Technology and Collaborative Learning in Employee Training

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This dissertation titled
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Abstract

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Technology and Collaborative Learning in Employee Training

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Employee training at universities occurs in diverse manners and it remains ambiguous as to how they can be properly evaluated for improvement. The purpose of this study was to investigate the extent to which employee training opportunities at one university used collaboration and technology, identify the foci of the training opportunities, and describe employees’ perceptions of the relationship between training programs and productivity. The differing methods utilized during trainings can have a significant impact on how employees retain information and translate those skills to their work tasks.

A mixed methods research methodology was utilized and a demographic survey and in-depth interviews were used to collect data from participants. In this study, a total of 10 university staff members participated as interviewees. Each of them attended various trainings at Ohio University with different subject matters. The trainings all had differing levels and types of instructional technology utilized during the sessions. Some of them also contained collaborative learning experiences to reinforce the learning.

Information gathered from the interviews showed that there were numerous ways through which employees in learning institutions can become innovative and productive. The findings presented in this study show that both instructional technology and collaborative learning utilized during training can have a perceived impact on employee
productivity. In fact, learning institutions can enhance employee productivity by utilizing collaborative learning and enabling employees to combine skills and experiences for enhancing growth and performance. The ability of an individual to utilize the instructional technology and collaborative learning resources that have been provided can significantly impact the success of the entire organization. Implications for future studies and research in the field are provided, as well as suggestions for the further research in the area of employee productivity as well as the different factors of institutional success.
Dedication

Thank you to my family, friends and colleagues for your support.

To my children: Giulianna & James, this has all been for you.
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Chapter 1: Introduction

Introduction

Wu (2013) stated that employee productivity (sometimes referred to as productivity of workforces) refers to the evaluation of the efficiency of an employee or employees in an organization. Employee productivity can be evaluated in regard to the employee’s output within a definite period. In general, the output of a worker is evaluated in comparison with other workers’ average output performing the identical task. Production or output of every worker is a significant factor to the success of the university or institution. Individual output of each employee at the university significantly contributes to competitive growth, and the universities will need to evaluate the productivity of their employees in order to gauge universities’ growth and performance (Gino, 2013). Djellal, and Gallouj (2013) stated that the typical and modest assessment of productivity is about evaluating input in comparison with the total output (input over the output). Productivity is measured as the overall output produced within an identified time span.

The current changes in the nature of work have partly developed a challenge in conceptualizing and evaluating employee productivity. The customary perception of improving employee productivity via scientific management was traditionally appropriate during the time period when numerous jobs comprised working on assembly lines. Currently, it is knowledge work and service jobs which dominate the present economy. This practice forces the development of diverse approaches to evaluate employee productivity which does not simply look at traditional outputs like the present day. These
measures would include things like a number of units produced, time to task completion and units sold or transferred. Evaluating productivity in learning institutions such as a university is very complex. This can be echoed by firms, companies, and institutions of higher learning which resort to the simplest and more classic ways of evaluating and improving productivity to save time (Wu, 2013).

However, some researchers have rejected the notion of basic output and input measures to evaluate employees' productivity. Calculating the difference in units created and sold in a given situation versus a situation where a productivity change has occurred is not suitable for an in-depth look at productivity. For instance, Glenngård (2013) stated that any significant change in healthcare of the patient should be emphasized more than focusing on the number of the treated patients in the healthcare industry. In learning institutions, such as universities, evaluation of employees needs to put more attention on the educational achievement and status of the students instead of focusing on the number of training programs offered (Linna, Pekkola, Ukko, & Melkas, 2010).

Linna, Pekkola, Ukko and Melkas (2010) stated that productivity can be defined as how an organization or system uses its resources effectively to accomplish specific objectives. Ferreira and du Plessis (2009) found that workers actively executing the work they were employed to do, in order to achieve the desired outcomes as outlined in the employees' job contracts, is what is defined as productivity. It was clearly further indicated that in an organization setting that is more competitive, the top performers tend to not always maintain their performance, resulting in a looping productivity cycle (Ferreira & du Plessis, 2009). The reason for this is that competitive environments rarely
offer room to mature and grow, and top performers face the same difficulties as they tend not to grow due to faulty relationships within the organization. Hence, in a business setting, the value is found in growing employees who hold some ability or potential, but that value can only be promoted by ensuring the employees are utilizing social media and sharing knowledge with people within and outside the organization (Ferreira & du Plessis, 2009).

Djellal and Gallouj (2013) argued that for all employees’ productivity conceptualizations, greater productivity is more important compared to decreased productivity in relation to growth and performance. Beheshtifar and Nazarian (2013) further found that workers who did not feel connected showed dissatisfaction through withdrawal behaviors, for example, absenteeism, a decrease in employee productivity, higher turnover rates, and reduced morale among the employees. Employees’ lateness or sluggishness and absence also leads to lower employee output and further cost losses or decreased performances. Lower employee productivity has several negative effects on a workplace such as economic impacts on profitability as well as systemic implications for employee morale (Avery et al., 2011). While wages and other benefits could lure workers to the organization, poor work conditions may force employees to leave or lead to a reduction in employee productivity (Djellal & Gallouj, 2013).

Several factors affect employee productivity at a university. Beheshtifar and Nazarian (2013) stated that the general financial performance and culture of an organization have a significant effect on employees’ productivity, performance and retention. Other factors that affect productivity include employee resilience, poor
psychological well-being, employee training, and the ability to collaborate. In the next section, each of these factors will be described.

**Study Background**

An organization’s leadership or management should also show effective determination or commitment in improving employee productivity from within their learning institutions (Fusch & Gillespie, 2012). Therefore, in addition to objective training, companies or universities should begin aiming towards outcome-centered strategies that are associated with the operational and strategic plans of the organization to improve employee productivity (Choi & Rainey, 2010). Dobre (2013) stated that management's strategy is the key factor influencing the performance of employees in the company or organizations. The manner in which leaders within an organization treat their workforce, as well as the respect accorded to these employees can create an atmosphere within the organization that will lead to improved employee productivity, job satisfaction and increased performance (Dobre, 2013). Kwon, Chung, Roh, Chadwick and Lawler (2012) stated that the worse the attitudes of leaders or managers are, the more they can significantly decrease employees’ productivity and organizational performances. This can lead to a negative effect on employee retention and be a significant concern for the organization. Whenever any workforce feels detached from an organization, it can lead to them being less motivated as well and more likely to resign or leave (Dobre, 2013).

Kaplan, Wiley and Maertz (2011) stated that leaders in various organizations or learning institutions need to retain qualified employees (talent) in order to sustain themselves (organizations) in a competitive market through achievement of the
organization’s goals or by maintaining higher employee productivity. Marga (2010) found that employee productivity and organization culture are increasingly becoming a collective perception which can set the organizational tone within a company or institution. Workers normally desire to belong to the specific organizational culture whereby the employees and managers clearly understand the specific roles assigned to them. This will result in increased employee productivity. Stewart, Volpone, Avery and McKay (2011) found that ordinary techniques of hiring will be insufficient to keep or retain workforces if organizational leaders have inadequate opportunities for development or for improving employee productivity.

Gberevbic (2010) examined the association between strategies of retaining employees and employee productivity or performance and found that improper employee productivity or retention strategies can have an important influence on an institution’s or firm’s performance, growth and employee turnover. Similarly, significant collaborations or relations among employees are important elements or factors that can lead to improved employee productivity and higher performance as well as work success or job satisfaction since workers keep themselves informed as they usually work together collaboratively towards attaining the organizational goals (Baek-Kyoo & Park, 2010). In addition, Kwon, Chung, Roh, Chadwick and Lawler (2012) stated that practices of employee involvement may considerably decrease negative relationships between an employee’s work performance and an employee’s voluntary turnover, predominantly the minority workers having a greater rate of employee turnover. However, Hussain, Siddiqi, and Iqbal, (2010)
argued that regardless of efforts adopted by the organization to reduce turnover rate of employees, retention costs persist.

Organizational leaders need to explore approaches such as program evaluations, training, life programs, as well as other incentives to improve employee productivity and retention. Wegner (2011) found that construction of evaluation programs and retention strategies to offer training to the workers will encourage employee decision making and could lead to improved employee retention and productivity. On the contrary, Aaron (2011) studied the practices of employee retention and recruiting for registered nurses in healthcare facilities and the study results indicated that lower wages, short-span of employee training programs, regulations, as well as inadequate support, contribute to reduced employee productivity.

Similarly, Wegner (2011) found that providing workforces with adequate resources and proper training to do their work will increase employee motivation and morale; thus, increasing employee productivity. Moreover, the involvement of employees has positive results for both organizations and the employees since such involvement of practices motivate employees. Yang and Konrad (2011) stated that adoption of effective strategies will boost the employees’ abilities or talents and gives them the ability to improve decision making; this would result in increased performance and productivity. In addition, the relationship between implementation and creativity sets a platform where the motivation of individual employee allows them collaboratively to implement their ideas into practice on how to improve employees’ abilities through the accomplishment of stronger associations at all levels in the institution or business companies (Baer, 2012).
Munda (2011) stated that positively managing workplace programs can result in healthier, motivated and dedicated performing workforces who appreciate the organization’s culture and promotes demographic interactions within the organization. Additionally, Munda (2011) further recommended that leaders desiring to employ, enrich, and train employees to be the most influential people in the organization should clearly understand the way they can choose individuals with essential skills and business competencies that would enhance general productivity and performance of employees.

Rosenberg (2006) stated that training and learning activities in the workplace have pursued the objective of improving the productivity and competence of each employee and improving organizational performance. As firms, organizations or learning institutions progressively emphasize the significance of learning performances, they recognize that currently, it is not enough to offer traditional training programs to their employees; for example, self-paced e-learning or classroom instruction led by instructors are needed to help supplement traditional offerings.

Another key successful strategy involved in training in addition to the application of instructional technology is the concept of collaborative learning. Guffey and Loewy (2010) stated that collaborative learning fosters a profound level of learning and promotes critical thinking through sharing other people’s experiences and ideas. Collaborative learning is the instructional technique or approach that encourages the employees to work together to achieve the organizational goals and performance. Adult learners prefer to learn through collaborating with other individuals who have more first-hand experience at work instead of learning from traditional classroom instruction led by instructors since
they may be inspired easily when the learning activity (Knowles, Holton & Swanson, 1998). The improvement of the requisite employee or learners’ skills and knowledge needs insights from mentors and colleagues who have applicable backgrounds and related previous experiences to address the distinctive difficulties as well as the ability to overcome different problems related to learning. For example, corporate network, video conferencing and email provide gains in productivity and lower operating costs. New mobile collaboration tools have made it easy for geographically dispersed workers to work as a team through the use of technological devices such as laptops, PCs, Tablets, and smartphones to connect with their fellow employees at any time. A university or company can decide to use employee development and training as a measure for the objective of improved growth and performance. The idea of employee development and training focuses on the goals every employee is working towards achieving, which include improved growth and performance. Collaborative learning basically differs from the customary direct transfer or one-way transmission of knowledge by a given instructor. On the other hand, Barkley, Cross and Major (2012) argued that instruction tends to shift from an instructor-centered paradigm to a more learner-centered paradigm in collaborative learning, simply because the knowledge is deliberated as a social construct that can be facilitated by cooperation, peer interactions, and evaluation.

Sigala (2007) stated that the introduction and integration of Web 2.0 technology has also enhanced learner-centered tailored learning environments. Additionally, O’Reilly (2005) found that the Web 2.0 technologies feature various Web applications including Facebook, blogs, wikis, and Twitter; are known as the Web-based services’
second generation. These tools have been progressively utilized in learning institutions and organizations or places of work; thus, they have resulted in increased research and application of Web-based collaborative learning technology to improve employee productivity in various workplaces. This setting has significantly promoted collaborative learning among students and allowed instructors to embrace more helpful or important roles. Moreover, Cole (2009) stated that new content can be created through collaborative learning to improve employee productivity as knowledge will be created and effectively shared across all levels of the organization rather than passing down from management, getting it ignored or inactively consumed.

Daradoumis, Demetriadis and Xhafa (2011) found that although technological tools, as well as collaborative activities and processes have been increased to enhance significant teamwork, performance and productivity in workplaces, instructional designers and learning managers have faced various demanding concerns. For example, there is a rising requirement to clearly understand definite concerns and interests concerning collaboration tools, processes, and activities. Therefore, corporate leaders and training managers need to clearly understand the collaborative processes and tools which can be used boost or improve employee productivity in organizations and learning institutions such as a university.

In effect, Chang, Gütl, Kopeinik and Williams (2009) suggested that universities should become more equipped to design, implement, and evaluate collaborative learning settings. Chang, Gütl, Kopeinik and Williams (2009) further stated that it is important to investigate the perceptions of corporate employees on the use of collaborative tools.
within a business’s or firm’s training as well as operations and contemporary issues of collaboration. This study will investigate the employee’s perceptions of current instructional technology methods that may improve employee productivity at a university.

**Problem Statement**

The association among workforces in an organization or learning institution occurs as a result of enhanced organizational or employee work-related behaviors as well as significant employee commitment towards the attainment of business or organizational goals (Jones & Lewis, 2011). According to Sreedhar (2011), advancing technologies are anticipated to change the economic atmosphere in workplaces resulting intense competitive markets that pressure the leadership of an institution to come up with strategic approaches to manage and improve their employee’s productivity.

Hyunkyung and Curtis (2014) stated that even though businesses and universities that encourage a process of collaboration and utilize tools related to collaboration in their workplaces have focused on the possibility of developing collaborative skills and building knowledge resources, there is little literature or existing research studies that have been done to investigate the actual concerns and interests of using collaborative learning to improve employee productivity at a university or corporate setting. In response, this dissertation study aims to investigate the improvement of employee productivity in a university using collaborative learning and explores the perceptions of employees who have been working at the university. This also includes their usage of
collaboration tools and processes that evaluate current instructional technology methods that may lead to an improvement in employee productivity at the university.

The main problem in this research area is that employee productivity can have a general effect on organizational success, profitability, the performance of the employees and overall growth of the university or the organization. The definite business concern is that some university or corporate leaders do not have adequate approaches aimed at improving employee productivity. Therefore, this study aims at evaluating employee productivity through the lens of university employee’s experience using technology-based collaborative learning tools.

Purpose of Study

This study examined key approaches that could be used in evaluating and improving employee productivity in universities. It also investigated employee’s perception on evaluating current instructional technology methods that may improve employee productivity at a university. To preview the research section of this dissertation, it is important to note that sequential explanatory research design was used. Hence, the study approach/design for this research will include administration of a demographic questionnaire and semi-structured interviews to collect primary data. Semi-structured interviews allowed for new organic ideas to arise during the interviewing process (Marshall & Rossman, 2011). Those ideas can be used to determine the employee’s perception on current instructional technology methods. 10 study participants (including both employees and managers) recruited from the selected university participated in the interviews.
The research findings can be used to provide strategic recommendations to improve employee productivity at the university and it can also positively influence business and management practices. Moreover, the study results will hopefully contribute to improved employee productivity as well as the effectiveness of knowledgeable employees at the university. The results as well can assist in dictating whether any sort of intervention will be recommended for improvement.

A mixed methods research technique was used to explore strategies for improving employee productivity and understanding the employee’s perception on instructional technology methods utilized during training at a university (Marshall & Rossman, 2011).

**Research Questions**

This dissertation was an example of a sequential explanatory research design. The goal was to determine what strategies university leaders need to implement to improve employee productivity. Therefore, the fundamental questions for this dissertation research are:

1. What types of training did employees participate in to improve productivity?
2. To what extent does this training use collaboration?
3. In what ways was technology used in these trainings?
4. How do employees perceive their technology based collaborative training will influence their productivity?

**Importance of the Dissertation**

Riccucci (2009) stated that researchers and policy analysts have constantly provided recommendations to the private and public sector to improve workplace
performance or productivity and adopt strategic initiatives aimed at enhancing business success. This blends well with this research with the focus centering on investigating the employee’s perception of the current instructional technology methods as well as what role collaborative learning serves. This study also reviews existing research studies on employees’ output or production; particularly the diverse techniques of evaluating employees’ productivity and also improve employees’ productivity.

Based on review of existing literature studies and study findings, this study results will give recommendations based on the data analysis and findings that could be adopted at various universities to improve employee productivity, job satisfaction, retention and performances. It also sought to identify the approaches to the various barriers of employee productivity.

**Significance of this study to corporate success in the university.**

Management and evaluation of employee productivity is an important requirement; however, lower employee productivity leads to poor organizational performance, and thus the triumph of an organization needs strategic management that aims at improving employee productivity (Yukl, George & Jones, 2010).

Hunter and Thatcher (2007) found that the most experienced workforces excelled more than workers who are new to the place of work or the organization simply because of the skills the employees have accumulated in the job position for a longer period compared to new employees. Tenure in position can be related to employee performances and productivity since experience offers the means for improved learning and acquisition of more skills. Experience has a greater effect on employee productivity and performance
when workforces have shorter-tenure and the employees are still learning how to do their specific tasks; Thus, managing and evaluating employee productivity involves identifying individual employees from various backgrounds and recognizing them as valued employees who can contribute towards attainment of organization goals and ultimately the success of the organization or the learning institution. Hence, the study findings will be used to make recommendations that will hopefully improve employee productivity in universities; this will contribute to improved business relationships, better performance and economic growth.

**Study implications for social change in the university.**

Epstein (2009) stated that the alignment of, as well as systems of, management are important in learning institutions such as universities or businesses in both motivating employees and coordinating activities. Universities are competing worldwide and they should therefore have employees who are motivated, prepared and equipped to collaboratively work together to improve the university’s performance and achieve the university’s goals. However, to do this, universities need to improve employee productivity and thus this study is of great significance due to the fact that it will provide an insight into how different technologies and methods are perceived and used in ways to supplement employee productivity. The education industry has begun focusing on strategic approaches which targets at meeting the specific objectives of the institution without being dependent on identities of employees but the reliant on the employee skills or capabilities which could transform to improved employee productivity and performance (Ray & Sethi, 2010).
Significance of this study to employee productivity.

According to Scott (2012), employee's productivity is an evaluation of the efficiency and effectiveness of an individual worker or a group of employees regarding output over a certain period of time. Employee's productivity is of importance as it reflects on the image and profits of the organization. Traditional measures of productivity include; the measuring of the overall output produced within an identified time span. The general equation of output/productivity is demonstrated as follows:

\[
\text{Productivity} = \frac{\text{Outputs provided by a process}}{\text{Inputs provided by a process}}
\]

In this case, there will be more of a focus on measuring the productivity scale of workers and their usage of collaboration techniques. Collaboration focuses on being a team player; hence, the employee's efficiency would be considered in groups rather than individually. Collaboration focuses on doing work in groups as a way to foster convergence which results in better output and serves as a reflection of better productivity. Given the nature of a University setting is different in production and nature than a traditional business, the traditional measurements of productivity would not be applicable. However, as the research will illustrate, there are some parallels that can be drawn to assist in the understanding of the complexities of employee productivity.

There are also a number of additional factors that can have an effect on productivity. Those factors would include things such as; retention, leadership, workplace culture, importance of job role, collaboration, and training. All of these factors will be
covered throughout the dissertation. Each play a role in contributing to overall employee productivity and are examined within the context of a university environment.

**Theoretical Construct**

Constructivist learning theory is the construct that is mostly applied in the instructional process. Some of the scholars that worked to develop constructivist learning theory are Vygotsky, Piaget and John Dewey (Alzahrani & Woollard, 2013). For instance, Jean Piaget contributed to personal constructivism while Lev Vygotsky to social constructivism (Mvududu & Thiel-Burgess, 2012). Piaget posited that individual construction plays a primary function in cognitive development. However, Vygotsky argued that the primary cause of cognitive is a cultural, social and historical interaction (Mvududu & Thiel-Burgess, 2012). According to suggestions, individuals construct psychological tools to test how they behave and the language they use. This shows that ideas and concepts of constructivism assume learning and includes collective activity as well as personal experiences which are considered essential for instructional processes (Mvududu & Thiel-Burgess, 2012).

According to Alzahrani and Woollard, (2013), constructivism is an epistemology that suggests problem-solving is necessary for thinking, learning, and development of individuals. This indicates that problem-solving enables people to use their own knowledge, skills, and experiences to look for an explanation or answer to the issue, and once they do, they realize the relevance of solving problems. Therefore, people understand the meaning of constructivism as a cognitive activity that creates mental models that portray perceptions of real life situations (Alzahrani & Woollard, 2013). The
purpose of using the constructivist theory of learning is to identify ways of implementing processes of learning and how the knowledge construction process occurs in learning institutions such as universities.

