# CHAPTER V: CONCLUSIONS, CONTRIBUTIONS, AND FUTURE RESEARCH

*"Employees' resistance can be a significant deterrent to*
*effective organizational change… and it's important to consider*
*the individual when bringing about any kind of change"*
(Folger and Skarlicki, 1999, p. 35)

## Chapter Overview

Chapter V presents the conclusions, contribution, and recommendations for future research arising from this study. The chapter includes an introduction, review of methodology, restatement of the research questions, review of the findings by research question, conclusions, contribution to literature, questions for future research and a post script.

## Introduction

This qualitative study presents differing views of the diffusion and adoption process of an innovation (SkillSoft®) as individuals within one military organization experienced it. My analysis and interpretation of descriptive narratives provided by study participants uncovered patterns that existed in the data. I employed a case study approach to enable me "to describe and analyze a phenomenon" (Merriam and Simpson, 1995, p. 108) and to analyze the influences on the process.

## The Purpose of the Study

The purpose of this study was to better understand how the diffusion (spread) and adoption (acceptance) of SkillSoft® occurred among employees of one military organization and explore the influences on the individual affecting this process.

## Review of Methodology

The use of a conceptual framework provided me a lens from which to conduct my literature review, formulate my inquiry, organize and code my data, analyze and interpret my results. I conducted an in depth pilot interview with one study participant, transcribing, analyzing, and interpreting the data to validate my questioning techniques and identify the possible outcomes of my inquiry. I revised my topical and probing questions based upon the results of my pilot interview to better focus my approach. Each step along my qualitative approach, I examined and reexamined my process and procedures, confirmed or revised my methods, reviewed my data

(looking for comments that seemed out of place and asked probing questions to gain understanding and meaning from the data), analyzed, and interpreted my data.

I employed both structured and unstructured coding models that were based upon the literature and key words and phrases identified from the data. My use of structured and unstructured coding models enabled me to handle unique perceptions, manage, sort, analyze, interpret, and derive meaning from the approximately 17,000 words that were collected through the 24 in-depth interviews. Structured and unstructured coding models can be viewed in Appendices 3-6 and 3-7.

## Research Questions

*Question # 1: How did the diffusion (spread) and adoption (acceptance) of SkillSoft® occur among individuals within one military organization as perceived by members of that agency?*

*How did diffusion occur within this organization?*

Conceptually for this study, diffusion meant the spread of an innovation (SkillSoft®) from management or employees to other employees. The purpose of the diffusion process was to create awareness (inform, encourage, and promote interest in the innovation -SkillSoft®).

The SkillSoft® diffusion process in this military organization appears to have followed a more centralized model where the "top leaders diffuse the innovation to the users" (Rogers, 1983, pp. 185-186). Top management in a centralized diffusion system "selects the innovation to be diffused" and uses formal channels of communication to diffuse it (Rogers, 1983, pp. 185-186). The centralized system involves more of a "technology push where the benefits" of an innovation are emphasized to convince employees to adopt (Rogers, 1983, pp. 185-186).

**Research Question #1**
*How did the diffusion (spread) and adoption (acceptance) of SkillSoft® occur among individuals within one military organization?*

Channels of Communication

Formal Channels of Communiction

Change Agents Both Formal & Informal

Informal Channels of Communication

Commander

Command Seargeant Major

Senior NCOs

Training Branch

Peers

Mandated Policy

Supervisors

Work Group

Division Chiefs

Division Senior NCOs

Rumors

Branch Chiefs

Junior NCOs

Mandated Policy

Supervisors

Soldiers

Civilian Employees

**Key**

- Informal channels of communication
- Formal channels of communication
- Formal and informal channels of communication

