

INFORMAL LEARNING IN THE WORKPLACE:
A CASE STUDY OF SOFTWARE ENGINEERS IN A PRIVATE BANK
IN ISTANBUL

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Thesis Abstract

İlknur Altay, “Informal Learning in the Workplace:

A Case Study of Software Engineers in a Private Bank in Istanbul”

The purpose of this study was to identify and analyze informal learning among workers in the workplace. Informal learning was defined as the acquisition of skills or knowledge intentionally or unintentionally that has taken place in the workplace in which the learning process was not determined by the organization. Formal learning, on the other hand, is the traditional method of training that involves planning, specific objectives and measurable outcomes; usually occurring in a specified setting, mostly in a classroom. Formal instruction accounts only for a small percentage of the learning that takes place on the job. Some research findings suggest that 80 % or more of learning occurs outside the formal classroom, and that this learning takes many forms. If so much learning takes place outside of the formal classroom, then study in this area is critical. The basic assumption of the study was that workers learn in the workplace primarily through informal learning.

The specification of this study was on the informal learning processes employed during the work activities by the employees. These were seen as necessary to be investigated to understand what was meant by the informal learning in the workplace thoroughly. Also, by pinning to the related literature, it was another concern to determine the factors that lead to informal learning in the workplace.

The sample of the study constitute by fifteen adult employees who were working as software engineers in a private bank in İstanbul. The data was collected by an interview using a semi-structured interview guide developed by the researcher.

As a result of content analysis the informal learning experiences of the subjects were categorized and named as learning on their own and learning from other people. The informal learning activities under learning on their own were specified as execution of the job, exploration, and trial and error. The informal learning activities involved in the learning from other people were questioning, mentoring, personal interactions, working in teams, observation, listening, role modeling, and on-the-job training. The factors contributing informal learning to occur in the workplace were classified and named as job related factors and personal factors. Efficiency, promotion, salary increase, mastery of the job, security, and career were named as job related factors; while recognition/respect, personal development, joy of learning, self-esteem, and socialization were named after personal factors.

Findings of the study indicated that adults were mainly self-directed learners. However, they needed to use different kinds of resources, and they relied either on other either material resources or human resources to learn about their inquiry. Experience was a distinguishing characteristic of adults and also a very significant criterion for selecting the resource people to resort to whenever necessary. So it was certainly necessary to make all the resources available to the employees.

Tez Özeti

İlknur Altay, “İşyerinde Kendiliğinden Öğrenme: İstanbul’da Özel bir Bankada Yazılım Mühendislerinin Örnek Olay İncelemesi”

Bu çalışmanın amacı işyerinde çalışanlar arasında kendiliğinden öğrenmeyi tanımlamak ve analiz etmektir. Kendiliğinden öğrenme işyerinde yeralan, öğrenme sürecinin kurum tarafından belirlenmediği beceri ya da bilginin kasıtlı ya da kasıtsız olarak edinilmesi olarak tanımlanmıştır. Öte yandan örgün eğitim planlama, belirli hedefler ve ölçülebilir çıktılar içeren, genellikle sınıf gibi belirli bir ortamda meydana gelen geleneksel eğitim yöntemidir. Örgün öğretim işyerinde yeralan öğrenmenin sadece küçük bir bölümünü oluşturmaktadır. Bazı araştırma sonuçları öğrenmenin yüzde sekseni ve fazlasının sınıf dışında olduğunu ve bu öğrenmenin birçok şekil aldığını öne sürmektedir. Eğer birçok öğrenme sınıf dışında yeralıyorsa, bu alanın çalışılması kritiktir. Bu çalışmanın temel varsayımı işyerinde çalışanların temel olarak kendiliğinden öğrenme yoluyla öğrendiğidir.

Bu çalışmanın tanımlama alanı iş aktiviteleri süresince çalışanlar tarafından kullanılan kendiliğinden öğrenme süreçleri üzerinedir. Bunların işyerinde kendiliğinden öğrenmeyle ne kastedildiğini tamamen anlayabilmek için araştırılması gerekli görülmüştür. Bunun yanında ilgili alan taramasına da bağlayarak işyerinde kendiliğinden öğrenmeye yolaçan faktörleri belirlemek bir başka ilgi alanıdır.

Bu çalışmanın örnekleme İstanbul’da özel bir bankada yazılım mühendisi olarak çalışan on beş yetişkin çalışandan oluşmuştur. Veriler araştırmacı tarafından geliştirilen yarı yapılandırılmış bir görüşme formuyla görüşmeler yapılarak toplanmıştır.

Katılımcıların kendiliğinden öğrenme deneyimlerinin içerik analizinin sonucu olarak sınıflandırıldı ve kendi başına ve başka insanlardan öğrenme olarak adlandırılmıştır. Kendi başına öğrenme başlığı altındaki kendiliğinden öğrenme aktiviteleri işi yapma, araştırma, ve deneme yanılma olarak belirlenmiştir. Başka insanlardan kendiliğinden öğrenme aktiviteleri sorgulama, danışmanlık, kişisel ilişkiler, takım çalışması, gözlem, dinleme, model alma ve işbaşında eğitimi içermektedir. İşyerinde kendiliğinden öğrenmenin gerçekleşmesine katkıda bulunan faktörler sınıflandırılmış ve işle ilgili faktörler ve kişisel faktörler olarak adlandırılmıştır. Farkedilme/saygı, kişisel gelişim, öğrenme zevki, kendine güven ve sosyalleşme kişisel faktörler olarak adlandırılırken; etkinlik, terfi, maaş artışı, iş hakimiyeti, güvenlik ve kariyer işle ilgili faktörler olarak adlandırılmıştır.

Çalışmanın bulguları yetişkinlerin temelde kendi kendine öğrenenler olduğunu göstermiştir. Yine de öğrenenler farklı kaynaklara ihtiyaç duymuşlardır ve araştırmaları hakkında öğrenmek için ya maddesel kaynaklara ya da insan kaynaklarına güvenmişlerdir. Deneyim yetişkinlerin ayırtedici bir özelliğidir ve aynı zamanda ne zaman gerekli olursa olsun başvurmak için kaynak insanları seçerken önemli bir kriterdir. Bu yüzden çalışanlara gerekli olan bütün kaynakları sağlamak kesinlikle gerekli görülmüştür.

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CHAPTER 1: INTRODUCTION

This study addresses to the learning processes of adults with a special focus on their informal learning processes and the driving factors for them to learn informally. The settings for informal learning ranges from family, workplace, community and lots of other settings the individuals are present. As the setting the workplace where most people spent a majority of their times as mature adults is selected. Today, the rapid change in every phase of the life necessitates adults to learn continuously either individually or collectively. To be able to sustain their development adults as workers, they need to gain the necessary knowledge and skills, and the research show that adults realize their learning mostly informally in the workplace.

To have a deeper understanding of the informal learning processes still there is a lot to do. This study aims to develop an understanding and awareness on this issue. The discussion of the issue goes from adult learning characteristics and processes according to the influential learning theories, the conceptualization of the learning types as formal, non-formal, and informal learning to informal learning in the workplace. This section continues with background of the problem, statement of purpose, definition of the terms, and significance of the study.

Background of the Problem

Learning has always been one of the key elements of study in the investigation of education. Among the concepts of education such as education, training, teaching, and

learning, learning is found to be the broadest term of all because there is some kind of learning involved in all educational activities (Tight, 2002). The acquisition of knowledge and skills is probably the most distinctive feature of the human species. However, Hager (2004) does not seem contented with the definition of learning as a product which is assumed to be stable and replicable. He sees learning as a holistic process that changes the learner. He defines learning as “to acquire knowledge (of a subject, etc) or skill (an art, etc.) as a result of experience” (p.29). He believes that rather than just acquisition (of knowledge, skills, attitudes values, understanding, etc.), learning involves participation in the construction of the learning, of the self, and of the environment (Hager, 2004).

Adult learning has been an inexplicable area since the beginning of the previous century for educators. Researchers from different disciplines like psychology, philosophy, and sociology began to study adults with differing perspectives. After vigorous thought and empirical studies, an accumulation of knowledge has led to a clearer understanding of adults and their learning with different characteristics from those of children.

For educators, this deeper understanding meant to search for the most effective ways to make the adults learn in accordance with their characteristics. The study of adult learning and teaching adults apart from the general education has been relatively a new conceptualization. The realization of adults with different characteristics and needs on such issues as education, training, and learning has been highlighted with Knowles’s (1970) adult education model that he named as “andragogy”. Some of the most influential contemporary theories of adult learning focus on the learning capacities of

adults outside formal settings ranging from individualistic self-directed learning models (Knowles, 1970, 1980; Tough, 1971,1978; Brockett and Hiemstra, 1991) to more cooperative and collective models of adult learning and education (Freire, 1970; Mezirow, 2000), and more specifically towards adult learning theories for organizations. All of the theorists stress the active practical engagement of adult learners in the pursuit of knowledge or cultural change.

As it is also implied by Tight (2002) and others change is a key factor for learning to take place. Even learning itself is a state of change. Several researches (Knox, 1977; Freire, 1970; Mezirow, 2000) emphasize the stimulating function of change in an adult's life for further learning with such concerns as adapting to the new situation or developing new skills necessary to compensate the gap between the state of the learner and the requirements of the situation. Actually, they also highlight the close relationship between problem-solving triggered by disequilibrium and the subsequent expected learning as a result of reflection upon the experience. Experience is another important crux of adults which is highlighted by all involved in the development of adult learning theory, one way or another.

No matter how adult learning is triggered it takes some form either termed as formal, non-formal or informal, and is named after its certain characteristics, basically involving the lotus of control over learning variables with the collective accumulation of knowledge by the researchers dealing with the issue. The National Institute of Adult Education (NIACE) England and Wales defines adult education as “any kind of education for people who are old enough to work, vote, fight and marry and who have completed the cycle of continuous education commented in childhood. They may want

to make up for limited schooling, to pass examinations, to learn basic skills of trade and profession, or to master new working processes” (as cited in Rogers, 1996; p.31).

But adult education is a term that is intermingling used with other terms in the adult education field. It is sometimes used interchangeably with other terms such as lifelong education. Some others also equate lifelong education with lifelong learning (Mocker and Spears, 1982). The prospering focus on lifelong learning is a reflection of the prospering view of adults as lifelong learners (Tight, 2002).

Lifelong learning is like an umbrella term to cover all types of learning involved in one’s life. It is difficult to reach a consensus about a universally acceptable definition of lifelong learning. But the basic principles described focuses on the duration which is the entire lifespan, the change, its goals referring to self fulfillment, self-directed learning, and a supportive network encompassing all kinds of learning (formal, non-formal, or informal) (Cropley, 1979). Jarvis (2006) also stresses the duration of the lifelong learning and defines it as “the combination of processes throughout a lifetime whereby the whole person – body (genetic, physical, and biological) and mind (knowledge, skills, attitudes, values, emotions, beliefs, and senses) – experiences social situations, the perceived content of which is then transformed cognitively, emotively or practically (or through any combination) and integrated into the individual person’s biography resulting in a continually changing (or more experienced) person” (p.134). Jarvis (2006) also mentions the necessity to be a lifelong learner not to get lost within the system, to adapt to the demands of the wider organizations, and to sustain relationships with the outer world. However, there are others that emphasize several other functions of lifelong learning as an extension beyond the formal education.

Coffield (1999) is more skeptical about the meaning of lifelong learning and cautiously says that

lifelong learning appears in the literature and in political discourse in bewildering number of different guises. For instance, it is an instrument *for* change (in individuals, organizations and society) and as a buffer *against* change; it is a means of increasing economic competitiveness and of personal development; it is a social policy to combat social exclusion and to ease the re-entry of the unemployed into the labour market; it is a way of promoting the professional and social development of employees and of acquiring new knowledge through the labour process; and it is a strategy to develop the participation of the citizens in social, cultural and political affairs (p. 487-488).

Coffield (1999) also takes attention to the form of lifelong learning as a social control. Titmus et al. (1979) are also concerned about the extent of the term and they state that lifelong learning comprehends both the individual's intentional and incidental learning experiences. So whatever function it serves it is extensive term comprising all the learning types. There are various different criteria used among researchers on the definitions of learning types. A comprehensive analysis of the terms reflects the definitional challenges waiting for researchers.

Much emphasis is placed on the worker as a learner in today's competitive business economy. Especially in today's work life where change has taken its place and has become the ultimate goal of all organizations, the term learning becomes even more critical. Terms like learning organizations, workplace learning, and learning at work draw the attention of both practitioners and researchers to the workplace as a place where learning occurs. This view is a reflection of the change in the literature about formal learning as a necessity to develop the necessary knowledge and abilities required to function efficiently at work. Instead, there is a movement towards informal learning in

the workplace. It takes attention of people in the economic and academic world all over the world.

The importance of the informal learning in the workplace as the context of learning is reflected in the studies carried out in the last few decades. The researchers seek answer to the questions of how, why, where, when, with whom, and how much informal learning occur in the workplace. As the importance of informal learning realized better especially in the workplace, attempts to systematize the process have emerged.

The nature and the process of informal learning are investigated vigorously by Marsick and Watkins. Marsick and Watkins' efforts for more concrete foundational basis for informal learning have ended with an informal learning model (Marsick and Volpe, 1999; Marsick and Watkins, 2001; Marsick, Watkins, Callahan, and Volpe, 2006). In their model, they try to describe the processes the learners go through while they are learning in the workplace informally.

Marsick (1988) calls for a paradigmatic shift from continuously relying on the behaviorist paradigm for the learning to a new paradigm where the focus is on learning, not on education or training. If this change is to happen, the efforts should focus on the study of learning rather than teaching or training (Marsick, 1988). This necessitates looking into the processes of learning whether formal, non-formal, or informal.

In Turkey so far, only formal and non-formal education have taken attention of governmental agencies and researchers in the academic world. However, the issue of informal learning has not been dealt with and usually has gone unnoticed. To be able to

understand the learning issue in Turkey more clearly, it is necessary to look at the present institutionalized learning opportunities provided.

Educational activities are divided under two different headings in Turkey as formal and non-formal education under the responsibility of Ministry of National Education (MONE) by the law of Basic Law of National Education acted in 1973 (Okçabol, 1996; p.104). Formal education mostly deals with the education of children and teenagers, whereas non-formal education generally deals with the educational needs and necessities of adults. To clarify their scope and functions, they are chiefly described below.

Formal education in Turkey includes pre-school education, primary education, secondary education and higher education institutions including universities, faculties, institutes, higher schools, vocational higher schools, research and application centers, and conservatories. MONE (2006) defines formal education as “the regular education conducted within a school for individuals in a certain age group and at the same level, under programs developed in accordance with the purpose”(p.1). As it is obvious from this definition learners are learning according to their level of education and along with other at their age under a formal institution within prescribed goals and means.

Turkey also has many non-formal adult education institutions especially designed for adults, which offer a different range of education facilities. These institutions range from government agencies to unions, from companies to non-governmental organizations and private education centers to army. Provision of adult education in Turkey can be categorized under three main groups as governmental agencies, civil society institutions, and private sector, which offer different range of educational

facilities to improve individual's life in the span of their interests and energy. In this classification the biggest part belongs to governmental agencies and especially to MONE (Okçabol, 1996).

Among all these institutions, one is the leading institution in terms of provision of adult education as a public responsibility that is the People's Education Centers (Halk Eđitimi Merkezleri) (PECs). PECs are specialized educational organizations, which try to meet the needs of adults in different areas of interest, who are out of the formal education process. They have the biggest part both in the number of institutions and the number of participants (Okçabol, 1996). There exist 924 PECs in provinces and sub-provinces of Turkey with 1.312.618 participants and 4.724 teachers in 2006. MONE indicates that PECs provide three types of educational courses; literacy courses, socio-cultural courses, and vocational courses. They carry out literacy courses at several levels in order to realize the general aims of Turkish National Education. The socio-cultural courses are types of educational activities in order to promote, maintain and expand cultural values and to provide citizens with the information they need in general education subjects. Some of these courses are; folk music, language courses, sports, mother education courses etc. According to the MONE data, courses in about 700 different branches have been provided in vocational-technical and social-cultural areas, and types of courses depend on regional characteristics. The activities of these centers are free and open to everybody in general. However, in some programs age or education level could be considered. The other non-formal education institutions are vocational education centers, practical art schools for girls, maturation institutes, technical education centers for adults, special education centers for the mentally retarded, autistic,

and dominant or special capable children, vocational courses including private non-formal education courses, motor vehicles drivers courses, private teaching institutes, and various other courses, and lastly Koran courses (MONE, 2006).

The non-formal education institutions have the purposes to equip the participant learners with various knowledge and skills. Those objectives conveyed by the MONE (2006) are to teach citizens to read and write and to provide them with the opportunity of continuous education so that they can complete their deficient education; to adjust to scientific, technological, economic, social and cultural developments; to protect, develop, promote and assimilate the values of our national culture; to gain an understanding and habits for living together, solidarity, mutual assistance, working together and getting organized are acquired and assimilated; to gain a profession in accordance with the employment policies and in line with the development of the economy; to promote a healthy way of life and healthy nutritional habits; to equip them with the necessary information and skills for further development in their professions; and to establish the habit of spending and using spare time productively.

During the evolvement of adult education in Turkey, the education of adults as workers has long grasped attention along with all the cited activities above. Before the establishment of the Turkish Republic one of the first adult education activities for working adults starts with the Apprenticeship Schools (Çırak Okulları) application of Islam Education Association (İslam Öğretim Derneği) to teach literacy, calculation, and religion in 1865. The need to open apprenticeship school is suggested in 1923, in İzmir Economy Congress (İzmir İktisat Kongresi), and a similar suggestion also comes from Dr. Kuhne as a consultant from Germany in 1925 (Okçabol, 1996).

The sixth item in the MONE foundation act in 1926, necessitates for organizations to educate the employees lacking education. Apprenticeship education applications have been started in big companies in 1930s. In workplaces which employ more than 100 employees the act of 3547 in 1938 stipulates on-the-job training to the employees (Okçabol, 1996).

The constitutional development followed a similar path moving towards training in formal settings to training in more natural on-the-job settings. The 1960 Revolution has brought about a novelty by constructing on-the-job training bureaus for the in-service education for the civil servants. The bureau of Training Teachers On-the-job (Öğretmeni İşbaşında Yetiştirme Bürosu) turns into Education Unit (Eğitim Birimi) in 1966, and into Department of In-service Training (Hizmetiçi Eğitim Dairesi Başkanlığı) in 1975. In 1977, General Directorate of Apprenticeship Education (Çıraklık Eğitimi Genel Müdürlüğü) has been founded, and in 1983 merged with Institute of Non-formal Education (Yaygın Eğitim Enstitüsü), founded in 1978 under Ministry of Education. This new department is named General Directorate of Apprenticeship and Non-formal Education (Çıraklık ve Yaygın Eğitim Genel Müdürlüğü). For apprenticeship education to be executed more efficiently, Ministry of Education has founded Vocational Education and Technology Center (Mesleki Eğitim ve Teknoloji Merkezi) in 1991 in cooperation with Turkey Tradesmen and Craftsmen Confederation (Türkiye Esnaf ve Sanatkarları Konfederasyonu), Vocational Education and Small Business Support Foundation (Meslek Eğitimi ve Küçük Sanayii Destekleme Vakfı), and Ankara Small Business Complex Construction Cooperative (S. S. Ankara Küçük Sanayi Sitesi Yapı Kooperatifi). In the 1980s several vocational and in-service education projects have been

carried out such as Skill Acquisition Programs (Beceri Kazandırma Programları), In-service Education Programs (Hizmetiçi Eğitim Programları), and Adults Occupation Education Project (Yetişkinler Meslek Eğitim Projesi) (Okçabol, 1996).

Small and Medium Industry Development Organisation (Küçük ve Orta Ölçekli Sanayi Geliştirme ve Denetleme İdaresi Başkanlığı (KOSGEB)) is founded in 1990 for the development and promotion of enterprises, provide the informational and technological needs and requirements of small and medium industries, and establishment of practical education systems of their own. Workplace is one of the settings adults as workers spend most of their times and engage in several learning activities. In Turkey, education of adults in the workplace has been changing towards a conception of adults as lifelong learners with a focus of learning, while the focus has been on developing their work-related technical skills in the past. Education becomes an industrial area day by day. Okçabol (1996) indicates that organizations and institutions give more and more importance to the in-service training of their employees; and that corporations are getting pre-service or in-service education, or on-the-job training for their employees either with their own staff or by hiring an outside service. Enterprises, especially banks in the private sector, periodically make their employees get education either from external educational institutions such as universities, education-consultant companies, and public and private institutions.

The new trend is even more revolutionary towards the development of institutions' own academies of learning and teaching. Okçabol (1996) points out that universities are increasingly arranging more lifelong education activities. To give other examples, Turkcell Akademi can be cited that has been responsible for employee

development since 1999 and has begun to function under a new separate organizational unit as the education provider governing development programs in 2005. The efforts of organizations to develop their employees are quite obvious. Another instance is Siemens Akademi. It also functions as a learning center which develops learning programs in accordance with their work areas since 2005. It is developed based on a learning center model of 'knowledge universe'. In the recent years, there is a growing attention on the foundation of private educational institutions focusing on the development of workplace related knowledge, skill, and abilities. The courses they offer differ from technical and sector specific ones to the courses that aim to develop individuals' personal and social abilities as a whole person.

Tough (1971, 1978) and Zemke (1985) suggest that as much as 80 % of learning occurs outside of the formal classroom, and that this learning takes many forms but prevaillingly informal forms of learning. Informal learning is not a recently developed issue; conversely it has been discussed for several decades. But still it is interesting that very small –even none- number of research is held on informal learning in Turkey.

To be able to keep up with the new global challenges of the growing competitive market, it is crucial to bring the once unnoticed informal learning processes to the surface. In any case, it is clear that both adults' informal education/training and their informal learning in the workplace have been relatively little explored to date and warrant much fuller attention from those interested in comprehending the nature and extent of adult learning. But still it is mostly vague what is meant with informal learning and there are little studies to define the sources, strategies and goals of successful informal learning activities. Instead, there are mostly suggestions about how to develop

a learning organization or society rather than receipts to move towards action (Eraut, 2004).

Actually, all of the factors that necessitates this study to be conducted they all indicates the need for learning. It becomes even clearer to grasp the importance of the problem considering the fact that most learning on the job is informal, and that employees need to learn continuously during their work time. Still, so little is known about the informal learning processes going on in the workplace that can be used to facilitate and maximize the learning of adults as workers in subsequent studies.

Statement of Purpose

The purpose of the study of informal learning in the workplace is on the purposes of informal learning for organizational and personal goals, and the activities, sources, and strategies employed during the work activities. These are all seen as necessary to be investigated to understand what is meant by the informal learning in the workplace thoroughly. Also, by pinning to the related literature it is another concern to determine the perceived importance of formal and informal learning taking place in the workplace by the individual worker, and the perceived importance that the organization places on such learning. In this study answers to the following research questions is sought.

1. What are the factors that lead adults to learn informally in the workplace?
2. How do adults learn informally in the workplace?

Definitions of the Terms

To understand the connotations of the terms is necessary to grasp the references made in this study. The followings are the definitions of some of the terms used in this study:

Formal learning refers to institutionally sponsored, teacher mediated, classroom-based, and highly structured learning involving planning, specific objectives and measurable outcomes (Marsick and Watkins, 2001; Livingstone, 2006).

Non-formal learning is structured, teacher mediated, and takes place outside formal educational institutions. It involves planning and specific objectives (European Commission, 2001; Livingstone, 2006).

Informal learning refers to all individual or collective learning that occurs outside the structured curricula provided by formal and non-formal educational institutions. It is not classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. It can be intentionally or unintentionally encouraged by the learner or organization. It always takes place although people are not always conscious of it, which includes incidental learning (Marsick and Watkins, 2001; Livingstone, 2006).

Incidental learning is defined as an unintentional byproduct of some other activity such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning (Marsick and Watkins, 2001).

Significance of the Study

The post-industrial workplace demands that we continually learn so we may effectively use new technologies and information to help shape this increasingly complex environment (Gorard and Rees, 2002). In order to make these adjustments, the workplace must increase opportunities for growth and development through learning. The traditional formal training method no longer meets the complex needs of today's learners. In order to fill the gap between the formal training and these learning needs, people are learning informally in the workplace. This study is potentially significant to adult educators, who will help design programs and develop organizations within which workplace learning might flourish (Livingstone, 2006). Adult learners will profit from the information generated in this study by gaining the knowledge to explore and meet the demands of their learning. By searching the possible ways to make use of informal learning methods and practices in the workplace people, organizations and even societies can become more effective and efficient possibly without the need for additional finances (Bell, 1977).

The drive for this study is to sustain development to be equipped with the related skills ever growing with the latest developments in technology and techniques. Workers need to change in accordance with the constantly changing technologies to survive in the

competitive market and adult educators should strive for ways to enhance adults' abilities to acquire new knowledge and skills.

In fact, the most crucial impelling force to conduct this study is the hope to make the unconscious nature of the informal learning more conscious by creating awareness about the ongoing learning activities all of us are going through in the workplace. Although it is tacit and unconscious nature sometimes makes it hard to identify, it is not possible to bring these activities into consciousness as Marsick and Watkins (2001) also implies in their paper. Creating such awareness is not also without drawbacks. Some of the investigators take attention to the possibility of those in power to intermingle into informal learning of adults so distort it which is effective in its spontaneous and self-initiated nature (Garrick, 1998; Marsick and Watkins, 2001).