Constructivism is a learning and meaning-making perspective which explains how people use their competencies, and how the learning process takes place. People’s understanding depends on their experiences and knowledge (Ultanir, 2012). The theory assumes that acquisition of knowledge and perceptions occurs as a result of sharing ideas and beliefs and interaction of events and activities that affect learners’ daily lives. The functions of an educator are to guide, facilitate and encourage students to consider, judge and formulate their own ideas, perceptions, and conclusions (Ultanir, 2012).

According to Semerci and Batdi (2015), constructivism is an approach positing that students create knowledge using what they experience in real life situations instead of learning from abstract concepts. The school of thought is based on personal experiences. There several characteristics of this theory which include the following: “posing problems of emerging relevance; building lessons regarding the basic concepts; Seeking and valuing students’ ideas and opinions; adapting instruction according to perceptions of the learners; and assessing student learning in the context of daily teaching” (Semerci & Batdi, 2015). These concepts of constructivism demonstrate that students must participate in all instructional processes from beginning to end. The constructivist thought also suggests that sessions should be managed in such a way that they suit learners’ needs and interests in order to motivate them; this kind of a program substantially influences students’ success (Semerci & Batdi, 2015).
One important thing to understand about the Constructivism framework is that it is extremely complementary to the concept of collaborative learning. Where constructivism concentrates on learning only truly occurring through real life application of concepts as opposed to theoretical concepts, collaborative learning relies much on the same precepts. Collaborative learning utilizes real life learning interactions that take place within a specific environment like a classroom or a training. A group is given a task to accomplish together and the process of them working through that situation to achieve a common goal is the process of collaborative learning. Due to the nature of interrelatedness of these two concepts, constructivism as a framework helps to enhance the documentation of collaborative learning throughout this dissertation.

**Definitions of constructivism.**

The manner in which a person sees, understands and explains objects approaches the definition of constructivism (Ultanir, 2012). Therefore, defining constructivism depends on individual’s position and perceptions. Some scholars define “constructivism as a both scientific and meta-theoretical perspective that explains the likelihood and limitations of real life theories of the creation of humanity” (Ultanir, 2012, p.196). Constructivism refers to the philosophy, or belief, that learners construct their own knowledge based on how they interact with the environment as well as how they interact with other individuals (Mustafa & Fatma, 2013).

**Basic ideas of constructivist school of thought.**

The theory suggests that knowledge is just an explanation and assumption but not the final solution for all problems (Jia, 2011). The way students understand things
depends on their own experiences, historical and cultural backgrounds, and learning experience determines learners’ understanding (Jia, 2011).

The theory suggests learning as a process that involves creating individuals’ cognitive structures. Learning is a process that involves knowledge construction. The theory describes learning as an initiative where meanings are created and generated (Jia, 2011). To complete the process of learning, there should be an interaction between learners’ old and new knowledge. Therefore, real learning occurs when students create knowledge based on past experiences (Jia, 2011). Instructional processes emphasize on construction of knowledge, where students should actively participate and collaborate with each other to ensure effective learning (Ultanir, 2012).

Learners enter the learning environment with their own previous experience. They have their perceptions and experiences relating to real-life activities (Jia, 2011). Students that lack experiences and opinions about daily life can use previous experiences and cognitive skills to construct explanations and ideas about a certain problem. In this case, the work of an educator is to ensure that learners use their previous knowledge and experiences to construct new knowledge (Jia, 2011). Ultanir (2012) articulated that activities carried out in the learning environment are learner-centered, authentic as well as individual and collaborative work. Constructivism suggests learners as people who should be actively involved in construction of knowledge and collaborative learning; students monitor themselves (Ultanir, 2012).

Educators function as facilitators since they help and influence the learners during the construction of meanings (Jia, 2011). Constructivism is a paradigm that takes an
instructor as an individual who creates an educational setting and guides students’ learning process, whom students can consult academically. Constructivist learning theory opposes the traditional method of teaching where a teacher conveys knowledge to students and assumes them as objects that receive knowledge. In a constructivist classroom, learners are taken as the center while an educator guides them. In other words, teaching process needs teacher to organize as well as guide students. According to Ultanir (2012), constructivism teaching takes an educator as a helper, encourager as well as a community builder. This dissertation will utilize the constructivist lens to examine the problem within the research.

Definition of Terms

Below is the definition of terms used throughout this thesis for purposes of this research:

*Collaborative learning:* Collaborative learning is a term used to explain a number of learning approaches involving joint scholarly efforts by students alone or students and teachers together (Schuman, 2006).

*CSCL:* Computer supported Collaborative learning that can take any form, including emails, chats in social networks, and discussion forums through video conferencing and instant messaging. CSCL systems provide a combination of media networks that contain a set of unique functions within them. (Resta & Laferrière, 2007).

*Employee performance:* This refers to the production levels and abilities of job related tasks if employees associated with a company, business or institution of higher learning (Hunter & Thatcher, 2007).
Employee productivity: It refers to evaluation of the efficiency of an employee or employees in an organization (Wu, 2013). Linna, Pekkola, Ukko and Melkas (2010) defined the ability to evaluate employee productivity as determining the measurable change in speed or task quantity to be accomplished before and after a defined period of time.

Employee: A person who is hired to work in an organization or institution to perform specific job and contribute towards attainment of organization’s goals (Kruse, 2012).

Instructional Technology: These tools for teaching purposes can include computer-based training, teleconferencing simulations, printed books and interactive videos (Dumova & Fiordo, 2010).

Organizational learning: Locke and Latham (1990) have defined organizational learning as a change in the capacity of the organization to do something new.

Assumptions, Limitations, and Delimitations

Neuman (2011) stated that assumptions are things or events which are invisible or not testable, and the investigator would not fully control. Study limitation refers to intrinsic weaknesses that can be experienced while conducting the research while the delimitations refers to the features which limit the research scope and defines the study boundaries. Unlike assumptions, study delimitations are usually in the control of the researcher (Yin, 2009).
Study assumptions.

Completing this study will contribute to improved understanding of employee productivity and the effectiveness of flexible and knowledgeable employees at universities. Motivated and Committed employees are well-connected with the institution and it is assumed that their behaviors and attitudes should be endorsed to develop a self-defining and satisfying relationship that would lead to improved employee productivity and workplace performance. The research that has taken place in this study will assist in evaluating employees who have taken training at the university. It gives any future members of university leadership the ability to take the conclusions and utilize them to make training improvements. Those improvements can lead to a clearer definition of what the university’s goals and values are. Furthermore, Hunter and Thatcher (2007) argued that employees actively embrace the organizational or university goals and values and can put more effort towards achieving the university’s objectives. Brown, McHardy, McNabb and Taylor (2011) found that employee productivity and effective participation have an affirmative outcome indicated by employee commitment and positive work attitudes. Questions that determine the effect this information has on productivity were key parts of the interviews. One more assumption is the study participants will ethically share information without any restraints. Part of the interviews included a discussion about management involvement about pursuing the training opportunity. Those participants may have feared expressing how they truly perceived the opportunity.

The study further assumed that there was an adequate response rate for the conclusions reached. The study provided enough data to reach proper saturation.
However, the study also assumed that few recruited study respondents will not provide truthful information. This could occur for a variety of reasons including a fear of reprisal by management or personal bias. This highlighted the importance of the selection process.

**Study limitations.**

This study focused on employee productivity in a university. Hence, the boundaries surrounding this study, may limit the use of the study findings from being applied to other industry settings. A limitation involved investigating definite characteristics of poor employee productivity in the university instead of all aspects of productivity and obtaining or giving credible results. For instance, an auto manufacturer may not be able to rely upon the same conclusions reached given the distinct differences between a university setting and an assembly manufacturing business.

Also, employee productivity is not well-defined; this would become a significant concern particularly if the research respondents cannot tell or explain the pre-existing state of employee productivity at the university and its effects on general success or performance. But during the designing of the data collection instrument for this research project, definite primary quizzes were included in the data collection tool employed to clarify employee productivity. This gave the study participants a chance to clearly understand the objective of this study as well as the importance of their participation for effective data collection and meaningful analysis of the interview results. The perception of the employee on what the term productivity meant became extremely important given the nature of their job duties and its relation to the research.
Another limitation is the self-report nature of interviews. Since those participants being interviewed were asked to personally report how they perceived their productivity, it became important to put their answers in proper context. By asking a series of questions on similar topics, the researcher is able to make important distinctions about interview answers being given. This included asking specifics about the training, learning objectives, other participants within the training, the facilitator, resources utilized within the training, as well as personal motivation for attending and participating. Those topical questions helped put the participant in the right frame of mind to visualize the training and the impact it may have had on their business processes of work tasks. It also helped to ensure that the data being collected was as accurate as possible. Since the interviews themselves focused on largely positive topics with no fear of management reprisal, there were few opportunities for the data being collected to be canned or given in a way that shed the participant in a more positive light.

A potential limitation could also have been the small number of participants. In this study, 10 participants were interviewed and their data was the primary research to lead the study. Those 10 participants had diverse experiences in their training sessions in which they attended. The wide variety of topics and formats of those trainings helped ensure that the information added to the research in different ways during each interview. Although 10 may, on the surface feel like a small number, the wealth of information learned was extremely valuable and more than enough to answer the research questions put forth within this dissertation.
By conducting interviews the researcher had the capacity to fully comprehend the participant’s answers to the interview questions by using demographic characteristics to know the age of the respondents, specific role or jobs, and working experience; this helped in results’ validation.

**Study delimitations.**

Thesis scope was limited by picking one selected university as the target population as a result of restricted timeframe provided to undertake the project and potential increased cost of undertaking this dissertation. The usage of an Online demographic questionnaire forms was administered using email that limited the target study population. Study respondents who did not have adequate computer literacy will not be capable to partake in the research study; this is also an anticipated limitation. Primary data were collected using face to face interviews as well as some information learned from the demographic questionnaire. Those interviews and their corresponding questions were targeted specifically to those within the sample population who had attended a training within the previous two months. This data were then analyzed for the purposes of this research.

**Summary**

In summary, this research project examined evaluation and improvement of employee productivity at a university using collaborative learning. It also examined the employee’s perception on evaluating current instructional technology methods that may improve employee productivity at a university. Therefore, the fundamental thesis
question was: What approaches are important in improving employee productivity at the university?

The specific objectives for this research include:

1. What types of training did employees participate in to improve productivity?
2. To what extent does this training use collaboration?
3. In what ways was technology used in these trainings?
4. How do employees perceive their technology based collaborative training will influence their productivity?

Sequential explanatory research design was used in this dissertation and the data collection instrument was an interview. Additionally, the sample size comprised of 10 study participants (including both employees and managers) who were recruited from the selected university based on responses to a demographic survey. Those individuals participated in the interviews. I transcribed the interviews and made use of the MAXQDA Analytic Pro version 12 qualitative data software to assist in the coding process. Data analysis was done using Excel and the research findings are solely descriptive, which can be used to provide strategy recommendations to improve employee productivity at the university and it can also potentially influence employee motivation, performance as well as business and management practices.
Chapter 2: Literature Review

Using Collaborative Learning to Improve Employee Productivity

Collaborative learning is a term used to explain a number of learning approaches involving joint scholarly efforts by students alone or students and teachers together (Schuman, 2006). It involves working in groups with the end goal of looking for a different perspective, a solution or even creation of an invention. Collaboration is considered by scholars such as Rochelle and Teasley (2005) to be a joint effort to assist in the creation of mutual benefits. This may differ from other scholars due to some sources or determinants, such as the scale of interactions, hypothetical tools required to analyze relations occurring at different levels, and the mere fact that what constitutes education is a source of debate.

A number of researchers have agreed that two or more heads are better than one and that the work of a group is advantageous to problem-solving. It has been noted that collaborative learning is a well-created method of group work that is a useful option for teacher-fronted classes (Rochelle & Teasley, 2005). Collaborative learning’s different methods follow a definite number of set rules. The instructors who apply the method believe that learning is principally a social process and that their responsibility is not simply to pass on their own knowledge to their learners, but that the knowledge acquisition comes mostly through negotiation and discussion. The role of the instructor in collaborative learning is that of an organizer and facilitator, and occasionally that of a resource person. It is indicated that all the members of the team are equal in their search
of a common goal and their contributions are all similarly valuable (Rochelle & Teasley, 2005).

Studies have indicated that collaboration is an active process, an act of convergence of shared meanings, and of notes. Analysis has been carried out on how to get to this merging to occur (Schuman, 2006). It was determined that it occurs gradually and eventually rotates around five factors: the understanding of the problem’s profound structure, the interchange of metaphors, the interactive display, confirmation and repairing of concepts, and finally the application of high standards of evidence for convergence.

Scott (2012) showed that understanding is attained through collaborative learning involving teamwork, which helps scholars discuss and provides room for explanations of their views. This helps participants retain and understand the knowledge they have learned from the discussion. Collaboration stimulates team interaction which facilitates understanding of knowledge as group mates continually make themselves understood by contributing and explaining their points, which in turn builds and improves the students’ comprehension and retention of the concepts. Once understanding is achieved through the verbal exchange, meaning can be negotiated and the final arrival is shared through understanding or convergence.

According to Scott (2012), cooperation and collaboration have always been confused as meaning the same thing, but despite sharing a common constructivism base, they are two distinct learning approaches. The difference is in how collaboration allows all parties to be at an equal point of authority. This is unlike cooperation in which one
party has much higher stakes in the situation, such as when a teacher still has the final say and controls whatever is happening in group discussion. Collaboration will be the focus of the research for this dissertation.

**Organizational Learning**

Organizational learning is viewed as a kind of a final result of collaborative learning. In the organizational learning field, there has been a huge controversy in the difference between personal and organizational learning. It has been noted that organizational learning has been hard to separate as well as identify, for example, Locke and Latham (1990) connect group, individual, and organizational learning together. Organizational learning has been perceived as a process that is self-motivated and founded on the knowledge that needs to move amid various action levels; it goes from the personal to the group level, up to the institutional level, and then back again. Locke and Latham (1990) have defined organizational learning as a change in the capacity of the organization to do something new. It is noted that this process arises from the knowledge acquisition of the people and progresses with the incorporation and the exchange of this knowledge until a frame of collective knowledge is built and merged into the culture and processes of the organization (Schuman, 2006).

Studies have shown for a fact that personal and organizational learning are tangled. Locke and Latham (1990) identify four needed conditions for effective enhancement of organizational learning ability. The first condition is that the company management should make an environment that is conducive to organizational learning by making the environment supportive and involving all the organizational personnel.
Second, the firm must be viewed as a system in which every aspect must make its own contribution to get a satisfactory outcome. It has been noted that if a shared vision is lacking, the actions of the people do not contribute to organizational learning. Thirdly, effective organizational learning development requires organizational knowledge development based on the integration and transfer of knowledge acquired personally (Locke & Latham, 1990). Building the body of organizational knowledge that is steeped in the processes and routines of the work itself is important. Finally, the organization simply coping with the changes within the recognized framework is not enough. It is noted that the organization should go past adaptive learning and instead question the learning level that is required. If it is necessary, it is suggested that changes should be made to look for more innovative and flexible options to generate learning (Locke & Latham, 1990).

**Historical Perspective**

A study undertaken by Wiseman (2010) indicated that the history of collaborative learning starts with three renowned scholars: Dewey, Deutsch, and Elwin. Dewey explored the social nature of learning and eventually advocated for teaching through discussion and problem-solving. Deutsch, on the opposite side of the spectrum, came up with the ideas of cooperation and competition and, finally, Elwin came up with the researched idea of social interdependence (Wiseman, 2010). The three scholars’ theories are considered the foundations of collaborative learning as the researchers tried to explain and show the effectiveness of learning in groups.
Even though these three academics are considered the early founders of collaborative learning, not many researchers base their work on them. Many tend to focus on two central traditions, namely Vygotsky's social-cultural approach (Wiseman, 2010). This approach illustrates learning as a social approach in which an individual must learn with a general approach before heading out to learn individually. Social interaction fosters Neo-Piagetian ideas of social cognitive conflict in his theory in which he elaborates on the concept of intellectual development. The approach further concludes that if a person disagrees with another about something, it causes an imbalance in the worldview of that person, making them rethink their ideas (Wiseman, 2010). This can lead to an added benefit of causing the people involved to expand their ways of thinking.

**Collaborative Learning in Organizations**

According to Schuman (2006), collaboration appears to strengthen organizations by completely engaging workers, humanizing retention, and mounting the innovation capacity. It's of significance as it helps workers prosper in an ever-altering and varied workplace; despite this, many superior leaders view teamwork as an ability which is at best used to choose assignments instead of a business-broad artistic value which should be entrenched within the organization (Schuman, 2006). The concept of collaborative learning is much the same, but only the wording is what seems to change. It is seen as an action involving the members of the team performing a project collectively. It could be noted, however, that genuine collaboration is more than an action; it exists as the process associated with behaviors that might be learned and enhanced.
Collaboration does not exist in a vacuum; it is surrounded by an environment where every employee has a voice, and that ability to have a voice enables them to contribute (Schuman, 2006). This, in turn, helps the employee comprehend how their contributions fit into the company’s strategy and eventually gives them some direction. It promotes belief in the organization and stimulates intensive productivity as the employees work not only for the salary but the growth and belief in the organization. At the most basic level of a business, people want to feel that they belong. Hence, collaboration takes root as it fosters a sense of belonging (Schuman, 2006).

Schuman (2006) further reiterates that organizations conventionally apply collaboration to teams or through organizational levels that are broken down into different areas. Those areas are silos, fostering cross-functional activities and encouraging better innovation. Despite collaboration being implemented in a limited manner, it has proven effective in yielding results. It not only increases innovation, but also increases the employee's effort, creativity as well as productivity that eventually results to a happier, less stressed, and more involved worker (Schuman, 2006).

**Benefits of collaborative learning.**

Studies have indicated that collaborative learning is a strategy of teaching that needs small learner groups to work interdependently on the activities of learning so as to attain group recognition or rewards (Slavin, 2006). The major benefit of collaborative learning is that learners might learn better when they work together since they are held responsible to each other. It is vital to note that learning is improved when learners collaborate with others and when they discuss multiple viewpoints.
Numerous researchers have also indicated that collaborative learning enables simultaneous approaches of teaching for many audiences and levels of learners (Attewell & Savill-Smith, 2004). For example, high-achieving learners might help the low-achieving learners, leading to deeper learning for both. It is noted that learners who teach other learners must verbalize and integrate knowledge, which might deepen the process of learning. Learners who learn from other learners might be less threatened by their insufficient knowledge and thus are more comfortable asking questions of the fellow student instead of a professor. In addition, verbalization and problem solving are keys to the development of the critical thinking skills of the learner (McKenzie & Murphy, 2000) and are also essential to the process of collaborative learning. An efficiently designed, collaborative group solves problems by interactive discussion among the members. Thus, collaborative learning approaches might result in the development of the need for cognition by helping learners enjoy the learning process together.

**Application of collaborative learning.**

Studies have indicated that collaborative learning offers another dimension to the approach of collaboration in education. It is noted that collaborative learning might span numerous classes and academic years, or may be concentrated in one specific class (Locke & Latham, 1990). The four types of collaborative learning include residential, curricular, classroom and student type. Every type gives a single structure that enables learners to work together to attain academic goals. Classroom collaborative learning offers the most direct avenue for collaboration, though, since faculty members are capable of allocating and monitoring group processes. Residential collaborative learning
offers convenient proximity for learners, though it might lack the structured interdependence that classroom activities offer.

Some researchers argue that collaborative learning in an organization might improve the skills of problem-solving, collaboration, and teamwork while improving management collaboration with employees (Locke & Latham, 1990). Although the evidence doesn’t support a direct connection between collaborative learning and critical thinking, some have found that collaborative learning has a positive general impact on employees’ productivity in a workplace after finishing college. Through the use of broad standards of assessment, Locke and Latham (1990) found that the employees who participated in more generally defined collaborative learning had positive outcomes in their workplace for almost all measures, including work performance, knowledge, and overall satisfaction. Studies have indicated that collaboration among learners might go well with the learning environment of today due to the emphasis on teaching responsible citizenship (Locke & Latham, 1990). Studies have further indicated that traditional education was designed for workplace readiness, as well as the approaches of collaborative learning work better under the service learning epistemology. As learning teams show, the advantages of collaboration among learners are not restricted to the classroom. A positive relationship exists between collaborative learning and employee achievement, as well as personal and social development (Locke & Latham, 1990).

Researchers have shown that collaborative learning positively affects the openness of students to diversity. In a study of more than 2,000 employees in an organization, Rochelle and Teasley (2005) found that collaborative learning assisted with
motivating employees towards gains in openness to diversity, personal development, and analytical skills. These skills gained in collaborative learning helped the employees develop skills of critical thinking and improved their interaction skills with other people in the organization, therefore increasing their productivity and performance. It is noted that interaction with individuals from another ethnic or racial background positively influences employees’ aesthetic appreciation, a constituent of critical thinking. Studies have also indicated that varied experiences have a further favorable impact on the skills of critical or decisive thinking in low-achieving employees (Slavin, 2006).

