Exploratory Research on the Effect of Autonomous Learners to Team Learning within Healthcare Systems

Patricia R. Goodman
George Washington University

Neal Chalofsky
George Washington University

How does individual learning impact team learning? Through an exploratory case study, data was collected from questionnaires, documentation review, observations, and interviews. Three themes emerged describing how an autonomous learner affected team learning. The results indicated that the autonomous learner influenced team learning through leadership skills, systematic learning processes, and team mental models. For a practitioner's point of view, a team learning system explains the impact of the autonomous learner on the team learning process.

Keywords: team learning, autonomous learning, group dynamics

Does the team member, the team as a collective unit, or the system, influence team learning? Case studies have presented various examples of disasters that have occurred when teams failed to learn. These case studies, which encompass a wide variety of phenomena (e.g., military maneuvers, space exploration missions, airplane crashes, and medical errors), described situations in which teams do not transfer knowledge gained from previous events into memory or change their behavior. Simply, the problem is many teams don't learn.

The purpose of this study was to understand the influence an autonomous learner has on team learning in the healthcare system. Team learning has been critical within the healthcare system. When examining the poor decisions or flawed actions of a team member in a high-reliability organization, much research uncovered fatal tragedy and failure in team learning (Mahlmeister, 1999; Risser, Rice, Salisbury, Simon, Jay, & Berne, 1999). Examples of such poor decisions are related to the team structure and culture. The hierarchy is so ingrained in a medical team that when a nurse or technician observes an error committed by a surgeon, the error may not be reported in a timely manner (Edmondson, 1996; Edmondson, Bohmer, & Pisano, 2001). A case study of the death of a patient described healthcare teams that exhibited a lack of structure, poor task prioritization, poor communication, minimal cross-monitoring of members' actions, and a lack of assertiveness (Risser et al., 1999). Moreover, the communication norm in healthcare teams is unidirectional, functioning in a top-down manner (Cline, 1990). In order to open the lines of communication, team members must learn mechanisms to communicate vital information to each other. However, there is limited research on the learning of hierarchical medical teams in complex environments (Williams et al., 1999).

Theoretical Framework

The theoretical framework for this research has been based on concepts described within the team learning model of Kasl, Marsick, and Dechant (1997). The model emphasized team learning conditions as teamwork appreciation, individual expression, and operating principles. The team learning conditions were considered the boundary encompassing team learning outcomes and team learning processes. By exploring the relationship of defined group conditions to team learning, this study sought to understand how the skills, knowledge, and values of an autonomous learner affect the team learning process. The attributes that define learner autonomy are personal initiative, desire, resourcefulness, and persistence (Confessore, G., 2000; Confessore & Kops, 1998). The individual's learning, an aspect of the group conditions, has been represented as a catalyst of the team learning process. Therefore, this study focused on the team level of analysis. From the literature review, research findings demonstrated that group dynamics affect team learning process (Edmondson, 1999; Edmondson et al., 2001; Kasl et al., 1997). By examining specific attributes of an autonomous learner, the researcher sought to determine whether this individual will enhance or hinder the team learning process. Healthcare teams exemplify the focus on learning due to the nature of the members interdisciplinary professions.

In addition, these teams function in high-reliability organizations (HROs). It is not just a goal for these teams to learn; learning is a necessity in everyday procedures (Weick & Sutcliffe, 2001).

This exploratory study presented an opportunity to probe into the unexpected phenomena in the relationship between individual and team learning in a complex environment. This study sought to address this gap in the literature with the following exploratory research question: How does individual learner autonomy affect team learning within healthcare teams?

Research Design and Methodology

The research design was divided into three phases, each of which had a clear aim: sample selection, data collection, and data triangulation. The initial phase included two steps for the sample selection: identifying an intact team with an autonomous learner and evaluating the team learning process of the team. An intact team was defined as a group of individuals who described themselves as having interdependent roles for a mutual task meeting on a regular weekly basis. The second research phase sought saturation of information by collecting data from questionnaires, documentation, observations, and individual interviews. The last research phase employed data analysis of the data collected based on saturation of concepts using various triangulation methods to ensure credibility and trustworthiness in the findings.