CHAPTER 2: LITERATURE REVIEW

To establish the basis into informal learning historical foundational theories are examined on adult learning, then the concepts of formal, non-formal and informal learning are discussed. Next, the importance of informal learning and the extensive empirical studies reflecting the prevalence of informal learning are mentioned. Lastly, informal learning taking place in the workplace has been discussed with a foundational model for the early development of informal learning in the workplace is examined to establish insight into the informal learning in the workplace. Empirical research findings related to the research questions are also tapped upon.

Adult Learning

The study of adult education and learning apart from the general education processes under another major area of study has been relatively a new conceptualization. The history of educational psychology about adult learning dates back to the World War I with an aim to create mental aptitude measures to be used in the war. After the World War II, in all forms of adult education there was a rapid huge increase in numbers to enroll in postsecondary education. With this dramatic increase in the numbers of adults as learners counselors and student services professionals created a unique opportunity to lead the way in regard to research on and instruction of adults (Smith and Pourchot, 1998). Two of the basic components of education are teaching and learning. They were also points of reference in adult education which should be clearly perceived and defined

for effective progression of the adult education as inherent in all types of education (Tight, 2002). The issues of how to teach best and how learners learn best have been the topic of investigation throughout the history. It is also the case for adult education. Many learning theories have been developed to be applied in various ways under different conditions. Some of the learning theories generated are included and discussed tentatively in the remaining part of this section.

The importance of experience has long been emphasized by several researchers. Dewey (1995) takes attention to the use of experience as a starting point to the instruction. He also presents the growing complexity of experience for adults pointing to the difference between children and adults. His experimental model includes three steps for building upon the experience effectively which are the formation of ideas; acting upon ideas, observation of the resulting conditions; and reflective reviewing and summarizing of the observed consequences for future use. In summary, Dewey (1995) views learning as “an incessant process of reconstruction of experience” (p. 30). Houle (1961), on the other hand, found as a result of his interviews with continuing learners that adults differ in their motivational orientations towards learning. He identified three subgroups of adult learners as the goal-oriented, the activity-oriented, and lastly the learning-oriented learners (as cited in Knowles, 1980).

The realization of adults with different characteristics and needs on such issues as education, training, and learning has enlarged with Knowles’s adult education model that he named as “andragogy” (Darkenwald and Merriam, 1982). Similarly, much of research on informal learning draws upon Malcolm Knowles’s ideas of andragogy- the art and science of helping adults learn which he named after European adult educators as

andragogy, which was derived from the Greek word ‘aner’, meaning ‘men, not boy’ or adult, in parallel with pedagogy (Knowles, 1970;1980). Knowles (1980) mentions that the roots of the adult learning theory he generated in 1970 dates back to the 1950s. As he indicates it is only after 1960s and 1970s that adult learning grasped the attention of researchers and an accumulation of scientific research findings are obtained on the internal processes of adult learning. Tough (1971) conducted the preliminary research on adult learning. Tough (1971) found that well over two-thirds of most adults’ intentional learning efforts occurred completely outside institutionalized adult education programs or courses and adults engaged in from one to twenty major learning projects each year with an average around eight. Tough (1978) then investigates several studies held in the 1970s and summarizes his findings as “the typical learner conducts five quite distinct learning projects in one year. He or she learns five distinct areas of knowledge and skill...The person spends an average of 100 hours per learning effort-a total of 500 hours per year” (p. 252).

With this growing interest and awareness of the processes and differences of adult learning different from the learning of children, Knowles (1980) revised his adult learning theory of ‘andragogy’ being mostly loyal to the assumptions in his first model. Andragogy has its own philosophy of facilitating adult learning based on the characteristics of adult learners and principles that are essential for the adult learning process. According to his description adult learner is someone who is autonomous and self-directed, has accumulated a reservoir of life experiences and knowledge which constitutes a rich resource for adult learning, is problem-centered and practical in the

sense that s/he looks for immediate application of the useful knowledge, and lastly as a learner that need to be shown respect.

Knowles (1980) indicates that in a world of accelerated change the knowledge of men becomes obsolete at an ever growing pace. And that education can no more defined as a process of transmission of what is known and what should be known from an educator to the learner but as a lifelong process to help their clients develop towards achieving their full potentials. Knowles (1980) in his work identified four significant assumptions about adult learners in his model of adult learning. Terehoff (2002) states they are important to characterize adults as learners and to differentiate their learning from adolescent, namely student learning to facilitate the process of professional development of adults in the workplace. Although Knowles (1980) does not see pedagogy and andragogy as dichotomous but as the two different ends of the same spectrum, he differentiates the distinct characteristics of adults as learners and their learning processes from the premises of pedagogy as follows:

The first assumption he made is about self-concept of adults as learners. They see themselves as either a producer or user rather than as full-time learners dependent on others. As they mature they begin to strive releasing themselves from others' interference, often resisting conditions that are incongruent with their self concepts and needs as autonomous individuals (Knowles, 1980). The reflections of the self-concept of adults are their needs for more freedom, to learn, choice over their own learning, and the relevance of experiences during learning (Terehoff, 2002). According to Knowles (1980), self-concept influences the following:

1. The learning climate. The physical learning environment for adults should be informally decorated according to the tastes of adults comfortably. The psychological environment should convey the message that they are accepted, respected, and supported.
2. Diagnosis of needs. A greater emphasis is necessary towards the involvement of adult learners in a process of self-diagnosis of their needs for their own learning and also self-evaluation of their performance assessing their level of competency with that of in the model portrayed creating a discrepancy and a feeling of dissatisfaction which in turn leads to motivation to learn.
3. The planning process. Instead of the obsolete process of planning everything for adults to learn, adults should be engaged into the planning process which increases their commitment to learning and be held responsible for the content.
4. Conducting learning experiences. The teaching was no more seen at the disposal of the teacher but as a mutual responsibility between teacher and the learner, teacher functioning as a resource person and guide.
5. Evaluation of learning. Having determined their learning needs and involved in the planning process, learners should also gather evidence for their progress toward their educational goals and become aware of their strengths and weaknesses after a rediagnosis of learning needs.

Knowles's (1980) second assumption is that adults have a considerable reservoir of experience. Experience can be seen as a very rich source for adult learning. As Terehoff (2002) states "the experiences represent the adults' long-term investment in their self-image" (p.67). Knowles (1980) emphasizes the significance of building upon the experiences of adult learners during the course of other learning practices for not letting them feel rejected as persons. In this process key factors for effective adult learning mentioned by him are building the activities from known to the unknown, making the knowledge relevant to the new situations and enabling active participation in learning.

Another assumption featured in andragogy as a distinctive feature of adults is readiness to learn. This is especially important to teach adults at a learnable moment according to their needs and interest in accordance with their developmental stage. Knowles (1980) asserts that providing the opportunity to work in collaboration with others in the learning environment can be useful either heterogenous or homogenous letting them discover colleagues having the same readiness level and giving them a flexibility of choice. Terehoff (2002) mentions that working with colleagues help them receive feedback, share diverse perspectives, expertise and knowledge, and encourage communication.

Another assumption is that the adult learner's orientation to learning and the need for learning different from children must be performance-centered and focused on problem solving (Knowles, 1980). The last assumption Knowles makes in his system of assumptions about learners that learning is an internal process. Knowles's (1970; 1980)

andragogy premises crucial assumptions about the characteristics of adult learners emphasizing experience-based and self-directed learning approach.

In the last century, with the rapid development of technology and its wide usage in education with a variety of subjects, domains, purposes and applications aroused a different perspective of teaching and learning which paramountly emphasizes the individualization of the learning process (Merriam, 2001; Brockett and Hiemstra, 1991). There are those who state that independence is the ultimate goal the learners are trying to accomplish to deal with the individual differences as adequately as possible leaving all the responsibility for learning to the learner (Petrequin, 1968). A similar framework for the learner as an individual responsible for his/her learning, for the planning and organization of the learning environment, and ultimately the decision-maker about the content comes from a transactional perspective that considers learning as a process of constructing meaning from raw information and confirming knowledge with the direction of the self (Garrison and Archer, 2000).

The preceding findings of Tough (1971, 1978) should have helped the generation of the idea of adult as a self-directed learner. The history of self-directed learning is long and there are many contributors for strengthening the research on it. However, Brockett and Hiemstra (1991) provide a compact synopsis of the assumptions underlying the theory. They emphasize that the direction of learning is a combination of forces both within and outside the individual the learner taking responsibility for decisions associated with the learning process. They believe that all people in all learning situations have the self-direction characteristics to a greater or lesser degree. They make it clear that self-directed learning does not mean learning in isolation but as people face

new learning challenges they will find differing needs for outside assistance and facilitation of some outside source. In this respect, the self-directed learner needs a facilitator and the writers define the successful facilitator to assume a very active role by negotiation, exchange of views, and validation of outcomes (Brockett and Hiemstra, 1991).

Rogers (1969) also sees education as the facilitation of learning which relies on teaching the process of learning how to learn and how to adapt and change rather than the unchanging knowledge in the modern world of continuous change. The success of this goal he believes rests upon certain attitudinal qualities which exist in the personal relationship between the facilitator and the learner as a whole person.

But still, whether there is a facilitator or not, self-directed learners are said to have a willingness to initiate and maintain learning and this in turn help them have an enhanced self-concept (Brockett and Hiemstra, 1991). The activities illustrated by the Brockett and Hiemstra (1991) include personal investigation of a topic using interviews as a basic source; self-guided reading, where the instructor or some other person in a mentoring role provides some guidance and evaluative support as needed or required; participation in a study group, where three or more people cooperate in finding information and compiling a report on a topic through reading, research, and discussion; involving in an agency visitation or study tour of some organization; completion of a practicum or internship in an agency or with some expert; and engaging in a debate via online computer conferencing software. So self-directed learning has embraced such ideas as independence, autonomy, and personal development which bring about increased learner responsibility over his/her learning and a deliberate effort to learn.

But what such educators ignore is the huge amount of information so the knowledge that the new technology and developments makes available to those interested in learning. For learners to cope with such huge amounts of material to handle, in contrary, some group work may be necessary with the assistance and directives of others in the context of learning where a huge amount of social, cultural, and intellectual exchange takes place at the same time other than just learning the subject matter. These perceived merits of group work have been under investigation for centuries (Tindale, 1998). There are also educators who believe in the necessity to include interpersonal interaction and cooperation. Houle (1972) proposes a cooperative system for adult education and learning based on seven assumptions. He assumes that learning occurs in a specific situation and the purposes, pattern and results of learning experience are affected by that situation; the realities of human experience and their constant change should be taken into consideration during the planning and analysis of the educational activities; education is a practical art assessed according to the mastery of the goals; education and learning are a cooperative rather than an operative act involving the learner and teacher and their voluntary interaction; education involves some successive periods that are specific and relatively brief; the learner, the educator or another independent body individually or all of them collectively can plan the educational activity; and lastly educational designs include a complex interacting elements that can be reformulated during the process of learning. He asserts that his system can both be applied by an individual learner and an educator. So he sees adult education as a practical, systematic, situation specific, and cooperative endeavor.

Although the internal makeup of the adult learner is important, Knowles (1980) discusses the need to establish an organizational climate and structure conducive to learning. He also called for adult educators to set a cooperative learning climate, create mechanisms for mutual planning, arrange for a diagnosis of learner needs and interests, enable the formulation of learning objectives based on the diagnosed needs and interests, design sequential activities for achieving the objectives, execute the design by selecting methods, materials, and resources, and evaluate the quality of the learning experience while rediagnosing needs for further learning.

Although it is emphasized that Knowles has popularized adult education as a different area of study other than children's learning and has changed the role of the learner in adult education, his theory of andragogy has been criticized for not clarifying its position either as a theory of learning or teaching. He is also criticized for describing the ideal characteristics of adult learners as being self-directed and problem-centered, and desiring immediate application (Merriam, 1987). Merriam (1987) sees experience as the only well grounded assumption of Knowles. Kolb (1984) realizing the importance of experience for learning develops the theory of experiential learning. He describes the learning with six different characteristics. According to Kolb (1984) learning is a process rather than an outcome, a continuous process grounded in experience, an holistic process of adaptation to the world, a process of creating knowledge, requires the resolution of conflicts, and involves transactions between the person and the environment. Depending on these characteristics of learning, he defines learning as "the process whereby knowledge is created through transformation of practice" (p. 38). Kolb's model has been supported due to its success to incorporate and highlight the

relationship between learning, knowledge, and learning style of the learners (Jarvis, 1987).

Kolb (1984) develops a learning cycle with four learning elements. For learners to be effective they need four kinds of abilities which are concrete experience abilities (CE), reflective observation abilities (RO), abstract conceptualization abilities (AC), and active experimentation abilities (AE). The learners must continually choose between the learning abilities. According to Kolb (1984) these abilities are in polar opposites. His learning cycle shown on Figure 1 indicates the process of learning. The learners must be able to involve themselves fully, openly, and without bias in new experiences, that is CE; to reflect on and observe their experiences from many perspectives, that is RO; to create concepts that integrate their observations into logically sound theories, that is AC; and to use these theories to make decisions and solve problems, that is AE. But in his model these abilities are of polar opposites as shown in Figure 1. There are two dimensions in his model one representing the concrete experiencing of events at one end and abstract conceptualization at the other, and the other dimension having active experimentation at one extreme and reflective observation at the other. So the role of the learner can change in the process of learning in varying degrees from actor to observer in one dimension, and from specific involvement to general analytic conceptualization.

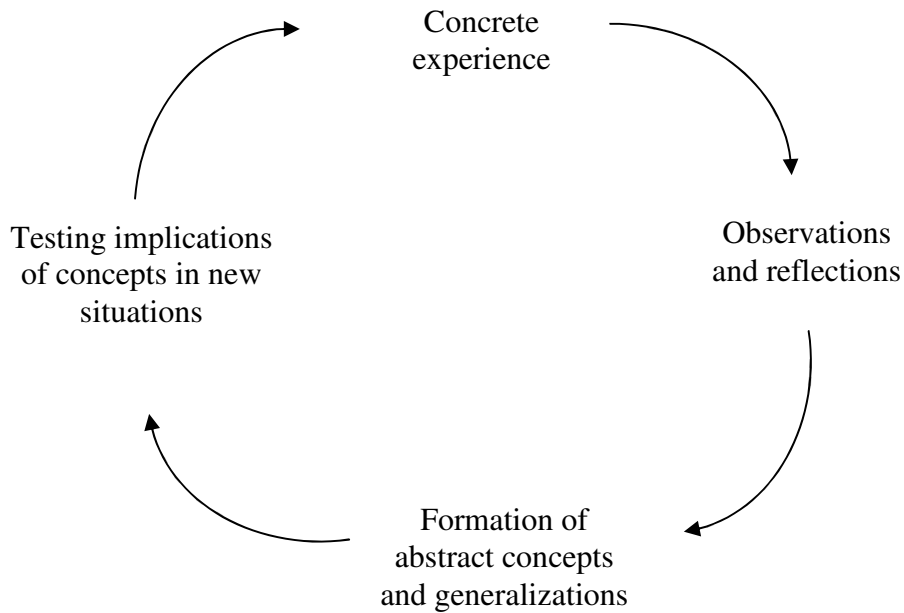


Fig. 1 Kolb's Experiential Learning Cycle

Source: Kolb, 1984; p. 34.

A more radical but actually humanistic view of adult learning comes from Paulo Freire (1970). He also supports a cooperative, in his words 'dialogical', learning environment where the teacher and the learner are both learners, and portrays the figure of teacher not as the authority, as the source of 'narrative' information, the imposer of the superior culture, and the monopolizer of valuable knowledge detached from the reality. He argues that the contradiction between the teacher and the learner as the two sides of the continuum should be resolved so that they can engage in the learning activity together to create and recreate the meaning again by reflecting upon events together with their students and act upon the fact, which he calls 'praxis'. In this process of creating meaning they should use their creative and transformative power of learners, as the subjects of education rather than objects complying with the prescribed

knowledge. For him reality is a process undergoing constant transformation. Learners should also be involved in this transformation process as an integral part of change to realize the reality of the situation they are in. He supports a problem-posing over 'banking' which means moving from the adaptable and manageable beings as objects for depositing knowledge to the radicals, according to the oppressors, who act upon their critical reflection intentionally for their freedom to become 'beings for themselves' in the process of 'conscientization' on the way to become a critical thinker and actor. So adults should possess a critical look at the events in their environments and culture to become aware of the dehumanizing practices imposed on them and to be reactive against it to recreate the reality. Jarvis (2004) considers the theoretical perspective of Freire as a political view and a social theory of learning. He points that Freire sees education as a political act either for facilitating freedom or for domestication of the participants.

Although not as political or radical and developed for an oppressed group of learners, there are other researchers that call for critical thinking and transformation of perspectives. Mezirow (2000) in his theory of transformative learning approaches the process of learning as a liberating force. He also argues about effects of the socio-cultural world surrounding people in the process of meaning construction of reality from their frame of reference that he calls 'perspectives'. He notes that when individual's perspectives are not in accordance with their experience, their perspectives are transformed as a result of reflecting upon the experience and planning new strategies of living as a result of their assessment of the situation. So Mezirow (2000) believes those life crises are times for abundant opportunities of learning. He creates a learning cycle with ten steps starting with the incompletion of meaning perspectives to deal with the

irregularity in the next situation. The stages of meaning clarification for transformations mentioned include the following:

1. A disorienting dilemma
2. Self-examination with feelings of fear, anger, guilt, or shame
3. A critical assessment of assumptions
4. Recognition that one's discontent and the process of transformation are shared
5. Exploration of options for new roles, relationships, and actions
6. Planning a course of action
7. Acquiring knowledge and skills for implementing one's plans
8. Provisional trying for new roles
9. Building competence and self-confidence in new roles and relationships
10. A reintegration into one's life on the basis of conditions dictated by one's new perspective (Mezirow, 2000; p.22).

Learning is defined by Mezirow (2000) as “the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience as a guide for future action” (p.5). He claims that learning occurs in four ways: “elaborating existing frames of reference; learning new frames of reference; transforming points of view; and transforming habits of mind” (p.19). For him, learning is a liberating process on the assumption that by becoming critically aware of how and why the structure of individuals' assumptions constrain they see themselves and their relationships, they can reorganize the structure for a more comprehensive and perceptive

integration of experience and acting upon these new understandings. In a nutshell, he concentrates on meaning and reflection upon experience as learning which can change the social construction of reality (Mezirow, 2000).

Yet another theory of learning to be mentioned here while moving from individualistic learning theories to more inclusive social theories of learning is action learning theory. The theory has a specific focus on the learning the chief application of which has been in the workplace. Argyris and Schön (1974) assume that people have mental maps with regard to how to act in situations (as cited in Dick and Dalmau, 2000). They say that there is a difference between people's actions guided by their mental maps, and theories they explicitly adopt to explain their actions. They define two different terms in line with the above description as theory-in-use and espoused theory. The former refers to those theories that are implicit in what people do as practitioners and the latter to the words people use to convey what they do or what they would like other think they do. Theories-in-use tend to be tacit in nature but they govern the actual behavior of individuals.

After differentiating between people's actions under these two terms, they build a model on the theory-in-use. This model involves three elements; governing variables: those dimensions of their actions that people are trying to keep within acceptable limits; action strategies: the moves and plans used by people to keep their governing variables within the acceptable range; and consequences: the intended or unintended results of an action for the self and/or for the others. When the consequences of the strategies people used for their actions are what the person wants, then theory-in-use is confirmed thanks to the match between intention and outcome (as cited in Dick and Dalmau, 2000).

However, when there is a mismatch between intention and outcome, in other words when there are unintended outcomes, there are two responses to this mismatch. The responses are their main contribution to the understanding of adult learning which compose their single-loop and double-loop theory of learning. For Argyris and Schön (1978) learning involves the detection and correction of error. When something goes wrong people many people look for another strategy that will work within governing variables without questioning the error. This is single-loop learning. Nevertheless, the desired learning is double-loop learning. It involves questioning the governing variables and subjecting them to critical analysis. This kind of learning may lead to an alteration of the governing variables, and thus a shift in the way strategies and consequences are framed (as cited in Dick and Dalmau, 2000).

Formal, Non-formal and Informal Learning

Rogers (1996) defines learning as “an activity in which we take part all the time throughout life” (p. 37). Throughout their lives people face situations at work, at home, at school and in their wider relationships in their daily lives for new learning. Such continuing learning is an informal natural process, performed as we enter new social roles, work at various occupations, develop new personal interests, and prepare for more learning (Rogers, 1996). Tight (2002) cites a survey that asked people for their associations with learning in the Campaign for Learning in 1998 (p. 23). The results of the survey show that learning is most associated with the words discovering, finding out more, enjoyment, TV/video, exchanging ideas/information with others, and personal

growth. Beckett and Hager (2002) see learning as an organic and holistic process that engages the whole person, blending intellect, emotions, values and practical activities. (as cited in Colley et al., 2002). Titmus et al. (1979) provides the definition of adult learning in two ways:

- As the act of acquiring new knowledge and skills, of developing new attitudes by persons having reached mature intellectual, physical and social development, and
- As the process by which adults acquire new knowledge and skills, develop new attitudes, and the factors-intellectual, biological and social-which influence these processes, with particular reference to those factors influencing the learning of children.

Hager (2004) criticizes the view of learning as a kind of product seeing the mind as a container. He supports the view of learning as a process that changes both the individual and the environment. He asserts that this view of learning highlights the contextuality of learning. He sees learning as ‘construction’ rather than just acquisition and participation. He refers to construction as “the construction of the learning, of the self, and of the environment which includes the self” (p. 29). United Nations Educational, Scientific and Cultural Organization (UNESCO) similarly states that individual’s learning opportunities are directly dependent upon the settings and curricula that school and community make available (UNESCO, 2001).

However, distinguishing adult learning from that of children is not enough to understand the variations in the types of adult learning. In this session, the different and sometimes convergent characteristics of different learning types will be included. The

word “informal” is defined as “not formal; not following official or established rules” by Longman Dictionary of English language and culture (1992; p. 674). Actually, such a definition may somewhat explain the confusion in the minds of the people regarding the meaning and definition of the term. As research report carried out by the Informal Learning Opportunities in the Workplace (INFLOW) puts it the formal imposes order, constricted by rules, offers regularity, official so authorized by authority; whereas informal means chaos, is anarchic, offers the unfamiliar continuity of random events, unofficial so lacks the authorization of the authority (INFLOW, 2005). Even in the language the cultural tradition reinforces formality over informality. However, Tough (1971) findings that indicated only 10 % of adult learning happened under institutional education settings acted as a threshold opening the doors for even more attention to learning outside formal institutions which falls in the scope of informal learning.

Still, it is more helpful to examine the dimensions of formality and informality, and how they interrelate with each other in the particular contexts for drawing exact boundaries between types of learning (Colley et al., 2002). Livingstone (2006) in the same line of thinking perceives learning as a continual process from formal to informal and the division of learning as somewhat arbitrary. Formal learning is one of the basic educational formats. The other two are non-formal and informal learning. There are also controversies among researchers on the definitions of learning types, although there is also agreement in general. These definitions and their implications are elaborated on next. For instance, terms related to learning are defined in a UNESCO report as follows:

Formal education takes place within the educational institutions, it is structured, aimed at well defined age groups and leads to recognized certification of skills and qualifications.

Non-formal education/ learning is taking place outside formal educational institutions, it is structured and supplementing a formal educational system. It does not lead to formalized certification, but possibly to factual recognition of skills and qualifications for example in workplace or in trade unions. But it also takes place in leisure time activities e.g. sports and music, in nursery schools, in evening schools and in voluntary associations etc.

Informal learning is incidental, it takes place alongside formal and non-formal learning as an unintended or 'hidden' curriculum. It is possibly not even recognized by the learner - it forms tacit knowledge and the learning goes on all the time in the family, in the media, in religious life, in the street or at the market (UNESCO, 2001).

The European Commission (EC) report (2001) defines three types of learning which are formal, non-formal, and informal. Certification is stressed in the definitions.

Their definitions are stated as:

Formal learning: learning typically provided by an education or training institution, structured (in terms of learning objectives, learning time or learning support) and leading to certification. Formal learning is intentional from the learner's perspective.

Non-formal learning: learning that is not provided by an education or training institution and typically does not lead to certification. It is, however, structured (in terms of learning objectives, learning time or learning support). Non-formal learning is intentional from the learner's perspective.

Informal learning: learning resulting from daily life activities related to work, family or leisure. It is not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification. Informal learning may be intentional but in most cases it is non-intentional (or "incidental"/ random) (p. 32-33).

Building upon EC (2001) definitions Sustainable Environment for the Evaluation of Quality in E-Learning (SEEQUEL) provides definitions for the three types of learning. The extended definitions of the terms are as follows:

Formal learning takes place in a planned way at recognized institutions such as schools, colleges, and universities. Teachers mediate the learning in a formal setting, and the student generally follows the

teacher/leader's agenda. The teacher's goal is to impart knowledge, and the learner's goal is to increase his/her knowledge and skills.

Non-formal learning occurs in a planned but highly adaptable way, in institutions, organizations, and situations outside the spheres of formal or informal education. It shares with formal education the characteristic of being mediated, but the motivation for learning may be wholly intrinsic to the learner. Examples of non formal education include continuing education courses, organized field trips, museum visits, and structured programs developed by organizations such as the Boy Scouts. The learner's objectives may be to increase skills and knowledge, as well as to experience the emotional rewards associated with increased love for a subject or increased passion for learning.