A study by Dumova and Fiordo (2010) of more than 4,000 college students showed that interaction with different students had a significant effect on the development of critical thinking skills. Even though studies show that student collaboration has various positive results, more research is required to determine if student collaboration directly affects the cognitive development of students, such as the need for cognition. Researchers have indicated that only a few studies directly examine the correlation between cognitive development and collaborative learning. The study by Lohman (1997) showed that learners involved in collaborative learning groups appear to develop and practice better problem-solving skills compared to those who do not participate in collaborative learning. The dissimilarity might lie in the correlation between incentive structures and learning goals related to strategies of collaborative learning. It was also noted that learners working in collaborative groups are less concerned with grades and are more concentrated on higher order strategies of learning than learners working individually (Lohman, 1997).
Researchers have indicated that learners working collaboratively with other learners benefit from the diversity of perspectives and student experiences within the learner groups (Slavin, 2006). These experiences enable learners to make stronger links to the course information. It was also indicated that students also report more positive views of intellectual development. People were likely to maintain their gains in problem-solving upon completion of the activities of the group, suggesting long-term positive achievement in cognitive behavior (Slavin, 2006). Slavin (2006) found that useful discussions with varied peers significantly affected a learner’s advancement of the need for cognition.

The application of collaborative learning in organizations for the purpose of improving performance is highly proposed by numerous researchers. It is argued that the individual is the fundamental aspect of knowledge creation, though without spreading personal learning across the firm, it is irrelevant to firms (Mahmoud, 2012). Collaborative learning, and teamwork is perceived as a core tool for this distribution of knowledge. Mahmoud (2012) defines team learning as a virtual permanent change in knowledge or skill generated by the team members’ shared experiences. Studies, however, have indicated that this change might not usually have a positive effect on team overall performance. According to Mahmoud (2012), the application of teams provides two main benefits to an organization. Researchers have indicated that the work of the team has the capability to empower individuals to utilize their capabilities that can assist in the inspiration and the social cohesion of the group. Also, the application of the teams enables managers to focus their attention on strategic issues rather than supervising
people. Furthermore, the experience of firms using teamwork has demonstrated that the effective application of teams may bring considerable improvement in performance and creativity and employee satisfaction.

Mahmoud (2012) has indicated that collaborative learning requires three processes to happen: sharing, retrieval, and storage. Sharing can be defined as the process through which new behaviors, knowledge or routines are distributed amongst the team members, and members know and understand that others on the team have that learning. Learning is defined as utilizing the stored knowledge. Associated with knowledge, it was found that as group members gain experience together and realize the knowledge competencies of their colleagues, a variety of group results, like satisfaction and quality, improve (Mahmoud, 2012). Mahmoud (2012) also noted that the retrieval process means that the members of the group may access and find knowledge or skills for upcoming use or inspection. Studies have indicated that without these processes, team learning cannot take place.

**How to Foster a Collaborative Learning Organization**

**Support building personal relationships among employees.**

Studies have indicated that one of the conventional ways of creating a collaborative learning organization is to make a database system that workers can access to retrieve and store data; on the other hand, organizations appear to get caught up in creating the “technical solutions” by simply making channels for conferences and entries, instead of essentially promoting the thought of collaborative work via relationship building (Lou et al., 2001).
Researchers have found from case studies that efficient inter-individual connections and communications are vital in upholding an institution of collaborative learning. For instance, British Petroleum successfully applied video conferencing to trigger knowledge sharing among its offshore oil drilling rigs; furthermore, it encouraged an organizational culture that identifies personal contribution and fosters face-to-face meetings (Lou et al., 2001). Numerous studies have indicated that firms are starting to recognize that personal connections link employees, and if they are really encouraged and incentivized to create connections, then they would eagerly apply the channel of technology to remain linked and exchange thoughts and knowledge with each other (Lou et al., 2001).

**Senior management commitment.**

Studies have indicated that dedication from upper management levels reveals both financial support and role modeling in a manner that is noticeable to the entire staff, which is vital to the creation of cross-institutional collaboration (Lou et al., 2001). The professionals should take supportive and challenging stances with senior managers by starting dialogues on managerial dedication to show and inspire collaboration amid the employees. The human resource teams of the organization can create agreements with senior teams of management, detailing particular procedures and review processes, so as to facilitate and encourage this type of cross-functional collaboration (Lou et al., 2001).

**Supportive environment.**

Numerous investigations have shown that social cohesiveness, trust, and a feeling of belonging to the team contributes to collaboration learning building (Lou et al., 2001).
The research illustrates that after participating in learning discussions and programs, employees must be encouraged to show the learning outcome and get support for new learnings; furthermore, employees must be allowed to make mistakes and take risks. An accepted arrangement to recognize the top teams’ dedication should be created at the start of building a collaborative learning institution and modifying the institution to produce diverse support systems to satisfy diverse requirements of workers at the time of implementation (Lou et al., 2001).

**Encouraging Collaboration in an Organization Setting**

An important step to increase collaboration adoption at an organization is to encourage it. Collaboration in an organization appears to strengthen organizations by completely engaging workers, humanizing retention, and mounting the innovation capacity. In order to realize these results, there are several steps that must be reviewed, which are critical to encouraging collaboration in an organization setting.

The first step focuses on defining what collaboration looks like to the organization; it entails setting up a roadmap and strategy precisely outlining the goals. Employees will always have good intentions but may fail to act upon them unless the roadmap and strategy were created with the input of all the employees and not just the senior leaders (Schuman, 2006). The components provide guidelines for how a plan is to be executed, outlining objectives, timelines, and individual jobs and responsibilities. It should only be detailed enough to give employees direction and not to be a roadblock. In other words, it deals with the structure of the business. It should be aligned and
configured to foster team effort rather than an aggressive environment which does not foster social interdependence.

The second step involves training the collaborative skills of the employees. It may be included as part of the management plan in developing its employees. A collaborative organization culture gives every employee a voice, so the employees must know how to communicate in collaboration (Schuman, 2006). The human resources department is tasked with conducting occasional surveys to evaluate where the organization stands concerning collaboration skills, and then a plan is formulated to combat the weaknesses uncovered by the analysis.

The third step is ensuring that the metrics of success are aligned among the business units so as to ensure effective collaboration in an organization. If the metrics are not aligned, employees tend to engage in anti-collaborative measures which result in silos—the intentional lack of inclusion and transparency—for example, the potential friction between typical sales and operations departments (Schuman, 2006). The dynamic relationship between the two parties is that one party must win, and the other must lose. This relationship causes some joint issues which lead to silos, territoriality, and even conflict.

The last step is more concerned with management; leaders must ensure they understand their role in facilitating collaboration in an organization. Collaboration implies everyone has a voice, which is true, but leaders are also required to support collaboration by investing resources that support and encourage collaboration, rewarding collaborative behavior, and lastly ensuring accountability which entails maintaining
active teamwork in the workplace by promoting the change in corporate culture and development of collaboration culture (Schuman, 2006).

**Support of Collaborative Learning through Technology**

**Background of collaborative learning supported by computer (CSCL).**

According to Resta and Laferrière (2007), the earliest sighting of CSCL was as early as the 1990s in response to some software that encouraged scholars to learn as individuals and not as groups. The exciting potential for the internet to join people in unlimited new ways gave CSCL a great deal of incentive for research. As CSCL became more industrialized, unforeseen hurdles to designing, disseminating and efficiently taking advantage of innovative educational software became noticeable to a greater extent. A revolution in the whole mode of learning was essential, including significant changes in education and the whole education process as a whole (Resta & Laferrière, 2007).

Briefly, after its discovery in the 20th century, CSCL progressed and grew, but it was not until 1989 in the Mara tea workshop that computer-supported collaborative learning came to life. Mara Tea workshop considered the birth of CSCL as it was the first conference that marked CSCL as the title of its convention (Resta & Laferrière, 2007). After that, many other conferences took place, which were completely centered on the notion of CSCL.

The earliest full-blown CSCL seminar was structured in the spring of 1995 at Indiana University. Successive national forums have been held at least every two years, including conventions in 1997 at the University of Toronto, 1999 at Stanford University, 2001 at the campus of Maastricht in the Netherlands, 2002 at the University of Colorado,
2003 at the school of higher education of Bergen in Norway, and the National Central University in Taiwan in the late spring of 2005 (Resta & Laferrière, 2007).

The main form of collaboration held is the computer system, such as the networks, which provides a venue for communication exchange (Resta & Laferrière, 2007). This can take any form, including emails, chats in social networks, and discussion forums through video conferencing and instant messaging. CSCL systems provide a combination of media networks that contain a set of unique functions within them.

Additionally, CSCL software provides various concepts of educational support for collaborative education. These may be enacted with rather complex and calculative mechanisms and techniques (Resta & Laferrière, 2007). The CSCL software can obtain alternative views on the continuing student’s discussion and combine the shared data into one research system. They can provide feedback that may be based on a drawing of the group inquiry. They can measure sociability by monitoring relationship patterns, eventually providing feedback to the scholars. In many of these cases, the purpose of the computer is to support, and not to replace, human group interactions that foster collaboration and, ultimately, better productivity (Resta & Laferrière, 2007).

The objective of designing CSCL was to generate actions and an ambiance that enhances the presentation of the group (Resta & Laferrière, 2007). Quick progress in computer and communication technology in recent decades, like the internet, has significantly changed the average employee’s working habits, as well as the student’s ability to study. No type of technology, no matter how creatively designed or refined, has the capability, by itself, to change performance (Resta & Laferrière, 2007). Creation of a
superior form of training requires more comprehensive structures of design that must
tackle core curriculum resources, contribution structures, and tools and neighboring
spaces.

**Collaborative learning and technology-enhanced environments.**

This section discusses the nature of, as well as main issues generating from,
collaborative learning in the setting of technology. A point should be made here of
clearing up the confusion regarding the applications of the words “cooperation” and
“collaboration.” Panitz (1996) distinguished between “cooperation” and “collaboration”
in the learning environment. He noted that collaboration is a viewpoint of the interface, as
well as a personal way of life whereby people are held accountable for their activities,
such as learning and valuing the contributions and capabilities of their peers. On the other
hand, cooperation is an interaction formation planned to trigger the achievement of the
final goal through individuals operating jointly in groups (Panitz, 1996). The
collaborative learning concept is vital since it reveals the manner in which professional
groups operate. The respondents in the research are anticipated to be professionals, and
thus collaboration distinguishes the way they are anticipated to conduct themselves in
groups when finishing a learning activity (Panitz, 1996).

Studies have shown that collaborative learning goes beyond the organized
allotment of set tasks or unstructured interaction. To a certain extent, collaborative
learning is the behavior of dynamically sharing thoughts to ensure there exists a “shared
notion of the challenge that enables shared involvement of respondents in a harmonized
effort to resolve the challenge collectively” (Roschelle & Teasley, 2005). According to
Roschelle and Teasley (2005), the definition of team learning has been concentrated on “collaboration” instead of “learning.” An argument is being presented for a state whereby specific types of interaction amid individuals are anticipated to happen, which can facilitate the methods of learning, even though there isn’t assurance that the anticipated interfaces will in fact happen. Much research regarding collaborative learning requires “zooming in,” especially on critical thinking in collaborative surroundings (Roschelle & Teasley, 2005). Numerous studies have focused on interconnected aspects of additive capability, technological self-efficacy, methods of learning, and enthusiasm and their impact on critical thinking behavior in collaborative learning (Roschelle & Teasley, 2005).

Numerous studies have indicated the importance of peer, as well as collaborative, learning. For example, Boud and Cohen (2002) indicated that interrelated involvement happens in groups by having learners operate and study by sharing experiences, thoughts, and skills. In collaborative learning, learners are confronted with thinking in diverse ways, promoting critical manifestation and re-examination of perceptions. Watters and Ginns (2000) applied assorted techniques to examine the fostering of teaching science self-efficacy within pre-service educators involved in the processes of collaborative learning. Watters and Ginns (2000) were capable of demonstrating improved self-efficacy and confidence in learners that was accredited to the involvement with peers. On the other hand, studies have indicated that the execution of collaborative work in a group with huge numbers is challenging, needing resources or strategies that are usually not practical in the physical setting of lecture halls (Miller, 1956). This also brings up matters
associated with being capable of efficiently controlling group instructions, group creation, task design, techniques for handling free-riders, assessment of aspects, and processes associated with cultural diversity (De Vita, 2001). However, Choi (2010) demonstrated a way to apply the techniques of active learning, collaboration, and interaction. Learners in big lecture halls were grouped into teams and were permitted to reflect on their experiences of learning, which triggered a higher learning order and promoted their research, technological, and time management skills. A web-quest system was further applied as a flawless interface for improving their skills of research and submission of assignments.

A study conducted by Miller (1956) explored the benefits that might be achieved by connecting the affordances and plan functionalities of wireless and mobile technologies as instruments of learning. This study found that the advantages of these technologies include the communities’ improvement in learning since the triggering of collaborative interfaces made the performance of learning tasks more convenient, especially for distributed learner groups. Studies have indicated that group composition for active learning might involve learner members who are geographically set apart or live far away from one other, making it difficult for the group to meet. It is vital to note that technology might serve as a mediating or anchoring system for synchronous, as well as asynchronous, interaction in groups (De Vita, 2001).

Studies have indicated that big classes are in a position to operate collaboratively in practical spaces outside or within the classroom through the use of connecting technologies that pass on information to the middle anchoring technology given by the
educator (De Vita, 2001). It would be possible to utilize the gadgets of the students, including their own mobile phones or laptops, to bring together personal and collective group feedback through an anchoring technology that includes a conferencing system or that bears the feedback data application via the server (De Vita, 2001). Studies have shown that the group members and learning facilitator might be bodily established within the office, classroom or any other bodily space, or be passing through diverse spaces and still be in touch with other classmates (De Vita, 2001). In addition, a number of studies not only demonstrate how critical thinking and profound learning might be triggered within the process of engagement and interaction, but they also show the technological system of collaborative teams from which enlargement of an instructional plan structure to encourage deep thinking and learning might be framed (De Vita, 2001).

**Employee productivity through collaboration skills initiated via technology.**

Human beings are social animals, and more recently the concept has evolved into human beings are now digital social animals. During a survey of European workers, it was noted that an average of 56% of them regularly use social networks as part of their personal lives. Therefore, it’s not a surprise that digital collaboration is significant to happiness at work (Ferreira & du Plessis, 2009). The survey also showed that 17% of the workers were satisfied with their work and workplace when they had access to digital collaboration material. Studies agree with the survey by showing that employee engagement can be worth close to 19% of the operating income of a large company; thus, so improving engagement through collaboration fosters improved business performance.
Social networks enable social relationships to take place online, bestowing these interactions with the speed and unsettling economics of the internet (Ferreira & du Plessis, 2009). Social interaction is a significant, profound way of competently controlling information, culture, influence, and political and economic power (Ferreira & du Plessis, 2009). People can use social mediums to facilitate organizational operations across distant time zones. In the case of employees, social interaction helps them foster collaboration in a more diverse and open environment that is capable of facilitating growth and productivity within oneself and within the company.

Social technologies enable exceptional insights by allowing sellers and product developers to engage directly with thousands upon thousands of consumers, which in turn enables them to get information from the direct source, unprompted and unfiltered (Ferreira & du Plessis, 2009). This kind of access generates precise and clear insights into consumers’ tastes and trends. Also, social technologies increase transparency and expose products and markets to public scrutiny.

**Video collaboration and productivity.**

According to Ferreira and du Plessis (2009), studies have indicated that video collaboration is a combination of video, content, manuscript, and data sharing, and sometimes it involves other collaborative tools to build up a more customized environment for identified scenarios such as process integration and defined stakeholders. It should be noted that telepresence is related to video collaboration in that it’s a subset of the latter, and it refers to the public presence at a distant location; currently, it’s achieved through high definition video, voice and life-sized simulations of individuals and
documents. Various parties, such as sales, marketing, learning and development, remote and collaborative product development, and project management teams, meet productivity standards through video collaboration (Ferreira & du Plessis, 2009).

Sales representatives using websites such as YouTube to connect with clients and prospects found that the natural and responsive interactions it afforded gave them a decided advantage over phone-driven salespeople, according to the Aberdeen study (Ferreira & du Plessis, 2009). The simultaneity of communications using video conferencing and collaboration eliminates the redundancy of email and phone tag and allows discussions to proceed as they would in a face-to-face conversation.

Marketers surveyed responded, extensively, that video was crucial to gaining audience awareness for key products and improving customer interactions (Ferreira & du Plessis, 2009). By deploying branded video collaborations (forums, presentations, and telepresence capabilities), marketers were able to curate discussions and events in a way that spoke to their desired audience. Additionally, these marketers reported that using video in their campaigns enabled them to achieve a success rate of 42% engagement of their target audience.

It was also indicated that 47% of the respondents of a sample analysis reported that on-site learning and development were cost-prohibitive in the current economy (Ferreira & du Plessis, 2009). It was further reported that 41% of responding organizations saw video collaboration as a more active mechanism for delivery of learning modules that adapted to the demands and complications of a newly hired workforce.
Geographically dispersed R&D teams experience extreme levels of collaboration by using video to create fascinating and ubiquitous virtual work and meeting spaces without the added cost of time spent traveling (Ferreira & du Plessis, 2009). As a result of using video collaboration, market development departments have been reporting a reduction in the time needed to bring products and services to market.

In a 2010 Aberdeen study of 18 project managers using video collaborations as part of their business processes, 67% cited the need to manage projects in global and distributed environments, and 61% cited the ability to tap more rare and remote skilled resources as key drivers in their use of video collaboration tools (Ferreira & du Plessis, 2009). Project managers surveyed were able to reduce the time by 5% and the cost for each project by 8%. Within the Aberdeen community, optimized resource allocation through video collaboration resulted in an average saving of $40,000 per project.

**Social networking and productivity.**

According to Ferreira and du Plessis (2009), time spent by a worker energetically doing the job in accordance with the instructions to fulfill and generate the desired outcomes as outlined in the objective and goal clause of a company is given the term “productivity.” Studies show that social networks have similar insights into human behavior in terms of how humans communicate and the essential need to communicate with people they know (Ferreira & du Plessis, 2009). Those studies also include the new people they meet and with whom they share a common interest. For this concept, the internet is a dream come true as it provides useful social networking to many different types of people. It allows people to build personal relationships, connect with others who
have faced similar experiences, expand one’s network of friends, discuss general topics that are of interest, and find potential life partners (Ferreira & du Plessis, 2009). In addition, users get to stay connected with distant family and relatives from anywhere in the world.

The idea of social networking is not quite new, considering it's the same human interaction that has always existed, just at a different level (Ferreira & du Plessis, 2009). Social networking itself genuinely helps in the formation of networks through social contact. Collaboration used to take form on a very modest scale. It was mostly between relatives or friends and colleagues at home and in the community. The current era has adopted a new direction quite substantially. In today’s society, it's hardly possible to find an organization that functions without applying some sort of technology to facilitate group collaboration. For instance, in the case of social networking technology, it allows users to form individual profiles and accounts that facilitate networking with other organizations. Members network by participating in debates and interacting using many other forms of social media interactions (Ferreira & du Plessis, 2009). Through the creation of social media technology, it has been made possible to obtain a much larger expert audience to expedite networking at a much faster rate.

Social networking may be an ordinary human behavior, but a question that many researchers ask is if it adds value to organizations. The answer has always proven to be complex. In fact, during ongoing organization meetings, companies have decided that despite the potential harm it can cause, it has proven to be much more profitable and therefore worth the risk. However, a research study was conducted and the results clearly
showed that for social networking technologies to achieve their full potential in the workplace setting, they must be effectively combined with human capital and technology (Ferreira & du Plessis, 2009). Successful organizations fuse human capital and society through business conventional technology and social networks, leading to an optimization state that builds on what people already know. Eventually, the fruits and wisdom from the experience reflect on the organization’s context and the community at large.

Despite its disadvantages, social media should be optimized so as to enhance working in a culture that is diverse and team-oriented (Ferreira & du Plessis, 2009). In order to increase worker satisfaction, teamwork, and organizational performance, it is important to encourage the use of social networks aided by a set of limits and standards to improve personal and business performance (Ferreira & du Plessis, 2009).