Research Phase One

The research sites were determined through availability and specific criteria. Three nonprofit community healthcare organizations in three different areas of the District of Columbia volunteered to participate. For confidentiality purposes, the organizations have been assigned fictitious names: ACT Health Care (Team A), BAT Medical Clinic (Team B), and CAT Medical Center (Team C).

At the time of the study, Team A included a doctor, a licensed practical nurse, two medical assistants, and a receptionist. Similar to Team A, Team B had seven staff members composed of the following roles: a medical director, a medical administrator, four clinical coordinators (whose role was similar to a medical assistant's), and a social worker. Team C comprised 11 members: an executive director, an executive assistant, a financial manager, a medical doctor, a nurse practitioner, two medical assistants, a billing coordinator, an information analyst, and two clerical workers.

In order to determine if at least one team member from each team was an autonomous learner, a questionnaire and rubric were administered to identify the autonomous learner in each team. The majority of the questions were devised using past research on self-directed learning and the attributes of initiative, desire, resourcefulness, and persistence defined by the Learner Autonomy Profile (LAP; Confessore, G., 2000; Confessore & Kops, 1998). In order to ensure the comprehensive quality of the questionnaire, the researcher offered two methods for responding to similar questions—ranking by levels of preference, and checking the most appropriate. The questionnaire was then critically reviewed by a focus group to ensure clarity (Goodman, 2004). For the autonomous learner rubric, the responses encircled the following: the learner sought information independently, placed high importance on learning, emphasized learning approach as self-governed, and learning goals based on own aspirations. The catalysts were identified in each team as follows: one autonomous learner in Team A (Medical Director), two in Team B (Medical Director and Medical Administrator), and five in Team C (Executive Director, Finance Manager, Nurse Practitioner, Information Analyst, and Receptionist).

The second step in the initial phase of sample selection employed the Team Learning Survey (TLS; Kasl et al., 1997). Similar to the questionnaire, this survey was completed individually as a self-report. However, the TLS is based on team dynamics and processes. The researcher collected the responses from Teams A, B, and C, totaling 23 participants, then followed the TLS guidelines for scoring. As directed on the TLS scoring form, they were into five categories: team learning outcomes, team learning processes, teamwork appreciation, individual expression, and operating principles (Dechant & Marsick, 1993).

Unexpectedly, all three teams' scores fell into the synergistic team learning stage under the team learning processes category. The researcher's aim was to gain a minimum of three teams that met two criteria—at least one member reported as an autonomous learner and operation at the pooled team learning stage. Therefore, this outcome exceeded expectations. Although the TLS was only used to identify the sample, it is important to consider some of the attributes described for the synergistic team learning stage. The survey depicted the team learning process through questions related to framing and reframing, crossing boundaries, experimenting, and integrating perspectives (Kasl et al., 1997).

In research by Kasl et al. (1997), framing and reframing referred to the development of shared understanding (i.e., mental models). Therefore, it was expected that the sample would have developed shared mental models; one would expect that individual perceptions and insights would be shared at the collective level, either implicitly or explicitly. Additionally, crossing boundaries involved seeking or sharing ideas by interacting with others across physical, mental, or organizational lines. Accordingly, synergistic learning incorporated the sharing of information across any form of boundary. Moreover, experimentation was to be frequent and routine at the individual and team levels. Finally, integrating perspectives were identified through team members working collaboratively to resolve challenges and conflicts. Prior to conducting observations and interviews of the teams, the researcher put aside the results of the TLS in an effort to avoid seeking out occurrences that might not be present.

Research Phase Two

Phase two incorporated documentation reviews, workplace observations, and individual interviews. During the review of the organizational documents, three initial themes emerged, which related to the organizations' history, mission, and employee training. Next, the observations of the teams at work offered several findings. Common data was identified in each team: communication and shared information, dedication and the strength of team mental models, along with the teams' cultures. These concepts complimented the findings from the last data collection, individual interviews.