Training Branch

Emails

Flyers

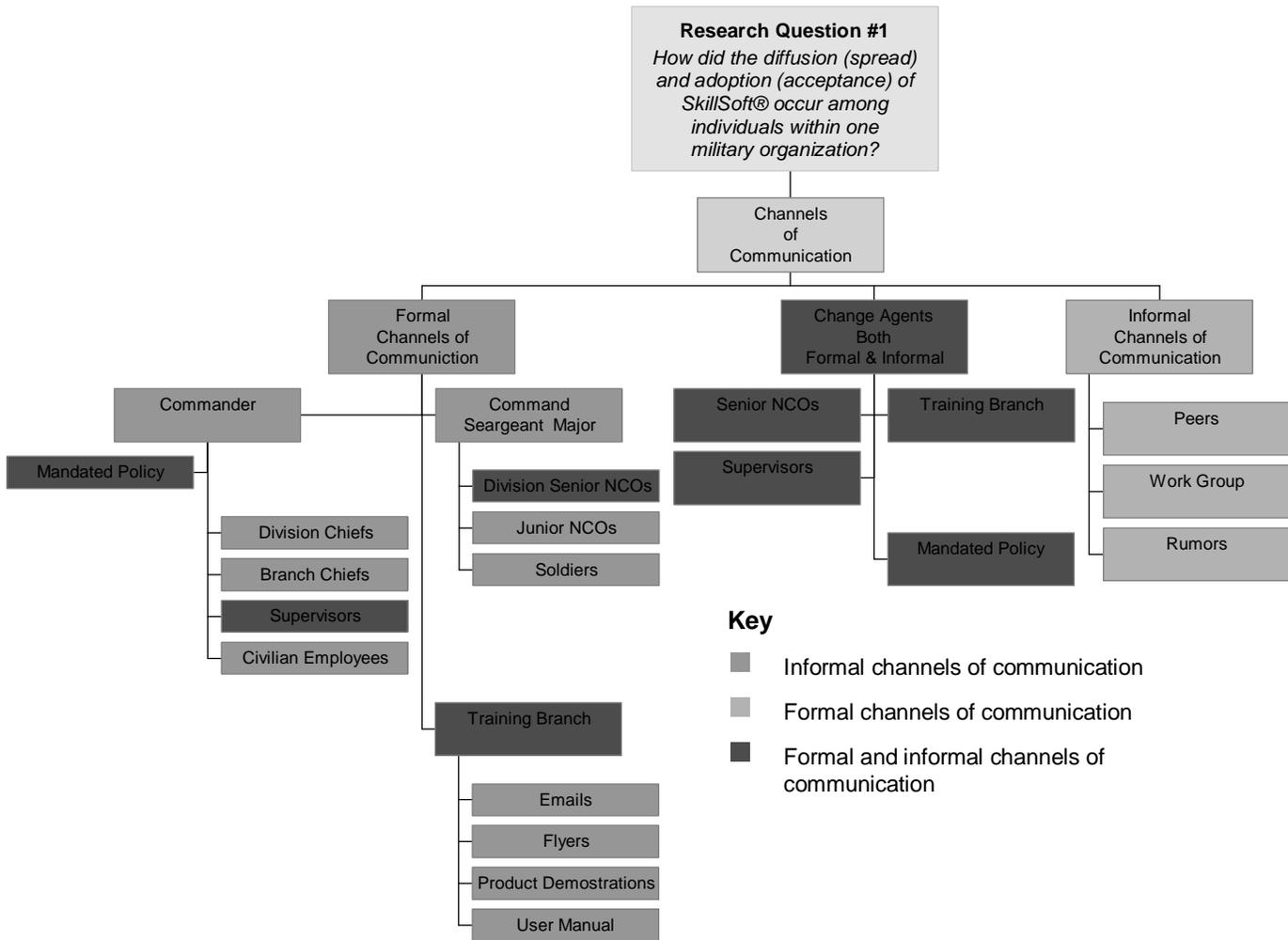Product Demostrations

User Manual

*Figure 1.* Channels of communication of SkillSoft®

Figure 1 depicts the formal and informal communication channels within the organization under study as perceived and communicated by study participants. The spread of SkillSoft® occurred primarily though formal channels of communication but also informally among study participants. The formal diffusion process was described as top down, superior to subordinate diffusion following the normal chain of command within this military agency. For civilian employees, formal communication about SkillSoft® began with the Commander and made its way through the Division Chiefs to supervisors and finally to the employees. Formal channels of communication were also used to inform soldiers about the innovation. Information about SkillSoft® came from the Command Sergeant Major, made its way to the Senior NCOs in each division, then to the junior NCOs, and finally to the soldiers. The formal diffusion process was accomplished by:

- Management memo mandating the use of SkillSoft® by all civilian employees.