Informal learning is voluntary and self-directed. It results from personal exploration and discourse and may occur spontaneously in everyday life situations, within the family circle, the neighborhood, and so on.

Informal learning is distinguished from the other two by having no authority figure or mediator. The learner is motivated intrinsically and determines the path taken to acquire the desired knowledge, skill, or abilities (SEEQUEL, 2004, p. 20).

Eraut (2004) presents the features of formal learning with a prescribed learning framework, an organized learning event, the presence of a designated teacher or trainer, the external specification of outcomes. Livingstone (2006) brings in another organizing principle: the relationship between teacher/mentor and learner. He defines the terms of learning with education as:

The form of learning is formal education when a teacher has the authority to determine that people designated as requiring knowledge effectively learn a curriculum taken from a pre-established body of knowledge, whether in the form of age-graded and bureaucratic modern school system or elders initiating youths into traditional bodies of knowledge;

the form of learning is non-formal education or further education when learners opt to require further knowledge or skill voluntarily with a teacher...by using an organized curriculum, as is the case in many adult education courses and workshops;

the form of learning is informal education when teachers or mentors take responsibility for instructing others without sustained reference to an intentionally-organized body of knowledge in more incidental and

spontaneous learning situations, such as guiding them in acquiring job skills or in community development activities (p.204).

He further sorts informal learning as self-directed or collective informal learning which includes “all other forms of intentional or tacit learning in which we engage either individually or collectively without direct reliance on a teacher” (p. 204).

Livingstone (2006) states that informal learning is “any activity involving the pursuit of understanding knowledge or skill which occurs without the presence of externally imposed curricular criteria...in any context outside the pre-established curricula of educative institutions” (p.206). The basic terms of informal learning (e. g. objectives, content, means and processes of acquisition, duration, evaluation of outcomes, applications) are determined by the individuals and groups that choose to engage in it. Although in his classification he differentiates between informal learning and self-directed or collective informal learning, he refers to all of his variations as informal learning (Livingstone, 2006).

Mocker and Spear (1982) believe that the most important characteristic of adulthood is the willingness of individuals is to take responsibility for decisions that affect their lives in conjunction with Knowles’s (1970) point that an adult is assumed to learn the skills of independent study as he/she is moving from dependence to independence. Their model is based on a two by two design of learner and institution with objectives and means as variables. They define four types of learning in their model as formal: learners have little control over the objectives or means of learning; non-formal: learners control the objectives but not the means of learning; informal: learners

control the means but not the objectives of learning; and self-directed learning: learners control both the objectives and means of learning. Although they differentiate between informal and self-directed learning, they assume self-directed learning as a variety of informal learning (Mocker and Spear, 1982). The model is illustrated on Figure 2 below.

		What (Objectives)	
		Institution	Learner
How (Means)	Institution	Formal Learning	Non-formal Learning
	Learner	Informal Learning	Self-directed Learning

Fig. 2 Lifelong Learning Model

Source: Mocker and Spear, 1982; p. 4.

Axinn et al. (1974) develops another model of learning (as cited in Okçabol, 1996). In their model, they use a two by two design using intentionality on the learner and teacher as a criterion to differentiate between learning and teaching types. They define education as a learning and teaching process. In their model, there are four learning/teaching types as formal or non-formal learning: the learner and the teacher is intentional; informal: either the learner or the learner is intentional for the learning to take place but not both; and incidental neither the learner nor the teacher is intentional. Whether the learning and/or teaching taking place at school or out-of-school is the

decisive factor for calling the former as formal, and the latter as non-formal. They claim that a learner that is sure about what he/she wants to learn can also determine the source and the learning setting for learning to take place. The illustration of their model is presented on Figure 3 below.

Teaching		Teacher	
		Intentional	Unintentional
Student	Intentional	Formal (at school) Non-formal (out-of-school)	Informal
	Unintentional	Informal	Incidental

Fig. 3 Learning and Teaching Forms

Source: Okçabol, 1996: p. 4.

Similarly, Marsick and Watkins further differentiate between the terms of informal learning and incidental learning as a variation of informal learning. They conceptualize the terms as; “Formal learning is typically institutionally sponsored, classroom-based, and highly structured. Informal learning a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. Incidental learning is defined as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning. Informal learning can be deliberately

encouraged by an organization or it can take place despite an environment not conducive to learning. Incidental learning, on the other hand, almost always takes place although people are not always conscious of it” (as cited in Marsick and Watkins, 2001; p. 25).

It is important to note that no learning is meant to be superior to the other, as Knowles (1980) responded to this kind of a question that he did not mean andragogy was superior to pedagogy but still worked for adults. So it is more important to search for effectiveness rather than superiority.

Because of the broadness of the learning included in informal learning the tendency is towards defining it with not what it is but with what it is not. So informal learning is generally defined in contrast to formal learning. Colley, Hodkinson and Malcolm (2002) divides informal and formal learning focusing not only on the who and what, but also the how and where the learner is involved in the experience. After analyzing the literature on the terms of learning they concluded with a tentative list of differentiating features for formal and informal learning as summarized on Table 1 below. Non-formal learning is said to lye between the two.

Table 1. Possible Ideal-Types of Formal and Informal Learning

Formal	Informal
Teacher as authority	No teacher involved
Educational premises	Non-educational premises
Teacher control	Learner control
Planned and structured	Organic and evolving
Summative assessment/accreditation	No assessment
Externally determined objectives/outcomes	Internally determined objectives
Interests of powerful and dominant groups	Interests of oppressed groups
Open to all groups, according to published criteria	Preserves inequality and sponsorship
Propositional knowledge	Practical and process knowledge

Table 1. continued

High status	Low status
Education	Not education
Measured outcomes	Outcomes imprecise/immeasurable
Learning predominantly individual	Learning predominantly communal
Learning to preserve status quo	Learning for resistance and empowerment
Pedagogy of transmission and control	Learner-centered, negotiated pedagogy
Learning mediated through agents of authority	Learning mediated through learner democracy
Fixed and limited time-frame	Open-ended engagement
Learning is the main explicit purpose	It is either of secondary significance or is implicit
Learning is applicable in a range of contexts	Learning is context-specific

Source: Colley et al., 2002: 18-19

But in this exhausting list they agree that there may be misconceptions and go to cluster these criteria under four headings as process, location and setting, purposes, and content to make analyzing and understanding learning in a variety of contexts easier.

Malcolm, Hodkinson and Colley (2003) identify their clusters as follows:

Process: where learning processes are incidental to everyday activity, many writers term them informal, while engagement in tasks structured by a teacher is often regarded as formal. For some there is the issue of pedagogue. If there is a teacher learning is formal, but if there is a friend or a work colleague, it is informal. Another process issue is assessment. When there is none it is informal, when predominantly formative and negotiated it is relatively informal, and when mainly summative it is formal;

location and setting: if the physical location of the learning is within a school or college learning is formal, whereas setting is community or workplace learning is informal. The setting of learning is informal when it is open-ended, with few time restrictions, no specified curriculum, no predetermined learning objectives, no external certification. It is formal when learning is seen as the opposite of all these things;

purposes: If the learning is learner determined and initiated, learning is informal. If the learning is designed to meet the externally determined needs of others with more power, learning is formal;

content: This covers issues about the nature of what is being learned. If it is the acquisition of established expert knowledge / understanding / practices, learning is formal, but it is informal when it is the development of something new when the focus on propositional knowledge learning is formal, while it is informal when the focus is everyday practice or workplace competence. (Malcolm et al., 2003; p.315-316).

All these criteria cannot be applied to the conceptualizations generated for formal, non-formal and informal learning. But still it is important to look at all these definitions together for a clearer understanding of the differentiating criteria used one by one.

UNESCO's (2001) definitions of the terms highlight the structured and systematic nature of the formal and non-formal learning, but the broadness of the informal learning existing everywhere. The EC report (2001) takes attention to the intentionality of formal and non-formal learning while reflecting the either intentional or unintentional nature of the informal learning. The report also emphasizes the criterion of certification which is evident in formal and non-formal learning but not informal learning. Eraut (2004) also points to the certification as an outcome of formal learning. Gorard and Rees (2002) states that informal learning should not be ignored and there should not be an unjustifiable reliance on certification. They argue that the reason for such little empirical research on informal learning is due to its characteristic that does not lead to such measurable formal qualifications like participation and pass rates. This in turn leads to investigation and accreditation of individual's formal rather than real level of learning.

SEEQUEL (2004) takes the motivation of the learners, the control of the learner over content and the mediation of a teacher/director as the basic criteria. They also take the place of learning into account either in formal settings, institutions or everyday life situations. It points out the mediation of the learning by a teacher in formal and non-formal education, whereas there is self-direction in informal learning. It also recognizes the power of the learners in informal learning to determine the process and content of their learning. Similarly, Mocker and Spear (1982) has developed a different typology taking the locus control of the learner as the basic criteria over the decisions made for the objectives/ goals of learning and the means of learning. Livingstone (2006) includes organized curriculum, teacher control, and learning places as definitional factors. He distinguishes formal, non-formal and informal learning in terms of the degree of directive control of learning. What is interesting in his approach to learning is his tendency towards defining learning with education. Mocker and Spears (1982) explain that education carries an institutional or system connotation, whereas learning implies behavior of the individual. They induce that learning focuses on the person while education focuses on the system.

Axinn et al. (1974) believe in the autonomy of the learner to intentionally determine the learning to take place. They further differentiate between informal and incidental learning referring to somewhat intentional and unintentional efforts to learn respectively (as cited in Okçabol, 1996). Marsick and Watkins (2001) use the setting, structure, and control over learning to differentiate formal, non-formal and informal learning. On the other hand, they use intentionality as a criterion to distinguish incidental learning from informal learning. Actually, Livingstone's (2006) definition follows a

similar path under different terms. He proposes his criteria as the presence or absence of a curricular setting and the process of acquisition either on the learner's own initiative or with aid of a recognized mentor (Livingstone, 2006).

The Extend of Adults' Informal Learning

Marsick and Watkins (2001) suggest informal and incidental learning are at the core of adult education and learning due to learner-centered approach and the possibility of learning from life experience which is so broad that can include anything in its definition.

Bell (1977) states that "Formal learning activities may be viewed as bricks fused into the emerging bridge of personal growth with the mortar of informal learning. Informal learning facilitates the acceptance and development of formal learning and it is this synergy which produces effective growth. Thus, informal and formal learning are both important ingredients for personal growth"(p. 280). He makes a list of advantages of informal learning. For him, informal learning

- reduces the element of 'anxiety' associated with formal learning,
- reduces the effort and costs of extensive planning and coordination required for the effectiveness of formal learning, and
- provides the flexibility of learning times inherent in informal learning in accordance with the maintenance of individual's positive attitude for learning while formal learning requires specific blocks of time (Bell, 1977).

Formal short courses outside the workplace often fail to express the participant's work accurately because of bad timing, lack of preparation and lack of follow-up which in turn may waste their prospective contributions (Bell, 1977). The more distant the learning is from the workplace, the more likely the organizations are to fail to connect with its current priorities, whatever their merits" because currently locating much important learning in workplace settings is emphasized more in preference to leaning in formal education and training (Eraut et al., 2000; p. 356).

Bell (1977) adds the importance of past learning which he holds responsible for every behavior individuals are engaged, and defines learning as a relatively permanent change in behavior or attitude as a result of practice and experience which can be created or fostered in a work related setting.

Eraut et al. (2000) believe that the limits to making tacit knowledge explicit have yet to be explored. Nevertheless, for them this is an important area of research to pursue because of the many practical benefits. These include:

- improving the quality of a person's or a team's performance;
- improving communication between co-workers;
- constructing aids to decision making;
- enabling people to review their actions and to keep them more under critical control even when they are not easily described;
- possible creation of new knowledge (Eraut et al., 2000; p. 257).

The Center of Workforce Development (CWD, 1998) cites several merits of informal learning. It is extremely relevant to needs because of its spontaneous nature to

occur in the setting where knowledge is used as the need arise, while formal learning is scheduled and occurs in a setting that is different from where the learning will be applied. This fact creates a temporal gap for the application of formal learning, whereas informal learning is immediately applicable. Due to its immediacy of application informal learning can be said to conform to adult learners who as Knowles (1970, 1980) mentioned have an orientation to seek immediate application of their learning.

The cumulative findings of the studies held in different groups document the varying actual time invested in informal learning activities as opposed to more structured formal learning activities. Livingstone (2006) cites studies that generated empirical evidence to the prevalence of informal learning. Among the first studies was the 1961-1962 U.S. national survey conducted by Johnstone and Rivera (1965) with a sample of 2845 adults. The survey asked its respondents to report if they had ever tried to teach themselves some subjects by means of study on their own. They identified that nearly 40 % of U.S. adults indicated they had engaged and 10 % were currently involved in informal learning activities (as cited in Livingstone, 2006).

The other study involved the case studies conducted by Allen Tough in the 1970's. Tough (1971) defined learning projects as a parameter for his study of adult learning as “simply a major, highly deliberate effort to gain certain knowledge and skill or change in some other way” (p.7). He included in his study all kinds of learning episodes without elimination including those that are planned by the learner, those planned by non-human resources such as educational cassettes, one-to-one consultation (or tutor), and group activities conducted by a leader. The results indicate that almost every individual undertakes 8 learning projects in a year at average, involving 8 distinct

areas of knowledge and skill, and spend 700 hours a year at learning projects. Of all these learning projects about 70 % are planned by the learner, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources. Other learning projects cited rely on a group of instructor, on private lessons or on some nonhuman resource (Tough, 1971).

Tough (1978) then looked back and reviewed twenty four studies replicating his earlier study. The results of research pointed out that only about 10 % of the learning projects were associated with educational institutions; 90 % of all adults conduct at least one learning project a year; typical learners engage in 5 separate learning projects a year, and spend an average of 100 hours on each project or a total of 500 hours a year; there is a fairly universal natural process of learning-adults who undertake to learn something on their own go through a similar sequence of steps; adults always almost turn to somebody for help at once or more points in this sequence; and usually they go to 'helpers' who have been trained as teachers, but frequently when they go to teachers the teachers interfere with their learning by substituting their own pedagogical sequence of steps rather than flowing with the learners' natural sequence. (Tough, 1971, 1978).

The first large scale national survey on informal learning is conducted by Patrick Pendland (1977) in the U.S. (as cited in Mocker and Spear, 1982). This study investigates the information processing and self learning patterns of individuals who employ a wide range of community resources and provisions for independent learning projects. He finds that over three-quarters of U.S. adults are involved in self-planned learning activities, and spent an average of approximately 500 hours per year on informal learning. Pendland's study finds that learning in real life is closely related to

the environment out of which it grows in an organic and developmental manner. In addition, most adults actually do initiate and plan their own learning projects instead of relying upon a teacher to do so. In fact, four out of five Americans over 18 years of age are involved in some form of learning activity during the year previous to data collection. The probability of involvement in learning activities is about 80 %, and the likelihood that such activities are self-initiated is almost as high at 76 %. Specifically, Penland states that the prevalence of lifelong learning in America is becoming evident and the realization of a learning society appears to be close at hand. In conclusion, Penland states that adult learners felt a strong need to establish the pace and control the character of their learning experiences.

But some national surveys use much more restrictive questions and exclude students who are registered on adult education courses find smaller percentages than the other surveys. A 1995 Finnish survey finds that 22 % of Finnish adults between 18 and 64 are involved in informal learning at least 20 hours in the last year. A U.K. survey covering the 1994-1997 period focuses mainly on taught learning has found that 57 % of all adults involve in some form of non-taught learning. 51 % of employed learners indicate they have learnt to keep up with developments in their work without participating in taught courses. On the other hand, the results of 1998 General Social Survey in Canada released by Statistics Canada reveal that only 30 % of respondents undertake informal learning rather than taking courses (as cited in Livingstone, 2006). The survey includes three general questions about informal learning. Livingstone (2006) argues that the relatively lower percentages for informal learning are underestimates of actual extent of informal learning, and the reason for him is the predisposition of

questions related to initial schooling and adult courses immediately preceding questions related to informal learning.

Livingstone (1999) also reflects in his Canadian survey with 1562 adults conducted under New Approaches to Lifelong Learning (NALL) that informal learning activities takes about 15 hours of a Canadian adult regardless of his/her prior schooling or further educational involvement at that moment. The survey indicates that virtually people of all ages exhibit similar patterns of informal learning incidences.

All the surveys mentioned above and most of the other sample surveys conducted in North America and Europe since the early 1970s on the general frequency of informal learning are summarized in Table 2 below. It reflects the intensiveness of the surveys with considerable sample sizes. It is also observable from Table 2 that there is a consistency in the findings regarding the total hours of engagement in informal and the average of adults engaging in such activities.

Table 2. Estimated Incidence of Informal Learning Activities, 1975-2000

Survey (years cited refer to period of learning surveyed)	Sample Size	Total Hours Per Year	Informal Learners (%)
Hiemstra(1975) [Nebraskans over 55]	256	325	84
Penland (1976) [U.S. national adult population]	1501	514	76
Tough (1971-78) [estimate based on 1970s case studies]	N/A	500	98
Leean and Sisco (1981) [rural Vermont school dropouts]	93	425	98
Blomqvist, Niemi and Ruuskanen (1995) [Finnish adult population]	4107	20+	22

Table 2. continued

Livingstone, Hart and Davie (1996) [Ontario adult population]	1000	600	86
Beinart and Smith (1994-97) [United Kingdom adult population]	5653	N/A	57
Statistics Canada (1998) [Canadian national adult population]	10749	230	30
NALL (1998) [Canadian national adult population]	1562	750	95
Livingstone, Hart and Davie (1998) [Ontario adult population]	1007	750	88
Livingstone, Hart and Davie (2000) [Ontario adult population]	1002	650	86

Source: Livingstone, 2006: 210

Along with these national surveys, some other small-scale in-depth studies also yielded similar results. In studies of Honeywell managers, 80 % of learning is found to be from informal on-the-job experience, and 20 % is from relationships with others and training (Zemke, 1985). Eraut et al. (2000) also reflect that their findings strongly support that formal education and training contribute to only a small percentage of learning at work for their respondents which constitutes 120 employees.

Informal Learning in the Workplace

Today's rapidly changing environment is the mostly stressed defining feature of the organizations. For the last couple of decades the shift from formal training and learning in the workplace to the more unstructured informal means is stressed by the researchers dealing with the learning of adults, especially as workers (Dale, 1977; Marsick and Volpe, 1999; Eraut, 2004). In business and industry, on-the-job-training

activities take place for the improvement of skills and knowledge bases of the workers. It is also referred to as human resource development for a concern to keep up with the latest information and the most necessary skills required utilizing new technological equipments (Darkenwald and Merriam, 1982). The increasingly popular parameter of competition is pointed to be 'human competence' and that by focusing on knowledge and learning organizations can obtain benefits (Slater, 2004). Cofer (2000) similarly states that the workplace learning has taken on an increasingly popular role as a vehicle through which organizations can achieve not only their short term goals, but also long term strategic vision.

Eraut et al. (2000) point up the formalistic emphasis of education and training policy treats learning as organized by 'providers' to yield outcomes that are easily described and measured. His starting point is that, although a great deal of important learning is attributable to formal contexts and frameworks which fit these assumptions, this paradigm fails to capture much of the learning that occurs in the workplace. Similarly, Dale and Bell (1999) definition informal learning equates informal learning with the workplace. They define informal learning as "learning which takes place in the work context, relates to an individual's performance of their job and/or their employability, and which is not formally organized into a program or curriculum by the employer. It may be recognized by the different parties involved, and may or may not be specifically encouraged" (p.1).

Recently, Marsick and Watkins have said that "informal learning can be deliberately encouraged by an organization, or it can take place despite an environment not highly conducive to learning" (Marsick and Watkins, 2001, p. 25). But more solid

bases came from Marsick and Volpe (1999) in their attempt to describe how informal learning actually works. Marsick and Volpe (1999) describe informal learning as “learning that is predominantly unstructured, experiential, and non-institutional. Informal learning takes place as people go about their daily activities at work or in other spheres of life. It is driven by people’s choices, preferences, and intentions” (Marsick and Volpe,1999; p. 4). When they take the daily activities they are engaged in at work, the report of the Center for Workforce Development (CWD) defines informal workplace learning (they use the term interchangeably with informal learning in the workplace) as “learning in which the learning process is not determined by the organization” (p. 35). In their conceptualization of the term, they differentiate the process of learning from the goals of learning whether this goal is organizationally or individually driven, or explicit or implicit in nature. Only if the learning process is formal learning is perceived as formal (CWD, 1998). The illustration of this typology is shown in Table 3 below.

Table 3. Informal Learning in the Workplace

	FORMAL LEARNING	INFORMAL LEARNING	
GOALS	Organizational Goal	Organizational Goal	Organizational Goal
PROCESS	Formal Process	Informal Process	Informal Process

Source: CWD, 1998; p.37.

Workplace being at the center of the informal learning there are efforts to describe its disposition. Marsick and Volpe (1999) describe the nature of the informal

learning in the workplace by the processes and experiences the learner goes through. The characteristics of informal learning they have elaborated on are summarized on Table 4.

Table 4. The Nature of Informal Learning

Informal learning	What enhances or improves learning
<ul style="list-style-type: none"> • Is integrated with work and daily routines • Is triggered by an internal or external jolt • Is not highly conscious • Is haphazard and influenced by chance • Is an inductive process of reflection and action • Is linked to learning of others 	<ul style="list-style-type: none"> • Making time and space for learning • Scan of external and internal environment • Heightened consciousness or awareness • Attention to goals and turning points • Inductive mindset and reflective skills • Dependent on collaboration and trust

Source: Marsick and Volpe, 1999; p. 5.

The first feature that characterizes informal learning is its integrated nature in the routines of the work occurring just at the time of necessity, when workers face a challenge, problem or unanticipated need. Inherent in its nature it is significant to give freedom to such learning spontaneously as they arise. Willingness by the organizations to encourage and reward curiosity and experimentation is necessary even if the learning does not lead to a predetermined goal (Marsick and Volpe, 1999).

The second realization is that for informal learning to take place there generally happens to be an internal or external challenge, surprise or problem on external conditions such as a lost or changed job or relationship, the demands of the new technology, changes in the scope of one's work or responsibility, or evidence of likely

failure; or on such internal drives to envision the future or to prepare oneself for future anticipations. The examination of the organization, industry, and job assignment is another common practice in the process of informal learning for both the individuals in the organization and the organization itself to identify the changes. To enhance this factor heightening awareness leading to reassessment of the situation and informed action is seek in organizations (Marsick and Volpe, 1999).

The biggest challenge in this process is the unconscious nature of most of the informal learning processes, because most of the informal learning is tacit and taken for granted (Marsick and Volpe, 1999). However, this does not mean that it cannot be brought into the consciousness level of the learners. Eraut et al. (2000) purport that by triggering an appropriate memory we may retrieve implicit learning practices of individuals. Even this constitutes a new challenge to the researchers for digging the depths of the process and making the processes and models explicit.

It is also important to mention here about the concerns of some researchers in this endeavor to identify the tacit processes and bring them into consciousness that although it is seen as a valuable knowledge for the betterment of organizations and individuals with more conducive learning environments, it can shadow the informal processes of such learning and distort its spontaneous characteristics and originality with formally designed workplace practices of human resource development agencies (Garrick, 1998; Marsick and Volpe, 1999).

Marsick and Volpe (1999) assert that its haphazard nature brings in the chance factor for informal learning to occur. But the fact that informal learning is increased when the learner meets new people and ideas in collaboration with others can still give

us a chance to identify the instances of informal learning in the workplace. Marsick et al. (2006) argue that workplace learning grows from a social contact among people who work together ranging from immediate work groups to complex work organizations beyond the immediate work group and workplace. The key factor for enhancing collaboration is referred as creating an environment of basic trust (Marsick and Volpe, 1999). Marsick et al. (2006) further explain the facilitation of informal learning that such learning is not subject to control by the trainers and their sole function is to simplify the context so that skills can be more easily acquired.

All of these factors actually said to reflect the continuous action and reflection process of informal learning. The process of reflection and action is described as “reflection involves looking back on what we have done, measuring it against what we wanted to achieve, and assessing the consequences...Action, by contrast, is easier to manage...People in the workplace need to construct their own lessons, and to do this they need skill at gathering data, assembling evidence, checking their reasoning, and asking others to check their conclusions” (Marsick and Volpe, 1999; p.7-8). Next, the informal learning model in the workplace, developed in line with its mentioned nature, is discussed in detail.

Informal Learning Model in the Workplace

Victoria Marsick and Karen Watkins have led the charge in this area of research for over a decade. With their contributions informal learning is not any more “an ill-

defined and messy concept that lacks theoretical foundation” as Cullen et al. (2002) see it, although there are still much to be investigated upon (as cited in INFLOW, 2005).

Marsick (1988) challenges the understanding that learning in the workplace is a behaviorist act that characterizes workplace learning with observable and measurable performance outcomes. She criticizes this view in that it sees learning as designed on a deficit model that measures individuals against standard norms, and as separate for the personal and job-related development.

Also, in the behavioristic paradigm jobs do not overlap and because of the clear separation of roles for better control and authority. In this paradigm learning occurs through classroom-based, formal training activities. Instead, she provides a new paradigm for learning in the workplace. Her new paradigm is based on the following characteristics: “a broadening of the instrumental focus of learning, integration of personal and job-related development, an organizational model that functions as a learning system, a concern for critical reflectivity and for problem setting as well as problem solving, emphasis on informal learning, and development of the organization as a learning environment” (p. 194). Because she believes that it is no more functional to view learning as confined to pre-determined actions to minimize overlap of functions (Marsick, 1988).