One-on-one interviews provided vital, diverse insight into learner autonomy and team learning. The researcher interviewed each team member in the sample. Interviews were conducted using a semi-structured, open-ended format in order to explore the impact of the autonomous learner on team learning. The interview protocol was tested with the same focus group used for the research questionnaire. After the transcriptions from the interviews were complete; a copy was sent to each participant for review and correction. Then, vignettes were created for each team from the individual interview data offering several findings further described in phase three.

Research Phase Three

The data triangulation phase brought meaning to the clumps of data. A distinction was found in the level of communication supplied by the autonomous learners, often offering further assistance. Although most team members shared information and used open lines of communication, the scope of their participation was bounded by their job descriptions. In contrast, the autonomous learners extended ideas based on the "big picture." The autonomous learners appeared to fulfill leadership roles by modeling learning systems, opening lines of communication and sharing information, building knowledge structures, and encouraging others to learn. By synthesizing the emerging themes, five meta-themes delineated the autonomous learner's influence on team learning: leadership, sharing of information, healthy group dynamics, team mental models, and systematic learning.

Of these five meta-themes, two (healthy group dynamics and sharing of information) further described conditions necessary for team learning to be effective (Edmondson, 1999; Kasl et al., 1997). Members' openness to sharing information was one of the key attributes of healthy group dynamics. When a team exhibited healthy group dynamics, one may presume that its conflict resolution would be effective, team members' communication would be open and reciprocal, and the team culture would be clearly defined and understood by all members. Therefore, the interaction of the team members was attributed to the group dynamic. The concluding three meta-themes have been explored in the discussion section.

Limitations of the Study

One of the primary limitations of the study was a result of its research design. As a qualitative case study design was employed, the generalizability of the findings would be limited. The population in the study was narrowly defined as a team within the context of a healthcare organization. The complex environment that formed the context of the study was defined as a high-pressured function with life-threatening decisions. Situations and environments that fit this description include aircraft cockpits, military maneuvers, crisis response situations (e.g., those involving firefighters, ambulance crews, and bomb squads), and emergency rooms. Due to the nature of these functions, there were variables that were held constant, such as time constraints, unexpected events, and changing team members. Therefore, the researcher had very few controls during the data collection process. Additionally, the researcher did not focus on the evolution of the team or the personalities within the group that created its emotional dynamics. As a result, this study may not be reflective of intact work teams over long periods of time.

The design of the study required the researcher to have direct contact with the participants. Therefore, learning may have been overemphasized during the observation phase of the study. This might have distorted the picture that emerged of the team. In an attempt to decrease the possible Hawthorne effect, the researcher did not emphasize the tracking of the catalyst within the team. However, the interview protocol expressed the research focus (the

relationship between individual learning and team learning), which might have triggered the exaggeration or minimization of learning processes. The researcher obtained documentation on the education patterns of the team and observed the team in an effort to decrease this limitation.

Although a great deal of literature provides guidance on the facilitation and use of self-directed learning projects, this study does not address learning projects or their effectiveness. Moreover, the study is not seeking to transform individuals into self-directed learners. The guiding assumption of the researcher was that an individual with autonomous learning attributes would employ these attributes in work-related functions. In addition, the researcher maintained that an autonomous learner would sustain these attributes, which were not a product of the team dynamic or role.

Discussion

Leadership, team mental models, and systematic learning process emerged from the robust data. These concepts were complex and multi-dimensional. In the following, explanations have been posed to demonstrate the influence the autonomous learner had in the team learning process.

Leadership

As viewed in the data, leadership related to the direction and interpretation of the learning process. The autonomous learner seemed to play a role in guiding team members' learning of new functions in the workplace, such as new technologies (e.g., the lab computer system used by Teams A and C) and processes (e.g., health insurance in the case of Team B), or in achieving greater knowledge in the medical field. In the teams noted above, the leadership demonstrated dedication to the learning process and to team members while communicating clear steps and answering questions. Although every reported autonomous learner in the study was not a designated team leader, each appeared to exhibit leadership skills in the team learning process by offering guidance to other team members.