**Risks associated with social networking.**

A study by Lehrman (2010) indicated that the entity of social media is exceptionally large and very influential, despite the fact that it comes with a number of drawbacks in relation to day-to-day business operations specifically targeting tactics and organization. Easy opening and searching, small publishing entry, discussion, community, arrangement, and the fast spread of information and data to other related content through a variety of sources and systems are known as social medium characteristics. These dynamic duo relationships mean less organizational control over shareholder dealings and communications between different conflicting stakeholder groups (Lehrman, 2010).
Reputation risk essentially describes the idea of a possible loss of value of an organization as a result of corruption or an embarrassment to the face of the organization which usually impacts the name (Lehrman, 2010). The danger of losing one's status is at most a threat to an organization’s productivity as it affects how its employee base communicates with their customers. Some of the reputation loss fallout can impact local positioning, the legitimacy of operations, media relations, and the trust and loyalty of stakeholders, and competitiveness could reduce the productivity level (Lehrman, 2010).

According to this research study, European managers have deeper concerns about reputation risk due to the understanding of the immense effect it can have on an organization or a business in terms of the market value of the entity as its clientele is so socially connected via the internet (Lehrman, 2010). It’s shocking to realize, though, that the significance of reputation risk is continuously neglected by supposed risk management academics.

It is debatable to say that social media acts as a catalyst to increase the reputation risks of a company by boosting the risk dynamics. The statement shows that since social networks are diverse and widespread, they are hard to control due to the free access and the freedom to post and write whatever one wants (Lehrman, 2010). Most of the time, information posted by users tends to be rumors that differ from the actual information that organizations have not yet released. Despite this, social media users generate opinions about what organizations should focus on in the future and can offer short-term solutions in terms of packaging and other associated issues. There are many social media websites that help facilitate these organizational communications. Few of them question
the responsibilities and administration of organizations, but those that do help to reveal corporate irresponsibility (Lehrman, 2010).

Research by Lehrman (2010) further indicated that social media offers challenges to the conventional reputation supervision in three ways. To start with, social media is not purposed to channel corporate communications; it’s really more the venue of an interaction. Corporate communications are actually a minor purpose of the social medium networks. A social network is a forum where companies interact with the public and gain insight on the value of their products. These interactions and communications between organizations and their clientele create observations and open room for research and development necessary for the growth of every organization and business (Lehrman, 2010). Henceforth, organizations should pay more attention to social media networks as there is an immense possibility of increased understanding of how certain unnoticed little aspects about their products and services can be a source of overwhelming profits.

Additionally, strategic reputation management departments or managers must consider ethics rather than make a run on short-term and much less profitable interests and possibilities (Lehrman, 2010). Social networks have positive and negative effects, and though the positive tend to be more than the negative, it may take only one negative to cancel all the positives (Lehrman, 2010). Therefore, a clear line in terms of interactions on the social sites should be set; it may not be now or tomorrow, but eventually, steps will need to be taken to prevent rumors and the closing down of businesses due to reputation losses.
Furthermore, social media has the added effect of presenting less of a collective truth (Lehrman, 2010). Web users take it upon themselves to create and falsify information by making assumptions and interpretations based on communication and data that may not be validated truth. That truth ends up being picked up by the social sites. Once they have a general picture, they formulate a comprehensive story with a lot of loopholes, but it’s undeniably believable and is shared with others (Lehrman, 2010). The prejudiced truth grows and turns into a truth about what an organization is up to and the potential downfalls. This process, unfortunately, leads to unsubstantiated rumors being proliferated, and it’s not surprising to note that none of these rumors are ever positive. These rumors, if not taken seriously, can lead to huge damage to an organization and their reputation (Lehrman, 2010).

**Employee's Productivity**

Achieving maximum productivity through collaboration requires an evaluation of the employees or workers in the organization (Scott, 2012). The assessment is necessary as it provides an informational base on how to group the employees in a more efficient and effective way while considering the goal of improving productivity. Persuasion of group culture and maintenance of mutual beneficial learning relationships help in leading to a diverse workforce capable of ensuring productivity at a high rate. Productivity occurs in different ways to different types of employees. In an organization setting there are both skilled and unskilled employees and through the ideas gained from shared learning, it is possible to ensure an average level of skilled working through the application of teamwork or better collaboration (Scott, 2012).
Challenges may arise while dealing with team productivity, such as free riding (when people take advantage of being able to use a common resource, or collective good, without paying for it) and measurement problems (the inability to effectively evaluate a business process), that end up hindering the best outcomes (Tarricone, 2002, p.56). The free-rider problem may be addressed through two theoretical approaches, the first being the folk theorem that uses the explicit threat of discontinuing teamwork in a dynamic setting. The theory explains that if team production is large enough for all of the members, hardly any will deviate in a bid to maximize his or her shot to have it pay off, which would cause a less efficient Nash equilibrium outcome. The other approach is less formal and uses the concept of internal and external peer pressure (Tarricone, 2002). The effectiveness of peer pressure sets in when an individual decides to take a free ride as the other team members carry the heavy load; the workers are free to impose punishments and, if need be, expulsion from the group to ensure mutually beneficial work that leads to positive results.

Enterprise social collaboration breaks down business silos by providing a safe, social foundation for the entire organization. This objective can be used to send messages, take checks, manage groups and assignments, work with external and internal parties, find experts, and innovate more efficiently (Tarricone, 2002). It also ensures that the employees can ask questions and express their opinions freely, leading to their growth and, in turn, increased productivity.

Studies have indicated that enabling employee connection and collaboration across the globe by connecting them to multiple sites using highly mobile formats keeps
employees readily connected wherever they are (Hamilton, Nickerson & Owan, 2003). This helps to provide a flexible platform that enables employees to leverage wisdom from the crowd, preserve knowledge, share success, and get faster answers on predicaments or situations back in the office (Hamilton et al., 2003). This connection allows employees not only to make better and more practical decisions but also exposes them to a more comprehensive perspective of doing business.

A transformation of the performance management sector occurs by putting people with social capabilities at the center to make sure the process is collaborative, inclusive, and results-driven. It is done effectively through the use of enterprise social collaboration which entails solutions that enhance and streamline communication with videos, messages, and annotated documents. These can be easily created and distributed to guide the employees through the active performance management process (Hamilton et al., 2003). Enterprise social collaboration enables the setting and managing of goals in an open manner, and consequently, it fosters better and faster completion of goals.

One way of keeping employees connected and productive is by ensuring they are flexible regarding mobilization of work, either at home or via telecommunication. To ensure effective and efficient employee productivity, an organization must make sure there is a foundation that enables its workers to work productively, regardless of their location. Remote working just happens to be one side of the equation; the other critical half requires employees to take advantage of intelligent collaboration features while mobile, through the use of phones and computers (Hamilton et al., 2003). The connection
enables collaboration with other workers, clients, and partners, and the information, applications, and processes needed to solve business-critical problems and initiate results.

Efficient teamwork has been noted as one of the building blocks of high-performing businesses. Companies that carry on performing profitably rely on group work (collaboration) as an essential cultural element of day to day business operations. Team-oriented businesses are more productive, yield higher quality deliveries, and benefit from a flat management structure resulting from an intensive client focus and effective and efficient communication due to employees’ self-confidence (Hamilton et al., 2003).

New employees often face extreme learning curves when they join a firm, making the on-boarding process long and difficult before achieving full productivity. Enterprise social collaboration can direct freshly acquired employees to the colleagues and material they need to acquire, which leads to a dramatic reduction in their contribution and comprehension timeline (Hamilton et al., 2003). Automatic delegation to new staff groups will easily connect new workers with high performing colleagues, training, and material information they will need to quickly locate the particular person to assist in the job at hand. Moreover, the extended social network can advise on people and content that are significant. These best practices enable new hires to jump right into interaction with the particular people and materials that can help them find answers to the questions that impact their position, which is paramount to their learning. All of these factors contribute heavily to improving their productivity.
Building Blocks for Active Collaboration

According to Schuman (2006), numerous investigations have indicated that there exist some building blocks which should live amid leaders and personal contributors to make sure collaboration is the component of the organization’s infrastructure. These structures are communication, trust, creativity, attitude, uniqueness, play, social interdependence and a shared vision and purpose (Schuman, 2006).

Trust has many facets, but the most sought-after facet due to its effect on the collaboration process is a vulnerability. Without trust, individuals tend not to completely devote their creativity to group endeavors. In other words, this means a setting where each person might express interests, fears, and diverse opinions with no fear of rejection, retaliation, or aggression (Schuman, 2006). The threat of vulnerability steers behaviors that stifle creativity and innovation, and at the time individuals feel not respected and perceive their contributions as being unnoticed and not valued, they search elsewhere for chances to contribute.

Creativity, as well as uniqueness, share the same learning concept that is highly encouraged for team members and the promotion of leadership. Proper ingenuity stands out and is therefore accepted or viewed as unique depending on the setting of the collaboration environment (Schuman, 2006). Team members are responsible for the success and possible failure of their team, so they are encouraged to express, respect and encourage their uniqueness and that of others.

Attitude blends well with play in that the teams with the right attitude always seem to be more relaxed and successful in the tasks allocated to them. As for play,
relaxing helps to achieve better results because human beings thrive in positive peer relationships (Schuman, 2006). Having excitement among group members generally, results in greater productivity and higher achievement.

Communication must be effective for collaboration to work in an organization, though for effective communication to work there must be acute self-awareness. Not only should employees understand their preference for how they approach a collaborative situation, but they also need to be able to understand the communication and collaboration styles that other employees may prefer (Schuman, 2006). Heightened self-awareness allows individuals to modify their behavior and communication style, which will ultimately lead to providing room for individuals with increased engagement. If collaboration is to succeed, it requires every employee in an organization to be on the same level—the senior managers shouldn’t be the only ones getting the opportunity to develop these communications skills (Schuman, 2006).

Social interdependence relates to how people react and interact in a social learning environment or working situation, including group surroundings which are an integral part of collaborative learning. The relationship between flourishing teams, supportive learning, and social interdependence is strong, as group work relies upon collective processes (Schuman, 2006). By enabling people to achieve more through social relationships than as individuals, this will show that teamwork has strength; sharing a common objective or a shared common vision fosters an accomplishment that cannot be met by an individual (Schuman, 2006).
Schuman (2006) further reiterates that shared vision and purpose entail explaining to everybody engaged in the process of collaborative "why" a specific project or program is being carried out, which helps the workers understand the way their job contributes to the objectives of the organization and the way collaboration can assist them in meeting their objectives. Unfortunately, the sharing of vision and purpose is at times overlooked when managing heavy workloads and deadlines (Schuman, 2006). Leaders should ensure they prioritize this sharing as a necessary investment in the definite increase in the team and individual performance for the benefit of long-term success.

Summary

It is seen that collaborative learning refers to the work performed by learners’ teams generating a product of some kind such as a set of the design of a process or a product, under conditions that fulfill the following five criteria: positive interdependence, personal responsibility, face-to-face interface for at least portion of the work, proper application of interpersonal skills, and finally frequent self-evaluation of the team functioning. The wide-ranging study has shown that comparative to traditional personal and competitive means of instruction, appropriately implemented collaborative learning results to higher learning as well as better enhancement of communication and skills of teamwork such as leadership, management of the project, and skills of conflict resolution. The technique has been applied with substantial success in all scientific subjects. It has been noted that the benefits of collaborative learning are not automatic, on the other hand, and if improperly implemented, the technique might build up considerable challenges for employers, most remarkably employee resistance and dysfunctional teams or opposition.
to work of the group. The employers who have never applied the method are asked to start using it slowly instead of trying a full-range implementation on their initial attempt and to raise the implementation level in the following course offerings. To a raising level, they must observe the learning advantages promised by the study, and as their proficiency as well as confidence in method implementing continues to increase, employee assessments of the team experience must advance concurrently. Most significantly, employers who are successful in applying the collaborative learning in their workplace will have the fulfillment of understanding that they have importantly assisted prepare their employees for their professional careers.

In this quick changing universe, an organization that has implemented collaborative learning is required to stay ahead of the pack. Numerous studies indicated how the organizations that have implemented collaborative learning assisted them to outperform at the time of the economic downturns. It is also seen that those successful organizations had continuous efforts to hold their open relationships within the organizations, employees, and even to their external environment, to assist the information and knowledge flow in the entire organization. This kind of the organization can assist workers to contribute to the continuous improvement of the organization and ability improvement via interaction with various levels of workers, teams as well as sharing information and knowledge with others. Lehrman (2009) tells us that social networking normally stimulates teamwork and knowledge allocation between persons, which can lead to increased productivity. Lehrman (2009) also mentions how social networking know-how should be directed in more efficient ways to certify maximum
outcomes, as there are drawbacks that workers may yield to if left to govern their own social networking experiences. Some of the risks involve bandwidth and storeroom consumption, possible legal accountability, exposure to malware, decreased yield, the disclosure of private information, and the danger of leaking company secrets. To make the most of social networking’s potential within the organization, it is suggested that organizations delegate specific networks for organization-wide public networking. It is also suggested that managers consider developing clear and all-inclusive policies when outlining social networking policies and potential complications. This resolve ensures that employees are fully aware of and accountable for what is acceptable regarding social networks. Networking know-how should be forwarded into efficient and effective ways so as to maximize outcomes, as there are drawbacks that workers may yield to if left to their own policies.
Chapter 3: Methodology

Research Design

The main aim of this dissertation was to investigate how employee trainings, which serve as one vehicle for improving productivity, utilize collaborative learning and instructional technology. It also investigated the employee’s perception on evaluating current instructional technology methods that may improve employee productivity at a university.

Specific research questions were:
1. What types of training did employees participate in to improve productivity?
2. To what extent does this training use collaboration?
3. In what ways was technology used in these trainings?
4. How do employees perceive their technology based collaborative training will influence their productivity?

This dissertation research relied on a sequential explanatory research design to accomplish its goals. Sequential explanatory research is characterized by a collection and analysis of both quantitative data and qualitative data (Creswell, 2003). Creswell (2013) further describes this design as the process of first collecting quantitative data and then collecting qualitative data to assist in the interpretation and explanation of the quantitative research. This approach can assist the highlighting and allow for more depth into the problem that is the focus of the data gained from the quantitative study. In this case, both a quantitative research instrument (demographic survey) and a qualitative
research instrument (semi-structured interview) were utilized to analyze collaborative learning and instructional technology that were employed during training.

Qualitative study, as one of the key elements in this research study, can be employed to produce outcomes based on in-depth interviews, unlike other potential methods or means of statistical procedures (Tracy 2013; Kothari 2005; Patton, 2015). However, a qualitative study yields results that can be obtained from actual settings where the objective is unfolded naturally (Patton, 2001). Qualitative methodology seeks an in-depth understanding of problems under investigation or motives of real-world scenarios (Hoepfl, 1997).

Kothari (2004) stated that qualitative dissertations offer profound information concerning research purposes or to address research problems. Also, according to Stake (2010), qualitative investigation can be used as a technique to explore and understand groups of people or persons in ways that emphasize their human, social or economic characteristics that would affect their workplace performance, relationships or productivity. The qualitative research allowed the deep analysis of interview data to provide vital information about the implications of how technology can provide an enhancement to the employee productivity at a university.

The sequential explanatory research design was chosen for this dissertation research to gain a broader understanding of how employee training at a university may or may not affect their productivity. The subjects consisted of administrative employees from the university. The focus of data collection remained on the employee’s training experience within the preceding two months. Those training experiences were discussed
for the purposes of understanding their effectiveness, use of technology, and the use of collaborative learning. The other aspects of the training such as the effectiveness of the facilitator, the importance of the topic, and the other participants in the training were not a focus of this case study. The information or responses gathered and submitted for descriptive analysis were done so with the aim of giving greater understandings regarding an employee’s perceptions of the technology used in training, collaborative learning as well as their impact on productivity and how it can be evaluated and improved.

**Recruitment and Selection of Participants**

Administrative Employees working at the university were the main target population of this study. Within that group, the goal was to find those employees who had attended a training within the previous two months that utilized some form of technology and/or collaborative learning element. In order to survey those potential participants, the researcher contacted the Information Technology department for email distribution lists. The department stated the list they had contained approximately 1000 email addresses of administrative employees of the university. A targeted email was sent to the entire list that stated the brief goal of the research and asking for their participation in the survey and potentially a future follow-up interview.

Once the survey had been active for a week, the responses had ceased, and those who matched the sought-after criteria were contacted. Out of the 1,000 emails that were sent, 95 had responded with the matching criteria. Those meeting the research criteria of attending a training within the prior two months that had an element of technology and/or collaborative learning were then sent direct recruitment emails to get their commitment
for an in-person interview. The purposeful sampling method was used to select respondents and the technique helped to reduce bias. The researcher scheduled 5 interviews initially based on the respondents, working with the first employees to respond to the recruitment emails and have availability. An additional 5 were scheduled for the completion based on the researcher’s projection about how many would work best for the study. There were about 25 who eventually responded to the recruitment emails, with only the first 10 being actually interviewed. The criteria for their selection all were generated from the demographic questionnaire.

The interview participants themselves were each from a different university department. They were the first 10 participants to respond to requests for further assisting in the research through the process of the interview. All were administrative staff that had attended a different training in the preceding two months. Some examples of their university positions were; departmental director, manager, administrative assistant, communications specialist, and consultant. This wide swath of positions to be interviewed as well as the training topics that were covered helped to produce a large volume of invaluable data for this dissertation.

The selection criteria included the topic of the training the employee has taken part in as well as the usage of technology and/or collaborative learning. This was the criteria for participation in phase 2 of the study. The caveat was that they have received that training within the previous 2 months. This was the criteria necessary for participation in phase 1 of the study. The necessity of them having to complete the training within the previous two months would drastically reduce any implication of
recall bias. Marshall and Rossman (2011) stated that seeking study respondents who have relevant experience will provide the highest possibility to obtain relevant research data.

The participants were selected in a several step process. The demographic questionnaires, within the software program Qualtrics, were emailed to the target population of the university employees. The recruited employees (respondents) were required to complete the questionnaires sent to them. The investigator identified respondents who met the demographic parameters of the study with the aim of requesting them to participate. This was accomplished by contacting all 95 participants who completed the demographic survey and met the criteria in an effort to secure their participation in an interview. Those who responded were scheduled for interviews. However, once 10 interviews were completed, there was no longer the need for more based on the information that was learned because data saturation was achieved. Data saturation traditionally is obtained when adequate data extended to the diminishing returns’ point through the addition of respondents whenever required until information replication occurs (Bowen, 2008); that held true for this dissertation as well. According to Bowen, (2008), data saturation involves the process of bringing more study respondents to participate in the research project until the data collection no longer provides extra info or data on the research problem.

The investigator received replies from the target population (university employees) and from there the researcher selected study respondents based on their responses to participate. The sample population was between 18 years old to 60 years old study respondents (employees).
Prior to data collection, IRB approval was obtained by the researcher and the study participants were given the opportunity to review the approval/consent forms before interviewing or issuing demographic questionnaires. Also, the participants were provided with an explanation about the objective of the research as well as consequences or benefits of taking part in this study prior the data collection process. The participants were requested to not mention any name or include any personal information. Furthermore, the interview responses remained anonymous and will not be seen by anybody other than the researcher as well as kept in confidentiality for 3 years, as required by IRB protocol.

**Data Collection**

Data collection occurred in two phases and utilized a demographic questionnaire and an interview. In phase 1 of the study, quantitative data was collected using a questionnaire. Richards and Schmidt (2002, p. 438) stated that questionnaires generally appear in three different kinds: (a) structured (or closed-ended) questionnaires; (b) unstructured (or open-ended) questionnaires; (c) merging or a fusion of the two (open-and-closed-end) questionnaires. Every type of questionnaires contains specific weaknesses or strengths (Seliger & Shohamy 1989). For example, a closed-ended questionnaire is more effective due to their ease of analysis. On the contrary, an open-ended questionnaire might result in improved or effective findings of the problem being studied (Gillham, 2000). However, Gillham (2000) admitted that open-ended questionnaires can also be difficult in analyzing their data. Alderson and Scott (1996) acknowledged the effectiveness and the importance of qualitative data but stated that the
nature of open-end questionnaires makes them problematic during analysis or comparison of data collected from interviews and discussions reports. Nunan (1999) further stated that for the majority of open-end questionnaires, each answer or reaction to each open-ended question truthfully or precisely reflects exactly whatever the study participant wanted to state or communicate, which is important for the success of any project. The important point is that the investigator needs to certify if each questionnaire is consistent, effective, unambiguous or valid (Richards & Schmidt, 2002, p.438). A questionnaire has the ability to make use of numerous types of these forms of questions (Blaxter et al. 2006 p. 171).

In this study, phase 1 data collection relied on 4 questions on the demographic questionnaire that were formulated by the researcher based on the overall objectives and study questions. The questions specifically addressed the following areas: what was the training topic, what type of technology was utilized to deliver the training and what was the most effective part of the training. This portion of the questionnaire was designed to consist of open-ended and closed-ended questions. Those open-ended questions helped to address the following research questions: What types of training did employees participate in to improve productivity? In what ways was technology used in these trainings? The close-ended were utilized to make sure the potential participants met the selected criteria for participation in this study. Receiving that information from the questionnaires was also helpful to reach the conclusions of this dissertation. That data learned from the demographic questionnaire was helpful to understand the broad range of training topics, types of technology used as well as what the most effective parts of the
training were. All questionnaire forms contained 9 questions. The questionnaire itself can be found in Appendix A.