Marsick et al. (2006) are interested in individual learning within the context of organizational learning and change. They argue that learning in the workplace grows from a social contact among people working together in the immediate work group or in more complex and broader groups. They are concerned with understanding how people learn using informal approaches, as people either conscious or unaware of their choices

for learning, the choices develop in the midst of work from people's interactions with others at work informally.

Victoria Marsick and Karen Watkins have developed a model of informal and incidental learning in the workplace after vigorous research and thinking upon the case (as cited in Marsick and Watkins, 2001). The model they established still constructs the basis for much of today's research (Cofer, 2000). The model is first designed in 1992 by Marsick and Watkins, and revised by the researchers in 1997 selecting the work as the context of informal learning in their model (as cited in Cseh, 1998). The 1997 model is then, realizing the importance of the context of learning redesigned in 1999 with Cseh and the context component is added to the model (Marsick and Volpe, 1999; Marsick and Watkins, 2001; Marsick, Watkins, Callahan, and Volpe, 2006).

There are eight "steps" in the redesigned 1999 Marsick and Watkins model. Their schematic diagram of the process (Marsick et al., 2006) is shown on Figure 4 below. They built their model on the assumption that learning comes about from experience and under non-routine conditions as a result of the interaction of individuals and their environment. Marsick et al. (2006) indicate that they are interested in individual learning within the organizational context. Marsick and Watkins (2001) indicate that they have developed this model to enhance informal and incidental learning in the workplace.

In summary, Marsick and Watkins (2001) in their 1999 model depict that informal learning grows out of everyday encounters while working and living in a given context. The context creates triggers: "internal or external stimulus that signals dissatisfaction with current ways of thinking or being" (p. 29). Cseh (1998) states that

the trigger can be surprises, new experiences, accidents, and discrepancies between what people expected to happen and what did happen. Learners then interpret the experience by assessing what is problematic or challenging, and examine alternative solutions by assessing the constraints and limitations of the context and by comparing the new experience with prior experience. Then, they develop learning strategies based on their cognitive and affective understandings by filtering information through their selective perceptions, values, and beliefs, and by learning new skills or drawing on capabilities in order to produce proposed solutions. There are several factors affecting learning in this phase of the learning cycle. These are the availability of appropriate resources (time, money, people, and available knowledge), willingness and motivation to learn, and the emotional capacity to learn. They then assess intended and unintended consequences to determine if the consequences of the produced solutions match the learner's goals. Finally, according to this model, learners identify lessons learned as a result of their examination of the results and use these lessons in framing the business context, thus creating new understandings that can then serve as triggers to another cycle (Cseh, 1998; Marsick and Watkins, 2001). Marsick and Watkins (2001) stress that the progression of meaning-making depicted by the model is more of an ebb and flow, rather than a linear progression.

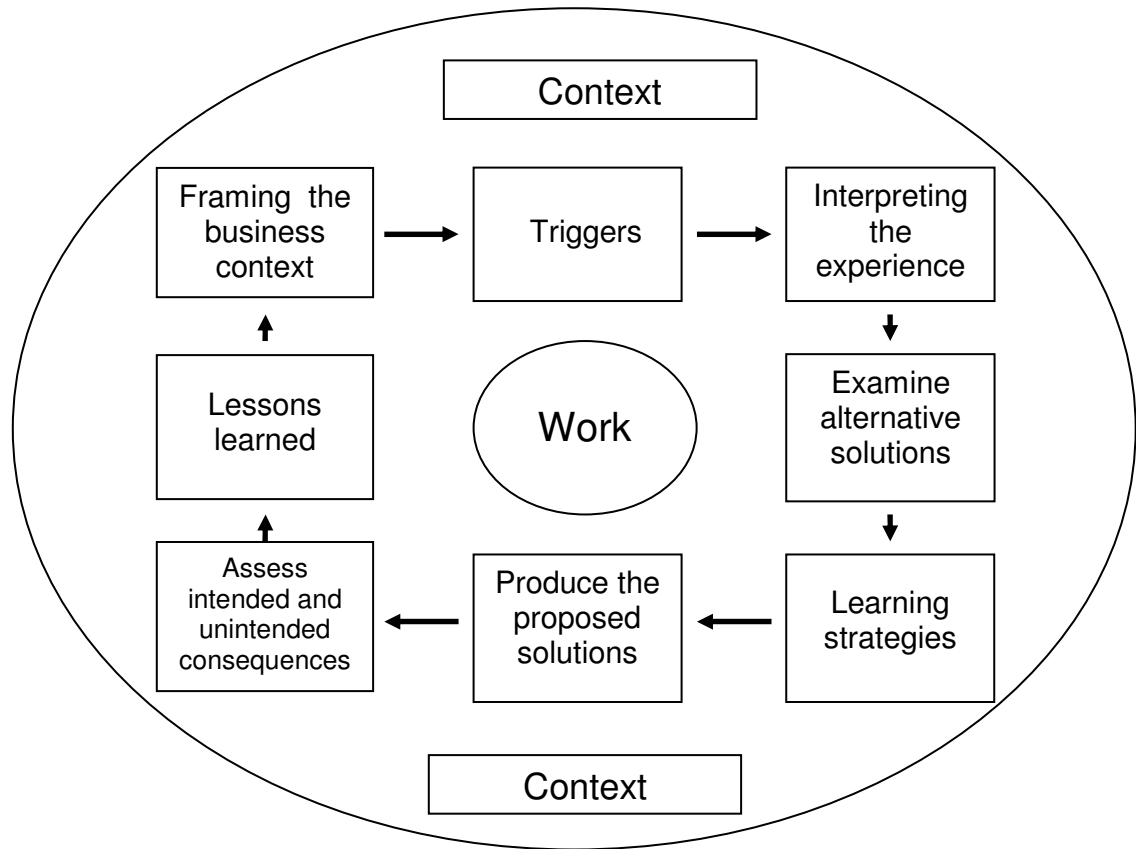


Fig. 4 Informal Learning Model (1999)

Source: Marsick et al., 2006: p. 795.

Qualitative Research Method

Berg (2007) describes science as “a specific and systematic way of discovering and understanding how social realities arise, operate, and impact on individuals and organizations of individuals (p. 14), and the purpose of research as to discover answers to questions through the application of systematic procedures. According to Berg (2007) certain experiences cannot be meaningfully expressed by numbers and the notion of

quality is about the nature of things. Miles and Huberman (1994) also describe qualitative research as being in the form of words rather than numbers. According to Gay, Mills, and Airasian (2006) qualitative research is “the collection, analysis, and interpretation of comprehensive narrative and visual data in order to gain insights into a particular phenomenon of interest” (p. 399). Because qualitative research studies things in their natural settings, it is also referred as naturalistic research, naturalistic inquiry, or field-oriented research (Gay et al., 2006).

Merriam (1989) emphasizes that the qualitative research contributes to the study of adult education more than quantitative method, since the most significant contributions to the field has been made by qualitative research methods. Merriam (1989) argues that qualitative research is appropriate when the research questions are seeking answers to how and why questions, because of its focus on the process rather than outcomes or products. Merriam states that

qualitative researchers are interested in meaning – how people make sense of their lives, what they experience, how they interpret these experiences, how they structure their social worlds. It is assumed that meaning is embedded in people’s experiences and mediated through the investigator’s own perceptions (1989; p. 166).

Miles and Huberman (1994) argue that qualitative research is an appropriate method for finding explanations of processes occurring in local contexts. The authors describe the strengths and power of qualitative data by highlighting the following features: they focus on naturally occurring, ordinary events in natural settings, thus they give a strong perception of what real life is like; with their emphasis on people’s lived experience, they are well suited for locating the meanings people place on events,

processes, and structures of their lives; their richness and holism provides a strong potential for revealing complexity including vivid and thick descriptions in the real context of the phenomenon at hand; they have a strong potential for discovery exploring a new area, for testing hypotheses; and lastly qualitative data are useful for supplementing, validating, explaining, illuminating, or reinterpreting quantitative data gathered from the same setting.

Merriam (1989) states the merits of the qualitative research as “a qualitative approach allows discoveries to be made about the phenomenon under investigation. There are no predetermined hypothesis which direct and limit what one looks for, no treatments, and no restrictions on the end product. In most qualitative studies, tentative hypothesis evolve only after some time has been spent observing the phenomenon of interest, interviewing key people, and analyzing relevant documents. The researcher then moves into a deductive stance seeking information of tentative findings, while at the same time remaining open to new insights yet to emerge in the analysis” (p. 166). Accordingly, Gay et al. (2006) state that qualitative data is analyzed inductively without making prior assumptions about the relationships, patterns, or themes among the data before data collection.

Ritchie and Lewis (2003) similarly argue that qualitative research address research questions that require explanation or understanding of social phenomena and best suited to studying processes. The researchers describe the commonly agreed key elements of qualitative research. These include:

- aims which are directed at providing in-depth and interpreted understanding of the social world of research participants by learning

about their social and material circumstances, their experiences, perspectives, and histories

- samples that are small in scale and purposively selected on the basis of salient criteria
- data collection methods which usually involve close contact between the researcher and the research participants, which are interactive and developmental and allow for emergent issues to be explored
- data which are very detailed, information rich and extensive
- analysis which is open to emergent concepts and ideas and which may produce detailed description and classification, identify patterns of association, or develop typologies and explanations
- outputs which tend to focus on the interpretation of social meaning through mapping and re-presenting the social world of research participants (p. 5).

Patton (2002) sorts qualitative research according to their type and quality. He defines three kinds of data collection as interviews, observations, and documents. He describes the concepts as follows:

Interviews: Open-ended questions and probes yield in in-depth responses about people's experiences, perceptions, opinions, feelings, and knowledge. Data consist of verbatim quotations with sufficient context to be interpretable.

Observations: Fieldwork descriptions of activities, behaviors, actions, conversations, interpersonal interactions, organizational or community processes, or any other aspect of observable human experience. Data consist of field notes: rich, detailed descriptions, including the context within which the observations were made.

Documents: Written materials and other documents from organizational, clinical, or program records; memoranda and correspondence; official publications and reports; personal diaries, letters, artistic works, photographs, and memorabilia; and written responses to open-ended surveys. Data consist of excerpts from documents captured in a way that records and preserves context (p. 4).

Guba and Lincoln (1991) also contend that through interviewing the researcher is “likely to receive more accurate responses on sensitive issues, and the interview itself is likely to provide a more complete and in-depth picture than other forms of inquiry” (p.187). They believe that it creates the opportunity for the contribution of information that the interviewee might never get in any other way. However, the disadvantages of interviewing should also be noted. Although interviews tend to produce data that is rich and varied, the researcher may have difficulty tracking and analyzing a particular theme or idea especially when dealing with multiple interviews (Bogdan and Biklen, 1982).

Content analysis is the method used for the qualitative data analysis. All interviews are considered as individual cases. As Patton (1990) has asserted that “content analysis is the process of identifying, coding, and categorizing the primary patterns in the data.” (p. 381). He suggests that data analysis will be done concurrently with data collection. Patton (2002) describes the process of content analysis in his later work as “...any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings.”(p. 453). According to Patton (2002) the core consistencies and meanings stated in the definition are the patterns, themes or categories.

Qualitative content analysis can be inductive or deductive. Patton (1990) states that content analysis is based on the inductive analysis approach. Patton (1990) defines

the process as “inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior data collection and analysis.” (p. 390)

Patton (2002) sees units of analysis as cases and states that case study approach refers to an analysis process. He states that cases for case studies can be a person, a program, an event, a group or an organization to describe that unit in depth and detail. He says that for case studies “the purpose is to gather comprehensive, systematic, and in-depth information about each case of interest” (Patton, 2002; p. 447). After the raw data have been accumulated in the case study, a complete and manageable case report has to be written by the researcher.

The organization of the qualitative data can be done by using both the case and cross-case analysis. Patton (1990) explains both processes as “Beginning with case analysis means writing a case study for each person interviewed or each unit studied. Beginning with cross-case analysis means grouping together answers from different people to common questions or analyzing different perspectives on central issues.” (p. 376).

According to Patton (2002) the quality of qualitative research depends on the researcher. Gay et al (2006) take attention to the significance of deriving findings relevant to the real life situations. However, Maxwell (1992) develops a more systematic framework for assessing the validity of qualitative research. He adopts the idea that the central focus of qualitative research for understanding the phenomena at hand is viewed from the perspective of the research participants which bases validity on the kinds of understanding researchers have of the phenomena they study. He claims that looking at

the issue from the researchers' perspective is more consistent and productive than the prevailing positivist approach based on the research procedures used to produce and validate it. In his statements it is clear that the concept of validity should be handled differently from the quantitative research which is based on predetermined regular rules and categories. He asserts that "validity is not an inherent property of a particular method, but pertains to the data, accounts, or conclusions reached by using that method in a particular context for a particular purpose" (p. 42).

Maxwell (1992) describes five categories of validity concerning qualitative researchers. These are descriptive validity, interpretive validity, theoretical validity, generalizability, and evaluative validity.

Descriptive validity: It is concerned with the factual accuracy of the researchers' accounts. Accounts refer to the physical and behavioral events, and descriptive validity to whether the researcher reflected the accounts without distorting the accuracy of the original data. This type of validity can be checked from the typescripts, videotapes, and other original data sources.

Interpretive validity: It refers to match between the inferences from the words and actions of participants in the situations studied and the accounts constructed by the researchers. To achieve this type of validity the usage of the actual words of the participants from their own perspectives is significant.

Theoretical validity: It refers to the ability of the report to function as an explanation of the phenomenon being studied regarding the emerging categories of concepts and the

relationships between the concepts. The appropriateness of the researcher's application of the account at hand for the explanation of the data ensures this type of validity.

Generalizability: It refers to the extendibility of the findings under different settings, and times with different groups. Internal generalizability refers to generalizing the findings within the research community, group, or institution studied, while external generalizability refers to generalizing the findings beyond the research settings. Internal generalizability can be achieved by the having the participants reflect upon their own responses. Although generalizability is not an issue of design in qualitative research, it can be achieved by the usefulness of the systematization of the findings for making sense in other studies.

Evaluative validity: This last type of validity refers to ability of the researcher to evaluate the data without being critical and biased (Maxwell, 1992).

Gay et al. (2006) describes validity with two terms: "trustworthiness" and "understanding" (p. 403). They state that trustworthiness is established through the credibility, transferability, dependability, and confirmability of the qualitative findings. These terms can be realized as follows:

Credibility: is achieved by the ability of the researcher to take into account all the complexities in the study being conducted and address problems that are not easily explained;

Transferability: is achieved through the inclusion of descriptive, context-relevant statements that identify the setting with as much detail as possible;

Dependability: is generated from the stability of the data collected;

Confirmability: is realized with the ability of the researcher to address the neutrality and objectivity of the data (Gay et al., 2006; p. 403).

Reliability in qualitative research refers to the production of the same data by using the same data collection techniques to the same group under investigation with time intervals (Maxwell, 1992). Gay et al. (2006) argue that the techniques used to gather data are considered for reliability of qualitative researchers rather than reliability of an instrument. Reliability can be enhanced by the adoption of multiple researchers, theories, or methods of data collection for the production of the same data under the same settings (Berg, 2007).

Research Findings on Informal Learning in the Workplace

Marsick (1999) has looked into study designs on informal learning and found out that samples are typically convenience samples with a sample size that ranges from twenty to thirty people. She reports the design of studies she has investigated so far as all interpretive case studies based on collecting and analyzing qualitative data. She adds that the researchers rely especially on open-ended interviews, using interview protocols they designed and field test their interviews before beginning their research (Marsick, 1999). Eraut et al. (2000) also reveals that all research approaches use interviews with different numbers, structuring and questions.

Marsick (1999) reflects that the data are analyzed inductively using a constant comparative method of content analysis. Researchers start with a conceptual framework

that they base on the literature This framework guides their initial analysis, but researchers often find that they need to modify or abandon it because it do not adequately tell the story in the data.

In this area there are several aspects of informal learning that researchers are interested in. Informal learning studies varies with respect to why it happens, how it is structured, where it occurs, with whom it occurs, through what process(es) it takes place and when and for how long it takes place. Marsick (1999) also takes attention to the fact that research instruments for many of studies on informal learning are designed to explore factors such as the following:

1. Context: trigger events and relationships to life transitions and factors inside and outside the workplace
2. Nature of learning: problematic situations, needs, interests, and objectives and whether or not learning fell primarily in one or another of the learning domains
3. How, when, and from whom the learning originated
4. Learning processes, strategies, and techniques
5. Consequences of learning
6. Degree and nature of awareness of taken-for-granted assumptions: norms and their impact on action as well as reframing of problems or situations, if this occurred
7. Feelings about the learning situation, both immediate and later (Marsick, 1999; p.97).

For the aims of this study, the researcher is interested in the informal learning processes, strategies and techniques employed by the employees, and the drives that lead to informal learning. In the next section, some of the empirical research findings regarding the research questions about the factors for and activities of informal learning occurrence in the workplace are included.

The Informal Learning Activities in the Workplace

Marsick and Watkins (2001) state that “informal learning is usually intentional but not highly structured. Examples include self-directed learning, networking, coaching, mentoring, and performance planning that includes opportunities to review learning needs. When people learn incidentally, their learning may be taken for granted, tacit, or unconscious. However, a passing insight can then be probed and intentionally explored. Examples are the hidden agenda of an organization’s culture or a teacher’s class, learning from mistakes, or the unsystematic process of trial and error.” (p.25-26).

Tough’s (1971, 1978) findings indicated that 73 % of learning projects, which were defined as the learning experiences of adults that lasted at least seven hours, were self directed as compared to 68 % in his 1971 study. The other comparisons of percentages of the learning strategies adults used between 1971 and 1978 studies were groups, 12 % to 14 %; one-to-one helpers, 10 % to 8 %; and nonhuman resources 3 % for each. The other comparisons between 1971 and 1978 studies are groups, 12 % to 14 %; one-to-one helpers, 10 % to 8 %; and nonhuman resources 3 % for each.

Howe (1991) carries out a qualitative research with 21 managers in the American Red Cross by using critical incident technique and interviews. He finds that managers learn their jobs primarily through informal means. Trial-and-error is found to be the most frequent strategy of informal learning, while superiors are found to be the most useful source for informal learning. The researcher lists 17 strategies and sources for informal learning in this study. They are from most common to the least committees-meetings, documents, peers, observation, experience and networking, subordinates and social group, questioning, volunteers, coaching, mentoring, task force and lastly informal work group. Formal learning is also included in the list but received no single response.

Rossi (1995) follows a similar research design with Howe (1991) and uses semi-structured interviews and critical incidents with 21 nurses in a mid-size acute care urban hospital. Her research reveals that the primary strategy employed by novice nurses is trial-and-error, and as they gain experience they also make use of coaching by peers and physicians more than observation, preceptoring, and role modeling. She identifies sources of informal learning as alone, supervisors, physicians, peers, subordinates, patients, professional organizations, committees/task forces, networking, informal work groups, social groups/grapevine, formal learning, and printed materials/documents; strategies as trial-and-error, observation, role modeling, coaching, preceptoring, and mentoring.

Considered as the most comprehensive look at how informal learning occurs in the workplace is Educational Development Center's report including findings of the two year study of corporate cultures in the U.S. The research sites include seven well-

established companies: Boeing Commercial Airplane Group, Siemens Power Transmission and Distribution, LLC, Reflexite North America, Data Instruments, Merry Mechanization, Inc., Ford Electronics, and Motorola (CWD, 1998). As an answer to how informal learning occurs in the workplace, CWD lists sites of informal learning during the work. Teaming, meetings, customer interactions, supervision, mentoring, shift change, peer-to-peer communication (goal- or non-goal directed), cross-training, exploration, on-the-job training, documentation, execution of one's job, and site visits were the activities listed in the report from the richest to the least in informal learning opportunities (CWD, 1998: p. 53). As it is also obvious from this classification, generally the means of defining informal workplace learning are a series of on-the-job activities (Marsick and Volpe, 1999).

Cseh (1998) conducts a qualitative research on managerial learning in Romania. An open-ended critical incident interview method is used along with in-depth interviews with 15 managers of small, successful, and private companies. In her study, learning strategies are defined as "the methods used by the managers to go about learning to deal with their critical incident" (Cseh, 1998; p. 122). The primary informal learning strategies are found to be learning from others and from experience among the 177 learning strategies identified. After codification of the critical incidents, she reports six learning strategies in descending order of frequency as learning from others (84), learning from experience (35), learning from field trips (23), learning from reading and the media (21), learning from market research (9), and learning through formal education (5) (Cseh, 1998; p. 23).

Slater (2004) in his study investigates the types of informal learning occurring in a nonprofit financial services organization and the factors that affect employees' ability to engage in informal learning with 676 employees surveyed. His findings showed that the employees identified the following top five informal learning activities from the most frequent to the least: execution of the job, interactions with supervisors, on-the-job training, working in teams, and reviewing documentation.

Skiba (1999) in her qualitative study investigates the impact of organizational change on the learning behaviors of 20 communication and education specialists through in-depth interview. She also employs critical incident technique because of the opportunity it gives to the participants to reflect upon a work-related experience and also how they resolved it. In her study, 16 of the 20 participants reveal the importance of collaboration, learning by seeing and/or doing, and connecting with another person/s face-to-face. In the process of change, the participants' learning is directed at a knowledge base that will guarantee their future employability. 10 of the 20 participants report the self-initiative versatile worker they turn out to be independently seeking what they needed to learn. Nevertheless, this does not mean to learn alone but in coordinated independence. Some strategies reported by the participants are trial-and-error and the sources are generally other people at work, personal network, and technology-based computer technology via e-mail or voicemail.

Eraut et al. (2000) report three main types of learning situation: collaborative teamwork, ongoing mutual consultation and support, and observing others in action. Eraut et al. (2000) differentiate between sources and contexts for learning in the workplace. As for sources their study indicates that most employees, from either

financial, engineering or health sector, relied on learning from others. Other less likely sources included materials such as manuals and reference books, journals and newspapers. Among the contexts identified the most positive examples are coaching and mentoring after short formal courses. Conferences is another context for learning which helped employees to establish networks both across different parts of the same organization and between people doing similar work in different organizations, and discuss, think and plan ahead with other people. They also portrayed the learning stimulus for people. Most prevailing one is the challenge of the work itself; in other words, work-based problem solving. The other type of learning arises when the employee, a doctor in this case, recognizes a need to acquire new knowledge and skills. The cases necessitating new learning are exemplified as changes in work role and special assignments. However, the most important stimulus is changes in an employee's duties and expectations about work processes and outcomes (Eraut et al., 2000).

Another qualitative study carried in two university libraries in Taiwan with eighteen librarians showed a different categorization as an answer to the question of 'How adults learn in the workplace'. The processes of informal learning in the workplace were analyzed as resources and strategies of informal learning. Resources were further divided into four as; informal learning from people (colleague, superiors, and users), informal learning from things (journals, books, files, manuals, CDrom, and computer databases), learning from the internet, and training activities. Strategies learners employed while dealing with the work activities were exemplified as learning from prior experience, learning by doing, learning from observation, networking, self-directed learning and mentoring (Li, 2001).

The Factors That Lead to Informal Learning in the Workplace

Okçabol(2005) states that learning is one of the basic needs of humans. It even helps other needs to be satisfied directly or indirectly. He mentions the changes in teaching and learning fostered by the changes in the process, content, and quality during the transition to the industrial societies. He refers to the needs for learning as individual needs, societal needs, and legal and global necessities. These needs mentioned may also be seen as drives or in Marsick and Watkins' (2001) terms 'triggers' for learning.

The individual drives covered in Okçabol (2005) include psychological needs, earning money, acquisition of learning, renewal of knowledge and free time and curiosity of the individuals; the societal drives as socialization for the reproduction of the culture and division of labour, science and technology, protection from the negative effect of globalization, secularism and democratism, prevention of alienation, organizational needs, being situated in a respectable place in the world.

Rogers (1996) states that people learn for their occupations to keep up with the constant calls of readjustment and new learning, and for employment. People also learn as part of their personal development as they grow older, for their self-fulfillment. He argues that learning for people's jobs may be part of self-fulfillment and personal growth, and too many social role learning.

Cseh (1998) has found that the foremost task faced by her participants in her research is to make sense of the rapidly shifting environment. She has looked at the triggers for learning of fifteen owner-managers of small private companies in Romania. She cites ninety four triggers related to five different themes. Her themes are clustered as

triggers related to economic, political, and social environment; employee issues; relationships with customers/suppliers; financial problems; lack of expertise; and personal integrity and trust (p. 108).

Having asked the same question CWD (1998) obtained findings in two ends one is individual and the other one is the organizational goals. The primary organizational goals are seen to be the need to survive, so grow in the competitive business environment. The secondary goals identified by the organizations are reflected as:

1. Reduced separation between management and worker responsibilities, and worker empowerment that include decreased supervision, increased worker participation in decision making, greater worker involvement in reducing costs and increasing quality, and greater worker initiative in identifying and solving problems.
2. Expanded job responsibility at all levels that means to rapidly adapt to new technology, to understand and perform other jobs in the work unit, to work as an effective member of a team, to be accountable for results, to understand quality and production metrics, to communicate effectively with internal personnel, to communicate and develop relationships with external customers and suppliers, and lastly to document processes and results (CWD, 1998; p. 46-47).

