E-mail: saks@utsc.utoronto.ca

Address: Centre for Industrial Relations and Human Resources, University of Toronto, 121 St. George Street, Toronto, Ontario, Canada M5S 2E8

Alan M. Saks, Centre for Industrial Relations and Human Resources, University of Toronto; Robert R. Haccoun, Département de Psychologie, Université de Montréal.

overlaps between shifts, creating areas where employees can gather and interact, forming discussion groups, and eliminating barriers to communication (Dobbs, 2000).

These demonstrate that the "profound shift" toward social constructivist approaches anticipated by Kraiger is in fact a profound development that has already occurred. Although organizations might benefit from greater integration of these forms of learning into their learning systems, it is questionable if they should do so using WBI.

Is WBI Best Suited for Learner–Learner Interaction and Learning?

Kraiger argues that "WBI is particularly well suited to fostering social interactions useful for construing meaning" and that learner–learner interaction is more likely to occur in an online environment than a face-to-face context. This of course is at odds with the three examples described above in which face-to-face interaction is most common. Perhaps of greater importance, however, is that the third-generation proposal leaves in abeyance the issue of *individual differences* and the *organizational context*, two elements at the core of the past 30 years of research.

Individual differences. The emphasis on learner-centered approaches with or without WBI is at odds with the reality that people have different learning styles that require different methods of learning and the increased emphasis on blended approaches to learning that combine classroom training and computer technology. For example, Lee and Li (2008) showed that higher levels of training effectiveness have less to do with the medium of instruction than the degree to which it dovetails with the learner preferences for media. There is also some evidence that e-learning is not equally effective for all learners, especially those with low computer self-efficacy (Welsh, Wanberg, Brown, & Simmering, 2003). In a South African sample of lower level workers, Moolman and Blignaut (2008) highlight the importance of learner motivation. They showed that technophobia (e-learning readiness) does consti-

tute an important determinant of training success and that the viability of e-learning depends on the organization's e-maturity.

Although WBI might be useful as part of a blended approach to learning, it is questionable whether it is more likely to result in learner–learner interaction than more traditional training methods. In fact, some have expressed concern about the lack of interaction among trainees in many e-learning courses. The consulting firm Accenture (cf. Welsh et al., 2003) found that the lack of peer-to-peer networking makes e-learning less attractive to learners and less useful. WBI also appears to be most useful for less complex cognitive learning outcomes and is of questionable use for complex skills, soft skills, and psychomotor skills (Welsh et al., 2003). Meta-analytic evidence indicates that students have a slight preference for more traditional forms of instruction and report somewhat higher satisfaction with face-to-face live courses than with distance education formats (Allen, Bourhis, Burrell, & Mabry, 2002).

As well, a number of studies have found that e-learning is associated with poorer learning outcomes or that it does not differ from traditional classroom-based instruction (DeRouin, Fritzsche, & Salas, 2005). In a study on orientation programs, Wesson and Gogus (2005) found that a social-based orientation session resulted in higher levels of socialization in more socially rich content areas than a computer-based orientation session. There is also some evidence that blended learning offers organizations more benefits over stand-alone e-learning programs including transfer of training outcomes (DeRouin et al., 2005). Thus, there is *not* much evidence to support the view that moving wholeheartedly into learner-controlled WBI is indeed the "one best way" for learner–learner interaction or learning.

Organizational context. What seems more important for learner–learner interaction is not whether the method is online or face-to-face, but the extent to which the work environment encourages and supports learning. Birdi (2007) showed that transfer of creative ideas into practical application

depended more fully on environmental context than learning outcomes.

According to Tracey, Tannenbaum, and Kavanagh (1995), in a continuous learning work environment, supported by social interaction and work relationships, organizational members share perceptions and expectations that learning is part of everyday work life and that it is an individual's responsibility. As such, it becomes an integral component of an organization's culture, and individuals are motivated to learn and apply what they have learned. Hence, individual learning and transfer motivation—supported and fostered by culture-level procedures and norms—are central prerequisites for effective learner-centered approaches in organizations. Hochholdinger and Schaper (2008) showed that learning culture correlated with learning and transfer success as mediated by transfer motivation, and Tracey et al. found that a continuous learning culture and a positive transfer of training climate had a direct effect on the posttraining behavior of supermarket managers.

Thus, the bigger picture is the organizational environment and the extent to which learning is encouraged, supported, and embedded in the organization's culture. Less important is the actual training method and whether it is a Web-based learning environment or a face-to-face context.

There are two other concerns with Kraiger's advocacy. One deals with organizational control. A full learner-centered approach implies that individual workers would conduct their jobs in a more idiosyncratic manner, presumably better suited to their styles and abilities. This implies a transfer of organizational control to the incumbent as to what is learned and what is done, not simply when and how. Although this might be less of a concern for students in distance education courses with learning as the primary goal, such a loss of organizational control is at best only acceptable for some jobs. In many instances such as low-level service jobs or when strategic organizational reorientations drive the training efforts or when learning is effortful (Hesketh, 1997), a loss of organizational control would be unacceptable for most organizations. Thus, for many organizations, jobs, and employees, the transfer of organizational control to the learner is simply not an option.

Second, the third-generation model is predicated on open and free exchange of information between trusting trainees with no fear that errors and learning difficulties will be held against the person. This can happen with both face-to-face and WBI media. In the face-to-face case, details of who said what and when are not recorded. However, with WBI approaches, this would not be the case. Everything on the Internet is recorded somewhere! Rendering public one's errors and weaknesses in mastering a new competency may be detrimental to a person's future. This issue has both ethical and effectiveness implications.

Fourth-Generation Integrative Model

When one considers what organizations are actually doing today, it becomes apparent that there exists what might be a *fourth-generation model* that integrates components of the objectivist, cognitive constructivist, and social constructivist models. One of the best examples is IBM's On Demand Learning, which includes e-learning packages for various topics that employees can access when they need them. Employees access the packages through the company's intranet, which also allows them to choose a preferred learning mode (e.g., a simulation, a discussion with a colleague). As part of a blended approach to leaning, job rotation is used and employees are assigned to new projects for additional training on the job (Weinstein, 2006).

This program contains elements of all three models. The packages are based on the identification of training needs and the knowledge and skills required to support business strategies that are incorporated into learning design (objectivist model). Learners have control over the training they receive, when they receive it, as well as the preferred mode of learning (cognitive constructivist model). And employees have access to experts, peers, colleagues, and leaders during

their learning (social constructivist model). A fundamental aspect of the program is a collaborative learning work environment in which learning is embedded in the company's culture (Lee, 2005).

Research on the fourth-generation model might (a) compare an existing training program based on the objectivist and cognitive constructivist models to the same program with a social constructivist component, (b) identify the effectiveness of various methods of social constructivism (e.g., on-the-job training, meetings, communities of practice), and (c) compare and contrast a Web-based versus a face-to-face social constructivist intervention.

Conclusion

Social constructivism is a profound development in how people learn; however, it is not a new model of learning. And although WBI has become an important method of learning for many organizations, it is by no means the best method for learner–learner interaction, learning, or transfer of learning. If we are on the "cusp" of a new generation instructional model of learning, then it is a fourth-generation model that combines and integrates the social constructivist model with the objectivist and cognitive constructivist models of learning.

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