**Administration of Demographic Questionnaires to Study Respondents**

Generally, there are diverse techniques of administering demographic questionnaires during interviewing or data collection process; each of these techniques has its own disadvantages and advantages. For example, demographic questionnaires can be sent by e-mail or over internet; in this technique administering questionnaires to the study participants, “the return rates will be very high or better compared to simply posting these questionnaires to all research participants since it is easier for the study participants to return the filled questionnaires to the researcher for data analysis” (Harsh, 2011, p.70). Furthermore, the demographic questionnaire could also be administered via the telephone; however, in this method, the study participants are relatively obliged to answer the questions over the telephone. Lastly, demographic questionnaires might be administered face to face during data collection process. Also, in this technique, the study participants are rather compelled to answer the questions directly or face to face (Gillham, 2000). However, when conducting a demographic questionnaire to a target population of over 1000, the most feasible way to accomplish the task is via email through a survey software like Qualtrics.

Conversely, Brown (2001) divided the process of administration of a demographic questionnaire into different ways. To begin with, each questionnaire can be self-administered this means that questionnaires are generally sent out to the intended study participants; however, Brown (2001) argues that this method has definite
weaknesses because most research participants frequently hardly return the filled questionnaire to the researcher. Furthermore, if there will be any ambiguous questions or if any misunderstanding arises, the investigator will not be within reach to clarify them; thus, hindering data accuracy. Lastly, the investigator might also have no knowledge of the manner in which each question will be responded to as he/she will not be there to check. Therefore, in order to make this technique effective for the purpose of collecting data for the research, the demographic questionnaire should be distributed to the target population all through the same means, with a limited time frame. Also, it is important to include contact information with a quick turnaround time to ensure the highest participation possible. Kothari (2004) stated that such an approach of distributing questionnaires to the target population will be more efficient and highly effective in comparison to other techniques simply because the percentage rate of return will generally be higher due to the availability or presence of investigator who will provide an explanation, clarification if there will be misunderstanding or lack of clarity issues that will be highlighted by the respondents and the investigator will have an idea or knowledge of how the administered questionnaires were filled out by the respondents. Hence, for this research study, the demographic questionnaires were administered to the sample population by e-mail and interviews were conducted face to face during the data collection process.

In phase 2 of this study, qualitative data was collected using interviews. Phase 2 interviews entailed in-depth interviewing, about an hour in length, the enlisted university
employees (research respondents) and investigated the use of collaborative learning and instructional technology to improve employee productivity.

Flick (2006, p. 160) stated that the objective of interviewing respondents is to reveal present knowledge in a manner which could be easily articulated or interpreted in the form of answers that will be available for data analysis or interpretation of interview results. Generally, interviews may be carried out in different ways: one individual to another (personal interviews) and collective as well as group forms. Merriam (1998) believed that all the interview forms are a type of objectively oriented conversations. In addition, interview’s strengths include:

- Interviewing is the best method for measuring other information of interest and attitudes from the research respondents.
- The interview provides in-depth information about the data to be collected based on the research objective and research questions.
- It allows the good interpretive validity of the data collected.
- For telephone interviews, there is a quick turnaround.
- There is relatively higher measurement validity for well-tested and the best-constructed interview procedures (Johnson & Turner, 2003, p. 308).

Creswell (2013) stated that there are numerous varieties of interviews types and the decision to select one type of interview method over another will rely on the specific aim of the study, research variables (independent and/or dependent), phenomenon under examination/investigation as well as the type of data to be collected. Patton (1990, p. 288-89) divided interviews into the following types:
- Open-ended (Structured) interview
- Interview guided method
- Informal discussion or dialogue interviews
- Closed-ended, fixed responses interview

The informal discussion or dialogue interviews are generally carried out with no particular order or without any pre-determined questions. These interview questions can arise or originate from the normal dialogue’s or discussion’s flow and could be categorized as naturally investigative discussions/interviews; thus, it can be somehow challenging for the new scholars. On the other hand, open-ended (structured) interviews contain questions which are pre-determined or prearranged with virtually fixed orders. Nevertheless, open-ended (structured) interviews are very rigid; thus, observing predetermined questions might not permit the researcher to access study respondents’ perceptions as well as views about definite research phenomenon (Merriam, 1998, p.74).

Similarly, fixed as well as closed answered interviews are the same as closed-ended questionnaires in which the study participants (interview participants) must give their responses to each question in a more rigid (not open) order as well as format. Creswell and Plano (2011) stated that in fact, the interview participants are hardly free to express themselves during the data collection process. Creswell and Plano (2011) further argued that this kind of interview method (the fixed or closed response interviews) is very cold and the interviewees are often bored. On the contrary, in the interview guided method, the interview questions and themes are detailed; however, these questions and themes might be reworded in any given order based on the research setting or condition.
One of the benefits of the interview guided method is that the gathered data could be contrasted and compared later prior data analysis (Fraenkel & Wallen, 2003, p. 456). The data collection approach in an interview guided method is relatively conversational and systematic. Therefore, the best, effective and significant technique for this study can be semi-structured interview guided method since it is flexible and gives more room to the interviewees to offer more data or info as compared to other types or forms of interviews; it is also less rigid and very open. Interview guided method form can be used to gather sufficient information or research data from the interviewees.

In order to accomplish these suggestions for best practices of interview question development, the interview questions were developed solely by the researcher. The process that took place involved writing out every step of the training process from being invited to participate to how it may impact day to day tasks. This included process steps, reflective steps, and evaluative steps. This was the most efficient and effective way to acquire the desired data. For example, the interview began by asking about the specific things that occurred during the training and understanding the participants’ impression of the effectiveness. The interview then proceeded to ask about the motivation to attend and finding out what was the most memorable aspect. Finally, the questions were geared toward the specifics of how the participant would rate the training and how the specific methods were used to convey the learning objectives. By gearing everything towards training and the associated processes, it made the interviews logically follow that train of thought. It also allowed the interviewees to focus their responses on the different
components of training as well as how it may have impacted different processes they may complete on a regular basis.

**Study Reliability**

“Reliability refers to a concept utilized to test or evaluate research; this ideology is most frequently used in all other research methods” (Tracy, 2013, p.4). Good qualitative research helps in comprehending unclear and inexplicable cases or circumstances, which results in better qualitative study where reliability can be used as an idea to assess the superiority of a qualitative research with the aim of generating understanding of what the study seeks (Stenbacka, 2001, p. 551). This is applicable for this case since the goal is to understand the use of collaborative learning and instructional technology to improve employee productivity by investigating the employee’s perception on the learning methods that were utilized during training. Reliability is factored in while planning or undertaking qualitative studies, evaluating study findings as well as judging the quality of research. For this sequential explanatory research design, reliability was considered while in the design stage and helped to analyze dissertation results by assisting in judging the quality of this dissertation research (Patton, 2001).

For the purpose of reliability, bias was avoided when interpreting the findings or collected data through the interview method and a high level of consistency was maintained throughout the study. The interview instrument, as well as the interview results, were enhanced by creating sound interview questions and making sure or certifying that all demographic questionnaire forms properly fit directed target study participants. The strength of utilizing interviews can be seen when they supplement one
another and boost the reliability and validity of the data that was collected (Yin, 2011). This is the same situation that occurred in this research. The knowledge gained from each interview was able to be multiplied by the information learned from the other interviews. In addition, all interview questions and items on the demographic questionnaire were developed prior to data collection, following the study questions as well as research objectives. This ensured a unified drive and goal of the research. In addition, the gathered data from the interview respondents was ensured by accurately checking for any errors and analyzing data carefully. These different steps all assisted in ensuring the reliability of this sequential explanatory research.

**Results Validity of the Dissertation**

Roller and Lavrakas (2015) argued that validity of the dissertation findings is preserved when the respondents are double-checked through the dissertation results that are gathered. Once it is found that methodologies/procedures employed shows likenesses or are nearly identical, all findings will be declared consistent or effective.

**Internal validity.**

The collected data from the interviews and demographic questionnaires were recorded (i.e. on a spreadsheet), scrutinized, evaluated and systematically interpreted. Likewise, the validity of the interview instrument as well as that of the interview results were enhanced by creating sound interview questions and making sure or certifying all elements properly fit directed target study participants (employees). The questions illustrated that they were prudently drafted and articulated so that they were used
effectively to collect data for accomplishing dissertation specific goals, answering the study questions and achieving the overall dissertation purpose.

**Validity of sequential explanatory research findings.**

The validity of the interview findings for this dissertation was ensured by thoroughly reviewing the study findings that were obtained through the administered interviews. Marshall and Rossman (2011) stated an investigator can use participant checks and/or validation of study participants to improve the dissertation/study finding’s validity. Also, participant checks encompass evaluative validity, descriptive validity, as well as interpretive validity. Most significantly, the researcher must share all the research findings with all the study respondents who took part in the research project; this will allow the respondents to scrutinize the study results and offer comments where necessary (Tracy, 2013; Saini & Shlonsky, 2012). Then study respondents affirm the summaries and expresses their experience or views regarding the study findings. Marshall and Rossman (2011) further added that once the study respondents confirm the completeness and accuracy of the study findings, the study will, therefore, reflect research integrity. The member checks were conducted via email. The feedback was overwhelmingly consistent in their agreement of my results and writing of their participation in the research process. A few took the opportunity to add commentary to the conclusions, while others just replied with an agreement.

Williams and Morrow (2009) stated that validation of study participants takes place throughout the information/findings’ gathering; predominantly, after the researcher receives feedback from interviewed respondents concerning the findings’ or info
truthfulness as provided. Generally, the objective of these validation procedures is to generate or obtain study results which are valid, legitimate, and authentic (Williams & Morrow, 2009). Therefore, in this dissertation, the study respondents were allowed to verify data collected as part of the participant’s validation process.

**Procedure**

The researcher administered the demographic interview questionnaire and administered semi-structured interview questions. The interview tools were articulated and designed following the dissertation purpose or goals as well as key study questions that intended to be dealt with. When gathering data, all demographic questionnaire forms were dispersed to the target population. The demographic questionnaire was live for 7 days to allow time for the target population to complete it. This was an appropriate amount of time as the number of potential participants who completed it was dramatically reduced after each day. The process of gathering information/data and conducting interviews took a duration of 7 days, which was sufficient to gather adequate findings. There was no special significance of 7 days, it was just the amount of time it took to get all interviews scheduled. Each respondent was given approximately one hour to answer the interview questions.

Therefore, the following data collection instruments were used;

**Detailed interview tool.**

It consisted of interviewing all respondents (employees) face-to-face to examine or gain deep understanding regarding the use of collaborative learning to improve employee productivity in the selected university. This was also utilized in
acquiring/obtaining relevant findings/data that assisted in accomplishing the purpose of this dissertation. Interviews contained approximately 20 questions or sentences; all were drafted or articulated for the purpose of realizing the aim of this dissertation, which explored the employee’s perception on evaluating current instructional technology methods that may improve employee productivity.

**Research Measures and Methods**

For this dissertation, the interview instrument was specifically designed and drafted to gather information to assist in evaluating employee training, its impact on productivity and determining the importance of using collaborative learning in enhancing/improving it. It was also used to investigate the participant’s view regarding current instructional technology methods that may or may not improve employee productivity.

Interviews were used in gathering facts/information for this research. Before and after data gathering, the researcher generally had to consider the reliability and/or validity of all findings gathered for this dissertation. Respondents were chosen from the target population that had completed the demographic questionnaires. The findings were thoroughly scrutinized or evaluated descriptively to accomplish the dissertation aims and determined how the dissertation findings related with the dissertation’s independent and dependent variables.

**Processes of collecting and analyzing research findings.**

Detailed semi-structured interviews were utilized in gathering relevant information/data in this dissertation. The interview instrument was created, drafted and
articulated to cover the dissertation goals and study questions, and then distributed to all selected study participants. All the questionnaires maintained privacy, as no inclusion of individual (employees personal) details was part of the process. All demographic forms were submitted electronically and the Qualtrics report provided adequate visualization or interpretation for descriptive analysis. Furthermore, respondent’s privacy and personal respect were safeguarded.

**Data collection process.**

Guest, Namey, and Mitchell (2013) stated that during the administration of interviews, identified study respondents will be given an overview of dissertation expectations, anticipated threats and importance of their contribution, and lastly, provide detailed approaches included and processes to be followed systematically to accomplish the intended goals or dissertation purposes. More significantly, study ethics and respondents’ privacy will be decisively retained. In this dissertation, research respondents (employees) were requested to read participant’s information forms (copies will be attached in the appendix) and also those interviewed were required to sign agreement forms. All study respondents understood that exposing or giving out any information or evidence regarding this dissertation to other parties could have serious implications i.e. they can be in legal trouble.

In the course of gathering relevant information, identified respondents (employees) completed semi-structured interviews with the investigator. Respondents who were unwilling to contribute or to be interviewed were also be appreciated for their
participation in the demographic questionnaire and their views will be respected (Speziale & Carpenter, 2011).

Participants should not be disclosed and they must be encrypted for protection/privacy or safekeeping. Any evidence about the institution i.e. university or respondents involved was eradicated or assigned pseudonyms in special cases where data must be included during final research submission. The investigator analyzed the interview responses/results with the aim of effectively accomplishing the dissertation aim and after that results can be shared with the university or respondents (employees) while the rest of information will be deleted once the dissertation is submitted (Lapan, Quartaroli & Riemer, 2012).

The last paragraph of the data collection instrument (demographic questionnaire form), includes an appreciation note mainly intended to show gratitude to the respondents for their willingness to participate and their contribution. Moreover, personal information or details of respondents stayed unknown (secretive). Finally, the investigator can notify the university or respondents (employees) who contributed towards success of this dissertation by giving them the copies of dissertation outcomes/findings as well as recommendations that may be useful in enhancing/improving employee productivity (Guest, Namey & Mitchell, 2013)

**Analysis of research findings.**

Regarding mixed methods methodology, the data analysis was based on the interviews and demographic questionnaires administered to the selected study respondents. The interview notes from the field (study participants) were cross-checked
for accuracy, tested, and then all data was analyzed systematically using various methods.

The Qualtrics report on the demographic survey was imported into Microsoft Excel for visualization. The data or interview results was as exported into Microsoft Excel and eventually into MAXQDA Analytic Pro version 12 for visualization as well as thorough descriptive analysis. Prior to data analysis, data was edited and summarized into lesser standardized arrays using excel which help in evaluating substantial connections. It encompassed efficient and logical classification and evaluation of interview responses in a manner that facilitated easy analysis (Sensing, 2011). This gave the researcher a great number of themes to start out data visualization and analysis. Looking at the codes for the first time, the researcher was able to narrow them down to about 25 main themes. This process is described in greater detail in the coding section. Utilizing gathered interview responses/results, the investigator performed effective analysis of recorded interview results that were obtained to achieve study objectives and provided answers to the study questions.

**Coding**

The one-on-one interview data analysis included a process of coding, grouping, sorting, and integration (Sensing, 2011). From that point, an assessment and understanding of that data will include some reflective analysis (Sensing, 2011). The researcher utilized MAXQDA Analytic Pro version 12 to assist in the process of coding, sorting and analysis of the interview data.

The goal of coding was to assess and extrapolate themes and the main focus areas to develop the categories and concepts that pertain to the questions involved in the
research. Codes were utilized into the process to determine the present and changing themes, points of consensus and dissent (Saini & Shlonsky, 2012). Coding means making divisions between consensus, personal opinions, and viewpoints (Saini & Shlonsky, 2012). It will also become necessary to evaluate and differentiate between minor opinions that are not necessarily aligned with others and explain why they were not included (Sensing, 2011).

A piece of coding involves taking theories and framework and meshing them with ways to conduct analysis (Speziale & Carpenter, 2011). The framework that was utilized to assist in the interpretation of the data involved increasing awareness of outside factors that were experienced by the employees as they reflect on past training they have received. Those factors included: understanding the time that had transpired between training, what activities they had done to further the lessons from training, their perception overall on technology and collaborative learning.

An approach recommended by Rubin and Rubin (1995): “to begin the final data analysis, put into one category all the material from all interviews that speak to one theme or concept” (p. 226). Having the transcriptions of the interviews on the computer will assist the researcher to utilize color-coding. This will enable the researcher to apply different colors for each category. This could include things like: types of technology would have a green color, and productivity improvements could be a yellow color. There will be no drive toward predetermined themes, instead, there will be a focus on identifying themes as they emerge. The strategy for final coding will involve what Strauss (1987) referred to as “open coding.” This will allow the researcher not to be
focused on accommodating predetermined themes, but instead, bring together similar
concepts, themes or ideas that are discovered during the data collection process.

Qualitative data was gathered by the researcher by reviewing the transcribed
audio as well as writing out notes following each session. The researcher included
reflections about the interviews that had just taken place. That information was used as a
third source of data. This information was collected and imported into MAXQDA for
coding. In order to keep organized, the participants were categorized by their responses
as well as including any specific notes that the researcher had written down during the
interview. All of the interviews have the audio captured using a recording application on
a cellphone. Following each session, the audio files were imported into an encrypted
drive. The audio files were then transcribed. Following the data being uploaded into
MAXQDA, the researcher studied the interview text to uncover the relevant and
emergent themes. They were then broken down into smaller categories. From the start,
there were 107 themes, which were broken down further and ended up becoming 25
themes that were prevalent throughout. Some examples of those 25 themes were about
collaborative learning. Examples would include effective use of collaborative learning,
continued use of collaborative learning, collaborative learning activity utilized and
previous collaborative learning experience. These themes were broken down into the
theme of asked to work collaboratively. This effectively encompassed all collaborative
learning aspects of the interviews.
However, the four main emergent themes that developed were as follows: (1) effective training, (2) memorable, (3) asked to work collaboratively and (4) technology was used effectively. In addition to these themes, the data also suggested the existence of categories and patterns. The development of themes as described by the voices of the participants provided thick descriptions of their training learning experiences.
Sorting and Integration

After coding was complete, the codes and themes were placed into Excel. They were then sorted based on the number of times they existed within the data to determine the actual relevance of each one. The categories that were determined for coding were arranged to assist in the organization of interview data into a more unified narrative that helped explain the overall opinion of all who are interviewed (Sensing, 2011). There are systems in place that will be followed to highlight underlying ideas, combine similar data as well as make connections with themes that will assist in making the data easier to comprehend (Sensing, 2011).

During the analysis stage of the research, there was an integration of methods. The goal was to draw the inferences made from the interviews (Saini & Shlonsky, 2012) to test and cross-validate the idea that instructional technology and collaborative learning may have impacted an employee’s productivity. Once the data were coded and analyzed, some preliminary conclusions were drawn. A further filtering of the data also assisted in the production of a framework which then transitioned to integration and analysis. Inferences were able to be made from that process.

Memo Writing

Memoing occurs when the researcher captures thoughts that arise when reflecting on other research in the same field. Miles and Huberman (1994) stated, “A memo is the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding…it exhausts the analyst’s momentary ideation based on data with perhaps a little conceptual elaboration” (p.72) Memos will appear when the researcher reflects on
their experience. Glesne and Peshkin (1992) discuss that memos assist in facilitating the process of analysis and that the act of writing a memo allows the researcher to expand their mind on the topic.

Memo writing can assist in determining whether follow-up interviews or clarifications need to occur. For example, if an interviewee’s answer left a gap that is realized by the memoing process, the researcher would be able to follow up to find the knowledge deficit. The subsequent interview could yield valuable data that otherwise would have been missed. It can also be used to help link the research questions to the already filtered data. The following paragraph illustrated my memoing through this process.

Looking over the literature and reflecting on the research that I have done has led me to create some excellent questions that allowed me to determine the results that I needed to accomplish the aims of this dissertation. My demographic survey was simple but allowed for quick and easy sorting of my potential participant pool. From there I grouped those responses into those who met the criteria and those who did not. The total number of the employees that received it, was about 1,000 with 95 who completed the demographic questionnaire and fit the target criteria. For those who did I looked at the responses for the training topic to make sure there was some synchronicity across the board to ensure the most consistent and replicable results. However, there was also a large amount of data to be learned from the survey. That data was helpful to understand the broad range of training topics, types of technology used as well as what the most effective parts of the training were. The researcher did select participants to begin
interviewing based on those results. The researcher reached out to them via email or phone to schedule a 1-hour interview to conduct my research. During the interview, the audio was recorded and took notes in order to assist in transcribing later. The researcher continued the interviews until reaching a point of data saturation where nothing new was learned by conducting additional interviews. After the eighth interview that took place, the amount of new, useful information began to dramatically decrease. Most of it was repeating. This increased until the tenth interview where there was very little gained after the completion of it. That interview audio was transcribed and a reflection on the process took place. Following that, the data was input into Excel for visualization and then the MAXQDA Analytic Pro version 12 software. MAXQDA assisted in connecting themes and interview elements across the data. Once an understanding of those recurring themes occurred the data could be recorded and the results were written.