For workers these implied taking on new responsibilities resulting in the development of new knowledge and skills. The other end of the continuum is the individual goals for learning informally in the workplace, although there is no visible certification in this type of learning. Individual goals are more readily predictable,

because they reflect basic human drives. There are financial and non-financial drives for individual workers.

1. Workers financially seek job security, salary increases, and promotion.
2. The non-financial individual goals either explicit or implicit are recognition/acceptance which implies a sense of belonging to a social group/community and self-esteem gained from recognition from superiors, peers, and subordinates. The second goal is achievement/development which connotes comfort and security from working in an attractive and safe work environment, pride in accomplishment, satisfaction from exercising control over one's own work, mastery of the job, pride in quality workmanship, satisfaction of overcoming challenges/solving problems, and finally a sense of contribution to a greater endeavor (CWD, 1998; p. 47-48).

These psychological goals are even sometimes cited as being more motivating than financial goals. So these give an opinion to the organizations for more sensitivity towards individual goals and provision of learning opportunities and choices; transmission of organizational goals to the individuals for more effective results (CWD, 1998).

CHAPTER 3: METHODOLOGY

In this section, the design of the study is described. The design includes the population and sample selection methods employed for this study. Then, it continues with data collection instrument, the procedure of the study, the research setting, and lastly the data analysis.

This is a descriptive case study. It attempts to explore the informal learning activities working adults are engaged in the workplace. It seeks answers to the questions of 'how' and 'why' adults learn informally in the workplace.

Population and Sample Selection

Population of the study included all adults with full time employment in private companies. Private companies composed the population of this study. Because of the competitiveness of the market in the private sector, the companies were in continuous need to learn to be able to compete with the ever growing body of new knowledge. Because it was neither convenient nor feasible to explore the whole population, purposive sampling method was employed in the selection of participants. So the population of this study was composed of workers working in private companies.

The sample selected for this study was adults working full time as software engineers. The software engineer group was selected for the nature of their work requiring constant learning and necessitating immediate application of the required knowledge.

The research setting selected for this study was the head office of a private Turkish bank functioning in the sector over 50 years. It had over 200 branch offices all over Turkey. The number of total employees in this bank was over 3000. There were thirty workers in the selected software and project management department.

The sample was composed of fifteen subjects. The subjects were informed about the research with face to face negotiation. The subjects were selected on a voluntary basis, after the researcher's description of the study and the participation requirements. Four of the fourteen project manager, ten of the twenty software engineer, and one of the three junior engineers were sampled for the purposes of this study.

Data Collection Instrument

In order to analyze the informal learning activities the subjects are engaged in the workplace and the factors that lead them to learn in the workplace, an interview was developed by the researcher. The development of the instrument and pilot study were described next.

Development of the Instrument

For the data collection an instrument was developed in Turkish. In the development process of the instrument, the related literature about informal learning in the workplace was examined. To identify the specific activities in the workplace that are seen as sources of informal learning digital dissertations and other empirical research

instruments were examined, as there were no related study in Turkey. An interview form was developed in the beginning including very specific questions about informal learning activities; the resources resorted; the personal relationships among workers; the daily routines in the workplace; the motivational factors related to the self, to the job, and to the company; and the perceived percentage and importance of the informal learning. The questions were prepared by the researcher drawing upon the related literature.

It was piloted with a male software engineers that was not included in the sample. The subject had four years of experience in his work and also in his current workplace. He was 29 years old. The interview was carried out in the meeting room in the company after the work finished in the evening. However, informal learning was not a concept that were taught or mentioned in the formal schooling process in the education system in Turkey. So the subject was not familiar with the concept and he could not describe such a concept and its importance for him. The questions were exhaustive and producing the same answers for several questions. Some of the questions were too specific and also directive. Finally, it was seen that it was neither functional nor possible to use this preliminary form of the interview.

Then, the instruments developed by Rossi (1995), Howe (1991) and Cseh (1998) were used as the base of the interview guide developed by the researcher. They all used the critical incident technique and used the technique as the basic data collection instrument. After the related literature was reviewed for the critical incident technique, it was seen as a valid technique to gather data for this study. Critical incident is an interview technique first developed by Flanagan (1954) and used for over fifty years.

The critical incident technique involves gathering self-reported data by using either the interview or the questionnaire data collection method. John Flanagan (1954) defines the critical incident as “a procedure for gathering certain important facts concerning behavior in defined situations” (p.335). According to Chell (2004) critical incident technique is “a qualitative interview procedure, which facilitates the investigation of significant occurrences (events, incidents, processes or issues), identified by the respondent, the way they are managed, and the outcomes in terms of perceived effects. The objective is to gain an understanding of the incident from the perspective of the individual, taking into account cognitive, affective, and behavioral elements” (p.48). Flanagan (1954) states that critical incident technique can be used for a wide range of populations and issues because it is easy to administer, very flexible, and fairly objective.

The critical incident technique was also seen appropriate for the purposes of the study. Because it collected data with the least interference by the researcher, and also gave information about the real life informal learning experiences of the subjects, rather than hypothetical situations created for collecting data. Another advantage of using critical incidents was the close proximity of the data to a specific situation for the acquisition of more accurate and complete responses.

However, the technique was not the only measurement device used in the questionnaire. In Cseh ‘s (1998) study, the results obtained showed that the triggers for adults to learn were the necessity to learn the job when they first started to the job, the problems faced in the procession of the work, changes in the work responsibilities and work structure, and new tasks requiring new knowledge and abilities. Four further

questions were added to the critical incident form which actually questions the problems faced to be able to better discover all the workplace activities that result in informal learning. Three questions concerning their first experiences at work, their experiences when they were given a new duty, when there is a change in their workplace were added to examine their informal learning patterns at work. One last question was added to explain the aim and scope of the research and to increase the understanding of the participants. It was added to see if there was anything that could not be covered in the previous questions (see Appendix A).

The final form was a semi-structured interview. It included open-ended interview questions about the participants' demographic information. Questions related to the demographic characteristics of subjects were included in the interview not for the purpose of analysis but for descriptive purposes. Demographic information part included gender, age, educational level, their work experience in general, and their work experience in their current workplace to be able to describe the related characteristics of the participants.

Before conducting the interviews to the selected sample, the interview questions were piloted. The procedures involved in the pilot study were depicted in the next section.

Pilot Study

The interview form was piloted before the actual interviews were conducted by the researcher. The aim was to check the comprehensiveness of the questions and the

applicability of the form in terms of time and space. Furthermore, the openness, organization, and content of the form were also checked. It also helped to validate and refine the interview form. To increase the validity of the interview form, it was tested with two subjects. The first subject was 28 years old male employee working as a software engineer among the same population. The latter was 26 years old female working as software engineer in the same position at another bank. The piloted subjects were not included in the sample. This helped to crosscheck the validity of the interview form. As the researcher was also inexperienced as an interviewer, the piloting helped to gain control over the interview form and develop the ability to use the interviewing method.

Procedures

First, the necessary permissions are taken from the institution and from the manager of the department verbally as a result of face to face negotiations. The manager of the software development department was informed about the aim and content of the study, the background of the researcher, and the method for data collection. It was restricted for others to enter to the company building for reasons of security and confidentiality. But after several negotiations and by the help of some insiders, the manager let the researcher to use the meeting room to conduct the interviews. For recording an additional permission was taken verbally from the manager. The manager informed the employees in the software development department about the study

informally. Nineteen employees turned back and agreed to participate in the study. Then, interview dates were determined in accordance with the schedules of the employees.

The subjects were interviewed during their lunch breaks in the meeting room in their workplace. Four of the volunteers could not be interviewed due to their workloads at the date of the interview. They were all turned back for another date for the interview. However, they were passing through a very busy period in the workplace and had deadline imperatives. As they could not be made available within ten days, they were eliminated from the sample compulsorily. The data was collected during June, 2007.

The interviews were recorded with a digital type recorder not to miss any information during the analysis of the data. This helped to increase the accuracy of the information. The interviews lasted about thirty minutes at average. To avoid any distraction during the interview the subjects were listened carefully, and clarifications were asked where necessary with minimum interruption. Plain, formal, and similar clothes were carefully chosen for all the interviews not to disturb subjects' attention. Sometimes there were informative talks between the researcher and the interviewee if there was enough time after the interview. This helped to understand the general atmosphere and functioning in the company. The researcher immediately after the interview or as soon as possible transcribed the recordings and the impressions about the subject, the job and/or the company.

The Research Setting

The research setting selected for this study was one of the oldest private banks in Turkey. To clarify the organizational scheme of the setting and to be able to understand the relative position of the department studied, it was seen necessary to depict the general organizational structure of the workplace, and more specifically the department studied. The physical characteristics of the workplace were also stated to understand the structure more clearly.

The bank selected was one of the most established banking brands in Turkey with more than 200 branches across Turkey. The head office of the bank was in Istanbul and the research was carried out in the head office of the bank. The main structure of the bank was separated into two main headings. These were the banking branches and the technical branch. In the banking side, namely business module, there were banking operations going on. In the technical side, namely the operations module, the software was developed by the software engineers employed for the necessary banking operations. The research sample was the operation module. In the operation module there were project groups which composed the software of the business modules.

To gain a better understanding of what the subjects actually do as engineers, their work titles were analyzed and described accordingly. There were five staff positions available. These were the chief executive officer, unit manager, project manager, software engineer, and lastly junior engineer. The chief executive officer, called the branch manager was responsible for the overall operation of the planning, development, and execution of the entire module. He was followed by the unit manager of the

software and project management department. The unit manager was responsible for the planning and execution of all the software development projects in his command. There were two unit managers for this department. However, they were not reachable due to their heavy workload at the time of the research. They were followed by the project managers. At the time of the study there were fourteen project managers in the department. They were in account of their projects for the timely and efficient processing of the projects. They were seen as the project leaders in their project groups. Their numbers may changeable according to the emerging needs for the new projects groups. Under their command there were software engineers working as software developers and junior engineers which are novice software engineers. There were twenty software engineers and three junior engineers in the department. In total, there were thirty workers in the software and project management department.

There were fourteen project groups at the time of the research. The groups were formed with a project manager and one to three software engineers or junior engineers operating under the project manager. There were no absolute projects the engineers were responsible all the time, and they could change their groups according to the emerging project needs. The cross departments were the related banking modules in the banking side. There were business analysts in between the engineers and the banking modules. They were acting as a bridge to make the sides understand and apply what was requested and what was manageable. They were not engineers employed in the banking modules but mostly graduated from business and management departments. That's why they were not included in the sample.

For the physical characteristics and culture of the research setting, there was an open climate in the company. There were no offices which separated the workers from each other and placed distances among workers. They were all working in a big office on tripled desks aligned together. That meant six workers were working on attached desks three of them sitting together in one side and three other worker in the other side of the desks. Only the chief executive officer had a private office room. The unit managers were also sharing the same office with the other workers but they had a separate working table for each one of them.

There were no rooms for coffee or tea breaks, and also a rest room interestingly. So the workers were drinking their coffee or tea in the steps or outside the company building in small cafes and even in little coffeehouses around. Smoking cigarettes was not allowed in the company building, so the workers were getting out of the building for smoking.

Analysis of Data

In this study, the data gathered through open ended interview questions was analyzed by using content analysis method. The interviews were transcribed by the researcher. After all the data was transcribed and reviewed several times by the researcher, the raw data was coded according to the emerging patterns in the data. First, within case analysis of the data for each subject was carried out. This helped to see the emerging themes in general. Then, cross-case analysis led to organizing the data in more detail. The emerging themes were coded, and after that all the data was analyzed again

and again by coding the raw data into categories. According to the relations of the preliminary coding, the subunits of analysis were classified and categorized under major themes.

CHAPTER 4: FINDINGS

In this section, the results derived from the analysis of the interviews with software engineers working in a private bank were presented. First of all, findings about the demographic characteristics of the sample were provided. But the names of the subjects were kept anonymous to keep the confidentiality of the participants. Instead, they were assigned random nicknames. Their nicknames were used in the discussion. Secondly, following the analysis of the in-dept interviews with the participants, major findings were structured around the emergent discussion themes based on the research questions and the analysis of the interview transcripts. The emerging discussion themes were organized under two headings: the informal learning activities of the participants in the workplace and the factors that lead to them to learn informally in the workplace. The details of the findings were presented in detail in the following part of this section.

Demographic Characteristics of the Sample

In the interview form, there were questions concerning the following characteristics of the subjects: age, gender, educational level, years of work experience, and years of experience in their current workplace. Those who participated in the study are between 24 and 34 years old, and the average age of the subjects is 27. Females constitute 27 % of the subjects, and males constitute 73 %. As for the educational levels of the subjects, ten of the subject had an undergraduate degree, and five subjects had a

graduate degree. The work experiences of the workers ranged from fourteen years to two and a half months.

All the details of the demographic information of the participants were summarized on Table 5. for simplification of the referrals in the next sections. Only the departments the subjects graduated from were not included in the following table. The details of the demographic information of the subjects were provided below.

Table 5. Demographic Characteristics of the Sample

Nickname	Age	Gender	Education	Experience in General	Experience in This Company	Work Title
Kıymet	27	Female	BA	4	4	Software Engineer
Evren	28	Male	BA	7	1	Project Manager
Kadir	25	Male	MBA	3	1	Software Engineer
Hüseyin	29	Male	BA	8	3	Project Manager
Ömer	26	Male	BA	2,5 *	2,5 *	Junior Engineer
Gökhan	26	Male	BA	3	3	Software Engineer
Eren	25	Male	BA	3	4 *	Software Engineer
Özgür	29	Male	BA	4	2	Software Engineer
Erhan	34	Male	MA	14	7	Project Manager
Dilek	32	Female	BA	12	12	Project Manager
Hakan	24	Male	MA	4	3	Software Engineer
Özge	25	Female	MA	3	1*	Software Engineer
Mehmet	31	Male	MA	5	2	Software Engineer
Rüya	24	Female	BA	3	3	Software Engineer
Salih	24	Male	BA	2	2	Software Engineer

* The experiences of the employees were stated in years, asterisks stand for months.

Kıymet: She was 27 years old. She had an undergraduate degree from the computer engineering department. She has been working for four years as a software engineer. She has been working on this company since she started working, so this company is her first workplace. She is working as a software engineer.

Evren: He was 28 years old. He had an undergraduate degree from computer engineering department. He has been attending to a graduate program for one year at a private university on computer engineering. He has been working as a software engineer for seven years, but he has been working in this company for one year. He is the project manager in his contemporary group.

Kadir: He was 25 years old. He had an undergraduate degree from computer engineering department and also a master degree from Business Administration Department. He has been working as a software engineer for three years, but he has been working in this company for one year. He is working as a software engineer in this company.

Hüseyin: He was 29 years old. He had an undergraduate degree from computer engineering department. He has been working as a computer engineer for eight years, whereas he has relatively less experience in this company with three years of experience. Still, he was the project manager in the software development module.

Ömer: He was 26 years old, and had an undergraduate degree as a computer engineer. He was one of the three inexperienced software engineers in the company. He has been working as a software engineer for only about two and a half months. So his title was junior engineer.

Gökhan: He was 26 years old. He had an undergraduate degree from computer engineering department. He has been working as a software engineer for three years both as an engineer and as an employee in this company. He was working as a software engineer in his contemporary group.

Eren: He was 25 years old. He had an undergraduate degree from computer engineering department. He has been working as a software engineer for three years but he was a novice employee in this company with four months of experience. But still, he was working as a software engineer in his contemporary group.

Özgür: He was 29 years old. He had an undergraduate degree from computer engineering department. He has been working as a software engineer for four years in general but he has been working in this company for two years. His position in the company was software engineer.

Erhan: He was 34 years old. He had an undergraduate degree from computer engineering department, and also a graduate degree from computer engineering department. He has been working as a software engineer for fourteen years, but he has been working in this company for seven years. He was the project manager in his contemporary group. He was the oldest and the most experienced employee interviewed.

Dilek: She was 32 years old. She had an undergraduate degree from the electrical engineering department. She has been working for twelve years but for the first four

years she was not working as a software engineer. She has been working on this company since she started working, so this company was her first workplace. She was working as a project manager at present.

Hakan: He was 24 years old. He had an undergraduate degree from computer engineering department and also a master degree from the same department. He has been working as a software engineer for four years, but he has been working in this company for three years. He was working as a software engineer in this company.

Özge: She was 25 years old. She had a graduate degree from the computer engineering department and a graduate degree on computer technologies. She has been working for three years as a software engineer. She has been working on this company for one month, and this company was her second workplace. She was working as a software engineer.

Mehmet: He was 31 years old. He had a graduate degree from mathematics engineering department, and also a graduate degree from the same department. He has been working as a software engineer for five years, but he has been working in this company for two years. He was working as a software engineer in his contemporary group.

Rüya: She was 24 years old. She had a graduate degree both from computer engineering department and also from business and administration department. She has been

working for three years, and this company was her first workplace. She was working as a software engineer.

Salih: He was 24 years old. He had an undergraduate degree from computer engineering department. He has been attending to a graduate program on computer engineering when the interview was conducted. He has been working as a software engineer for two years both as an engineer and as an employee in this company. He was working as a software engineer in his contemporary group.

After describing the general characteristics of the sample, the findings of the study were discussed. The descriptions of the informal learning activities and the factors that motivated the subjects to learn informally in the workplace were provided in the next section.

Informal Learning Activities in the Workplace

The results from the study were analyzed to detect the informal learning activities employed by the employees interviewed. The activities were listed and further divided into two main themes by drawing upon the related literature and the emerging themes in the data. The emerging themes were informal learning on their own and learning from other people. The learning activities were categorized under these two headings. The details of the activities were analyzed and exemplified one by one in this section.

Informal Learning on Their Own

Under this theme there were three informal learning strategies generated from the interviews. Individual learning activities were included under this theme to refer to how the subjects learn informally in their workplace without applying to any other people resource. The emerging strategies were exploration, execution of the job, and trial and error. Exploration was further analyzed into subcategories as documents, the Internet, and books according to the resources resorted by the employees.

Execution of the Job

It referred to the informal learning that takes place when the participants were engaged in the execution of their jobs. All of the subjects mentioned learning informally by doing their jobs. The subjects were engaged in the execution of their jobs for most of their time in the workplace. The execution of their jobs was the effort for the accomplishment of the specifically assigned jobs. The subjects were mostly focused on the accomplishment of their tasks, avoidance of mistakes, and securing the deadlines. Three of the subjects stated that they even did not have enough time for learning other than completing their responsibilities.

“Genel olarak öğrenmeye çok fazla vaktimiz olmuyor. İşimi yaparkenki durumlar dışında öğrenme miktarım çok az. Zaten şu sıralar sadece işimizi yaptığımız için iş yerinde bunun dışında çok fazla kendimizi geliştirmek için girişimimiz olamıyor.”

[Generally, we don't have much time to learn. My learning level is too low at times other than the execution of my job. We cannot already have much attempt to develop ourselves in the workplace for the task we carry out because we just do our jobs."] (Özgür, 29, software engineer)

Three other subjects stated that they learnt best when they were trying to carry out their tasks because of their concentration and active involvement on the task. Ömer stated that you just realize that you have done something earlier accidentally when you are executing your job, and that execution of his job was very useful for him.

“En çok işi yaparken öğreniyorum. İş yaparken aa şurada şunu yapmışız ister istemez bir şeyler öğreniyorum. Çünkü o anda o işe konsantre olduğum için orda onun bana çok faydası oluyor.”

[I learn best when I carry out my job. When we are carrying out our task we learn when we see we have done something deliberately or not. Because I am very concentrated on the job at then, it contributes very much to me.] (Özgür, 29, software engineer)

“ İş oldukça hem aktif olarak girdiğim için de daha fazla şey öğreniliyor daha fazla iş yapıyorsun. Bankacılık eğitimi almıyorsun sonuçta. Onları iş yaparken öğreniyorsun.”

[Because you are actively involved when there is a task to do, more things were being learnt and you do more tasks. Eventually, you don't get business education. You learn them when you execute the job.] (Hakan, 24 software engineer)

Still, two others stated that when they were given the responsibility of a task, they were learning better with the responsibility and ownership of the task. They just stated that they even recognized their need to learn during the execution of their jobs, because the need to learn emerged according to the problems they were faced with everyday. The problems they faced were unique to the situation so they needed to acquire new ways for solving their problems, and to accomplish their tasks.

“Özellikle bir şey öğrenmenin bence en iyi yolu sormadınız ama mesela size bir iş verildiğinde. O işi yapmaya çalışırken çok iyi öğreniyorsunuz çünkü bilmediğiniz şeyler de o noktada açığa çıkıyor zaten. Sonuçta ben bir projeye başlamak onu birebir kendiniz üstlenmek yani bir kişinin götürmesi ona çok şey öğretiyor. Çünkü sorumluluk almak yani farklı bir şey.”

[For me especially the best way to learn something-you didn't ask but- for example, when you are given a new task. You are learning when you are trying to execute that task, because the things you don't know show up then. All in all, to start a project, to take over it individually yourself, namely to carry out it oneself teaches her/him a lot of things. Because it is something different to take responsibility.] (Rüya, 24, software engineer)

Exploration

The informal learning that took place when the subjects initiate activities such as personal reflection through which they think and reflect about work-related problems and issues; identifying and acquiring various resources to address the work-related problems or simply to expand their general understanding on some issue. Exploration was described as the process of initiating self-directed informal studies either to solve an immediate work problem, to compensate for their inadequate knowledge to carry out the task, or to satisfy their curiosity. All of the subjects expressed that generally they thought and reflected upon the problem or inquiry, and tried to meet their needs by exploring several sources if they didn't generate a valid answer to the question in their minds.

Their primary motivation for their exploration was the desire to execute the task at hand. Another desire was to develop their knowledge not just for their current position but for their future employability and durability in their company.

Actually the sources stated were the same for the entire subjects. However, their priorities were varying among themselves. The mentioned sources for exploration were the written documents available, the Internet, and lastly books.

Documents

It referred to the informal learning that took place when the workers read written material to gain knowledge about their inquiry. The documents were generally fell under two categories. The first group included the previously written codes in their projects. The subjects used them as reference points to see the previous wisdoms used to execute their jobs more effectively. Twelve of the fifteen subjects expressed that they explored previous codes to solve their work related problems and to learn how to do the task they were held responsible for. The subjects also made clear that they usually referred to these kinds of documents generally when they first started working.

“Yazılı kaynaklarımız bu konuda yani şöyle diyebilirim kodların içindeki açıklama alanları oluyor bazen. Eğer yazan kişi oraya açıklama yazdıysa oradan okuyup bir fikir edinebiliyorsun. Onun dışında işi anlamaya çalışıyorsun. Biraz da işi de öğreniyorsun o şekilde kodu inceleyerek.”
[Written documents, namely on this issue I can say that sometimes there are explanation areas within codes. If the person who writes the code has written an explanation, you can get an idea from that. Other than this, you try to understand the task. You also learn the job a little bit by exploring the code in that way.] (Kıymet, 27, software engineer)

“İlk etapta zaten ilk aşamada bırakıyorlar sizi okuyorsun dokümanları, kendine bağlı olarak kodları inceliyorsun.”
[Well they let you on your own at first. You read the documents, you explore the codes at your own will.] (Ömer, 26, junior engineer)

The second group included the documents provided by their companies and also documents provided by the help documents provided by the programs used. Five of the subjects stated using the available help documents of the software programs. Ten of the subjects mentioned about the documents provided by the company, although they expressed that they were little in number. Of course, the availability and quality of the documents affected the usage of documents as reference sources and the level of the subjects' informal learning.

“Daha çok tecrübeli developerlardan yardım alırdık. Onlar bilmiyorsa bir şekilde o programların libraryleri oluyor yani o yazılımın kütüphanesi oluyor bilgisayarınıza yüklediğiniz onlardan bulmaya çalışırdık. Microsoft'un mesela MSDN diye bir libraryisi var. Bunlar döküman yani içinde tamamen karşılaşılan hatalar, örnekler vs.var. Orada bulmaya çalışırdık.”

[We got help from more experienced developers. If they didn't know, in some way there are libraries of the programs. Namely, that software has a library that you downloaded into your computer. We tried to find there. For example, Microsoft has a library called MSDN. These are documents, namely there are completely errors faced, examples etc.there. We have been trying to find there.] (Evren, 28, Project manager)

The Internet

The Internet was another commonly cited source of information for the subjects, when they were searching for new information on their own. Of all the participants stated to use the Internet. The Internet was used for two main goals. The first one was to find similar problems and sample solutions to their technical problems at work.

“Sadece internete başvuruyorum sadece internet. Teknik olarak soruyorsanız sadece internet.”

[Only Internet, I apply to only Internet. If you are asking technically only Internet.] (Gökhan, 26, software engineer)

“Daha önce insanlar öyle bir sorunla karşılaşmış oluyor. Hemen sorunlardan giriyorsun orda oluyor cevabı orda oluyor. O yüzden uygulamayı fazla öyle sorman gerekmiyor insanlara. Hemen internette googleden araştırıyorsun. Problemlerle karşılaştığın zaman internette bulabiliyorsun karşılaştığın problemlerin çözümlerini.”

[Generally people have encountered that kind of a problem earlier. You immediately enter from the problems, and the answer is there. So you don't need to ask people the application too much. You immediately search on the Internet from google. When you encounter a problem, you can find the solutions of the problems you encounter on the Internet.] (Eren, 25, software engineer)

The second goal was self-development on issues they were interested in either directly related to their jobs or not. Seven subjects mentioned using search engines, specifically “google”, “yahoo”, and “altavista” on the Internet to search for their inquiries.