- An information paper describing SkillSoft® distributed at meetings.

- Meetings between Training Branch personnel and each employee, where the Training Branch issued SkillSoft® user IDs, explained the product and its benefits, and demonstrated log on procedures.

- Three product demonstrations workshops led by representatives from SkillSoft Corporation. The objective of the workshops was to make people comfortable with SkillSoft® and help them overcome any fear of technology or of the program.

- Meetings held by Division Chiefs, Branch Chiefs, NCO and/or supervisors with solders and civilians to discuss SkillSoft®, explain the mandated policy guidelines, and encourage those employees to use the product.

- Two sets of e-mail messages. The first e-mail informed employees about SkillSoft® and scheduled product demonstrations. The second e-mail contained information about when employees could pick up their user IDs.

Analysis revealed that not only was diffusion accomplished formally as defined in the implementation plan, but it also occurred informally flowing horizontally among workgroups from NCOs to soldier, civilian supervisors to civilians, peers to peers, and through rumors.

The informal diffusion process was accomplished by:

- Informal discussions within workgroups and among peers over lunch or on coffee breaks and informal discussions among NCOs and soldiers during duty and non-duty hours.

*Awareness of SkillSoft®*

Most of the participants (n=20) interviewed for this study indicated a high level of awareness of SkillSoft®. Many study participants recalled key aspects of the program in great detail. The interviewees were able to describe how they first became aware of SkillSoft®, their first log on experience, the course library, how to navigate within a course, the variety of courses offered, the types of learning formats used in a course, and whether or not a SkillSoft® course was related to their professional or personal development.

Members of the implementation team attributed the high level of awareness of SkillSoft® to the implementation plan, which included e-mail notifications, publication of a user's guide, product demonstrations, flyers, and discussion of SkillSoft® in staff meetings.

*Adoption of SkillSoft®*

Conceptually for this study, adoption meant that study participants would log on and routinely use SkillSoft® as another means for obtaining training or education (in addition to or in lieu of attending traditional classroom instruction).

As indicated in the literature, adoption is an individual decision. Individuals must identify a reason (a benefit), for adopting an innovation to persuade them to decide to adopt. Without an individual decision to adopt, adoption of a new product could fail. The findings suggest that adoption of SkillSoft® did not occur in this organization probably due to influences on the adoption process. This finding is based upon SkillSoft Usage Reports and findings from the data.

Findings from the second research question (influences on the diffusion and adoption process) provided me insights into better understanding how some influence may have affected the adoption of SkillSoft®.

*Question # 2: How did various influences (personal, organizational, and technological)*
*affect the process?*

Study participants, (n=20) described an evolving organization that experienced an increase in the agency's optempo (level of effort and number of assignments), changes in the unit's mission and functions, as well as changing organizational structure, all of which may have contributed to the failure of many employees not to try or adopt SkillSoft® due to lack of time. In addition, the lack of job related courses as reported by study participants (n=8) may have influenced some employees either to not try or to discontinue use of SkillSoft®.

This study found that 6 out of the 11 civilian participants interviewed did not like being

mandated to take a SkillSoft® course. Their apparent defiance to not follow senior management's policy and the inconsistency in implementing that mandated policy by some supervisors may have influenced some civilian employees either to not try or to discontinue use of SkillSoft®.

Technical problems (lack of access, failure to bookmark, failure to print certificates, problems with the server, lack of control over user support), appear to have been another significant influence for some employees either to not try or to discontinue to use of SkillSoft®.