Interestingly, a team member not in a leadership role, but reported as an autonomous learner in Team C, offered the team visionary goals and guidance in its learning project. Whether the autonomous learner was the designated leader of the team or not, the autonomous learner was viewed as a resource for others. Moreover, they offered strategy during the team learning process. The team members asked questions and listened to the autonomous learners based on their perceived knowledge, trustworthiness, and skillful communication. It is uncertain whether autonomous learner attributes dominate leadership skills or vice versa. Surprisingly, there is little research about autonomous learner attributes or leadership skills in team learning models. Recently, it has been suggested that team leadership, especially in healthcare, influenced the team learning (Edmondson, 2003). It may be interpreted that the leadership attributes relate to the autonomous learner's attributes.

Beyond the teams' homogenous healthcare composition, Teams A, B, and C share several factors in regard to leadership. First, the leaders of the teams were open to learning and demonstrated good interpersonal skills. Second, each team leader emphasized the importance of sharing information and inspiring healthy group dynamics. Moreover, a majority of the leaders described themselves as autonomous learners. Additionally, six out of eight autonomous learners demonstrated or expressed the expected attributes of a desire to learn, personal initiative, resourcefulness, and persistence. The behavior of autonomous learners often mirrored the elements referred to as *Leadership That Matters:* communication, trust, caring, creating opportunities, self-confidence, empowerment orientation, vision (cognitive capability), and organizational context (culture) (Sashkin & Sashkin, 2003). These behaviors and characteristics are drawn from transformational leadership research and visionary leadership theory. Although autonomous learning is an independent process, there appeared to be an understanding of how knowledge would improve the workplace. In addition, the greater picture of the work environment led to a shared responsibility for increasing and/or stimulating others to gain knowledge. Whether this effort was based on collaborative means or compassion, other team members accepted the information from the autonomous learners in a respectful manner.

Team Mental Models

Since several team members in this study referred to the autonomous learner as their resource for answering questions, it could be suggested that the team members have similar expectations of who to seek knowledge from during a team learning process. This cognitive process assisted the team in building common understanding, thereby helping all members to function on "the same page." Therefore, the autonomous learner was a catalyst motivating intellectual growth and the strengthening of team mental models.

Team mental models are strengthened as autonomous learners stimulate learning by developing new knowledge structures and experiences through verbal, visual, and written communication. The assumption cannot be made, however, that team members' shared mental models will transfer to a team mental model. Members of Team A, for

example, had established knowledge structures for completing internal lab work. However, the medical director wanted to learn about a more efficient and effective method to conduct lab procedures. She initiated a learning project to understand the current status of the system, evaluate errors, review other systems, communicate with the team about improvements, and train the staff on new methods. As a result, the team gained further understanding of lab procedures and a learning process. This knowledge appeared to strengthen the team's mental models toward learning.

By contrast, a team's instinctual action was evident in the observations of Team B, whose seemingly chaotic activities functioned in concert. The team members did not take time to think out each action, but intuitively acted based on their knowledge structures. The team members' discussions suggested that the autonomous learners in Team B assisted in the development of these mental models through consistent actions, training, and communication. As identified in the team learning model (Kasl et al., 1997), framing and reframing the group's perceptions was an initial step in the team learning process. In the findings gathered, the autonomous learner was at the forefront of shaping the team's learning.

Systematic Learning Process

As the adult learning literature suggested, adults often learn from experience, trial and error, and reflection (Merriam & Caffarella, 1999). Moreover, self-directed learners employ control over what will be learned, how, by what means, and when the outcome is achieved. As action learning suggests, a systematic method for team learning is a result of problem identification, reflection, experimentation, analysis, planned solutions, and implementation (Marquardt, 1999). On an individual level, the autonomous learners expressed a similar learning process. Action learning implied that team members will contribute from their independent learning in order to achieve a desired team level outcome (Marsick & O'Neil, 1999).

The intriguing point drawn from Team A's medical director (an autonomous learner) was her description of a systematic learning process. First, there was the identification of the desired learning project. Then, she discussed reflecting on the situation through brainstorming strategies. The next step involved information gathering through research. The experimentation occurred as changes were made and progress was evaluated. Finally, she recounted her method of evaluating the outcome.