“Yahoo gibi altavista gibi arama motorları var. Ağırlıklı olarak öğrenmeyi googleden yapıyoruz arama motorundan.”

[There are search engines like yahoo or altavista. We mostly do the learning from google, from the search engine.] (Kadir, 25, software engineer)

“Merak ettiğiniz bir takım kelimeler oluyor, özel ifadeler oluyor. Onu da araştırıyorsunuz çeşitli arama motorlarından. Özel olarak bir sorun olması şart değil. O tarz bir araştırma sürecine girebiliyorsunuz örnek olarak.”

[There are some words, special terms you wonder. You search that from several search engines. It is not necessary to have a special problem. You can go under such an search process as an example.] (Mehmet, 31, software engineer)

Books

Books were the least preferred source of information among others. Only three of the participants mentioned of reading books. They also stated that they read books when they started to work in this company at the very beginning. They were still not too positive about reading books and their effectiveness. Only one of the subjects mentioned of reading e-books that he printed. One of the subjects mentioned buying books for personal development on business issues.

“İşe ilk başladığımda bana kitaplar verilmişti incelemem için. Bir müddet onlara baktım ama sıkıldım yani okumaktan. Çünkü basit şeyler işle direk ilgili olmayan örnek şeyler falan vardı.”

[When I first started work, I was given books to explore. For some time I explored them but I got bored of reading. Because there were easy sample things that were not related with the work] (Kıymet, 27, software engineer)

“İlk tabii bir şeyler okumakla başlıyor. Önüne bir sürü kitap yığıyorlar bunları okuyun. Tabii hiçbir şey anlaşılıyor onlardan.”

[Of course, you start with reading something first. They gave lots of books so that you read them. Of course, nothing was grasped from them.] (Dilek, 32, project manager).

“Genellikle e-booklar var benim ilgilendiğim konularda bir sürü, paylaşım programlarında bulabiliyorum onları bir sürü mesela. Güzelce dosyalayıp printerımdan basıyorum oradan okuyorum yani. O şekilde geliştiriyorum.”

[Generally, there are e-books on issues I am interested in. For instance, I can find them a lot in share programs. I print them from my printer, file them neatly, and read them then. I develop that way.] (Eren, 25, software engineer)

Trial and Error

Trial and error was the strategy used for development of the knowledge and skill on the job by attempting, practicing or engaging in the process despite inadequate preparation and training. From their mistakes they learn how to do their job correctly or at least what not to do. This method of informal learning was cited by seven of the subjects. They all stated that they used trial and error strategy to solve their problems at work. The problems cited were generally task related and required immediate application.

“Deneme yanılma yöntemini çok oluyordu bilgisayar başında. Bilgisayarın başına geçiyorsun dur şuna da bakayım dur buna da bakayım oluyor.”

[Trial and error method was very common on the computer. You get to the computer by looking at this and that it happens.] (Erhan, 34, project manager)

“Kod kısmında bir servis hazırlamıştım bir de kod tasarımı yapılan kısımda servisi bulamıyordum. Birkaç kere açtım kapattım bilgisayarı. Limitleri bile kopyaladım yine de servisi orda göremiyordum. İşte arkadaşta sordum. Refresh etmek gerekiyormuş bu servisleri. Ondan sonra bütün servisleri refresh ettim.”

[I had prepared a service in the coding but I could not find the service in the code design section. I opened and shut down the computer several times. I even copied the limits but I couldn't see the service there. Well, I asked a friend. It was necessary to refresh these services. After that I always refresh all the services.] (Özge, 25, software engineer)

Informal Learning from Other People

The informal learning activities that included the active or passive involvement of some other resource person were placed under the informal learning from other people theme emerged from the data. If the informal learning activity of the subjects involved a human resource, the activity was perceived to be learnt from others. The emerging subthemes were analyzed and exemplified in order of their frequency. They included questioning, mentoring, personal interactions, working in teams, observation, listening, role modeling, and on-the-job training respectively. The details of each activity were described next.

Questioning

Questioning involved the informal learning when the learner sought information from others as a means of learning. This could take the form of asking for help or asking questions. This was interestingly by far the most cited way of learning. All of the subjects mentioned questioning. It was cited for thirty three times by the subjects. When it came to the person to ask for help or for clarification, the person questioned could be a peer, a superior, a mentor, or even external references. The peers could be working in the same department, in the same project group, or in different departments within the same company, or still others from other companies or previous work groups or even school mates. For asking people for help generally having experience was cited as the main criteria. However, experience was not conceived only as years of work in the

workplace or in the occupation. Subjects cared for the perceived experience of the person consulted over the problem faced by them rather than their year of work experience directly. Nevertheless, this did not mean that the years of experience were not important and cared by others. Years of experience was especially considered important when the employees started working in the beginning. Also, those experienced people were the employees working in their teams and around them. Still, four other subjects expressed that they looked for someone that experienced the same problem earlier or dealt with the issue beforehand.

“Biraz tabi etrafımdakilere sorarak çalışmaya başlıyorsun çalışma arkadaşlarıma. Yani benden üst ama aynı görevi yaptığımız, benden daha önce başlamışlar çalışmaya meslekte ve o şirkette önceden olan bilen kişiler. Onlardan destek aldım.”

[Of course you start to work by asking people around you, your coworkers a bit. Namely, superior than me but people we do the same job, they have started to work in the occupation earlier than me, the people that are more experienced in the occupation and in that company. I got support from them.] (Rüya, 24, software engineer)

“İşi öğrenmeye çalışıyorsunuz zamanla da işler geldikçe. Nasıl yapacağınızı da daha önce yapanlardan öğreniyorsunuz. Soruyorsunuz bu şekilde işte ekibimdeki insanlara. Daha önce başladıkları için birkaç yıllık tecrübesi olan kişiler. Tabii onlar olaya daha vakıf. Onlardan öğrenmeye çalışıyoruz.”

[You try to learn the job in time as the tasks came by. You learn how to do them from others that have done the tasks before. You ask in this manner, well to the people in your team. Those are people that have some years of experience as they started earlier. Of course, they are more in command of the issue. We try to learn from them.] (Ömer, 26, junior engineer)

They also cared for the general overview about the person consulted in the workplace. In the research setting, the subjects did not mention about such respected

figures that they assumed to know most of the things but in their previous workplaces they mentioned of such knowledgeable figures. The subjects stated that sometimes they believed in the knowledge of the people, sometimes they considered their experience as a reason for consultation, and sometimes they just asked questions to the nearest people available. Whatever the reason and whoever the person was the main motivation for questioning was to solve the immediate work problems.

“Kimi zaman en yakınınızda gördüğünüz insanlardan yardım istiyorsunuz. Kimi zaman gerçekten bildiğine inandığınız insanlardan yardım istiyorsunuz. Başka türlü şirketin sağladığı dökümanlar oluyor. Ama en çok daha kolay olduğundan dolayı insanların hep tercih ettiği hemen en yakınındaki insanlara ya da bilgilerine güvendiğin insanlara sormak.”

[Sometimes you ask for help from the people around. Sometimes you ask for help from the people you believed that really knew the subject. Otherwise, there are documents the company provide. But as it is easier to ask people what people usually prefer isto ask someone just close to them or to those people that you trusted in their knowledge.] (Salih, 24, software engineer)

“İnsanlara soruyorum. Daha tecrübeli de olabilir ya da daha tecrübeli olması şart değil sonuçta senin göremediğin bir şeyi başkası görebiliyor. Senin karşılaşmadığın problemle başkası karşılaştıysa eğer o bir çözüm başkasından öğrenmiş olabiliyor kendisi üretmiş olabiliyor. Onun çok faydası oluyor o anlamda.”

[I ask people. They can be more experienced or it is not necessary for them to be more experienced, eventually someone else can see something you cannot see. If that person has faced with a problem that you have not faced, he/she can learn a solution from someone else or find a solution himself/herself. In that respect, it is very useful.] (Eren, 25, software engineer)

“Onun haricinde tecrübeli arkadaşlarla o problemle önceden karşılaşan oldu mu diye grup içinde bir mailleşmemiz olabiliyor.”

[Except from that we can exchange mails within the group if there is anyone who have met with the problem before.] (Evren, 28, software engineer)

Five of the subjects believed that it was easier to ask others rather than exploring other resources on their own. So they would immediately ask others for clarification when they faced with problems, while the others stated that it was more appropriate to ask other after you explored every solution.

“Genellikle ve çoğunlukla sorarak. Onlara yaptırmak şeklinde. Takıldığım konular olduysa yine dokümanlardan araştırmak yerine işin ehli olan arkadaşlara sormak şeklinde.”

[Generally and mostly by questioning. In the form of having them make. If there was things I got stucked, again instead of exploring documents by asking expert friends on the job.] (Hüseyin, 29, project manager)

“Tabii herkes takıldığı bir yerlerde birilerine sorarak hemen yapmak ister.”
[Of course, everybody wants to ask someone and do it immediately when stucked.] (Özgür, 29, software engineer)

“Genelde kendi çabalarıyla ama takıldığın yerlerde gene işte diğer insanlara sorarak.”

[Generally, (I learn) with your own endeavour but when you get stucked well by asking other people.] (Dilek, 32, project manager)

It was also possible to ask questions to the people from other departments within the same company whenever it was necessary. Even other resource people from several external sources were sometimes consulted for solving work related problems. These external people sources were identified as Microsoft and some other software companies providing technical services for their own products. Generally, people from cross departments within the same company were referred for understanding the business

related matters of the bank. As the research sample were composed of software engineers with no prior education or training on business issues, they needed clarifications and explanations for the design of the codes. In addition, the employees stated to face with technical problems such as the system requirements of the software programs used and in such cases people working in the related departments were consulted.

“Elimde bir alet vardı...ve bir türlü biz bu aletle irtibata geçemedik yani haberleşemiyorduk. Örnek kodlar da mevcuttu ama onu aletin dilinde yazamıyorduk. Onun için baya bir uğraştık bir yirmi gün kadar onunla uğraştık. Hatta microsoftta bile mail attığımı hatırlıyorum ben. Microsoftta mail atmıştım ve microsofttan bana yardım gelmişti. Daha sonra işte bu microsofttan gelen yardımla, şu şekilde yapabilirsiniz yardımıyla onu yapmayı işte haberleşmeyi başarmıştık.”

[I had a device in my hand and we could not connect to the device in no way. There were also sample codes but we could not code in its language. We worked quite much- for about twenty days on it. I even remember sending an e-mail to Microsoft. I sent an e-mail to Microsoft and I received help from Microsoft. Then, well with the help we got from Microsoft, with the help you can do it in this way we achieved to do it to communicate with the device.] (Kadir, 25, software engineer)

“Tabii ki sora sora çözüyoruz bilen birisine. Dün mesela çalıştırdığımız bir sistemde çalışırken bir sorunla karşılaştık. Alt katta bilen çalışan birisi vardı gittik oraya ona sorduk. O da gayet rahat bir şekilde daha önce bu hatayla karşılaştığı için altyapıda falanca şeyi falanca yere alırsanız olur dedi. Yani o yapmasa biz bırakmıştık.”

[Of course, we solve by asking to someone who knows. For instance, yesterday while we were working on a system, we faced with a problem. There was someone who knew it downstairs. We went there and asked him. He said very comfortably that you can do it when you take that to there as he met with the problem earlier. Namely, if he did not do it, we would quit.] (Ömer, 26, junior engineer)

“Yani bizde problem ya da yardıma genellikle kod kısmında altyapı için ihtiyacımız oluyor. Kod yazım aşamasında da işte bankacılık bilgisine ihtiyacımız oluyor. Bunları nasıl öğreniyoruz genelde bankacılık kısmını

işte bankacılık bilgisini yanımızda analistler var onlara sorabiliyoruz veya bankadan direk business kısmından irtibata geçebiliyoruz.”

[Well, we generally (have) problem or need help in coding for the substructure. In the process of coding we need banking knowledge. How we learn them..banking well..banking knowledge, there are analysts with us. We can ask them or we can directly communicate with the banking side.] (Kadir, 25, software engineer)

Mentoring

It referred to the informal learning that took place during a voluntary or loosely structured interaction between a novice employee and a more experienced employee. It involved both teaching and learning. There was a two way relationship in mentoring as cited by the subjects. Both the novice workers and the mentors themselves reported that they have learnt out of the mentoring relationship. Actually, as far as concerned there was a positive environment encouraging the mentoring relationship among the employees. Even the physical structure of the work setting was designed to ease the interaction between the workers. The organizational structure was also designed in a way to encourage such relationships. There were project modules in which there were an experienced leader to consult and also novice employees scattered into different groups. One of the subjects stated the mentoring relationship in those groups as:

“İş verilirdi takım liderim tarafından. İşin tüm ayrıntıları verilirdi teknik ve business tarafı. Birebir yapmaya çalışırdık. İşin aciliyetini takım liderimiz belirliyordu işe ilk başladığımızda önce şu yapılacak veya bu yapılacak diye.”

[The task was given by my team leader. All the technical and business details of the job were given. We tried to do it literally. Our team leader was determining the emergency of the task like this will be done first or that will be done.] (Evren, 28, project manager)

Although the success of the relationships differed according to the personal characteristics of the individuals involved, still both parties reported making use of the mentoring relationship. The mentors did not have to be supervisors or trainers. As the results of the interviews indicated, generally the most outstanding feature for the mentoring relationship was the experience of the mentor. The experience was described in two ways. The first was the years of study in the occupation and the company. Mentors in this respect were sometimes superiors and sometimes peers.

“Üstlerime başvuruyorum. Daha tecrübeli daha bilgisine güvendiğim insanlara danışıyorum.”

[I resort to my superiors. I consult to people that I count on the knowledge.] (Kıymet, 27, software engineer)

“Daha çok tecrübeli developerlardan yardım alırdık.”

[We got help from experienced developers more.] (Evren, 28, project manager)

“Altyapıda da bir yardıma ihtiyacımız olduğunda da işte hemen bilen birisi yardımımıza geliyor.”

[When you need help in the substructure, somebody who knows the job provides help.] (Kadir, 25, software engineer)

The second factor considered was the previous involvement of the mentor in the related project/s. The coworkers experience on the related aspects of the job were referred for mentorship when the employee was in need.

“Bir keresinde çok ciddi bir hata yapmıştım. Hani orada iyi bilen arkadaşlardan yardım alarak toparlamıştık. Bu arkadaşlar o işin uzmanı bizim çalışma grubumuzda işin uzmanı olan arkadaşlardı.”

[Once, I made a very serious mistake. Well, we overcome (this) by getting help from our expert friends. These friends were the expert of that task in our group.] (Hüseyin, 29, project manager)

“Karıřık sorgulama yaptığım bir dönem vardı. Ne yaptıysam başaramamıştım ama yardımla bunu daha iyi bilen birisinin yardımıyla deęişik bir teknik öğrendim. Onların bu yardımından da ben bu teknięi kopyaladım çaldım.”

[There were a period complex query. I could not accomplish whatever I do but with the help of an expert I learnt a different technique. I copied, stealed this technique from their help.] (Hakan, 24, software engineer)

Mentoring was not only reported to be used when they experience problems or difficulties. The subjects also stated that they use it when they start doing a new project to make use of the experiences of the mentors or when they just wanted to learn whatever they could.

“Çevremdeki yönetici pozisyonunda yani daha bu tarafta yazılım yöneticisi olan insanlardan faydalandım. Ya da bir uygulama geliştirirken daha önce hani onun benzerini yapmıştı insanlar. Hani bunu yaparken nelerle karşılaştın işte bunun riski nedir gibi bu insanlardan da bilgi almaya çalıştım.”

[I made use of the people in manager position, namely the software managers in this department. Or else when I develop an application you know people have done a similar version of it. I try to get information like what you have faced with when you produce this, what is the risk of this.] (Rüya, 24, software engineer)

“Bir de ben özellikle benden daha tecrübeli olan insanlardan yaşadıkları sıkıntıları, şeyleri, problemleri, zorlukları özellikle onları sorarak nasıl aştıklarını sorarak o tarz şeylerini öğrenmeye çalışıyorum ki çünkü sonuçta her şey tecrübedir yani tecrübe de yaşanarak elde edilir ama o insanlar yaşamış o tecrübeyi ben niye bir daha yaşamak durumunda kalayım ki.”

[I also try to learn the difficulties, things, problems, hardships, from the more experienced people especially by asking how they overcome these kinds of things, so that all in all everything is experience, and experience

is acquired through experience. But those people had that experience so why I will have to live all again.] (Hakan, 24 , software engineer)

Although it was relatively less frequent, three of the subjects interviewed stated that they apply to others that left the company. The subjects said that even if they were no more a coworker in the company, they still new the task at hand. So the subjects expressed that keeping relationships positive and close was an important factor to care for.

“Kurum dışında buradan ayrılmış olan insanlara danışmış olabilirim. O da yaptığım işi bildikleri için. Mesela işi yapan kişi benim ihtiyacım olan bir modülde çalışma yapmış o arkadaş.”

[I can consult to people outside the institution that left this company. That is because they knew the task. For instance,the person who did the task that worked on the module I need.] (Gökhan, 26, software engineer)

From the mentors' respect, as three of the subjects reported the teaching experience was also a source of informal learning for the employees. When asked questions, they expressed that they learnt reflecting upon the problem. They realized that they did not actually know the requested knowledge which they may have considered insignificant or even did not realized. These kinds of inquiries may even function as triggers for exploration on the issue ultimately resulting in informal learning for the mentor.

“Yeni gelen arkadaşlar vardı. Benim yöneticilerim gelene kadar onların teknik olarak yönlendirilmesi, yönetilmesi görevini almıştım. Bunu yaparken de ben de bir şeyler öğrendim çünkü sizin gayet normal deyip geçtiğiniz bir şeyi onlar soruyor. Onlar sorunca çok fazla bir şey bilmediğinizi fark edebiliyorsunuz. O yüzden öğretici.”

[There were newcomers. I took the responsibility for their guidance and direction. I also learnt something while I was doing this, because they ask

something that you normally say as being quite normal. When they asked, you may realize that you did not know much. That's why, it is educative.] (Hüseyin, 29, project manager)

“Ya da onun haricinde senin o an yoğunlaştığın bir iş var onunla ilgili kasıtlı olarak öğrenmeye çalıştığın bir şeyler var. O an başka birisi bir şey soruyor sana. Bilmiyorum ama bakayım dediğinde sonuçta sana soran kişi bir ihtimal senden daha tecrübeli ve kendisi uğraşmış yapamamış. Onunla ilgili problemle ilgili uğraştığında o anda anlık olarak öğrendiğin bir şey olabiliyor.”

[Or else there is something you are concentrated on, and you are trying to learn deliberately at that moment. At that moment someone else asks you something. When you say I do not know, but let me look at it, eventually the person who asks you is more experienced and bothered himself/herself but could not solve. When you struggle with the problem, there can be something you learn momentarily.] (Gökhan, 26, software engineer)

“Mesela şöyle caseler olabiliyor. Birisi bir sorun yaşıyor sana soruyor. Ben de bilmiyorum onun çözümünü fakat beraber denerken onun çözümünü buluyorum ve ben de yeni bir şeyler öğrenmiş oluyorum.

[For instance, there may be such cases. Someone experience a trouble. I also do not know the solution of it, but when we are trying together I find the solution and I also learn something new.] (Dilek, 32, project manager)

Personal Interactions

For the purposes of this study it referred to informal learning that took place during discussions or interactions among employees at all levels within and beyond the employee's immediate job responsibility. The work setting was appropriate for the establishment of personal relationships with other employees. There were also work groups to even ease the communication better among group members.

There were other routines in the workplace that allows for free dialogue. It was interesting to realize that in the breaks and lunch time the employees avoided talking

about the work related matters. However, as the employees were all dealing with similar issues sometime it was unavoidable to end in job related matters. The job related issues were generally about the problems faced. Sometimes the employees were deliberately telling about the unusual problems they encountered and the solution they have generated on that problem. As the subjects stated there was not a specific type of problem but various and sometimes unique problems and solutions could emerge. These were expressed by the subjects during the interviews as the following.

“Aslında ayaküstü sohbetlerde oluyor. Şey derler hatta üç bilgisayarçı bir araya geldiği zaman direk iş konuşmaya başlarlar, mesleki konulara dalar diye. Çok oluyor yani öyle işlerle ilgili.”

[In fact, (learning) happens on occasional conversations. Even they say when three computer engineers come together they directly start to talk about their jobs, they dwell into occupational matters. There happens to be a lot such about tasks.] (Erhan, 34, project manager)

“İş yerinde yemek arasında işle ilgili mesela arkadaşlarla karşılaştığımız problemleri konuşurken bir çözüm çıkabiliyor ondan falan.”

[In the workplace, when we talking about the problems we have encountered in lunch breaks, for instance a solution can come out.] (Kıymet, 27, software engineer)

“Sonuçta arkadaşlar olarak birbirimize yardımcı oluyoruz zaman zaman. Bir arkadaşım yeni bir şey yaptığında bana söylüyor. A bak ben böyle bir şey yaptım çok faydalı çok güzel bir şey. Birbirimizle paylaşıyoruz.”

[Eventually, we sometimes help each other as frşends. When a friend of mine does something new, he/she tells me about it. Well, I have done such a thing, a very useful, very nice thing. We share with each other] (Salih, 24, software engineer)

Even when they were talking about daily issues such as football, food, and other interest areas, the employees stated that they learn informally in such occasions. Two of the subjects reported that he was learning on issues he was interested in. The majority of

the subjects with twelve subjects out of fifteen stated that they generally did not prefer to talk about job related issues in breaks. They explained it by saying that as their job required mostly heavy concentration and brainwork, they needed breaks to relax and save energy. But still they expressed that they learn informally even on job related issues and mostly unintentionally on such breaks as coffee, tea, cigarette, and lunch. The subjects stated that when they talk with others they broaden their visions and gain different viewpoints on various issues.

“Yine işte benim gibi farklı konulara meraklı olan kişilerle konuştuğum zaman işte öğrenmelerim oluyor. Onda da genelde bir şeyleri almaya çalışıyorum.”

[Well, when I talk with people who are interested in different subjects like me, I learn. At that I generally try to get something.] (Kadir, 25, software engineer)

“Kahve aralarında ve yemek aralarını genellikle dinlenmekle geçirmeyi tercih ediyoruz. Özellikle yemek aralarında iş konuşma gibi bir alışkanlığımız yok. Diğer konularda her zaman bir şeyler öğreniyorsunuz. İnsanlarla sohbet ediyorsunuz, konuşuyorsunuz. Sohbet bir konuya geliyor. Bazen de konuşurken konu işe dönüyor. Bir kişi farklı bir yorum yapıyor belki benim fark edemediğim bir konuda. Yani düşündüğünüz zaman o kişinin haklı olduğunu görebiliyorsunuz.”

[At coffee breaks and lunch breaks, we generally prefer to spend time by resting. Especially at lunch breaks we do not have such a habit to talk about job. We always learn some things about other issues. You talk, chat with people. The conversation comes to a point. Sometimes when you are talking the conversation turns to the job. Someone makes a different comment on an issue I could not realize. Namely, when you think about it, you can realize that the person is right.] (Hüseyin, 29, project manager)

Three of the subjects focused on their desire for socialization via personal interactions to be able adapt to the environment. One of them stated his preference for personal communication as a strategy to solve problems with others, and that lack of was

the main reason for problems. Some of the employees enjoyed this type of socializing within the company and consciously encouraged building such relationships during deliberate activities being aware that facilitated and enhanced their work experience and their adaptation period. Özgür, for instance stated that that he used personal communication as a strategy over a problem related to the deadline of a project.

“Sorunun kaynağı empati eksikliğidir. Ben böyle durumlarda iletişim kurmaya çalışarak başa çıkarım. Yani öfkemi kontrol edip mümkün olduğu kadar insanlarla direk iletişim kurmaya çalışarak.”

[The source of the problem is the lack of empathy. I handle with it by attempting to communicate. Namely, By trying to communicate with people as much as possible.] (Mehmet, 31, software engineer)

“Uyum sağlamayı hızlandırmak için sosyal etkinliklere katıldım ilk önce tabii yani iş arkadaşlarıyla. Yani tabii biraz iş ortamında iletişimi düzgün kurabilmek açısından insanları biraz tanıyabilmek. Herkes kendisine yakın olanla iletişimi çabuk kurabiliyor. Onun için de mümkün olduğu kadar ortak özellik bulmak için de sosyal aktivitelere katılmak lazım. Voleybol turnuvaları oluyordu. Voleybol turnuvalarına katıldım. Daha sonra işte arkadaşların doğum günü partileri oluyordu. Onlara katıldık. Sinemalara gittik. Öyle bir kaynaşma oldu.”

[To fasten the adaptation process I participated in social activities of course with coworkers. Namely, to get to know people to be able to set the communication properly with people in the work environment. Everybody can set the communication with the person close to him/her. That’s why, it is necessary to participate in the social activities as much as possible to be able to find common features. There were volleyball tournaments. I participated in volleyball tournaments. Then, there were the birthdays of friends at work, we participated to them. We went to movies. There was such a socialization.] (Özgür, 29, software engineer)

Another type of relationship stated was with the supervisors. Actually, there was no clear cut supervisor definition in the company. In the projects, there were group

leaders responsible for the smooth progressing of the projects. However, they were not generally regarded as superiors but as experienced coworkers.

