A FRAMEWORK OF UTILIZING BACKGROUND MUSIC IN ASYNCHRONOUS LEARNING

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DEDICATION

To my Almighty,

That my existence is with His Will.

To my lovely Mother, Parvaneh Safdarian

Who gave me endless love, trust, constant encouragement over the years,

and for her prayers

To my lovely father, Shokrollah Songhory

For his trust in me and his endless supports

To my Son, Amirhossein

For his patience, love, and for enduring the ups and downs

during the completion of this thesis.

This thesis is dedicated to them.

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I would like to take the opportunity to express my admiration, appreciation and gratitude to Professor. Dr. Mohd Salleh Bin Abu and Professor Dr. Baharuddin Bin Aris for all of their patience, supports and guidance during my journey of this research.

ABSTRACT

The purpose of this research is to explore learners' experiences in their learning while studying with background music in e-learning environment within a variety of academic fields. It aims to find a framework for learners who use background music in asynchronous learning environment. Various sources have been used for data collection such as semi-structured in-depth interviews, and open-ended questionnaire with 15 participants from diverse academic fields. Interpretive Phenomenological Analysis (IPA) was used for analyzing the data. IPA is an approach to psychological qualitative research with an idiographic focus that offers insights into how a given person, in a given context, makes sense of a given phenomenon. Conclusively, four main themes were categorized including activity, meaning, influential people, and research participant's recommendation. Through axial coding and selective coding, three main factors have been discovered and identified, which are learner, social environment, and metacognitive process that assumed as the affecting factors around the recognized phenomenon. In conclusion this study developed a new framework for learners who are utilizing background music while studying in asynchronous learning environment as well as a definition of background music from the participant's point of view. The definition of background music is any favorable audio elements rooted in learner's culture and experiences and change their moods and emotions. The framework can be used to enhance learning through background music.

ABSTRAK

Kajian ini bertujuan mengkaji pengalaman pelajar sewaktu mereka belajar sambil mendengar muzik dengan persekitaran e-pembelajaran dalam pelbagai bidang akademik, yang bertujuan mendapatkan satu kerangka berhubung pelajar yang menggunakan muzik latar dan persekitaran pembelajaran asinkroni. Pelbagai sumber telah digunakan bagi mengumpul data iaitu, temu bual separa struktur mendalam dan soal selidik terbuka terhadap 15 orang peserta kajian daripada pelbagai bidang akademik. *Interpretive Phenomenological Analysis* (IPA) telah digunakan bagi menganalisis data. IPA merupakan pendekatan kajian kualitatif psikologikal yang berfokus kepada idiografik tentang bagaimana seseorang yang berada dalam konteks tertentu menjadikan sesuatu fenomena itu bermakna. Oleh itu, terdapat empat tema utama telah dikategorikan iaitu aktiviti, makna, orang-orang yang berpengaruh dan cadangan daripada responden kajian. Menerusi pengekodan axial dan selektif yang dijalankan, tiga faktor terpenting telah ditemui dan dikenal pasti iaitu pelajar, persekitaran sosial dan kesedaran metakognitif yang dianggap sebagai faktor yang memberi kesan kepada fenomena tersebut. Kesimpulannya, satu kerangka baharu telah dibina berhubung pelajar yang menggunakan muzik latar dalam persekitaran pembelajaran asinkroni dan definisi bagi muzik latar dari perspektif pelajar. Definisi muzik latar ialah mana-mana elemen audio yang menjadi pilihan dan berakar dalam budaya dan pengalaman pelajar serta berupaya mengubah suasana dan emosi mereka. Kerangka tersebut boleh digunakan untuk meningkatkan pembelajaran menerusi muzik latar.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ALN	-	Asynchronous Learning Network
APA	-	American Psychology Association
BM	-	Background Music
bpm	-	Beats per minute
CBT	-	Computer Based Training
CEO	-	Chief executive officer
CMC	-	Computer Mediated Communication
IBT	-	Internet Based Training
ICT	-	Information and Communication Technology
TEL	-	Technology Enhance Learning
MRI	-	Magnetic Resonance Imaging.
P, N	-	Participant no N

LIST OF APPENDIXES

CHAPTER 1

INTRODUCTION

1.1 Introduction

E-learning consists of a combination of multimedia elements, such as text, photographs, graphic images, video, and audio, (like; narration, sounds and music), motion graphics, animation as well as hypermedia (Najjar, 1996; Kleen & Shell, 1994). E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material (Stockley, 2003).