Through her learning process, the medical director unknowingly characterized each of the defined learner autonomy attributes: initiative, desire, persistence, and resourcefulness. Although this procedure was highlighted in many total quality improvement systems, in this case it appeared to be new to the other team members; the team replicated this systematic learning process in other improvement projects. Other autonomous learners expressed learning processes with parallel steps.

It can be concluded that an autonomous learner energizes others to learn by modeling a systematic learning process. This synergy can be defined as crossing boundaries and integrating perspectives into the team learning model (Kasl et al. 1997). The elements in the team learning process were the lines of action toward team learning outcomes. The data supported the team learning model (Kasl et al. 1997).

As suggested by Weick and Sutcliffe (2001), high reliability organizations need to learn and implement continual improvement in a proactive forum. From the findings, it appears that healthcare teams unconsciously employed autonomous learners that demonstrate leadership skills, develop stronger team mental models, and adopt systematic learning methods to enhance the team learning process. Failures in team learning in medical environments arise from several factors, including hierarchical team structure, top-down lines of communication, instability in team membership, ingrained culture, and malfunctions in teamwork. These factors imply the need for healthcare teams to change their behaviors and investigate their actions. Ideally, teams should move toward preventative rather than reactive performance. In order to become proactive, team members need to balance their interdependent tasks while the team as a whole learns to focus on continuous quality improvement. As a result of these findings, a team learning system emerged to explain this relationship through an illustration.

Recommendations

"Composing groups of knowledgeable individuals does not guarantee group learning" (Argote, Gruenfeld, & Naquin, 2001, p. 389). By analyzing the data for pattern sequences and themes, a framework may be drawn to explain the relationship of the autonomous learner to the team learning process. In Figure 1, the system is illustrated with the interactions between the environment, the autonomous learner, and the team in a double-looping system (Goodman, 2004). The foundation of the system was Dechant and Marsick's (1993) team learning model. Team learning conditions were described by the team culture, the outer circle of the system. The team culture offered an environment that encourages and provides opportunities for learning, maintains open lines of communication, and

supports healthy group dynamics. The context of culture is vital to the team learning process (Yorks, Marsick, Kasl, & Dechant 2003). Interacting with the team culture, the inner-circle symbolizes the team mental models. The team mental models embody the unit's knowledge structures bonding the team together through shared tasks and understandings.
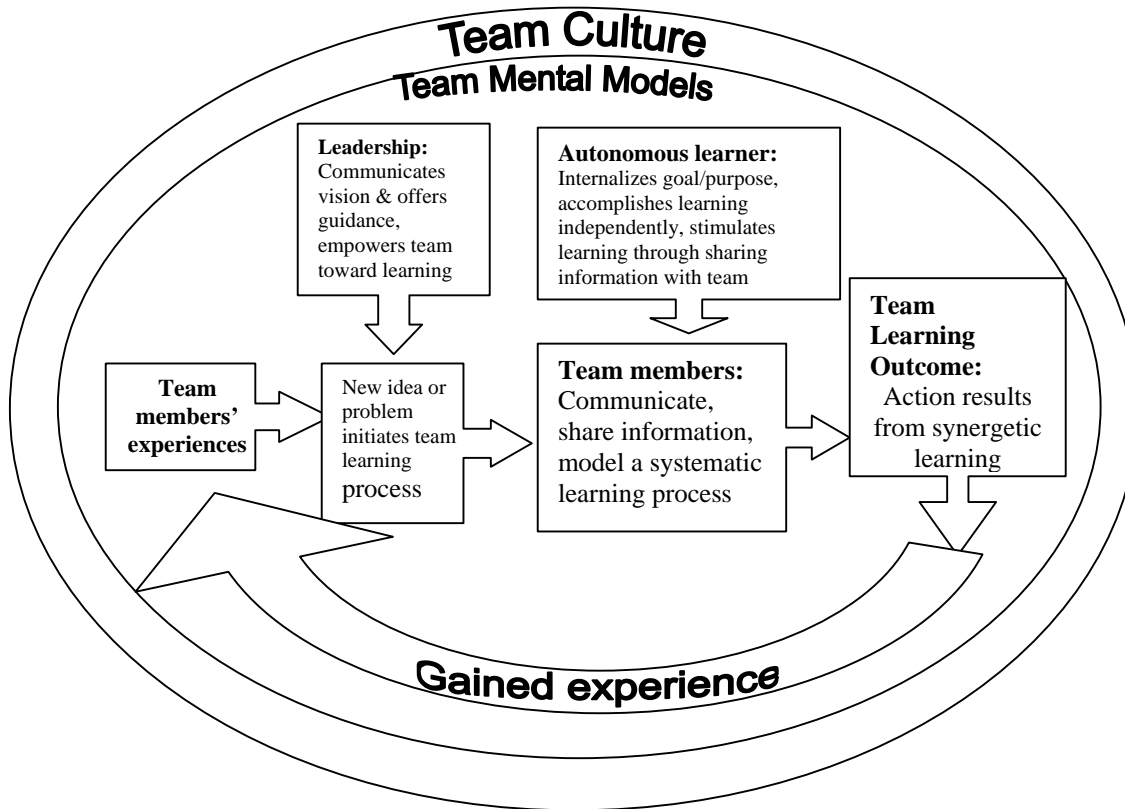