My review of the literature brought to light another influence (the role of senior management in the diffusion and adoption of SkillSoft) that may not have been adequately addressed by the institution. Senior Management chose to shift its priorities from implementing SkillSoft® to accommodating changing mission requirements and increased workload (optempo). By doing so, my analysis was that SkillSoft® may have lost its champion (senior management) within the organization. Segrest, et al. (2000, p. 429) remind us that, "organizational champions are required for projects to become part of the strategic repertoire of an organization." When management shifted its priorities, there may not have been champions to continue to promote SkillSoft®, an e-learning product, to employees. Lack of management support could have been another influence on the diffusion and adoption of SkillSoft®.
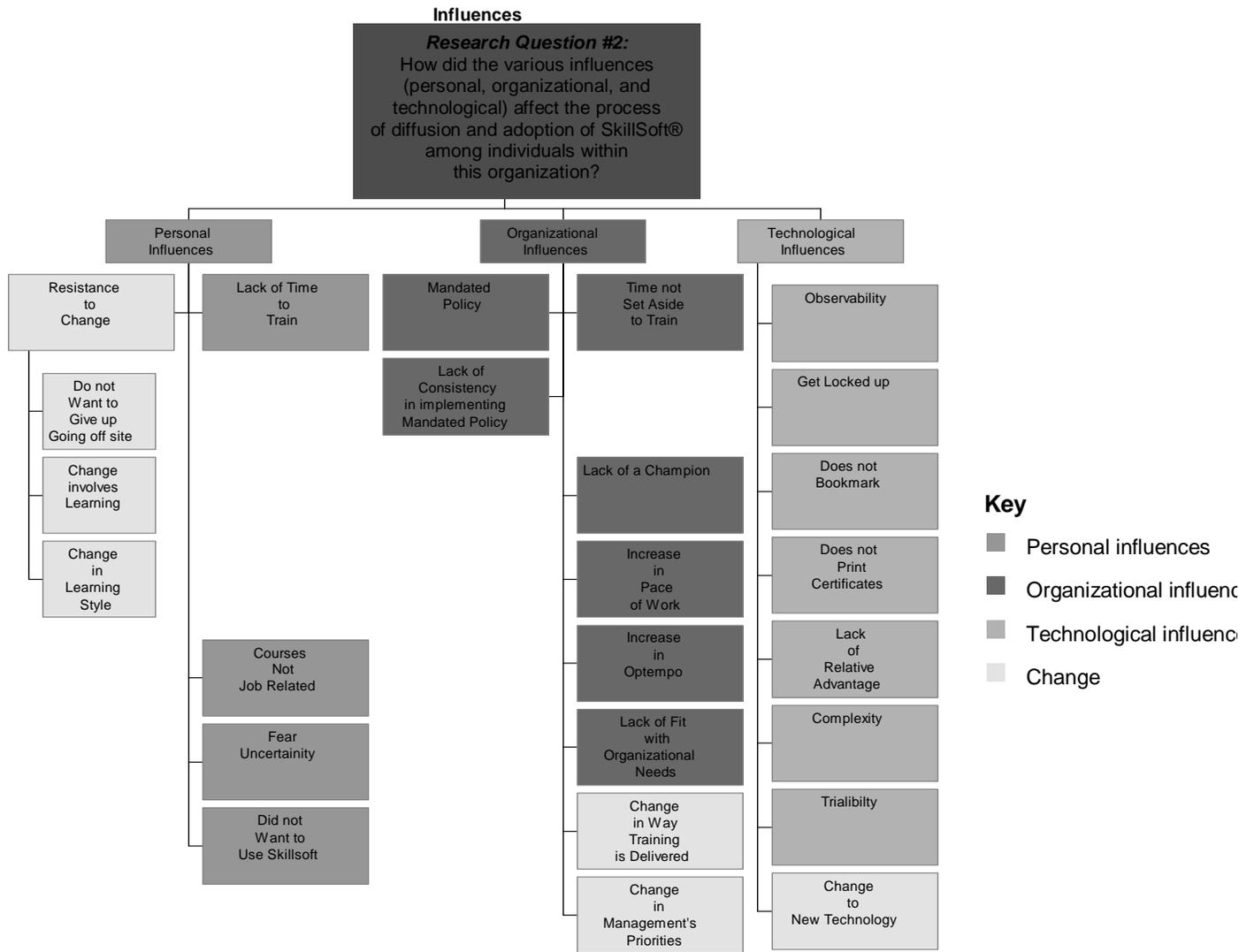
**Influences**

**Research Question #2:**
How did the various influences (personal, organizational, and technological) affect the process of diffusion and adoption of SkillSoft® among individuals within this organization?