**Research Limitations**

Rubin and Babbie (2011) argued that there are potential limitations and shortcomings of qualitative studies. For example, specified time might be insufficient; thus, it bounds the study scope to a single university. Therefore, the researcher chose to limit the research scope and decided to use one region which is convenient i.e. the university where the study respondents (employees) were selected from (Rubin & Babbie, 2011).

In some cases, respondents might somehow suffer or face desirability biases. Generally, this occurs when respondents may decide to respond to interview questions the way each of them sees appropriate for him/her, without observing systematic
procedures and consider personal interests or desires when completing them (Sensing, 2011). There is the potential that the number of participants may be perceived as too small. However, since the subjects are all being evaluated on different training topics, their perceptions will illustrate a much larger model about current and future employees at a university.

Another potential issue of this study was recall bias. Recall bias involves when people remember past events, they don’t usually have a complete or accurate picture of what happened (Grimes, 2002). In order to prevent this from becoming a major factor, there are a few ways to mitigate it. First, defining the research questions carefully can help assure that there is no misconception about what the researcher is trying to achieve (Grimes, 2002). A lack of comprehension can be problematic. Next, Grimes (2002) discusses that by choosing an appropriate data collection method, the researcher can ensure that the data collected will be effective in achieving research goals. Finally, by ensuring the questionnaire and interviewer allow enough time for an adequate recall of long-term memory, the recall bias potential pitfall can be avoided (Grimes, 2002).

During the interviewing processes, misconceptions, confusions or misapprehensions can occur when responding to the interviewer; however, all questions were clearly drafted to avoid ambiguity and ensured that they are simple, precise and clear. This covered all the foreseeable potential major weaknesses and that ensured that I was able to recognize and accept those weaknesses to ensure that any limitation was dealt with for the successful completion of this dissertation.
Chapter 4: Research Findings

10 participants were interviewed and responses to different questions were recorded and analyzed using Microsoft Excel and coded using MAXQDA Analytic Pro version 12. This was also in addition to 95 participants completing the demographic survey and meeting the study criteria. The data for both was examined. Both open and closed-ended questions were included in order to determine the perception of the effectiveness of instructional technology and collaborative learning on job performance and satisfaction through employee training. Not all interview responses were relevant or met all the criteria. Only those that attended a training within the past 2 months that utilized technology and/or collaborative learning and completed an interview will have their specific responses within this section.

Based on the research that was conducted, data saturation was reached after 10 participant interviews. After the eighth interview that took place, the amount of new, useful information began to dramatically decrease. Most of it was repeating. This increased until the tenth interview where there was very little gained after the completion of it. The similarity of methods that were employed across the university to deliver training limited the potential information that could be learned. Also, the differing topics could all be grouped into smaller categories such as professional development, business process, or new technology. The new, relevant information is learned from each interview after the eighth participant began to decrease to the point where there was nothing of major consequence learned from the tenth and final participant. The study results were guided by the research questions.
What Types of Training Did Employees Participate in to Improve Productivity?

Respondents were asked to provide the topic of training that they experienced at the university during the past 2 months. The following detailed responses are from those who participated in an interview. Various topics were covered. The first participant mentioned the Summer Institute for Diversity training that the university conducts annually. The respondent stated that:

The one that I noted in the survey was the Summer Institute for Diversity education which is basically a large-scale training that the university puts on every year. And when I say large scale I guess I should redefine that it is limited to 25 people but people throughout the university take a part in the training. So clearly, it is first to come first served anybody in the university, as well as outside parties, can participate in the training. So largely the Summer Institute for Diversity education was about taking people through how to train others to talk about diversity and have productive conversations. So, this is a Train the Trainer program.

Another respondent mentioned the new online calendar system used by the university. This respondent said:

The name of it is some calendar name solutions. That’s the company that bought it, and it's what the university uses. There is a lady in this department who is the calendar queen. We call her for the department and she's helped implement it and she's training the various colleges and units around the university on how to submit events for it and how to manage to approve those events for the
Administrators who were involved in that.

Budget training was identified by the third respondent as the topic the university trained its staff in order to save funds on traveling in campuses. The interviewee stated:

We are kind of a little bit tighter on our travel funds so that works great for us, especially when pertaining to the budget.

Another respondent identified a leadership Workshop for staff as an important topic of training the university offered over the past two months. They said:

The leadership workshop for staff… processes they should know and how to leverage university resources.

There was also a participant who remembered a training on different technologies

The topic kind of was meant to prepare us to use all different types of technologies. These were primarily about distance communication technologies like Skype, and Blackboard.

The next respondent mentioned the training from HR on the legal questions and topics during the hiring process.

We had training from H.R. and it was basically during the interview process for interviewing new hires, the legal questions or topics that shouldn't be discussed during interviews or the application process.

There were also responses that were recorded on the demographic survey. In total, there were 95 responses collected including those who participated in the interviews. The overall categorized breakdown of topics can be found in Figure 4.1 below.
The diverse nature of the topics that employees were receiving training on made it so there was a cross-sampling of all the different categories to populate this research. Those selected for interviews ended up representing all the different categories. This helped to ensure that the takeaways from those interviews may be applied generally to help understand the particular phenomenon of how employee training can impact their productivity.

**To What Extent Does This Training Use Collaboration?**

The second question entailed asking the respondents if the training they received offered them a chance to work in a collaborative manner. Their responses were recorded, analyzed and presented using charts. Of the 10 participants who participated in the interviews, 7 stated that they were asked to work collaboratively while the remaining 3
said they were not. There was a similar trend when looking at the data from the demographic survey as is demonstrated in Figure 4.2.

![Collaborative Participation Chart]

**Figure 4.2 Collaborative Participation**

To better gain insight into the specifics of what exactly was occurring during these collaborative learning moments, the participants described the collaborative activity during the training. One respondent identified an individual activity that turned out to be a group activity. This activity was writing a personal story about an individual’s life and then sharing the story with a group. The respondent said:

Yeah. Like working together to accomplish something to give you some sort of activity with an outcome. It was very moving and helpful to hear everyone’s story.
The next respondent mentioned the training was largely informative and no collaborative activity was conducted. They disclosed:

No, it was really more of an informative session. They just presented the information and sent us on our way.

Another mentioned that the training involved going through a packet of leadership statements and discussing them in a group to determine the acceptable ones. The respondent claimed:

Yeah, they gave us a packet of sample all leadership statements and had us talk about them in a group to see which ones were acceptable and which ones were not. Kind of troubleshooting some of the problems.

A participant mentioned the advising of the training piece as one of the group activity in the training.

Well, I specifically remember doing it as we did an activity and I don't remember what she called it but it was essentially like a kind of like mind mapping. So, we had a big page in the middle of the table and it was kind of like something between a mind map and a brainstorm. So, everyone was writing the same sort of mind map looking sheet but you weren't you weren't allowed to speak aloud.

An interviewee remembered that the training involved students carrying out various activities on Blackboard and later joining in meetings.

A couple of things that we would have done or that we did during that time that was collaborative is we were first off made to be students in a Blackboard course. Secondly, we all joined an online meeting. We were expected to do it ourselves,
so we had some collaboration there for trying it.

One of the respondents identified an activity that involved a list of applicants who were changed around and the group asked to be collaborative in deciding how to proceed with the applicants who were presented.

Yes, we had a list of applicants that were sort of changed around and we were asked to work as a group to decide which of these options we would consider hiring. Then we would pretend to bring them in for an interview. Each group had slightly different demographics on their list but with the same general descriptions. And just to see what sort of reaction people got from those how many people were in those groups. I think they were in groups of three to four depending on how many were sitting at the table. So, the idea of the activity was to work together to examine the applications, the qualifications of them and then say who will be the one chosen for an interview that you got out of that group.

And then the facilitator revealed who was who at the end.

As asked if there was any collaborative activity, a few interview participants stated that there was no collaborative activity, but demonstrations were consistently employed during those trainings.

**In What Ways Was Technology Used in These Trainings?**

There were a number of technologies that were identified among the participants used during the training. First, the group who completed the interviews broke down their technology exposure like this: PowerPoint presentations were widely used (50 percent)
with Skype, Computers, Paper Binder, Adobe Connect and Videos having taken 10 percent usage as shown in Figure 4.3.

![Bar chart showing technology usage during training](image)

**Figure 4.3 Technologies Used During the Training for Interviewees**

The second group, the data that was generated from the demographic survey had a slightly different breakdown of their technology exposure. This data also includes those who participated in the interview process. PowerPoint presentations were widely used in 51 percent of trainings with Computers being named by 26 percent of respondents, Videos being utilized 12 percent of the time, Adobe Connect being used 4 percent of the time, Skype being used 3 percent of the time, Zoom being used 2 percent of the time and a Paper Binder being used 1 percent of the time as shown in Figure 4.4.
How Do Employees Perceive Their Technology Based Collaborative Training Will Influence Their Productivity?

In terms of productivity, 70 percent of the interviewees believed that the training improved their productivity in the workplace while the rest (30 percent) said the training had no such effect as shown in Figure 4.5.
The participant, whose topic was hiring completely changed the way they would conduct the hiring processes for full-time positions and students.

I am prepared to be more prepared now I suppose for lack of a better description of the situation. I know how to prepare better for every situation where we are doing the interviewing, and is a valuable time that will not be wasted.

Another participant who attended the training on the calendar system was unsure of how specifically it would help his productivity but was certain it would.

My belief is that it is incremental but I think yes it will help my productivity. I don’t know how you quantify how much it will help but it’s definitely going to help.
The interviewee who attended a training on budgeting discussed how the process changes will have a big impact on productivity specifically for them and others who deal with the same types of situations.

In that respect, yes. I think that this way of doing it will greatly speed up my work. It is much better than the way it was before. Everything is going to be in one location with a bunch of additional features. Another plus is that we’ll be able to track more data which is something we really haven’t had the ability to do directly in our financials.

In the leadership workshop for staff, the interviewee mentioned how it will make an impact on their productivity for the next several years.

The training will certainly improve my productivity and give me a new, focused direction when it comes to my day to day activity. I can easily see the impact of it for the next several years.

A participant felt like their productivity was not going to be improved, but the other participants in the classroom should have experienced an improvement.

I have such a high knowledge of this subject area that my productivity will be unchanged. I was just going through the motions. However, my staff, who were in attendance do not have this type of exposure to this curriculum regularly, so they should definitely see an increase in productivity. I know the first time I attended a training like this, I did.

Another participant pointed out that the training caused a reconsideration of how they were approaching their job.
I have been working 60 hour weeks for a long time and getting largely little recognition. I have been motivated to help drive research and my department. Well, the training made me realize that I had worked enough. I needed to set more departmental boundaries and shift work around before I got more burnt out. So, in actuality, it will probably lead to a dramatic decrease in productivity but a much better work/life balance for myself.

When asked if the training was effective, 70 percent of the interview participants agreed that it was effective contrary to 30 percent of the respondents who did not find the training effective. All of the participants who felt the training was effective had collaborative learning as a component of the training. One person who experiences collaborative learning during a training did not feel the training was effective.

Participants were also asked to name the most memorable part of the training and they provided varying responses. The first participant mentioned the activity on the trauma that seemed to be the most impactful and memorable because it required everyone sharing their emotional connections. They said:

I think that there were multiple collaborative learning activities within the session and yes those are absolutely the most impactful. You know I think that one was probably the most memorable just because it really creates a lot of emotion and triggered memories was the one where everyone had to recall a traumatic event and use that for the activity.
Another interviewee pointed out the presenter’s excitement when she was showing different features of the software program that her prior university calendar system did not have; such as ease of use, timesaving as well as a handful of other functions.

The presenter’s excitement when she showed several different features of the calendar that her previous or the university’s previous calendar system did not have. It simply didn't have the timesaving functions and the ease of use sort of functions of it were probably what got the most reaction from the trainees as well. It was it was sort of this infectious excitement and personality that would get us excited and you can do multiple events in a whole series when there is that kind of excitement. People really seemed to enjoy it.

A respondent mentioned the training about budgeting to be most memorable because of the kind of challenges they were going through while conducting the activity.

I think to be able to understand that the changes are going to be kind of rough getting into it. But I think this process change will definitely save us time in the long run in doing it this way.

Discussion about a number of technology tools that were available to conduct distance communications was the most impactful activity as pointed out by one of the participants. That respondent said:

That sticks out to me as a collaborative piece, when we all were discussing the different technological options and worked together to identify the most effective ones.
The next interviewee mentioned that the conducive format of the training was the most important part to remember. They said:

For me personally, I got a lot of questions answered that I would have asked. So the format was conducive for that to be able to happen well.

Another participant could remember a great deal of the advice on the hiring practices such as seeking employees from Google, Facebook or LinkedIn was not recommended. The most recent training, I'd say the most, the thing that really I remember was that they advised us in hiring practices not to Google people not to go out and look for them on LinkedIn or look for them on Facebook because then we would be privy to information that could reveal them as a protected class that we would never otherwise know about. So, they were advising us not to go and search for potential hires because that's information that you really don't need. You shouldn't have in your decision and you can't forget that. So, that one kind of blew my mind because that's essentially what everything tells you to do everywhere else and they're like No, no, no. You probably believe if you've gone and you find out that somebody posted photos on their LinkedIn of themselves with their children while they are you know that they've got children. And that can sway you one way or the other. And I was just sort of like why I was mostly looking to see if they had anything on their profile that was different and you know that might be other skills or were endorsed by people but you know like additional recommendations that people can put a lot of protected information on there. It's not relevant and we're not we really aren't supposed to be considering that one. I
was just. Well, I never thought about that's worth considering I guess at least maybe something about what I could place on my own LinkedIn for the training.

Another few key components of productivity are a better understanding of the job tasks that the training was designed to address and have the trainings improved job satisfaction. These topics were discussed in depth with the interview participants. Based on their responses, 90 percent felt they had a better understanding of their role utilizing the topic while the remaining 10 percent did not. This can be seen below in Figure 4.6.

Figure 4.6 Better Understanding of Your Role Using Topic After Training

In addition, the other critical component of employee productivity as outlined by the research is on the topic of job satisfaction. Among the interview participants, 90
percent confirmed that the training had improved their job satisfaction while the rest claimed that it did not as shown in Figure 4.7.

Figure 4.7 *Training Improved Job Satisfaction*
Chapter 5: Discussion

Discussion

This dissertation has found that collaborative learning plays an instrumental role in enabling employees to enhance their productivity. Employee productivity measured by the efficiency of employees in an organization can be determined by measuring the output of each employee in a given period. Workers’ output is evaluated in relation to the average performance of other workers doing the same task. The output of each worker is a critical element in the transitioning to the university scope because any institutional success relies on it. Individual contributions of every employee count to the competitive advantage of a university, and the institutions will need to measure the productivity of their workers in the process of determining its growth and performance.

The studies presented in this dissertation have shown that employee productivity in learning institutions can be significantly improved through collaborative learning that is initiated using modern technology. Studies have also shown that employee productivity can only be analyzed based on the performance of an employee in comparison to the productivity of other workers. Dobre (2013) states that employee productivity is measured based on a specific time period as well as the performance of the entire organization. In a learning institution, collaborative learning plays an instrumental role in enhancing the productivity of all the personnel involved. The success of a college or a university depends on the output of an individual and this leads to competitive growth. This implies that the ability of an individual to utilize the resources that have been provided impacts significantly on the success of the entire organization.
As the interview data has shown, the most impactful part of the trainings were the collaborative learning aspects. Learning institutions can enhance employee productivity by utilizing collaborative learning and enabling employees to combine skills and experiences for enhancing growth and performance (Roschelle & Teasley, 2005). There are a number of factors that can curtail the performance of employees, including psychological factors, lack of resources, poor working environment, and lack of motivation (Marga, 2010). However, such factors can be eliminated when a learning institution puts in place measures that enhance collaborative learning and thus promote employee productivity. In addition, the capacity to collaborate plays an instrumental role in enhancing the success of an organization. For instance, creating efficient communication channels and networks of cooperation tend to promote collaborative learning and thereby enhancing employee productivity.

The interviews conducted for the purposes of this dissertation have yielded many indicators about university employees’ perception on instructional technology and collaborative learning. Instructional technology does not have to be overly complex or revolutionary; it just needs to be used to help improve the topic being presented. For instance, some interviewees indicated that PowerPoint was effective at delivering the training outcomes. In this case, PowerPoint is being viewed as a simplistic technological addition to a training. There did not seem to be any backlash against trainings that employed new technology or programs to assist in their messaging. The instructional technology chosen all appeared to be appropriate to its audience. Employees who
participated in those trainings also were able to gain enough knowledge about the subject matter, they were able to replicate the technology used in their own settings.

Furthermore, studies have shown that learning environments have undergone significant changes especially when it comes to matters concerned with the utilization of modern technologies (Epstein, 2009). For instance, the productivity of trainers and other personnel in learning organizations can only be enhanced if they are fully skilled when it comes to the utilization of modern technologies (Epstein, 2009). The cost of productivity can be lowered while the gains can be improved when workers gain the knowledge of using modern learning technologies. Although in the interview data, technology did not directly impact the perception of improved productivity, the varying technology environments that were created to facilitate the trainings helped expand the potential options to utilize collaborative learning methods. Trainers have the ability to impart students with skills while using the internet and other modern technologies. This not only can have an impact on the productivity of employees but also improves the ability of learners to gather new knowledge. Studies have revealed that scientific management of new knowledge tends to transform the traditional forms of learning since workers can use collaborative knowledge to enhance productivity.

Employee productivity can be gauged based on that employee’s overall output for a specified duration of time. To understand this, the employee’s output is compared to what other employees have done regarding the same job specification or task that has been identified. For the organization to grow at the desired rate, the employee output plays a very instrumental role. For production to register the resources of the organization
should be used properly and the same reason as to why the role of each employee is an important consideration. The reason why most organizations focus on the training of their employees is to boost the productivity of each of their employee by meeting the set goals both at personal and organizational levels. Factors such as psychological wellbeing and employee resilience impact the performance of the organization or the universities in question. A great focus should shift from productivity evaluation as a way of monitoring their productivity to more proactive approaches such as designing appropriate programs for instituting measurement of productivity that can gauge the current employee productivity.

According to Wu (2013), learning institutions can enhance their productivity when they implement diverse approaches, and this goes beyond the traditional learning approaches that were used in the past. The same ideology has been echoed by Dobre (2013) who stated that companies, organizations, and higher learning institutions may resort to practices that enhance development and increase economic outputs. Within this study, there were a wide variety of topics that were trained as well as different learning approaches that were used to convey the subject matter. The technologies used to help the participants also varied from using programs such as Adobe Connect, and Skype to using a pen and paper. Utilization of modern technologies such as laptops, personal computers, smartphones, and tablets has enabled researchers, scholars, lecturers, and students to connect and collaborate in order to share knowledge which ultimately enhances productivity. In the case of this research, there was a direct correlation between collaborative learning and an increased perception of productivity improvement. Largely
the activities that took place during the trainings that were attended by interviewees relied on those same modern technologies.

Numerous arguments have been presented by different scholars that differ in terms of defining the aspects that determine the productivity of employees. In this case, the evaluation of specific improvements in employee productivity was complex. The key was to examine the subject matter of the trainings that took place and transpose those lessons onto normal business processes that participants may utilize. By determining the impact, the training may have had on those business processes, the researcher was able to make a determination about the impact the training may have had on the participant’s productivity. Glenngård (2013) stated that scholars have rejected the assumption that input and output measures should be the only means of analyzing the productivity of employees. He provides an example of health care institutions where the rate of productivity can only be determined by analyzing the quality of care that is provided to patients and not the number of patients who have been treated in healthcare settings.

In the background research conducted to support this study, it is evident that the way the management treats the employees will play a factor in determining the level of motivation manifested in these employees. This can be used as a mirror to reflect the overall productivity of these employees and in the end, if the organization will achieve its set objectives. If the employees have job satisfaction increased job performance shall be achieved in the long run. In other words, these yardsticks for measuring performance and output of the employees could impact negatively on their productivities if not taken seriously by the management. If motivation is lacking in the workforce of any given
organization, the resultant effect will be that some employees will be tempted to resign from active service of the organization or they will be very reluctant in their dispensation of the duties allocated to them. It is wise for the management of organizations to embrace a culture that will unite the employees towards realizing the set objectives of the organization. The culture should clearly stipulate the different roles to be played by specific employees in the organization towards the achievement of the set objectives of the organization and in the same breath, they should be able to see the effort of the organization to motivate them towards this task. It is up to the management to make sure that all the employees are motivated and as such they must ensure that they retain the qualified personnel in the organization to avoid unnecessary expenses of training new staff to fit in the culture of the organization because this will lower the productivity of the organization.