Figure 1. The team learning system.

The team learning process functions within the boundaries of the team culture and team mental models. This process was based on an open-system model incorporating previous team learning concepts with a significant addition, the influence of leadership and autonomous learner attributes (Edmondson, 1999; Kasl et al., 1997). The impact of leadership was not identified in terms of the team leader, but through concepts identified in the team learning process. Although in the present study a majority of the autonomous learners also provided leadership, the system identified the points where leadership and autonomous learning attributes influence the team learning process.

Experience has repeatedly been cited as an important factor in the learning process, whether at the individual or team level. Therefore, the system began with the team members' experiences, which feed into a new idea or problem that initiated a team learning project. Leadership interjected direction through visionary goals and/or guidance, empowering team members to initiate the team learning process. In the midst of the team's communications, the autonomous learner enlightened the team with information and energized a systematic learning system. Learning expands through communication, sharing of information, and employment of a systematic learning method. The team learning outcome results in the transfer of knowledge from the individuals in the team to a synergetic team learning experience: "learning teams learn how to learn together" (Senge, 1990, p. 257). Although this system does not express the degree of effectiveness of the team learning outcome to the organization, the focus was based on collective thinking that reached beyond the individual team member's reality.

By reflecting on the learning process, the team members gained experience from the learning outcome. This knowledge has been described as flowing through the team culture, thereby adding to the members' experiences whenever a new team learning project begins. As a result, an ongoing loop of knowledge has been created in the team learning system.

Insofar as the team culture and team mental models set the stage for the team learning process, these elements appeared throughout the data. The system attempts to represent the importance of the autonomous learner (as opposed to an outsider or antecedent) in the midst of the team learning process. Although this system does not signify the effectiveness of the team learning process or team performance, it has been suggested that team learning will impact team performance (Edmondson et al., 2001a; Marquardt, 1999; Schwandt & Marquardt, 2000; Senge, 1990). This system does not minimize the importance of the team leader in the learning process, but emphasizes that leadership skills can be beneficial to team learning, whether those skills are from the designated leader or another team member, namely an autonomous learner.

Implications for Management

The influence of an autonomous learner in a team learning process is significant to management and Human Resources (HR). Presuming that the aim of HR is to create healthy, productive teams, the team member selection process should be analyzed. In an interdisciplinary team, diversity of job function offers broad insight into team functions. This study suggested that an autonomous learner has much to offer a team learning project. As a result, HR should seek a team composition that is rich with autonomous learners, but not to the point that members' ability to share and listen to information is jeopardized.

Whether a team is existing or new, the vision of a team often involves learning. Since it is suggested that an autonomous learner influences team mental models and energizes learning, it is recommended to engage an autonomous learner in the team learning process. Moreover, with the seemingly constant innovations and changes in the workplace, it is recommended that teams seek knowledge in all directions. Team members need to bring not just experience to the team, but also ideas that will foster new learning. The learner autonomy attributes seem to be the characteristics necessary in these turbulent times: desire to learn, personal initiative in learning projects, resourcefulness in gaining understanding, and persistence toward the completion of learning (Confessore, S., 2000).