**Personal Influences**

Resistance to Change

Do not Want to Give up Going off site

Change involves Learning

Change in Learning Style

Lack of Time to Train

Courses Not Job Related

Fear Uncertainity

Did not Want to Use Skillsoft

**Organizational Influences**

Mandated Policy

Lack of Consistency in implementing Mandated Policy

Time not Set Aside to Train

Lack of a Champion

Increase in Pace of Work

Increase in Optempo

Lack of Fit with Organizational Needs

Change in Way Training is Delivered

Change in Management's Priorities

**Technological Influences**

Observability

Get Locked up

Does not Bookmark

Does not Print Certificates

Lack of Relative Advantage

Complexity

Trialibilty

Change to New Technology

**Key**

▮ Personal influences

▮ Organizational influenc

▮ Technological influenc

▮ Change

*Figure 2.* Influences on the Diffusion and Adoption on SkillSoft®

**Conclusions**

My analysis and interpretation of the data indicated that the optempo of the organization, failure to meet user training requirements and individual learning styles appear to have affected the lack of adoption of SkillSoft®. Adoption of SkillSoft® seems to have failed, since many study participants either did not have time to train due to conflicting work and family requirements, were not able to identify job related courses to enroll in or indicated that they perceived that taking a course through SkillSoft® was a change from their normal learning style. The findings illuminated that awareness of the organization's environment (culture, mission, organization structure, decision-making process, communications channels, skills of employees), users' requirements, as well as the product's (SkillSoft®) fit with individual learning styles, are key elements to be considered when implementing an e-learning product in a military setting.

The issuance of a "mandated policy" to use SkillSoft®, an e-learning product, resulted in anger and resentment in some of the government civilians. Participants expressed a desire to be able to select where, when, and how they would attend training. One interviewee suggested that, "management should have offered incentives or recognition (a completion certificate, time off, recognition at a meeting) instead of a penalty for not completing a SkillSoft® course." This study demonstrated that negative reinforcement appears to be a poor strategy for encouraging employees to adopt any innovation.

"Change overload" may have inadvertently fostered a resistance to change in some study participants causing them to not try this e-learning product. The literature indicates that change involves learning In this study, the participants who had not used technology as part of their daily routine not only had to learn the content of a SkillSoft® course, master the exams or quizzes, learn new technology in order to access the course content but also had to learn how to navigate in a new learning program. Depending on an individual's experience with technology and their particular learning style, the switch to SkillSoft® a technology-based training program, may have been asking some individuals to manage too much change at once.

The findings identified that differences in learning styles were possibly another reason why some individuals may have failed to try SkillSoft®. Some interviewees expressed a desire to attend learning experiences where they had an instructor to guide them, a book to read and review, and other students with whom to converse about topics of interest. These students may have perceived that completing a course through SkillSoft® was more andragogical rather than

pedagogical in learning style and not have been ready to make a perceived change in their learning style. Learning style differences may have contributed to some participants' decision not to even try or discontinue use of SkillSoft® for their learning process.