Another very important suggestion is for the future managers to improve the level of communication among the staff and the management, through workable strategies. The moment the motivation of the employees is improved there will be a reduction in the barriers, increased performance and improved retention of the staff. The workplace environment should be devoid of stress which in essence will increase the desired productivity. Leaders in the organization should provide a balance between the work-related activities and the non-work-related activities for effective work-related outcomes. There are so many considerations to be considered. The leaders should have the knowledge of their employee health, insurance so that nothing affects their productivity because health is one of the factors that affect the productivity of the employees.
(Richardson, 2014). Additionally, relationship management is one area that should be given audience. Another consideration should be an absence of positive feedback which leads to low morale and in the end, will demotivate the staff which might actually lead to turnover problems. If the employees are satisfied with the kind of treatment they get from the leadership of the company or organization, there will be no need for training new hires, but the training cost will be meant for lifelong learning of the already established workforce, who are already geared towards the performance of the organization. The sound leadership of the company will ensure that the employees have the right career path which will save them the agony of trying to find out on their own. The most important issue in all these is the kind of communication that exists between the leadership, management and the staff of the organization (Richardson, 2014).

Linna, Pekkola, Ukko, and Melkas (2010) provided another example of employee productivity that specifically applies to learning institutions. The scholars argued that employees in learning institutions such as colleges and universities should place more attention on the status and educational achievement of students and not simply on the number of students who are taught or the number of educational programs that are implemented. Such an analysis shows that institutions should not just rely on monitoring the performance of employees in order to determine the level of productivity. Organizations should be motivated to adopt modern and more effective measures of analyzing employees in order to efficiently evaluate and measure the productivity of the current employees. It is also evident that there cannot be a single measure that can be used to examine the level of employee productivity in all learning institutions (Marga,
This implies that various forms of collaborative approaches should be implemented to ensure that a true measure of analysis is implemented. In this study, there were multiple forms of collaborative learning that were evaluated. Within those cases, the employees all felt their productivity increased in regard to the training topic they were attending. However, due to the nature of the differing topics they were learning and the differing collaborative learning activities, it would be difficult to conclude that it could be used as a single measurement of success.

Studies have revealed that collaborative learning plays an instrumental role in enhancing employee productivity in learning institutions. Rochelle and Teasley (2005) have shown that collaborative learning is an essential learning technique that enables employees in learning institutions to develop networks that promote increased cooperation and long-term productivity. The participants within this study overwhelmingly felt that collaborative learning was the most effective and most memorable part of the trainings they were a part of. Collaborative learning tends to develop a wide range of learning approaches that enable studies to utilize scholarly literature to ensure that they gather information that has already been reviewed by experts in their field of study. For instance, collaborative learning plays into consideration when developing learning approaches that put mutual scholar strategies into effect that can enhance productivity among all parties.

Collaborative learning and organizational culture that is implemented in institutions of higher learning play an instrumental role in enhancing employee productivity. Studies have shown that when workers are highly motivated, they have an
increased level of productivity. Over the years, the level of employee turnover plays a huge role in impacting on the total costs of an organization. Therefore, the management teams can reduce the total cost of employee turnover since an organization spends a vast amount of resources on quality training and the education their employees.

To achieve the training requirements of a modern organization, there has been a significant change in the way training has been administered. More mature employees opt for collaboration with those individuals with vast first-hand experience instead of the traditional instructor-led classroom sessions. It takes the image of mentorship whenever they are acquiring the necessary skills and knowledge that is very effective at their workplace. In essence, there has been a notable shift from the instructor-led paradigm to learner-centered paradigm which is more task related. Modern technology has played a vital role in ensuring that learner-centered learning is effected since there is the growing availability of web applications that support this activity. The technological tools have been very instrumental in the creation of the spirit of teamwork, productivity and performance in organizations and as such, this is a wakeup call for the management to put in place the right tools and collaborative processes that will support this initiative in their organizations. Universities were also urged to make an effort to ensure that they are properly equipped for the task ahead of them that deals with collaborative learning.

One of the topics of discussion that came up during the interviews was the use of technology and its specific effect on collaborative learning. There were instances during the trainings that the employees had attended where collaborative learning was employed using technology and instances where technology was not employed. The types of
technology included; Skype, Adobe Connect and the generalized use of computers. However, the overall reaction from those who participated in those collaborative learning activities during those trainings both with and without technology was similar in nature. Overwhelmingly, collaborative learning was the most effective and memorable aspect of each training regardless of the technology utilized. The technology did not have a major impact on that activity. Although some technologies are specifically designed or required to use collaborative learning, it did not seem to have an effect on the participants. The most determining factor in their appreciation for the technology used was the participants’ own personal preferences on how they have used or perceived that technology.

This implies that collaborative approaches may differ in terms of structures and implementation but they play significant roles in enhancing productivity. It is important to note the employees can work in groups to develop the most appropriate collaborative metrics that enhance productivity. Dobre (2013) states that working in groups enables people to have a teamwork that develops a similar end-goal even when the activity is analyzed from different perspectives. This will also be instrumental in developing solutions that can be used in creating solutions that will be essential in developing inventions and innovations. Furthermore, it is important to note that collaborative learning approaches can be essential in developing mutual benefits since the joint efforts will be advantageous when it comes to problem-solving activities. In a training situation, like the ones the participants were a part of, this was typically the goal. Having some sort of close collaboration activity as a means of translating the knowledge through working
together. Close collaboration tends to eliminate stumbling blocks that may derail a group of workers from being productive. Close collaborations were experienced by those interviewed who participated in a collaborative learning activity during their training.

Apart from analyzing collaborative factors from the perspective of joint efforts, different scholars have examined various strategies that are implemented with the intention of enhancing productivity among workers in learning institutions. This implies that collaborative efforts put into consideration the factors that contribute to mutual benefits among both employees and learners. Therefore, collaborative efforts tend to enhance employee productivity since employees will become effective by imparting knowledge among students while learners will benefit by gathering new knowledge (Marga, 2010). It is from this perspective that scholars consider collaborative learning as an efficient and effective learning technique that can be utilized in learning institutions in order to enhance productivity. The participants in the study perceived their productivity was enhanced by the trainings they attended. The most likely rationale for that improvement is the collaborative learning activities they attended.

With regard to the theoretical construct of this dissertation, there was a great utilization of constructivist learning theory which is very instrumental in the cognitive process of development. In the literature of constructivism, some authors assert that for thinking to take place, there should be proper problem-solving skills in the organization. In the end, problem solving will definitely lead to learning and development of individuals. The good thing about problem-solving being that the concerned people in the process of problem-solving will be forced to utilize their skills, knowledge and the
experience that they have acquired over a period of time. Constructivism, therefore, dwells on the perceptions on how people engage their competencies with regard to the learning process. It focuses its energies on the happenings of each and every day as learning takes place and how the learning process affects those who are involved in the activity. The people in charge of the training of individuals in an environment in which learning is taking place should, therefore, be careful to ensure that the instructions given are constructed based on the ways the learners perceive the entire activity of learning. There should be seriousness in the engagement of the process by the students to achieve the desired results at the end of the training duration. This period will link the old and the newly acquired knowledge and old knowledge for the learners to make a clear distinction between the two and ensure that learning has taken place. With proper learning, employee work-related behavior together with their commitment towards the achievement of the goals of the organization shall be seen. Employees’ productivity, retention, and performance are also affected by the financial performance and organizational culture.

Several researchers have also argued that two people can work together as a team instead of leaving all the work to be done by a single individual. This is because people in a team are able to use different skills that will be instrumental in solving problems that may hinder an individual from being innovative. Those who attended trainings without a collaborative learning activity largely did not feel the training was effective. However, when they were able to work together, they were able to appreciate those benefits. Collaborative learning efforts have also been essential in enabling employees to work
with learners to create methodologies that will be used in solving problems (Rochelle & Teasley, 2005). Instructors can work with students and come up with problem-solving skills that will contribute positively in finding solutions to solving the inherent challenges. Employee productivity in learning institutions is enhanced greatly when there are regular negotiations and discussions thus enabling different stakeholders to combine efforts. This enables different teams to come up with collaborative learning techniques that will continually be used in solving skills.

Research studies have also revealed that collaborative learning tends to be an active process that involves the convergence of ideas as well as shared meanings and knowledge. Scholars are of the opinion that collaborative analysis has been done to determine how learning enhances the activities of workers. It is evident that collaboration takes place gradually and takes through a number of factors in order to enhance employee productivity. To start with, it is important to understand the nature and structure of the problem that needs to be addressed. The trainings that were the subject of this research all had clearly defined structures, and problems to be addressed. This is what spurred the development of the training whether it was a change in a budgetary process, an update to the scheduling system, or updating hiring practices. This process plays a crucial role in finding the most important strategies that can be used to finding the solution to the problem (Wiseman, 2010). For instance, in a learning institution, an instructor may seek to understand the reasons why students are underperforming in certain subjects or administrators are unable to perform certain tasks. Understanding the problem will thus provide the instructors with the means of seeking ways of solving the problem.
The first factor involves understanding the interchanging metaphors. Schuman (2006) states that certain challenges are usually interlinked. This implies that to address a single problem, a trainer must have the ability to find the means of solving other interlinked problems. Therefore, finding solutions to the multiple challenges will go a long way in enhancing the productivity of the employees. The next factor is associated with an interactive display. When trainers have come up with a compelling solution to a problem, it is important to develop proper means of implementation that will ensure that collaborative learning is used for the entire success of the institution. Third, learning environments should make a confirmation that the strategies being implemented are effective in repairing the loopholes that were hindering the productivity of the worker (Wiseman, 2010). For instance, when trainers find the most effective ways of interacting with learners, they will be in a better position of enabling collaborative learning in order to be productive to the entire student body. The best methods will deliver the desired results and those results will yield an enhanced productivity. In a situation like the one within this dissertation, the training topics that were developed and given were all meant to address a certain problem. The productivity of the employees who attended the training was based on the training being effective. Based on the research the trainings that were attended by the participants were largely effective in addressing the overarching problems and thus will be able to impact productivity.

The employees’ perception on collaborative learning proved to the most positive and memorable of all the different experiences. Every participant who experienced a collaborative learning exercise viewed them as the most positive and memorable of all
the different points of the trainings. The lessons taught in these exercises were able to be discussed clearly and with the most detail above all other parts of the trainings conducted. One of the more interesting correlations that were revealed was that all seven participants who had collaborative learning as a part of their training, all felt they improved their productivity. This helps to further the idea that employees’ perceptions were highly positive when it came to collaborative learning enough to illustrate how those specific activities were helpful in their jobs.

In the literature concerning collaborative learning, there is the encouragement of the aspect of convergence of shared meaning as stipulated on group work among the learners. Being issue focused within the university environment, the learners are expected to engage more on group work and discussions that will enable them into critical thinking and creativity to be able to solve issues on their own. The work of the instructors has been pinned down to that of facilitating, the students are expected to be creative in their approach towards the critical challenges that will face them in the job market. The main activity is finding an active and lasting solution to employee productivity and as such, this requires practicality in the entire process. Some of the key factors discussed include a keen understanding of the structure of the problem, the metaphor interchange, the display that is interactive, the confirmation and finally, high standard application of the standards as evidence for the convergence. For organizational learning to take effect, there must be support from the management of the organization and provision of a supportive environment. This must be operated in a system-like setup of the organization with all players handling what is expected of them. Through collaborative learning, there
will be a total engagement of employees, manageable retention program, and improved capacity for retention to take effect. Employees should be empowered to be contributors of ideas since collaborative learning does not happen in a vacuum.

Many scholars through their research have discovered that collaborative learning is essential in the work environment since; most of the learners who have passed through the system can bear witness to the same. Time has passed by and the notion of human beings being social animals has been overtaken by human beings being digital social animals. There is life online but the challenge is getting the balance between the unsettling economics and the feasibility of the program as it is. Efficient inter-individual connections and communications are vital in upholding an institution of collaborative learning. This calls for a spirited effort to enhance a proper atmosphere for learning. The aspect of social cohesiveness brings into play the aspect of collaborative learning. This is supposed to make a major change in the way things are done with regard to employee satisfaction. Some risks will be taken and mistakes will be made provided the objective of the program is achieved as stated earlier on. According to recent studies, big classes are in a position to operate collaboratively in practical spaces outside or within the classroom through the use of connecting technologies that pass on information to the middle anchoring technology given by the educator. With regard to the validity of the dissertation, enough review was carried out to ensure that this objective was actually met. The use of participant checks or validation of the study participants was put into play by the investigator.
It also became important to apply high learning standards and levels of evidence especially when it came to gathering new knowledge. This can enable workers to work in close collaboration and identify strategies that will be influential in solving the challenges that are facing the learning institution. Studies have revealed that collaborative learning can only be effective when the management team in the learning institution develops measures that promote teamwork and cooperation (Rochelle & Teasley, 2005). Applying a high level of learning standards that put into consideration collaborative learning enables trainers to collaborate more effectively with students. Institutions of higher learning should understand that collaborative learning can be achieved by promoting teamwork since employees will gain the opportunity of airing their grievances and explaining their views of finding the most effective solutions. The activities that existed within the trainings that were participated in were not overly complex. However, they were effective and memorable enough to make an impact on the participants of this study.

Scott (2012) stated that a problem that is shared, is twice solved and thus plays an instrumental role in finding solutions that can be used in tackling the challenges. In addition, teamwork enables participants to share, understand, and retain knowledge especially when different ideologies are presented during discussions. Collaboration tends to stimulate interaction among team members and this facilitates comprehensive ideologies and knowledge among teammates. These benefits were fully realized by those participants within this study who experienced collaborative learning within the trainings they attended. In addition, collaboration and teamwork enable an employee to be
productive since they gain the opportunity of making themselves known and understood (Wiseman, 2010). This also contributes to empowering workers to exploit their talents and become innovative, a factor that plays an instrumental role in enhancing the success of the entire institution.

Employee productivity is usually enhanced by collaborative learning since trainers gain the ability to assist participants to share knowledge and thus learn new concepts. When a certain level of understanding of new concepts is achieved, verbal exchange and other means of communication will be essential in negotiating the means of understanding new knowledge (Rochelle & Teasley, 2005). This will not only enhance productivity among employees but will also enable workers to be productive since the problems are regularly solved.

Information gathered from the interviews showed that there are numerous ways through which workers in learning institutions can become innovative and productive. Scott (2012) stated that there are no single means that can be used solve the issue of productivity in learning institutions. Although collaborative learning has been found to play an essential role in promoting the success of learning organizations, the teaching department should combine a number of learning programs that will be instrumental in enhancing the success of all students. For instance, collaboration and cooperation act as a means of creating the common constructivism base for sharing ideologies and knowledge while utilizing different kinds of learning approaches. Schuman (2006) argued that the main difference in the learning approaches will depend on how collaboration is utilized by all the parties involved and thus create an equal point of authority.
It is quite evident that collaborative learning can only be effective when the management team develops a working environment that appreciates teamwork and inputs of every employee. Research studies have shown that one of the customary methods for making a community-oriented learning association is to make a database framework that users can access to recover and store information. In addition, associations seem to become involved with making the "specialized arrangements" by basically making channels for gatherings and passages, rather than basically advancing the prospect of collective work by means of relationship building (Lou et al., 2001). As shown in the results of this research, collaborative learning can be an instrumental strategy that can enhance the productivity of all individuals especially with the assistance of the board of management.

In institutions of higher learning, programs that support collaborative learning and organizational learning have been found to be essential in enhancing productivity among all personnel. Within the context of this research, the most effective trainings that were delivered were specifically designed to address a problem using collaborative learning as a key component. When learners are able to communicate effectively with their trainers, they have an increased chance of excelling in their endeavors (Resta & Laferrière, 2007). Organizations can also support a hierarchical culture that distinguishes individual commitment and encourages up close and personal associations. Various studies have also shown that organizations are beginning to perceive that individual associations can be merged with collaborative teams that would ultimately enhance productivity across all teams (Hunter & Thatcher, 2007). In the event that collaborative teams are truly
encouraged to make a network of associations, they would exploit and utilize the provided resources of innovation to stay connected and thus benefit and learn from each other.

Another essential factor is to expand joint efforts where learning institutions can collaborate with their peers in other organizations to share knowledge and expertise. Selection of the participating teams enhances productivity since individuals are able to utilize different levels of expertise that are possessed by different institutions (Yin, 2009). A coordinated effort in an association seems to fortify learning organizations and this plays an instrumental role in captivating different specialists who will inspire all team members to work towards the achievement of the organizational goals. Employees who attended the trainings within this dissertation research from the higher learning institution were motivated to keep in mind the end goal in order to understand the outcomes that are expected from them. In most contexts, the subject matter was critical to the job they were performing or a responsibility they have. Scott (2012) also states that there are a number of stages in a project that must be inspected before they can be given the green light since they are germane to empowering a truly coordinated effort in an organization.

Collaborative and organization learning can only be effective when all personnel are willing to work towards the achievement of a common organizational culture. The participants within this study all had some impact on that area. The trainings themselves all had an aspect of common organizational culture but were differing in their approach. To start with, the management should characterize what coordinated effort looks like. This implies that the entire organization should be able to understand what is required of
them in order to benefit from collaborative learning. This entails setting up a guide and methodology that will accurately and efficiently act as a platform for achieving the objectives of the institution. Workers will dependably have great expectations yet may neglect to follow up on them unless the guide and system were made with the contribution of the considerable number of representatives and not just the senior pioneers. Those participants who were forced to attend training by their managers were less likely to find the experience rewarding, even when collaborative learning was a component. They did not feel they had a choice. It is important that rules and guidelines on ways in which an arrangement is to be executed exist. The strategy should be laid out in a way that flows from one area to another to enable all employees to easily associate with it especially when it comes to collaboration between internal and external stakeholders (Schuman, 2006). This would play an instrumental role in eliminating barriers that would prevent the organization from achieving its mandate. This strategy would also be effective in developing an organizational structure that cultivates constant collaboration and enhances cohesion between team members.

It is also important to note that an organization should prepare a community-oriented structure that would enable employees to collaborate efficiently with other stakeholders. The management team should work closely with all the concerned parties to ensure that the vision and missions of the organization are adhered to from one level to another (Yin, 2009). That structure might be incorporated as a chief aspect of the administration design in building up its representatives. In an institution like a university, this is very difficult to achieve with each department operating largely as their own
institution. In fact, many participants had little to no knowledge of other trainings that were being held within the timeframe of this study. A synergistic association culture has also been found to provide every employee in the organization with a voice, and this implies that all representatives must know how to function effectively in a coordinated effort (Schuman, 2006). The HR office is entrusted with leading infrequent studies to assess where the association stands concerning joint effort aptitudes, and after that, an arrangement is planned to battle the shortcomings revealed by the investigation.

According to Scott (2012), commitment from upper administration levels plays an instrumental role in ensuring that all personnel are provided with the needed resources in order to be productive. This implies that the management team should have the capacity of providing the necessary resources, both in terms of monetary and physical aspects. Most of the trainings within this study were recommended by a supervisor, and those who felt they had an option to attend it since it was for their benefit were more likely to consider their productivity was enhanced as a result. This would be crucial in the enhancement of cross-institutional cooperation which would ultimately enhance the productivity of the entire organization. The experts should take steady and testing positions with senior chiefs by beginning administrative commitment to appear and motivate cooperation in the midst of the workers. The human asset and groups of the associations can make concurrences with senior groups of administration, itemizing specific methodology and survey forms, in order to encourage and empower this sort of cross-useful coordinated effort.
Studies have also revealed that social cohesiveness is an important part of collaborative learning and it enables employees to be productive. It is evident that productivity can only be achieved when workers and learners are able to work together and share knowledge. This implies that the level of productivity in an organization depends on social cohesion which has been stimulated by the organizational culture. Various studies have also demonstrated that social cohesiveness and sentiments to being a member of a place or group add to the joint effort that is completed by all team members (Schuman, 2006). This dissertation outlines that workers must be urged to demonstrate the learning result and get boosted through collaborative strategies. Organizational learning will thus act as a foundation that will be instrumental in the achievement of long-term goals. Networks that are emotionally supportive have also been found to be instrumental in the achievement of organizational culture. This is because workers are in a position of working closely and sharing knowledge, especially when it comes to assisting a fellow colleague who is faced with difficulties. This was especially true with the participants in this research.