“Yani bir yöneticiyle işe yeni girmiş biri arasında yani tecrübe dışında pek bir fark bilgi açısından hiçbir fark yok neredeyse. Tabii kişiden kişiye değişiyordur. Burada pek yöneticiden öğrenilmiyor.”

[Well, there is almost no difference with respect to knowledge between a superior and a novice. Of course, it differs from person to person. Generally, you do not learn from the superiors.] (Kadir, 25, software engineer)

Working in Teams

It was used to refer to the informal learning that took place when a small group of co-workers, who shared tasks and/or responsibilities, were brought together to complete a segment of their work. In this company there was a conducive environment for teamwork. First of all, the employees were grouped as teams for the projects they were held responsible for. But more than the perceived structure there were positive relationships among team members. They were both coworkers and mostly friends. Only three of the subjects stated that they had problems in their teams. For both of the subjects the problem was related to the team leader.

However, generally the team leader was a resource person for the team members. They also stated to help the subjects to develop themselves and gain new perspectives for solving problems.

“Mesela dün bana bir iş verilmişti. Ortada bir data seti var. İşte ben bunun üzerinde dünden beri çalıştım. Ondan sonra yeni grup liderim olan beyle de

böyle bir iki göz olarak baktık. Yani onunla beraber bakarken mesela farklı şeyler öğrendim. Yani daha farklı bir bakış açısından nasıl bakılacağını da öğrenmiş oldum.”

[For example, I was given a task yesterday. There was a data set there. Well, I have worked on it since yesterday. Then, we looked at it with the man who is my group leader as two eyes. Namely, when we were looking over with him, I learnt different things. Namely, I learnt how to look at it from a different perspective.] (Rüya, 24, software engineer)

In addition, the subjects stated to work teaming with others for the solution of a specific work problem either from the same group or from other groups and even departments. Working in teams with people from other departments helped the employees to expand their knowledge base on different issues.

“Ben bi component yazmıştım ben bir analistle birlikte business analistle birlikte. O zaman o componentin business tarafını öğrendim diyebilirim.”

[I had written a component with an analyst, business analyst. Then, I can say I learnt the business part of the job.] (Gökhan, 26, software engineer)

One of the subjects stated that while she was working with others whatever the relative position of the person, she made use of the techniques used by the other members. So, while the employees were working in groups, it was possible to learn from everybody in the group and gain different perspectives.

“Yani biriyle beraber bir iş yaparken bakıyorum. Mesela onun yöntemi daha bana mantıklı geliyor. Daha yani verimli bir yöntem gibi geliyorsa onu kullanıyorum hemen, yani uygulamaya alıyorum deniyorum.”

[Well, when I am working with somebody, I look at him/her. For example, his/her method sounds more logical to me. If it sounds as a more efficient method, I use it immediately. Namely, I apply it, I try it.] (Kıymet, 27, software engineer)

Although teaming was said to have advantages for some subjects, three of the subjects were quite negative about the team work. One of the subject stated that team work was not even possible because of the Turkish way of thinking.

“Çünkü grup çalışmasının belli zorlukları var. Özellikle Türkseniz Türkiye’deyseniz. Bizim Türk mantalitesi grup çalışmasına yatkın bir mantalite değil açık söylemek gerekirse. Grup çalışmasında önemli olan iletişim. Şu sorun oluyor. Mesela benim yaptığım üzerinde çalışma yaptığım dosyada başka biri de o anda çalışma yapıyorsa birimizin yaptığı değişiklikler o anda boşa yapılmış oluyor ve projeyi uzatma problemi oluyor.”

[Because group work has certain difficulties especially if you are Turk, if you are in Turkey. Our Turkish way of thinking is not a liable way of thinking towards groupwork if it is necessary to say frankly. The important thing in group work is communication. This creates a problem. For example, when someone else is working on the file I am working on, the work one of us has done becomes in vain, and extending the project becomes the problem.] (Gökhan, 26, software engineer)

Another subject stated the difficulty of team work because of the personal problems with the team members on an individual basis. He mentioned the importance of the communication among team members and the possible adverse effects of working in teams that were not it tune with the employee’s working habits.

“Çalıştığım kişiler de değiştiği zaman tatmin olmadığın durumlar oluyor. Başka kişilerle çalışmak istiyorsun ondan dolayı birkaç grup değişikliğim oldu. Başıma geldi. Aslında herkesle çalışabileceğini görüyorsun veya herkesle çalışamayacağını da görüyorsun. Beraber çalıştığın yöneticin ya da çalıştığın insanlar grup içinde değiştiğinde farklı sorunları da beraberinde getiriyor. Ekip çalışmasının önemini de orda aslında anlıyorsun böyle bir durumda. Yani bir ekip kurduğunuz zaman belli bir noktaya geliyorsunuz. O ekip karıştığı zaman performansınız çok ters etkilenebiliyor.”

[When the people you are working with has changed, there are times you are not contended with. You want to work with other people, so I had some groups changes. In fact, you see that you can work with everybody or that you cannot work with everybody. When your group manager or the

people you work change within the group, it brings several problems along with it. In fact, you understand the importance of group work in such a situation. Namely, when you form a group, you come to a certain point. When that team shuffled, your performance can be affected adversely.] (Erhan, 34, project manager)

Observation

In this study observation referred to the informal learning that took place when the worker watched or observed situations or people and thinking over it that result in informal learning either intentionally or unintentionally. Four of the subjects stated that they were observing others in the same position to learn the requirements of their job titles. Three subjects stated that they were observing others during their work when they were given a new task or responsibility.

“Ben ilk geldiğimde ben seçmedim neyi yapacağımı. Bana ne verirlerse onu yapan kişileri izliyorum ben de.”

[When I first started the job, I did not choose what to do. I was observing the person who did the task whatever they gave me.] (Eren, 25, software engineer)

“Etrafımdaki bu görevi önceden yapmış insanlara bakıyorum yani. Onun dışında hiç öyle araştırma yapmadım bu işe başladığımda.”

[I look at the people around me who has done the job before. Except that I did not do any exploration when I started this job.](Özge, 25, software engineer)

Meetings were also stated as a source for observation by three of the subjects. The meetings were functioned as workplace routines where the employees had a chance to come together with others that they could not meet or see their working style. In the meetings, the subjects could also the relative position of their title, their job

responsibilities, and the ‘do’s and ‘don’t’s embedded in the company climate and employed by others in the same position in the company.

“Proje toplantılarında, banka tarafıyla olan toplantılarda da benle aynı seviyede olan bir developerı yavaş yavaş izleyerek onun konumunu, sorumlulukları ne ona göre benim ne yapmam lazım veya ne yapmamam lazım diye. Yani daha çok gözlem şeklinde bir öğrenme sürecine girdim.”
[In the project meetings, in the meetings with the banking side by slowly observing what the position and responsibilities of a developer in my rank are, according to that what I should do or should not do. Namely, I passed through more of a learning process in the form of observation.] (Evren, 28, project manager)

Two subjects explained that they learnt how to execute their jobs, how other people approached to the problems, and how they handle them during their observations in meetings. One of the subjects clearly expressed that the meetings made it possible for employees to observe others and make analysis based on her observations.

“İşle ilgili şeyler öğrenirken tabii başka şeyler de öğreniyorsun. Kişilerin olaylara yaklaşımı nasıl, idareleri nasıl bunu gözleyebiliyorsun. Sebeplerini bulabiliyorsun. Belki programsız çalışıyor. Yani bir gözlem yapıp işte böyle analizler de yapabiliyorsun. Çok fazla insanla iç içe çalıştığımız için psikolojik analizler de yapılabilir. Yani ben çok fazla gözlemleyen bir insan olarak görüyorum kendimi.”
[Of course you learn other things when you learn about the job. You can observe how the approaches of the people to the events are, and how their management is. You can find the causes. Maybe he/she works without any programs. Namely, you can make such analysis by making an observation. It is also possible to make psychological analysis as we are working closely with a lot of people. Namely, I see myself as a person who observes too much.] (Kıymet, 27, software engineer)

Listening

Listening took the form of overhearing according to the responses in the interviews. The four of the subjects stated that they listened to others around. Listening generally resulted in unintentional informal learning for the subjects. Rya stated clearly how she learnt by overhearing others in their open office environment unintentionally.

“Kasıtsız olarak da ğrenme sonuta bir de bizim alıřtıđımız ortam aık ofis ortamı. Yani řuradaki bir insan a ben řyle řyle bir řey yaptım dediđi zaman bile ona kulak misafiri oluyorsun. Ve ister istemez o anda kulak misafiri olunan byle herhangi bir sohbetin iinde konuřulurken bizimde kulak misafiri olduđumuz řeylerle de ğrenilebiliyor.”

[Learning unintentionally, eventually the environment we work in is open office environment. Well, even when a person over here say I learnt something like this, you overhear it. And whether you like it or not, you can learn the things spoken in any such conversation you overhear at that moment.] (Rya, 24, software engineer)

Concerning the things learnt by such unintentional listening could be casual information about the people in the workplace other than the job. zge stated that she was totally uninteresting towards the talks in the company other than the job related matters, and she believed that she was an incurious person to try to talk or listen but she still learnt in the work setting by overhearing and listening to others around.

“Yani genelde konuřmayarak ve dinleyerek ğreniyorum yle diyeyim. Benim bir ğrenme abam yok galiba arkadař ortamlarında iř dıřı. Niye ğreneyim ki biraz meraksız bir insanım herhalde. O yzden ancak benim yanımda konuřurlarsa ben de duyuyorum ğreniyorum hani atıyorum biriyle ilgili bir haber.”

[Well, I generally learn by not speaking and listening let me say that way. Presumably I don't have an effort to learn in the work settings other than the job. Why should I learn? I am an incurious person surely. That's why only if they speak near me I also hear and learn about lets say news about someone.] (zge, 25, software engineer)

Role Modeling

For the purposes of this study, informal learning that took place as a result of role modeling emerged as a byproduct of observation in the analysis of the interviews. Role modeling referred to the informal learning that took place as a result of a situation in which the employee purposefully modeled the behaviors of admired others. Actually, the role modeling process overlapped with the observation process for learning informally but it necessitated several exposures and an admired figure for his/her special characteristics. Three of the subjects reported to role model others in their workplace. Kıymet stated that she wanted to develop herself and get the positive characteristics of her coworkers, while Evren stated that he took the positive and negative attitudes of two different supervisors to establish his own style in his new position.

“Kendime mesela örnek aldığım, gerçekten çizgisini beğendiğim bir kişi varsa yaa inceliyorum onu neler yapıyor yani bir model olarak görüyorum. Tabi olumlu yönlerini kendime uyarlamaya çalıştığım için kendimi geliştirmeme sebep oluyor.”

[For example, if there is someone I take as an example and like the style, I examine him/her to see what he/she does, namely I see him/her as a model. Well, because I try to adapt the positive aspects of them to myself, it causes me to develop myself.] (Kıymet, 27, software engineer)

“İşe girdikten sonra işte birkaç ay sonra altı ay sonra falan zaten takım liderliği verildi. Onunla ilgili olarak artık yaptığım iş tanımını değiştirdim. Bunlar da sonuçta bir yerde yazılı olan şeyler değil. Daha önceki çalıştığım şirketlerde örnek aldığım yöneticiler nasıl davranıyorsa, yani bu iş tanımını biraz daha önce gördüğüm örnek aldığım veya almadığım kişilere göre şekillendirdim kendimi.”

[Well, a few months after I started the job, I was given the group leadership. Related to that my job description has changed. Eventually, these are not things written somewhere. How the managers in the previous companies I worked behave, namely, I shaped myself for this job

description according to the people I took or didn't take as an example.]
(Evren, 28, project manager)

During On-the-job Training

It was used to refer to the informal learning that took place when the worker received instruction regarding formal job requirements. Only three subjects stated that they learnt informally in the workplace via training. Twelve of the subjects stated that they received no training regarding their job responsibilities. The training took the form of orientation for only one of the subjects interviewed. Gökhan expressed that he was a lucky one who received an orientation and that was because of the massive employment at that period.

“Bir oryantasyon dönemi oldu. Şöyle oldu aslında bizim başladığımız dönem şanslı bir dönem oldu. O dönem bir oryantasyon dönemi planlamışlardı. Bizden sonra başlayan hiçkimse için öyle bir şey yapmadılar da. Biz başladığımızda altı kişi beraber başlamıştık. Altı kişi başlayınca böyle bir önce bir teknik eğitim verdiler. Böylelikle işi öğrenme süreci orda oluştu.”

[There was an orientation period. Actually, the period we started to work was a lucky period. They had planned an orientation period at that period. They also didn't do such a thing for the others that started the job after us. When we started to work, we started six people together. This being the case they gave us a technical training at the beginning. In this way, the process of learning the job started there.] (Gökhan, 26, software engineer)

However, on-the-job training was generally delivered by one of the informally instructed to help the novice employees. Two subjects reported that an experienced employee was appointed to help them learn the job.

“Bana mesela şunları yap diyen belli bir kişi vardı. Onun müdürü de ona bunları da anlat demiş mesela. Hem ben soruyorum işte onun müdürü de ona demiş tembih etmiş anlat diye.”

[For instance, there was someone who says me to do these. His manager said him to tell me these and these, too. Both I ask and his manager said, recommended him to tell me.] (Eren, 25, software engineer)

“Benim proje müdürüm işi bana anlatması için bir arkadaşı görevlendirdi. Bana anlatan arkadaş başka bir projedeydi. Ama o herhalde tecrübeli olduğu için bütün projelerle ilgili genel bir bilgisi var.”

[My project manager appointed someone to tell me about the job. The friend telling me about the job was from another project. But I guess he had a general knowledge about all the projects as he is experienced.] (Özge, 25, software engineer)

Factors That Lead to Informal Learning in the Workplace

The subjects participating in this study mentioned their effort to learn during the course of their work for satisfying various human drives. In this section, the findings from the interviews were outlined to reflect the specific goals that motivated individuals to learn in the workplace. The emerging patterns were classified under two major categories. These categories were job related factors and personal factors. Job related factors ranged from efficiency, promotion, salary increase, mastery of the job, security to finally career. Personal factors, on the other hand, ranged from recognition/respect, personal development, self-esteem, joy of learning, and socialization. The details of these factors were provided below.

Job Related Factors

All the subjects interviewed in this study reported several factors that they believed learning contributed them in job related matters. They were generally involving more concrete financial and position incentives. The emerging factors under job related factors were efficiency, promotion, salary increase, mastery of the job, security, and finally career in order of frequency.

Efficiency

For the purposes of this study efficiency was defined as the ability to solve problems, to overcome troubles easily and in a quick manner. This factor was the most frequently mentioned factor among all other factors. It was mentioned by seven of the fifteen participants. The subjects expressed that if they learnt the job and their efficiency increased, it would contribute to them in several ways. Some believed that they could handle the difficulties they might face, and solve problems more easily and faster, others said that they would face with less problems. Two of the subjects stated that this would make their lives easier, in return. The answers of the subjects were quoted below to make the statements more accurate.

“Çözümüne sonuca çabuk, daha çabuk ulaşmak için.”
[To reach the solution the result fast, faster.] (Evren, 28, project manager)

“Gün içinde düşünürsek öğrenerek bir işi yapmak öğrenmeden yapmaktan daha hızlıdır ve daha rahat.”

[If we think it is faster and more comfortable to do the job by learning than without learning.] (Özgür, 29, software engineer)

“Sorunları daha kolay ve daha rahat çözebilmek için öğreniyorum.”

[I learn to be able to solve problems easier and more comfortably] (Erhan, 34, project manager)

“Herhalde hayatımızı kolaylaştırmak için. Teknik olarak bir şey yaparsam çalışma hayatında sorunları şey olur, sorunlarla karşılaşma oranım azalır veya karşılaştığım zaman da çözüme çabukluğum artar.”

[Presumably, to make our lives easier. If I do something technically, in business life my rate of facing with problems decreases or when I face with problems my rapidity of problem solving increases.] (Hüseyin, 29, project manager)

Promotion

Among all other factors promotion in doing their jobs was among the most frequent factors that motivated the subjects to learn informally in the workplace. Six of the subjects reported that their promotion would be possible and faster if they learnt their job better. To get promotion one of the subjects implied that you have to show yourself in terms of learning to others to get promoted. One other subject stated that learning made people advantageous over others in the competitive business life.

“İş olarak da yükselme olarak. Yani kendinizi gösterdiğiniz şekilde öğrenme açısından bir şekilde de karşılığını alıyorsunuz.”

[As for work as promotion. Namely, as you show yourself in respect to learning, you somehow get the payoff.] (Evren, 28, project manager)

“Sonuçta rekabet ortamındayız. Yani senin için öğrendiğin her bilgi daha sonar senin için avantaj olacaktır. Yani kim avantaj elde etmek istemez ki. Şirketimde daha iyi bir mevki o tarz şeyler yani.”

[All in all we are in a competitive environment. Namely, every knowledge you have learnt would be an advantage for you later. Who doesn't want to have advantages. A better position in my company that kind of things.] (Hakan, 24, software engineer)

Learning for promotion was not seen as a short term goal but as an expected outcome to reach in the long run. Promotion was not only expressed to be limited to get a higher position within the same company but also being promoted to a better company in the sector.

“Uzun vadede tabii ki terfilere öğrenme önemli bir unsurdur.”

[In the long run, of course learning is an important factor for promotions.] (Özgür, 29, software engineer)

“İşte hedefleriniz oluyor. Benim de hedeflerim var. Hedeflerim ne tabii ki çok daha iyi bir yere girmek. Bundan çok daha iyi bir yer.”

[Well, you have goals. I also have goals. Of course my goals are to get a job at a better place. A much better place than this.] (Ömer, 26, software engineer)

Salary Increase

Another concern by the subjects for learning in the workplace was their expectations for increases in their salaries. They hoped to have a better life standard by earning more money, and they express that they would be better workers according to their learning. Five of the subjects stated that they expected to have better earnings if they knew more. Even two of the subjects said that only earning money was a valid factor for them to learn.

“Para olarak öğrenmenin katkısı olacağını düşünüyorum. Sonuçta para getirir sadece başka bir şey düşünemiyorum.”
[I think learning will have a contribution as money. Ultimately, it brings money I can't think of anything else.] (Özge, 25, software engineer)

“Daha fazla para kazanacaksın daha fazla şey bildiğin zaman. Bu iş için yeterli para.”
[You will earn more money when you know more. Money is enough for this job.] (Gökhan, 26, software engineer)

Mastery of the Job

Another factor emerged in the interviews was to be able to do the job. Three of the subjects stated that they learnt to do the job. Two of the subjects felt that they were obliged to learn to manage to do their jobs.

“Sonuçta buradaki işi yapabilmem için buradaki işi öğrenmem gerekiyor yani. Özel olarak öğrenmek istediğim için öğrenmiyorum yani. Öğrenmek zorunda olduğum için öğreniyorum.”
[All in all I need to learn the job here for me to be able to do the job here. Namely I don't learn because I especially want to learn. I learn because I have to.] (Özge, 25, software engineer)

“Öğrenmeden iş yapamıyoruz. Çünkü yani bizim yazılım sektörü olduğu için sürekli bir şeyler öğrenip sürekli bir şeyleri uygulamak lazım. Yeni ihtiyaçlar doğuyor. Yeni bir yazılım yapılması gerekiyor bunun için artı bir şey kullanmamız lazım.”
[We cannot do any job without learning. As our sector is software sector, we have to learn something and apply something continuously. New needs arise. A new software needs to be coded, for this you need to use something extra.] (Dilek, 32, project manager)

One subject stated that to be in command of the job was an important for him to learn. Having control over the job would help him to produce better projects, which in turn led him to have less trouble on the job.

“İşe hakim olmak istiyorum o yüzden öğrenmek istiyorum. İşe hakim olursam bir kere ürettiğim şey düzgün olur. Daha az zorlanacağım yani.”
[I want to learn, because I want to be in command of the job. If I have a grasp of the job, I produce good things. Namely, I will be less constrained.] (Eren, 24, software engineer)

Two of the subjects stated that success was a factor for learning. However, as the conversation developed it was seen that success meant mastery of their jobs to the subjects. It was clear that the connotation of success was the complete mastery of the job in a smooth and timely way rather than personal satisfaction.

“Başarı. Ya tabii başarı. Yaptığım işin eksiksiz, hatasız, zamanında yetişmesine çalışıyorum.”
[Success, Of course, success. I try to do the job I do to be complete, faultless, and timely.] (Kıymet, 27, software engineer)

Security

For the purposes of this study security meant the subjects' desire to secure their employability both in their current company and in other and even better companies for the future employability. Sustainability of their jobs was an important factor leading to informal learning in their workplace.

“Ben işi iyi öğrendiğim için hem ilerde şirkette kalacağım, hem şirketin değerli bir elemanı olacağım. Bana onun katkısı olacak. Eğer ben başka

bir şirkete gidecek olsam bile ben bu şirkette bu kaliteli işleri ürettim o yüzden bana güvenebilirsiniz falan diyeceğim.”

[As I learn the job well, I will both stay in this company and be a valuable employee of the company. This will have a contribution to me. Even if I leave for another company, I will say I have done these qualified tasks in this company (and) you can count on me.] (Eren, 25, software engineer)

Two of the subjects expressed that they must learn to continue their jobs.

Security also expressed to provide financial security for two employees to be able to sustain their lives.

“Tabii ki geçinmek için de öğreniyorsunuz.”

[Of course we also learn to maintain our lives] (Mehmet, 31, software engineer)

Career

For three of the subjects having a high status was seen as important factors for learning to take place. They stated that in terms of their career learning would certainly contribute them to have a high status in their jobs.

“İş açısından kariyer için çok önemli bir şeyler öğreniyor olmak, çok iyi olmak, biliyor olmak iş açısından önemli.”

[In terms of your job for career, it is very important to be learning, to be very good, to know...is important in terms of job.] (Erhan, 34, project manager)

One subject stated that the ability to learn continuously would be an effective factor for his career in the future. He thought that a better career would bring better life

standards which were again a perceived future incentive that can be made possible by learning.

“Biz sürekli öğrenmek zorundayız yani. Bu daha iyiyi daha doğruyu öğrenmek zorundayız. Bu da benim kariyerimi etkileyecek iş anlamında, ilerdeki yaşantımı doğrudan etkileyecek.”

[We must continuously learn. This .. we have to learn the good, the better. And this will affect my career regarding my job, (and) my future life directly.] (Salih, 24, software engineer)

Personal Factors

Personal factors that lead the subjects to learn informally in the workplace were the more psychological and non-financial factors emerged in the data analyzed. The factors placed under this theme were recognition/respect, personal development, joy of learning, self-esteem, and socialization in order of frequency. The details of each factor were presented next.

Recognition/Respect

The sense of being recognized by others took several forms and stated eight times by the subjects. Being appreciated by the others was the most common stated form of recognition with four subjects. The subjects were psychologically satisfied by appreciation. They stated to be happy when they were known to be a person who can be trusted in any kind of problems.

“Sonuçta takdir dilmek de başkaları tarafından seni mutlu ediyor.”
[Ultimately, it makes you happy to be appreciated by others.] (Kıymet,

“Şöyle de bir katkısı olabilir bu adam bu işi bilir, bir sıkıntı olsa gideyim ona sorayım oluyor. Öyle arkadaşlarımız var yani ne tür bir sıkıntı olursa olsun o kişiye gidelim o kesin bir fikri vardır dediğiniz insanlar oluyor. Ben öyle bir insan değilim belki ama olsam iyi olurdu diyorum.”
[There can be such a contribution: this guy knows the job, if there is a trouble I should ask him. There are such friends well there are people you say let’s go to that person whatever kind of a trouble there is, he/she has certainly has an idea. Maybe I am not that kind of a person but I say that would be better.] (Erhan, 34, project manager)

One of the subjects stated that he was personally satisfied when he was recognized by others as a swift learner. He said that learning his self-satisfaction increased when he could show others that he knew better and he was a better problem solver than other people in that company. Actually, the ultimate motive underlying his statement was his desire to be recognized by his supervisors, so that he could get a promotion.

“Kişisel olarak da tatmin için yani diğerlerinden daha iyi bildiğinizi, daha çabuk çözebildiğinizi gösterme isteğinden dolayı.”
[Personally, for satisfaction. Namely, out of the desire to show that you know better than the others, and you can solve the problems faster.]
(Evren, 28, project manager)

Three of the subjects stated being respected by others was an important factor for them to learn more in the workplace. They assumed that when they knew more, they would be respected more by the others in the workplace. Eren expressed his belief that he could get good references if he knew, and also gain respect in his job. Even Gökhan found it enough for learning informally along with earning money.

“Şey iyi referans almak istiyorum. İnsanların senin hakkında bu insan iyi bilir falan demesi de önemli. Hem insanların sana da bir saygısı olsun.”
[I want to get a good reference. It is also important for people to say that this person knows and such. Likewise, people should have respect to you, too.] (Eren, 25, software engineer)

“İşinde daha fazla itibar göreceksin. Daha fazla itibar göreceksin daha fazla şey bildiğin zaman. Bu da yeterli zaten benim için.”
[You will be respected in your job. When you know much more things, you will be respected more. That is already enough for me.] (Gökhan, 26, software engineer)

Personal Development

Personal development was a quite common factor after the desire of the employees for recognition and respect. It was cited eight times by the subjects. The employees felt that they continuously needed to learn although they had different goals for learning informally. Three of the subjects just mentioned about self-development as a drive for informal learning in the work setting. One of the subjects stated that he learnt because he wanted to be different in the workplace. Two others stated that when they learn they broaden their horizons, and gain new perspectives.