As proposed initially in this study, it appeared evident that group dynamics affect team learning. Here, group dynamics were defined through the characteristics of an individual learner, namely an autonomous learner. However, this is just the tip of the iceberg. There are many other elements involved in group dynamics: team member personality, shared humanity, conflict resolution, communication, membership change, and leadership. This exploratory study opens the door for further understanding of the phenomenon of learners in team learning.

References

Argote, L., Gruenfeld, D., & Naquin, C. (2001). Group learning in organizations. In M. E. Turner (Ed.), *Groups at work: Theory and research* (pp. 369-411). Mahwah, NJ: Erlbaum.

Cline, R. (1990). Small group communication in health care. In E. Ray & L. Donohew (Eds.), *Communication and health: Systems and application* (pp. 69-91). Hillsdale, NJ: Lawrence Erlbaum Associates.

Confessore, G. (2000). *The learner autonomy profile: Findings of the validation study.* Royaumont Symposium on Self-Learning.

Confessore, S. (2000). *Learner autonomy in the new workplace: Understanding the challenges and leveraging the opportunities.* Second World Conference on Self-Learning, Paris, France.

Confessore, S., & Kops, W. (1998). Self-directed learning and the learning organization: Examining the connection between the individual and the learning environment. *Human Resource Development Quarterly*, *9*(4), 365-376.

Dechant, K., & Marsick, V. (1993). *Team learning survey facilitator guide.* King of Prussia, PA: Organization Design and Development.

Edmondson, A. (1996). Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. *Journal of Applied Behavioral Science*, *32*(1): 5-28.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*, 350-383.

Edmondson, A. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *The Journal of Management Studies*, *40*(6), 1419-1452.

Edmondson, A., Bohmer, R., & Pisano, G. (2001). Disrupted routines: Team learning and new technology implementation in hospitals. *Administrative Science Quarterly*, *46*, 685-716.

Goodman, P. (2004). *The effect of learner autonomy in team learning within a healthcare environment.* Washington, D.C.: The George Washington University.

Kasl, E., Marsick, V., & Dechant, K. (1997). Teams as learners: A research-based model of team learning. *Journal of Applied Behavioral Science*, *33*(2), 227-246.

Mahlmeister, L. (1999). Professional accountability and legal liability for the team leader and charge nurse. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, *28*(3), 300-309.

Marquardt, M. (1999). *Action learning in action: Transforming problems and people for world-class organizational learning*. Palo Alto, CA: Davies-Black.

Marsick, V., & O'Neil, J. (1999). The many faces of action learning. *Management Learning*, *30*(2), 159-176.

Merriam, S., & Caffarella, R. (1999). *Learning in adulthood: A comprehensive guide*. San Francisco: Jossey-Bass.

Risser, D., Rice, M., Salisbury, M., Simon, R., Jay, G., & Berne, S. (1999). The potential for improved teamwork to reduce medical errors in the emergency department. *Annals of Emergency Medicine*, *34*(3), 373-383.

Sashkin, M., & Sashkin, M. (2003). *Leadership that matters: The critical factors for making a difference in people's lives and organizations' success*. San Francisco: Berrett-Koehler.

Schwandt, D., & Marquardt, M. (2000). *Organizational learning from world-class theories to global best practices*. Boca Raton, FL: CRC Press.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.

Yorks, L., Marsick, V., Kasl, E., & Dechant, K. (2003). Contextualizing team learning: Implications for research and practice. *Advances in Developing Human Resources, 5*(1), 103-117.

Weick, K., & Sutcliffe, K. (2001). *Managing the unexpected: Assuring high performance in an age of complexity*. San Francisco: Jossey-Bass.

Williams, K., Rose, W., Simon, R., & Consortium, M. T. (1999). Teamwork in emergency medical services. *Air Medical Journal*, *18*(4), 149-153.