The three primary audio elements in educational technology are speech, music, and sound effects. Among these e-learning elements, audio can convey information, capture attention and transfer emotions.

Adding audio elements to courses is grabbing the attention of the users (Crowther, 2012; Anderson *et al.*, 2000). According to these researchers, music affects learners' level of energy as well as their emotions. Learners listen to music to create desired moods to make themselves happy, to dance, to meditate, to relax, to remember precious moments and memories, and so on. There are some learners who listen to music while they are studying, and this music is known as Background Music (BM). Background music is one of the e-learning sound elements, which influences academic performances and academic skills.

In academic area a wide-range of abilities have been studied, like the influence of background music on mathematics learning (Vaughn, 2009; Johnson & Edelson, 2003), solving problems (Howard, 2000), reading, writing, recognizing visual or auditory material, memorization (Anderson, 2004; Schellenberg, 2005), reading texts, learning verbal information like, vocabulary, decision making or stressful task (Hirokawa & Ohira, 2003; Crawford & Strapp, 1994; Furnham & Allas, 1999; Paquette, K. & Rieg, S. 2008). Among sound elements, each has a special effect on human body and mind, the qualities of pitch, loudness, tone, and pace of background music can set the diverse mood and pace, release stress, mask the environment, motivate the learner and help in retaining information. Music is capable to stimulate prior knowledge, catch learner's attention, play a role as a rapid means to help recall information, and promote a positive attitude to learning. Conceptually, functionality of the music refers to the usage of music that has been insufficiently theorized by the psychological literature (Gaston, 1968; Merriam, 1964; Cihodariu, 2011), while other researchers have studied the physiological as well as psychological affect on humans (Hargreaves, 1997; Moreno, *et al*., 2011).

Background music is described as any type of music played while the listener is focusing primarily on a duty or activity rather than listening to the music (Radocy & Boyle, 1988). Music transfers emotion and pace to a visual multimedia presentation. Music can make a change in the way that learners identify visual information within a rhythm that brings to mind an emotional response like fear, sadness or happiness, (Behne, 1997; Sloboda & O'Neill, 2001; Juslin & Laukka, 2004; Gan & Zillman, 1997).

Some important parts of of e-learning is made with background music. This reveals student's choices as the music is important to youths (North, *et al.,* 2001) and some students prefer to listen to background music while they are studying. Stephenson and Coomey (2001) propose a broad study of effective online learning and teaching besides students' active involvement in the learning procedure results from intentionally organizing learning activities and planning learning resources.

Many researches have been conducted concerning the effect of music on learning. This starts from the manifestation of Mozart effect by some researchers like Alfred Tomatis (Thompson & Andrews, 2000), Rauscher, *et al*., (1993) and replicated by some other researchers like Hetland, (2000) in spatial-temporal reasoning. The rationale about the effect of implementation of music or background music in education is to improve emotional parts, such as mood and arousal (Kim, Schmidt & Emelle, 2008; Lu, Liu & Zhang, 2006), strengthen the mind (Swanwick, 2003; Clarke, *et al.,* 2010; Miles, 2005), enhance the IQ (Schellenberg, 2004; Corrigall, *et al*., 2013), effects on the brain (Schlaug, *et al*., 2005; Jensen, 2008) and to improve learning (Savan, 2009; Scholz, 2011), and motivation (Gold, *et al*., 2005; Jones, 2009). Some researches support this assumption because arousal activates exact parts of the brain (i.e. the amygdale), which in turn are involved in shaping long-term memory storage (Groussard, *et al*., 2010). Bishop and Cates (2001) established the theoretical foundations for use of sound in multimedia instruction. This is a supportive theory for the theory of working memory, initially proposed by Baddeley and Hitch in (1974), which claimed that the brain can process data simultaneously while data is coming from both channels of the ears and eyes.