Earlier in this dissertation, it was discussed how group members and the learning facilitator can be communicating through diverse spaces and still be in touch with other classmates through a variety of means. There is a great application of the Research and development team via Video in the creation of ubiquitous virtual assignments with the exception of additional time and traveling costs. Time spent by a worker actively doing the job in harmony with the instructions to fulfill and produce the desired results as outlined in the objective and goal clause of a company is given the term-productivity.
Studies show that social networks have similar insights into human behavior in terms of how humans communicate and the essential need to communicate with people they know. Precise types of communication amid individuals are expected to happen, which can expedite the methods of learning, even though there isn’t assurance that the anticipated interfaces will in fact happen. Much research regarding collaborative learning requires “zooming in,” especially on critical thinking in collaborative surroundings. Numerous studies have focused on interconnected aspects of adductive capability, technological self-efficacy, methods of learning, and enthusiasm and their impact on critical thinking behavior in collaborative learning. Interconnected connection happens in groups by having learners function and study by sharing experiences, thoughts, and skills. In collaborative learning, learners are challenged with thinking in diverse ways, promoting critical display and re-examination of perceptions.

Studies have shown that collaborative learning goes beyond the organized allocation of set tasks or unstructured interaction. To a certain extent, collaborative learning is the behavior of enthusiastically sharing thoughts to ensure there exists a shared notion of the challenge that enables shared involvement of respondents in coordinated effort to resolve the challenge together. Collaborative learning requires three processes to happen: sharing, retrieval, and storage. Sharing, by definition, is the process through which new behaviors, knowledge or procedures are disseminated amongst the team members, and members know and comprehend that others on the team have that learning. Learning is defined as applying the stored knowledge. Related with knowledge, it was found that as group members acquire experience collectively and gain knowledge
of the capabilities of their colleagues, a variety of group results, like gratification and quality, improve. Also noted was the retrieval process, meaning that the members of the group may access and discover knowledge or skills for upcoming usage or inspection. Studies have specified that without these procedures, team learning cannot happen.

In summary, it is important for the management team to develop training structures and strategies that will enable all employees to utilize networks of collaborative learning. This dissertation has established that collaborative learning has immense powers in contributing positively towards the productivity of the entire organization. Employees who work in institutions where there are effective strategies and processes to collaborate have a higher chance of being productive in comparison to those who work in rigid environments (Schuman, 2006). Studies have also shown that collaborative and organizational learning can only be effective when all team members work towards achieving the common goal thereby creating an environment of sharing knowledge. This implies that the organization will avoid situations that lead to win-lose situations but instead develop a culture where employees are able to assist their colleges to achieve their optimal achievements.

Suggestions for Future Research

Whereas numerous research studies have been carried out to determine the factors that enhance the productivity of employees, more studies need to be done to develop the most effective training techniques in different settings. Organizational leaders have explored approaches such as training, program evaluation, life programs and different initiatives that will play an instrumental role in enhancing retention and productivity.
Studies have shown there are numerous ways through which employee productivity can be enhanced. In addition, studies have shown that organizational culture can be enhanced when the management team promotes diversity (Baek-Kyoo & Park, 2010). This has become a collective perception that the organizational tone in an institution plays an instrumental role towards facilitating innovation and productivity. Employees tend to desire to belong in a certain organizational culture that satisfies their innovativeness and rewards the efforts that they set.

Employee training should be utilized in a regular and consistent manner where an organization assigns specific roles to workers to ensure that every individual takes responsibility for their actions. This will enable all individuals to recognize what is expected of them and thus promotes the achievement of organizational goals. Further studies in the area of employee training in a large scale educational institution should be conducted by focusing on a few key areas. First, the effect an individual’s role has on their training they receive. This dissertation suggests that an institution’s training can enhance employee productivity by enabling all individuals to understand their specific roles. Next, the effect that differing hiring techniques can have on employee productivity. Studies have also revealed that normal techniques of hiring employees may not be sufficient when it comes to retaining qualified personnel and therefore, organizational leaders should utilize the opportunities for developing quality and improving employee training.

Guffey and Loewy (2010) also suggest that there is a close association between strategies of employee retention as well as employee performance or productivity. Poor
employee training, as well as retention strategies, can have a huge impact on the productivity of employees including employee retention and turnover (Baek-Kyoo & Park, 2010). However, this has not been fully researched in a large scale educational institution. By further researching employee retention and its relation to employee training in that setting, it will provide information that will assist in drawing further parallels between the university environment and its relation to the corporate world.

Organizational leaders tend to analyze different approaches that can be used to promote employee productivity. This dissertation suggests the use of different training techniques can enhance employee retention and productivity. Further research in this area is needed on how those concepts affect large-scale educational institutions. Is there a dramatic difference from the research that exists from a more corporate workplace? Training evaluation in a university environment is essential and therefore the effect it may or may not have on enhancing employee retention and productivity could be a great source of interest to future researchers. That suggestion of additional research on ways that can be used to ensure that employee turnover is reduced, especially when it comes to retaining the most qualified employees.

Munda (2011) states that when employees are provided with adequate amount of resources as well as proper training, they gain a better chance of being innovative and productive. For instance, employee engagement leads to positive results since all individuals tend to be more motivated and productive. Does this same concept work for administrative employees and professors at a university? The question is an important
one that should be addressed for further research. The long-term strategic planning of a university could rely heavily on the outcomes of a study of that nature.

Furthermore, the relationship between proper training and adequate resources tends to increase employee motivation and thus increase the level of productivity. Baek-Kyoo and Park (2010) say that when an organization adopts effective strategies, there will be positive results since high levels of employee involvement goes hand in hand with the ability to boost the abilities and talents of employees. This is because when effective strategies are adopted they increase the performance of employees. They have already been provided with enough opportunities of making independent decisions.

This dissertation also suggests that the organizational management team should enhance creativity by implementing structures and institutions that allows collaboration. Munda (2011) says that improved collaboration goes a long way in enabling employees to share knowledge and thus improve their abilities to achieve the mission and vision of the organization. From this perspective, increased performance can only be enhanced when workers are provided with the opportunity of forming a stronger association that will lead to sharing of knowledge and ideas. Munda (2011) says that positive management of different forms of employee program tends to result in an organizational workforce that is healthier, dedicated and motivated. Employees are usually motivated by an organizational culture that promotes demographic interactions. What kind of impact do these factors have on a large scale educational institution? Is there enough incentive to share ideas across departments? Or is there a feeling of departmental priority that leads to
each one being separated in their areas of research. Further study on this is needed to see
if the same rules apply to a university.

Further recommendation pertains to management of programs, especially when
managers enrich and train its workforce to be constantly motivated. The management
team should clearly understand the techniques that play leading role especially when
employees are given the opportunity of maximizing their skills and thus enhancing the
overall productivity of the organization (Baek-Kyoo & Park, 2010). There are essential
skills that are required for a business to be able to exploit its competencies and thus
enhance the general productivity as well as the performance of the organization. More
studies are also required to provide organizations with knowledge of enhancing the
innovativeness and productivity of employees. Munda (2011) has stated that learning and
training events in the workplace play an instrumental role in enhancing productivity by
improving the competencies of employees. This also leads to enhanced organizational
performance, since firms are given the opportunity on learning in a progressive manner.
An organization that recognizes the significance of continuous training usually equips
their employees with opportunities for enhancing the level of competitiveness
irrespective of pressures from other firms. Baek-Kyoo and Park (2010) state that
emphasis should be placed on the ability of discovering and utilizing the skills of
employees. Therefore, this dissertation provides a suggestion that will ensure that the
management team places into perspective the importance of enhancing the
competitiveness of all workers.
Studies have shown that an institution that enables its workers to exploit their skills and expertise has a higher chance of remaining competitive in the face of an ever-changing world. In addition, with recent advancement in technology, organizations that are able to utilize the modern technology have a better chance of being productive and competitive. Traditional training programs should also be merged with contemporary strategies that enhance innovativeness. Also, examining difficulties that can be overcome only when the employees are provided with the opportunities of sharing their knowledge (Baek-Kyoo & Park, 2010). This can be done through the implementation of programs that enable employees to exploit their skills and expertise. Furthermore, a highly productive workforce is the one that merges its traditional role with the most recent and modern programs.

**Prioritization of the individual employee.**

Most organizations are faced with the challenge of quality leadership, how to engage the employees by developing them and other issues related to turnover. It is up to the management of these organizations to be in the forefront to institute changes in these areas so as to retain the best of the talents they can acquire. The starting point, therefore, is how the management can build lasting relationships with the workforce. Most employees fear the changes that come with operations of an organization that are attributed to the dynamic market environment. One of the main challenges facing 41% of these employees is that one of a lacking element of collaboration and enhancement of strict controls by the management (Wentworth & Lombardi, 2014). In this 21st century, there has been a new brand of individual employees that happen to be young and
independent and the management should ensure that the organizational culture factors in the new lot (Wentworth & Lombardi, 2014). They expect to be treated with some level of understanding in the sense that they are individuals and not groups. Their approach should encompass new learning mechanisms that are aligned to the organizational objectives. Based on the findings from the study by Brandon Hall group, 2014 on learning and development benchmarking, over 50% of modern companies have revisited their strategies in learning and are trying to improve their learning budgets to maintain a quality workforce. This is the reason as to why technology has been a major consideration for these companies to compete effectively in the market. Of late there has been a new trend that supports innovation, social collaboration and learning and development of the workforce.

Companies should embrace the use of the following best practices which include the application of mobile technology, social learning tools’ adoption, keeping in tandem with the organizational objectives, the application of adaptive learning principles and the capability to put into use evaluation effectiveness.

**Mobile technology.**

Most companies are considering mobile learning for their human capital management. It is bewildering to note that though most of the organizations understand this, they are still very slow or resistant in the implementation of mobile technology as a lasting strategy for the performance improvement. It is, therefore, a wakeup call for these organizations to ensure that they improve their learning function by making the mobile
strategy a priority so that they can go out of their way to search for their technology partners. Further research in this area is a definite necessity.

**Understanding social media.**

The engagement of the social media platform in their quest to boost the learning culture in the organization, most companies are moving towards the right direction. This will constantly engage the employees towards the acquisition of the learning culture which is very healthy to the survival of the company. The use of blogs, discussion forums, and document sharing is currently being utilized. They must, therefore, make a proper investment in social learning and have the providers who can provide solutions that will help lead to the desired business outcomes.

**Adaptive learning.**

With this kind of approach to learning, Wentworth & Lombardi, (2014) explain that the employees will be in a position to acquire more knowledge and skills through self-practice. For those companies that have the urge to grow, it a very creative approach that has proven to bear fruit. Most companies are breaking from the traditional approach in which learning was meant to take effect in the presence of a classroom and in the presence of an instructor. This approach is very instrumental in the sense that it is engaging and for this reason efficient and can also boost the retention of quality staff in the organization because they have the desired confidence levels.

**Alignment of the business objectives.**

All the corporate objectives should be considered in the area of future collaborative learning if the company is to achieve its set goals. In case the company has
invested in technology, serious considerations should be made in regard to the retention of the staff, boosting performance levels and employee engagement. This, in the long run, will have a significant improvement in the overall revenues of the company.

**Measuring effectiveness.**

Wentworth & Lombardi, (2014) assert that for the company to be on the safe side in the process of determination of learning strategies, the effectiveness of the approach must be evaluated. All the metrics involving business and HR should be considered. As it is currently, most companies have their focus on employee encouragement, engagement and satisfaction unlike, traditionally when they considered revenue per full-time staff, turnover, and retention. For all the above suggestions to be effective there will be needed to select the best providers who have the necessary innovative capabilities in terms of mobile and social understanding and also be in a position to measure the effectiveness of the innovation. The professional in the learning program should make an effort to ensure that they collaborate closely with the business leaders who will offer the right technology (Wentworth & Lombardi, 2014). By so doing the individuals will acquire the right approach to learning which in essence will boost their success on an individual basis. Finally, companies should not be single-minded in their perceptions when dealing with employees. They must approach each individual based on the uniqueness that these employees come with the first time they are employed so that they can analyze what set of skills and knowledge they require to be more productive in the company (Wentworth & Lombardi, 2014).
Successful leaders in any given organization will formulate proper strategies especially when they are able to understand what motivates the employees so that they can use them to bring about a change in the performance of the company. If they fail in this, the organization will suffer at their hands because it will lose qualified staff.

Richardson (2014) suggests that workplace design is a very important tool that is in support of performance at the workplace. In case the employees have a good environment to operate in, their mood will be relaxed and as such, they will be better placed to offer productive service to the organization. This is so because they feel safe and secure from any health hazards (Richardson, 2014).

**Recommendations for Practice**

From the above analysis, it can be argued that the changes that are currently being implemented in the nature of employees’ work have been a result of the difficulties associated with analyzing and conceptualizing the productivity of workers. However, in the contemporary learning institutions, collaborative learning has been shown to have significant impacts on the productivity of those attending training and lectures. If the university would embrace standards or best practices for training, the inclusion of collaborative learning activities would play a pivotal role in the effective delivery and retention of the material being discussed. This study shows that a wide cross-section of university administrators felt their productivity was improved based largely on those collaborative learning activities. The practice of collaborative learning has led to the development of modern learning approaches that are used in the analysis of employee
productivity. Such a practice may not necessarily portray the productivity of employees in terms of economic perspective.

According to information that has been gathered from the interviews within this dissertation, it can be argued that it is very complex to evaluate the productivity of individual personnel in higher learning institutions. This is because different institutions tend to rely on differing evaluation methods. In addition, various amounts of resources are provided to teaching personnel and this implies that workers tend to perform differently in various institutions (Rochelle & Teasley, 2005). However, a collaborative learning approach tends to play a significant role when it comes to determining the kind of learning technique that could be implemented in the organizations. This also impacts on the productivity of the teaching personnel, including the ability of students to perform well in their exams.

The research presented has also revealed that a number of resources that trainers are provided with will tend to impact their capacity to assist participants to progress well in their careers. Productivity can be improved when enough resources are provided since a huge amount of time is saved thus enabling workers to multitask (Schuman, 2006). For instance, when learners are provided with modern learning technologies such as laptops, tablets, and smartphones, they can research widely and collaborate with their colleagues in other learning institutions, without having to travel. This saves large amounts of time and resources and ensures that employees and learners are able to utilize a number of resources that are available.
According to the results of the interviews, collaborative learning enhances productivity since workers are able to work together, cooperate, and share ideas. Therefore, collaboration is a process that is actively implemented to ensure that the entire learning institution is able to grow and become productive. Studies have revealed that the success of an organization depends on the strategies that have been implemented to motivate and promote productivity. Innovation can only be facilitated if learning institutions have developed programs that tend to motivate employees and reward excellent performance. It is also evident that collaborative learning cannot materialize if the organizational culture does not promote cooperation. In the current highly globalized and diversified world, the working environment is filled with employees from diverse backgrounds (Schuman, 2006). The employees that make up that diversity have a direct impact on innovation and can make a significant impact on the growth of the learning institution.

In addition, other demographic factors such as gender, age, race, and sexual orientation tend to significantly impact on the success of a learning organization. Therefore, in such a scenario, collaborative learning can only be successful if the organizational culture requires all workers to respect other people’s identity in order to cooperate for the common good of the organization. Employee productivity can only be enhanced when the working environment is conducive and tends to respect the identities, thoughts, and ideologies of other people. The trainings that were attended and discussed during this research all met that criteria. There was no report of any type of discrimination or perceived bias. Learning environments that are free from discrimination
and bias have the highest rate of employee productivity (Schuman, 2006). That concept plays an instrumental role in enhancing the success of the entire organization.
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Appendix A: Demographic Questionnaire

Q1 Contact Information:
Name _______________________________
E-mail Address ________________________
Phone Number ________________________

Q2 What is your age?
☐ Under 30
☐ 30-40
☐ 40-50
☐ 50 or older

Q3 Please indicate the duration you’ve worked at the university?
☐ 0-4 years
☐ 4-10 years
☐ Over 10 years

Q4 Have you attended a training at the university in the past 2 months?
☐ Yes
☐ No

Condition: No Is Selected. Skip To: End of Survey.

Q5 What was the topic of that training?
_______________________________

Q6 Was there a collaborative learning activity used during that training? (Collaborative learning involves working in groups with the end goal of finding a solution)
☐ Yes
☐ No

Q7 What type of technology was used to deliver the training?
_______________________________

Q8 What was the most effective part of the training?
_______________________________
Appendix B: Semi-Structured Interview Questions

a) Can you describe the topic of training that you experienced at the university in the past 2 months?

b) Were you asked to work collaboratively?

c) Can you describe the collaborative activity?

d) Did you feel this was effective?

e) Was this training recommended by a supervisor?

f) Do you feel Ohio University, as an organization values training as a way to grow their staff’s skillsets?

g) Have you ever previously used collaborative learning during a training?

h) What was the most memorable part of the training?

i) What type of technologies were used during the training?

j) Did you feel they were used effectively?

k) Prior to the training, how did you interact with the training topic?

l) Now that you have attended the training do you feel you have a better understanding of your role utilizing the topic?

m) Can you give me an example of something you did (germane to the topic area) prior to receive training? Walk me through that process.

n) How do you accomplish that task now?

o) Has attending this training improved your job satisfaction?

p) Do you feel that the training helped your productivity? Why or why not?
q) Do you have an opportunity to utilize collaborative learning, either in person or digitally in your current position?

r) Do you utilize the same technology that was used during the training?
**Appendix C: Survey Questions and Sources**

<table>
<thead>
<tr>
<th>Question</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>Use of collaborative learning</td>
<td>Rochelle &amp; Teasley, 2005</td>
</tr>
<tr>
<td>Description of collaborative activity</td>
<td>Schuman, 2006</td>
</tr>
<tr>
<td>Perception on effectiveness</td>
<td>Scott, 2012; Schuman, 2006</td>
</tr>
<tr>
<td>Organizational learning perception</td>
<td>Locke and Latham, 1990; Schuman, 2006</td>
</tr>
<tr>
<td>Supervisor recommendation</td>
<td>Lou et al., 2001</td>
</tr>
<tr>
<td>Historical collaborative learning examples</td>
<td>Schuman, 2006</td>
</tr>
<tr>
<td>Most memorable part of training</td>
<td>Slavin, 2006</td>
</tr>
<tr>
<td>Technology used during training</td>
<td>Resta &amp; Laferrière, 2007</td>
</tr>
<tr>
<td>Effectiveness of technology</td>
<td>Resta &amp; Laferrière, 2007</td>
</tr>
<tr>
<td>Prior to training, interaction with topic</td>
<td>Hamilton et al., 2003</td>
</tr>
<tr>
<td>Better understanding of job post training</td>
<td>Hamilton et al., 2003; Schuman, 2006</td>
</tr>
<tr>
<td>Training improved job satisfaction</td>
<td>Hamilton et al., 2003</td>
</tr>
<tr>
<td>Training helped productivity</td>
<td>Scott, 2012; Tarricone, 2002</td>
</tr>
<tr>
<td>Opportunity to continue to use collaborative learning in current role</td>
<td>Ferreira &amp; du Plessis, 2009</td>
</tr>
<tr>
<td>Opportunity to continue to use same technology used in training</td>
<td>Ferreira &amp; du Plessis, 2009; Lehrman, 2010</td>
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Appendix D: Institutional Review Board Approval Letter

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<tr>
<th>Project Number</th>
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<tr>
<td>Project Status</td>
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<tr>
<td>Committee</td>
<td>Office of Research Compliance</td>
</tr>
<tr>
<td>Compliance Contact</td>
<td>Rebecca Cale (<a href="mailto:cale@ohio.edu">cale@ohio.edu</a>)</td>
</tr>
<tr>
<td>Primary Investigator</td>
<td>Adam Lewis</td>
</tr>
<tr>
<td>Project Title</td>
<td>Using Technology Based Collaborative Learning Tools for Employee Productivity</td>
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<td>Level of Review</td>
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The Ohio University Office of Research Compliance reviewed and approved by exempt review the above referenced research. The Office of Research Compliance was able to provide exempt approval under 45 CFR 46.101(b) because the research meets the applicability criteria and one or more categories of research eligible for exempt review, as indicated below.

IRB Approval: 05/15/2017 11:26:39 AM
Review Category: 2

Waiver: N/A

If applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. In addition, FERPA, FIPPA, and other authorizations must be obtained, if needed. The IRB-approved consent form and process must be used. Any changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).

It is the responsibility of all investigators and research staff to promptly report to the Office of Research Compliance / IRB any serious, unexpected and related adverse and potential unanticipated problems involving risks to subjects or others.

This approval is issued under the Ohio University OHRRP Federalwide Assurance #00000008. Please feel free to contact the Office of Research Compliance staff contact listed above with any questions or concerns.

Research Compliance
117 Research and Technology Center 740.593.0614
compliance@ohio.edu