“Kendimi geliştiriyorum bir şeyler öğrenerek. Hayata daha geniş bakıyorum. Tabii yaptığım iş yazılım açısından değil ama hani bir ekip içinde çalışmak, birileriyle bir şeyler paylaşmak, toplantılar yapmak, bunların sonucunda bir şeyler üretmek tabii kendine çok şey kazandırıyor.”
[I develop myself by learning some things. I look at the life broader. Of course, not in terms of my job but to work in a team, to share something with someone, to do meetings, and to produce something as a result of these bring in a lot of things to you.] (Dilek, 32, project manager)

Two of the subjects said that learning betters their brains. By learning in their jobs they thought that they developed the functioning of their brains. One of the subjects said that it advanced brain development, cognition, and perception. Another subject expressed that learning was compensating for the asocial nature of their work.

“Öğrenme ufukumuzu da açar. Bizim işte çok fazla sosyal tarafı olmamakla beraber yani öğrendiğimiz işi işin dışında çok fazla kullanamamamıza rağmen beyin jimnastiği oluyor öğrenme bizim için. Zeka geliştiriyor. Bir de o anlamda da öğrenmenin çok önemli bir etkisi var.”

[Learning broadens your horizon. In our job, even if there is not a lot social aspects, even though we do not use the job you learnt outside the work, learning is brain exercise for us. It improves the intelligence. In that respect learning has a very important contribution, too.] (Özgür, 29, software engineer)

One of the subjects stated that he felt the need to learn because he was in a superior position. When the people in his group asked something to him, he thought he shouldn't be overlooked by the others but respected in his position.

“Bir kere daha çok öğrenmem gerekiyor diye düşünüyorum çünkü size developerlarınız bir şey sorduğunda başka bir developerdan önce sizin yanıtlamanız lazım. O yüzden sizin kendimizi sürekli geliştirmeniz gerekir. Bizim her yeni teknolojiyi de öğrenmeniz lazım var olan teknolojiyi de öğrenmeniz lazım, sonuna kadar bilmeniz lazım. O yüzden daha çok doğru terim olmayabilir altta kalmamak için öğreniyoruz.”

[First, I think I have to learn more. Because when your developers ask you something, you need to answer first before another developer. So you need to advance yourself continuously. We need to learn the new technology, the existing technology, we need to know up to the end. So it might not be the right term but we learn not to be overcome.] (Evren, 28, project manager)

Joy of Learning

Three of the subjects stated that they learn because they think that learning was an enjoyable act and they were satisfied just out of the act of learning. They express their desire to learn and place it even above financial rewards.

“Öğrenme zevkli. Yani yemek yemek gibi bir şey diyeyim. Kişisel olarak da zaten bir şeyler öğrenmiş olmanın zevki yetiyor.”

[Learning is enjoyable. Let me say something like eating. Personally, the joy of learning is already enough.] (Gökhan, 26, software engineer)

“Ya aslında ben kendim mutlu olacağımı düşündüğüm için biraz da yani. Ben yani iyi bir şeyler yaptığım zaman, iyi bir şeyler ürettiğim zaman kendim mutlu oluyorum.”

[Well, in fact, a little bit because I think that I myself will be happy. When I do something, produce something good, I get happy myself.] (Rüya, 24, software engineer)

Self-Esteem

In the analysis of the interviews three of the subjects revealed that their self-esteem increased when they learn more in the workplace. One of the subjects stated that once he faced with a very critical problem, he learnt that there was always a way to solve problems. Then, he said to have more confidence over problems. With more exposure to such problems and learn more solutions, learning brought in self-esteem.

“Kişisel anlamda öğrenmek güven kazandırıyor. Yani bir şey öğreniyor olmak, bir şeyleri çözmüş olmak, denemiş olmak, görmüş olmak o şeyle

bir daha karşılaştığınız zaman sıkıntı yaratmadan çözebileceğinizi gösteriyor.”

[Personally, learning have you gain esteem. Namely, to be learning something, to have solved something, to have tried, to have seen show that you can solve that thing when you encounter with it without creating time problem.] (Erhan, 34, project manager)

Another subject expressed that she was proud of herself when she knew something. That learning made her happy and proud. However, she felt inferior when she could not know and had to say that she did not know.

“Bir şeyleri bunu ben yaptım diyebiliyorsun. Daha kendine güvenin oluyor. Yani insanlara bunu biliyorum diyebiliyorsun. Birisi bir sorunla geldiği zaman ben bunu bilmiyorum demenin ezikliğindense hani ben bunu biliyorum demenin böyle gururu oluyor.”

[You can say that I have done something. You have more self-confidence. Namely, you can say people that you know it. When somebody comes with a problem, instead of the inferiority of saying I don't know this, there is the proud of saying I know this.] (Dilek, 32, project manager)

Socialization

Two of the subjects stated that learning was necessary for socializing in the workplace. For setting positive relationships with others at work, and develop oneself socially, the subjects believed in the necessity of the learning. the subject stated that informal learning took place in the adaptation process to the workplace and others around. Another subject reported the intentional participation of him in the social activities for socialization.

“Sosyal gelişim için de öğrenme önemli aslında. Dinlemek ve algıları açık tutmak gerekiyor sisteme adapte olabilmek için.”

[In fact, learning is also important for social development. It is necessary to listen and keep your perception open to be able to adapt to the environment.] (Mehmet, 31, software engineer)

In the next section the summary of the study and discussions of the findings were presented. Then, the limitations of the study were put forward. Lastly, suggestions to the researchers for further studies were included for the cumulative development of the knowledge.

CHAPTER 5: DISCUSSION AND CONCLUSION

In this section of the study, the findings were summarized. Then, discussions of the findings were presented with the concluding remarks on the research. Lastly, limitations of the research were presented with suggestions for further studies.

Summary

This study sought to investigate the informal learning experiences of the employees and the factors that led the employees learn informally in the workplace. The study was carried out as software engineer in a private bank in İstanbul with the computer engineers working. There were fifteen subjects participated in this study on a voluntary basis. They were interviewed with the instrument developed by the researcher.

The data was collected with the semi structured interview guide and recorded. The tapescripts of the interviews were analyzed by using content analysis. The within case and cross case analysis of the data were carried out. The emerging codes were analyzed and categorized drawing upon the data and the related literature.

The findings of the study showed that the subjects were mainly either learning on their own or learn from other people in the workplace. They were involved in mostly self-directed informal learning activities. The activities emerged in the analysis were execution of the job, exploration, and trial and error for the “learning on their own” theme; and questioning, mentoring, personal interactions, working in teams, observation, listening, role modeling, and on-the-job training under the “learning from others” theme.

The factors that led the subjects for informal learning in the workplace were emerged to be “job related factors” as efficiency, promotion, salary increase, mastery of the job, security, and finally career. The emerging “personal factors” were recognition/respect, personal development, self-esteem, joy of learning, and socialization.

Discussion and Conclusion

The findings of the study verified the findings of the previous research and reflected the fundamental importance of informal learning in the workplace. To keep pace with the ever expanding demands of their jobs, the employees had no time for formal education or training in the workplace. So it was evident that they relied heavily on the informal learning for meeting the immediate requirements of their jobs. The employees were dealing with the work related problems all the time because of the nature of their work. Every problem was critical for them and needed immediate attention since their job required the employees to deal with the issues of money that depended on the daily changes in the financial world. Their little mistakes could cause quite serious financial losses in the bank. This being the case a commitment to informal learning was a must for the workers for the accomplishment of their tasks.

Although the engineers reported learning a lot from peers or on their own, they rarely reported learning from groups or from group membership. Howe (1991) identified superiors as important learning sources in his study. However, superiors were not cited as much as peers or individual study in this study. Even one of the subjects said that

after a while she started to work in this company, she could not see any director or manager and asked a peer who the managers were in the company. So the relative status of the workers in the workplace was not emphasized in this company. Individuals were provided with space for personal autonomy by the organization. However, the employees desired to learn on their own with their own resources available by trying to learn and handle problems by executing their jobs. Execution of the job was by far the first stated informal learning activity in the workplace.

First of all, the workload and the pace of their daily routines generally didn't allow for formal or non-formal training. Furthermore, formal training or education was not a regular routine in this workplace. Interestingly, no one mentioned about receiving formal education or training in the workplace. Only one of the subjects stated that they were given informal technical training delivered by their experienced coworkers in an orientation period. But as the subject also stated there was no other training mentioned in the interviews.

In this respect, learning by doing and experiencing the work was necessary for learning in the workplace. As Knowles (1970,1980) stated learners were opt to learn by experiencing and that adults were application based learners. These workplace learning resulted from the execution of the job also helped to construct another characteristics of adults as a reservoir of experience (Knowles, 1970;1980). They were gaining experience day by day and building over their experiences.

The nature of their work required to deal with the immediate and ever urgent problems all the time. So the usage of critical incidents was actually an appropriate way of collecting data matching with the daily processing of their job as software engineers.

If the experiences of the employees were not sufficient to execute their jobs, the subjects chose to explore for the solution of the problem first in the software codes they were developing for various computer uses of the company. They sought the root of the problems and thought over the problem for a time. One of the subjects stated that sometimes he unconsciously thought over the problem so ingeniously that he found the solution when he was about to sleep at night. These findings supported Mezirow's (2000) learning cycle in which the learner first encounters with a disorienting dilemma and began to critically reflect upon the problem. The learner continues to reflect until finding a fitting explanation for the distortion. Self-reflection was a valuable process that resulted in learning for the subjects.

Knowles' (1970, 1980) readiness to learn assumption featured in andragogy was another valid explanation for the employees to learn. There was a learnable moment for the employees and the need to learn aroused by the encountered work related problems. The subjects' focus on problem solving and orientation towards performance reflected the general characteristics of adults (Knowles, 1970;1980).

While the subjects were exploring for a solution to their work related problems, it was also necessary to be provided with the necessary resources. Having autonomy and motivation for learning did not mean to learn just by reflecting upon the problem on one's own. The subjects needed reliable and comprehensive resources to resort whenever necessary (Brockett and Hiemstra, 1991). The resources cited by the subjects included the written computer codes in the company as examples of previous applications, the documents provided by the company either developed by them or purchased by the software firms like Microsoft. The Internet was another huge source of

information for the employees. But it was in the second rank of frequency. It was because of the unique nature of the problem faced that can be solved by the specific solutions generated within the company. Books were the least preferred and used materials and mentioned only by three of the subjects. The subjects mentioned to read books when they first started to work. However, they reported that the information in the books were too theoretical and they needed to see not the theory or information but how they are applied in real life situations. In this respect, the company supplied all the necessary resources and support for their employees.

If the employees still cannot solve their problems with all the resources available they again used their own resources by trying out alternative solutions and see their applicability. Although trial and error was the most frequently cited informal learning activity in Howe's (1991) study, only half of the employees cited to use trial and error in this study. Actually, no informal learning activity had a pure strategy. All activities were intermingled with several strategies together. While a subject was reflecting upon a problem, he/she was also trying out the possible solutions. This may be the explanation for the differences in the findings of several studies.

The employees demonstrated the quality of personal autonomy as a reflection of the adult characteristics (Knowles, 1970;1980). Candy (1991) identifies self autonomy as the goal of all adult education and states his ideas as "given the widespread acceptance of autonomy as a valued social and cultural ideal... with the concept of adulthood as being defined in terms of autonomous thought and action, it is not surprising that the enhancement and development of self-directedness has been adopted as a major goal of adult education" (p.20).

Another mode of learning was classified as learning from other people in the data analysis in this study. Because another valuable source for learning were other people for adults to learn informally in the workplace. The researchers preferred to separate people from material resources available in the company. When others in the workplace involved, it was pretty clear that the employees relied upon others for resolving their distortions related to their work.

The autonomy of the employees as adult learners was still obvious in the informal learning activities selected by them. They most frequently questioned other people as information sources. The self-directedness of the subjects for learning regardless of the resources involved reflected the distinctive nature of adults (Knowles, 1970; 1980; Tough, 1971; 1978; Brockett and Hiemstra, 1991). The employees applied to selected others in need of learning. The people questioned were determined according to the perceived experience of the coworker in the first place. Experience was regarded as the only well grounded assumption of Knowles (Merriam, 1987). Kolb (1984) also realized the importance of experience for learning and reflected its importance in his theory of experiential learning. The experience was used to distinguish the employees in the workplace. However, experience was not evaluated according to the years of work but according to the exposure to the related problems.

Next to the solitary self-learning activities, the most important learning resources were the most frequently experienced coworkers in the company. Experience was certainly a differentiating feature among workers. The experience was not confined to the years of work experience but to the experience over the problem/s encountered. As Terehoff (2002) mentioned working with colleagues helped the subjects receive

feedback, share diverse perspectives, expertise and knowledge, and encourage communication. Mentoring was another quite common activity resorted by the subjects in this study. Experience and personal relationships played an important role in the mentoring activity.

As the communication among employees increased, it resulted in fruitful learning experiences for the subjects. They reported to learn informally and even incidentally over their interaction with other employees at all levels. Although they stated to avoid talking about the job in the breaks and socialization times available, they still learnt both about their jobs and other areas of personal interest.

The environment of the workplace was very important for the employees. There was an open office environment that made the interaction among the employees as much as possible. The subjects expressed that they could learn from others and develop their social abilities in this open office environment. Not only the employees built rapport with others in the workplace but they captured different perspectives by observing, listening, and modeling others in the workplace. This also helped the subjects gain social communication abilities in the workplace. They not only learnt about the job but also about the culture in the workplace.

Another interesting finding of the study was the results regarding working in groups. Group work was only cited as positive when there was an urgent problem waiting for a swift solution and the teams worked over the problems for long hours together. In fact, the company had arranged the organization in a way to encourage group work being aware of the merits of the group work for the effectiveness of the huge amount of social, cultural, and intellectual exchange that takes place in the workplace

(Tindale, 1998). However, some of the employees were clearly quite negative about group work and working in teams. Although working in teams were cited among the most frequent informal learning activities in the works of CWD (1998) and Slater (2004), the Turkish way of thinking was not seen as appropriate for group work by the subjects. The subjects mentioned about communicative problems of working in groups. Some of the subjects stated that the people were not taking responsibility for the adverse happenings during the course of the group work, while some others suffered from the lack of respect among group members for the work others has done. Actually, the main problem detected for the negativeness toward group work was lack of proper communication among group members. They did not know about what others in the group were dealing with and also did not inform others about the processing of the group task.

Although they did not directly state it, all of the subjects interviewed in this study reported that they seek for the opportunity to advance themselves in terms of financial factors that were classified under the job related factors. There were other factors that were clustered under personal factors referring to more psychological drives. Recognition/respect was the most common personal factor that satisfied the employees psychologically, but they were somehow related to the financial issues ultimately for getting promotion.

On the other hand, it was interesting to see that the subjects were obviously trying to learn for the joy of learning. Some of the subjects reported that they learnt just because it made them happy to learn. It was clear that these non-financial factors were considered to be as motivating as financial factors. For example, one of the subjects

made it clear that she changed her group just to learn something new, because learning made her happy. She was obviously frank because she received no salary increase or promotion as a result of her position change. She was already a project manager but chose to change her group for the sake of learning.

The sample was a small representation of the whole population, even if it was not proper to derive generalizations from the findings, the detailed qualitative analysis of the informal learning experiences of the software engineers showed that although Howe (1991) and Rossi (1995) found little organizational support for informal learning, in this company it was encouraged among employees. The experience, self-direction, and cooperative learning were the major factors that contributed to the informal learning of the research sample.

The findings in the study made it clear that the climate of the workplace played an important role for the employees to learn informally in the workplace. It was important to create a positive learning environment in the workplace for more informal learning to occur. The conditions of a positive learning environment were suggested to be the existence of an open office environment that allows communication among employees, and the reduction of the perceived hierarchical ranks among workers in this study. Namely, both the physical and the psychological factors in the culture of the workplace affected the informal learning activities of the employees.

Furthermore, the employees as adult learners needed other resources for dealing with the challenges and problems faced almost everyday in the workplace. These resources might take any form according to the needs and preferences of the employees. However, the need to provide all the necessary resources at the employees' disposal was

obvious. So the arrangement of the work groups should be arranged in a way to encourage interaction and transmission of knowledge among employees. Knowles (1980) also contends with the usefulness of providing the opportunity to work in collaboration with others either in heterogeneous or homogenous groups in the learning environment letting them discover colleagues having the same readiness level and giving them a flexibility of choice. Discovering mentors that were seen as admired and trusted coworkers was another contribution of grouping employees heterogeneously.

It was also crucial to allow for some personal exploration space and resources for self-directed learners among the employees. The occupation of the employees already required some self-study over the computer coding material and individual development of the computer codes. Nevertheless, for most of the subjects individual learning mode was already the preferred informal learning style over other collaborative informal learning activities. The subjects enjoyed reflecting over the work related problems, exploring through the available resources, and trying out new solutions. If they still did not find a solution, they questioned others, listened, observed and discussed with others. Of course, it was a matter of personal choice. For some of the subjects exploration was a long and tiresome process, so they preferred to apply other more experienced coworkers around. As it was clear, variety of resources and activities in the workplace was a key element to meet the diversity of the informal learning preferences among workers.

Limitations of the Study

Inherent in every qualitative research, one of the most important limitations of this study is its generalizability. Only a small percentage of the whole population could be represented in this study. Purposeful sampling method does not represent the whole population but it was still found helpful for providing a deeper understanding of the inquiry at hand. However, the number of interviews is determined according to the nature of the study. Therefore, collecting more data does not necessarily provide more detailed understanding of the phenomenon. The data saturation can be considered to be reached when new data doesn't seem to produce additional information. After the sixth subject common themes began to appear in this study.

Research and analysis conducted with individuals from a particular cultural situation should not be generalized to other cultural settings. It cannot be assumed that the experience and perceptions of the subjects in this study can be applicable to the all employees.

During the interview process, some subjects may have answered with a drive for socially acceptable replies. This is called "social desirability bias" and may have resulted in answers received in ways that are perceived to fit the desirable situations rather than the real factors. Furthermore, how subjects responded during the interview process may not be truly representative of their perceptions. In other words, it is important to understand in which situation the individual participant is located. That is why situational variables might have played an important role in the responses of the subjects to the interview questions.

There may be other methodological deficiencies involved in the development, application, and the analysis of the data due to the inexperience of the researcher. The researcher in this study is also the research instrument as Patton indicated (1990, p.14), therefore the data collected may reflect biases of the researcher. There is an interaction between the researched and researcher, so the researcher's bias enters into the picture even if the researcher tries to stay out of it. It was hardly possible to keep own feelings and personal reactions out of the study when there was relevance in the researcher's feelings to the matter at hand.

Recommendations for Further Research

There are no studies investigating the informal learning experiences of any population in the workplace in Turkey. This vast area of study warrants attention by the researchers. This study needs to be replicated and verified under different settings with different populations. This will increase the generalizability and validity of this study. Ultimately, with enough data at hand, it can be possible to draw more solid conclusions and even applicable measures for more extensive applications of the emerging knowledge.

Another suggestion for further research is to look into the cultural factors that contribute and/or impede the informal learning of the adults. Along with the cultural factors personal factors are also known to determine and affect informal learning preferences of the adults. It is also necessary to investigate the personal factors that lead adults to use different mediums and strategies for informal learning in the workplace.

These are all necessary for a fuller understanding of the informal learning processes the adults are passing through. Then, after enough study is carried out, it might be possible to develop theories. To detect the underlying informal learning schemes of adults, and to learn the cultural factors intervening may all help to increase the productivity and success of the employees. In turn, this will certainly contribute to the welfare of the companies and to the education system in schools for equipping the students to the workplace with proper abilities for learning.

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APPENDICES

APPENDIX A:

The Interview Guide

(Turkish Form)

İş Yerinde Kendiliğinden Öğrenme

Bu çalışma yetişkinlerin iş yeri ortamında herhangi bir eğitim öğretim etkinliğine katılmadan kendiliğinden nasıl öğrendiklerini ve bu öğrenmelere neden olan unsurları belirlemeyi amaçlamaktadır.

Vereceğiniz bilgiler Boğaziçi Üniversitesi Eğitim Bilimleri Bölümü, Yetişkin Eğitimi Programı' na sunulacak bir yüksek lisans tezinin verilerini oluşturmak için toplanmaktadır. Vereceğiniz bilgiler yalnızca akademik amaçlarla kullanılacak ve gizliliği korunacaktır. Katılarınız için teşekkür ederim.

İlknur Altay

Kişisel Bilgiler:

1. Cinsiyetiniz: Erkek_____ Kadın_____
2. Yaşınız:
3. Eğitim durumunuz:
 - a) Lisans:
 - b) Yüksek Lisans:
 - c) Doktora:
4. Kaç senedir bu mesleği yapıyorsunuz? _____
5. Kaç senedir şimdi çalıştığınız kurumda çalışıyorsunuz? _____
6. İşiniz neleri yapmanızı gerektiriyor? İşinizi biraz tanımlar mısınız?

Görüşme Soruları

1. İlk işe başladığınız zamanları düşünün. İşinizi nasıl yapıyordunuz?
2. İş yerinde günlük çalışmalarınız sırasında, sizin için önemli bir öğrenme kaynağı olduğunu düşündüğünüz bir sorunla ya da zorlukla karşılaştığınız bir durumu hatırlamaya çalışın. Lütfen bu durumu mümkün olduğunca detaylı bir şekilde tanımlamaya çalışın.
 - a) Ne oldu? Ne zaman ve nerede oldu? Durumu tanımlar mısınız?
 - b) Sizce bu duruma ne sebep oldu?
 - c) Bu durumla nasıl başa çıktınız? (Kullandığınız strateji/ler nelerdi? Ne/ler yaptınız? Neler öğrendiniz? Nasıl öğrendiniz?)
 - d) Kimler ya da hangi kaynaklar sorunun / zorluğun çözümünde size yardımcı oldu?
 - e) Bu durum sizde ne gibi değişikliklere yol açtı? Neler öğrendiniz? Neler hissettiniz?
3. Kurumunuzda yeni bir yapılanma ve değişim süreci yaşandı mı? Yaşandıysa ne/ler oldu? Siz ne/ler yaptınız?
4. İş yerinizde size yeni bilgi ve beceriler gerektiren yeni bir görev verildiğinde ne/ler yaparsınız?
5. İş yerinizdeki günlük çalışmalarınızda yukarıda bahsettiğiniz durumlardan başka ne zaman, nerede, nasıl ve neden öğreniyorsunuz? Açıklar mısınız?
6. Bu çalışmada kendiliğinden öğrenme konusu araştırılıyor. Kendiliğinden öğrenme bireylerin amaçlı ya da amaçsız olarak kendi başlarına ya da herhangi bir kaynaktan yardım alarak herhangi bir eğitim programına katılmaksızın öğrenmeleri olarak tanımlanmaktadır. Kendiliğinden öğrenmede öğrenmenin kontrolü öğrenenin elinde görülmektedir. Kendiliğinden öğrenme bireyin günlük yaşantıları esnasında her ortamda gerçekleşebilmektedir. Kendiliğinden öğrenmenin bir alt başlığı gelişigüzel öğrenme olarak adlandırılmıştır. Gelişigüzel öğrenme ise herhangi bir aktivitenin yan ürünü olarak ortaya çıkan kasıtsız öğrenmeler olarak tanımlanmaktadır. İş yerinde kendiliğinden öğrenmeniz ile ilgili ekleyeceğiniz başka bir şey/ler var mı?

APPENDIX B:

The Interview Guide

(English Form)

Informal Learning in the Workplace

This study aims at determining how adults learn without participating in any education/training activities, and the factors that lead to this learning.

The information you will provide is being collected to compose the data of a master's thesis to be submitted to Boğaziçi University Educational Sciences Department, Adult Education Program. The information you will provide will be used only for academic purposes and confidentiality will be kept. Thank you for your contribution.

İlknur Altay

Personal Information:

1. Gender: Male _____ Female _____
2. Age: _____
3. Education status:
 - d) Undergraduate: _____
 - e) Graduate: _____
 - f) Doctorate: _____
4. Years of experience in the occupation: _____
5. Years of experience in this company: _____
6. What does your job require you to do? Could you please describe your job a little bit? _____

Interview Questions

1. Think about the time when you first started to work. How did you execute your job?
2. During your daily work in the workplace, try to remember a problem or challenge that stand out to be an important learning source. Please try to describe the situation as much detailed as possible.
 - a) What happened? Where and when did it happen? Can you describe the situation?
 - b) What did you think caused to this situation?
 - c) How did you deal with the situation? (What were the strategies you used? What did you do? What did you learn? How did you learn?
 - d) Who or what sources helped you in the solution of the problem or challenge?
 - e) Which kind of differences did this situation caused on you? What did you learn? How did you feel?
3. Was there any new structuring and change process in your organization? If so, what happened? What did you do?
4. When you are given a new task that requires you to learn new knowledge and skills, what do you do?
5. In your daily work in the workplace, when, where, how, and why do you learn? Can you please explain?
6. In this study, informal learning issue is being investigated. Informal learning is defined as intentional or unintentional learning of individuals on their own or by getting help from a resource, without participating in any formal education program. The control of the learning rests in the hands of the learner in informal learning. Informal learning might happen during the daily routines of the individual in every context. A subtitle of informal learning was named as incidental learning. incidental learning is defined as unintentional learning appears as a byproduct of any activity. Considering all these information, is there anything you can add about your informal learning in the workplace?