## Contribution to Literature

This case study addressed two gaps in the literature that were a need to better understand the process of adoption and a need to better understand student perceptions of their distance learning experience. The study contributes to the literature by illuminating how the diffusion and adoption process occurred in a military agency and influences on the process from an individual perceptive. The findings revealed that diffusion occurred formally and informally, adoption did not occur and that adoption was hindered or encouraged by multiple influences. Revealing the various influences on the process in a military organization affirms previous research by Rogers (1983), Weinstein (1981), and Schein (1985), Sherry (1998) by suggesting that personal, organizational, and technological influences may have an effect on the diffusion and adoption of an innovation such as SkillSoft®. The study findings discovered that interviewees preferred job related e-learning courses, which resonates with previous research on distance learning by Bonk and Wisher (2000). In addition, these findings augment research on dropout rates of distance learning by Bonk and Wisher, (2000) by identifying key influences that might promote or hinder individual adoption of an e-learning technology (SkillSoft®). Further, findings in this study were similar to conclusions by Bassett-Jones (1991, p. 23) that suggest that, "subject-matter experts…are often confronted with [the] seemingly intractable problem of being offered market-focused, off-the-shelf provisions which may look attractive but may not meet the specific needs of the users". This study demonstrated that negative reinforcement appears to be a poor strategy for encouraging employees to adopt any innovation. The findings identified differences in learning styles as possibly another reason why some individuals may have failed to try SkillSoft®.

**Questions for Future Research**

The following research studies are proposed based upon my review of the literature and the findings of this study.

*(1)   A  Diffusion and Adoption Study on an e-learning product with a Difference Audience*

Future researchers, building upon this study, may want to consider applying this approach to other audiences utilizing the same conceptual framework of Rogers and Shoemaker's (1971) Stages of Adoption. Potential audiences for future studies are both military (Army Material Command, Intelligence and Security Command or another Services like the Marine Corp or Navy) and federal agencies (Health and Human Services, the Department of Agriculture or the Internal Revenue Service. The intent of future research would be to capture the perceptions of other distance learning students, document how diffusion and adoption occurred, and identify the influences that affected the process, thereby continuing the on-going research agenda on distance learning proposed by Bonk and Wisher (2000) and other theorists.

*(2)   Study of Effect of Individual Learning Styles on the Adoption of an e-learning Product*

While only 2 study participants mentioned their learning styles as a reason for not adopting SkillSoft®, this could be an area worth exploring. Future research might include a study of student dropouts from e-learning courses to determine if there is an identifiable link between the students's learning style and the reason they dropped out of an e-learning course. Such a study would follow up on previous research by Jonassen and Grabowski (1993, p. 249), which suggests that, "differences in learning styles are a result of heredity, past experiences, and the demands of the present environment…additionally socialization experiences in family, school, and work." An individual may be reluctant to continue the use of an e-learning program because the program does not fit with his or her learning style. I propose a perception study using interviews to collect the data.

*(3)   The Effect of a Mandated Policy on the Adoption of an e-learning Product*

This study is proposed because, in my review of the literature, I was not able to locate specific research on the question of how a mandated policy affects the adoption of an e-learning technology in a military setting. The findings of this study suggest that management's policy of mandating the use of SkillSoft® may have had a negative effect on the adoption of the product.

Further study is recommended on the effect of issuing a policy that mandates the use of technology for training. There is value for such a study since the U.S. Army issued a directive in 2000 requiring soldiers to make use of distance learning opportunities. This directive could have a negative effect on employee's use of an e-learning product.

*(4)    The Effect of a Champion on Diffusion and Adoption of an e-learning product in a Military Setting*

This study identified another possible influence (the effect of senior management in the diffusion and adoption of SkillSoft in a military setting) that may need to be addressed by further study. If a military champion shifts his/her priority from e-learning to some other mission requirements, this may influence the diffusion and adoption of the product. I propose further a future study on champions in a military setting. A study could be designed to investigate the effect of a champion in diffusing and adopting an e-learning/distance product in a military environment.

## Post Script

With the acquisition of SMARTFORCE®, SkillSoft® Corporation was able to diversify its e-learning training opportunities (course library) to better meet the learning requirements of military personnel.  SMARTFORCE® Corporation offers a library of technically oriented e-learning training courses that enhance solider and civilian job related knowledge and skills. Currently the 2003 SkillSoft® SMARTFORCE® library of courses is available free of charge on-line to active duty and reserve military personnel and Department of Defense government civilians.