Although most of the researches, which have done before, were under isolated areas and laboratory conditions (Schellenberg, 2004; Salmon, 2010), many other variables couldn't be controlled such as stress or individual condition. Still finding the balance point between the BM and learning depends on more learners' characteristics and their expectation of the e-learning environment which enhances their learning. Hence, this research attempted to determine the expectations of the learners from e-learning which are supposed to empower their learning by using BM and to see in what extent they prefer to add or blend background music to this technology to enhance their learning environment.

1.2 Background of the problem

Gradually, the attention of higher education has shifted more towards outcomes of the educational systems like; how well students learn, than structures of

the lessons and teaching techniques. One of the initial discussion factors in higher education is about “student success.” With increased development in technology and learning areas the efforts on improving learning, teaching and assessment through the usage of technology become more stylish, and the research’s areas shifted to more detailed environment. While student success in learning is outlined in different ways, most explanations still show the notion of insistence to complete the student’s program (Berge, Z. L., & Huang, Y. P. 2004).

Traditional education practices strongly emphasise more on using memorizing techniques with the emphasis on language and mathematic subjects. This method does not allow learners to improve their life skills and enhance their learning abilities which they need for their life success. Students could neither understand themselves as learners or what is happening to them or why they cannot produce adequate results during their years of study. As a consequence their self-esteem and motivation are reduced dramatically and finally their minds for lifelong learning are lost. The results could be harmful for the society and could drag them in crime rates, drugs, unemployment, alcoholism, child abuse, and violence. This indicates that an society is rooted in poor education and low self-esteem (Prashing. B, 2005).

Most people's minds knowledge acquisition seems to stop when they leave school thus it is no surprise that lifelong learning is usually not part of all of their mind-set. Yet some people appreciate the learning experience that they achieved inside their real life over the years. They usually get better at those skills and even enjoy it; however as soon as they had to go back to traditional training situation, formal learning or studying they immediately develop negative feelings, the same feeling they experienced through their school learning like; anxiety, frustration boredom, stress, decreased motivation.

The main function of learner’s brain is to learn and they are capable to increase their skills and knowledge, yet given the amazing brain power for learning as well as studying and information intake should actually be fun, easy, without stress and should have long lasting effect. Why do so many people have learning

difficulties, a poor memory, concentration problems and find information intake and skills acquisitions very stressful at times? The key to successful learning and working is knowing one unique personal learning or working style which accepts one's strengths as well as ones weaknesses and matching personal preferences as much as possible in any learning study or work situation.

People of all ages can then learn virtually anything if allowed to do so through their own unique style through their own personal dissatisfaction. They are more capable of consistent performance if they're working conditions suit their individual style preferences. Research over the past 25 years has shown that human beings can learn any subject matter successfully when the instructional methods used are matched with their individual learning preferences, when human diversity is taken into account in their learning process in training situations, or in skills acquisitions the results are always positive. The learner experiences pleasure, gains a sense of accomplishment without frustration and stress experiences, increased motivation and is always in control of the learning process (Prashing, B. 2005).

The relationship between the four factors of this research that investigating the effect of "background music" on the "asynchronous leaning" of the "e-learning" users, "learners", is shown in the Figure 1.1. Accordingly, the background of the problem of this study is delivered under the following four section. And each section look into the relation of each two factors. The background is starting from the main factor; 1) The learner, who uses background music while is studying 2) The second section is about the learning through asynchronous learning, it means how learner's study with asynchronous learning 3) The third section is about the individual differences in learning styles among the asynchronous learners of the e-learning programs 4) And finally the forth section section is about the aim of this research that how the techniques of the users could be considered to enhance e-learning program.

1.2.1 Learning with Music

The first link among the mentioned four factors of this study is considered between Many researches have been done in order to discover the effects of music on learning (Savan, 2009; Scholz, 2011; De Groot, 2006; Hallam, *et al*., 2002), and some evidence also exists concerning learners who listen to music while doing their assignments (Kotsopoulou *et al*., 1977; Batt & Denora, 2005). As the majority of previous research has found that vocal music (music with lyrics) has a detrimental effect on the verbal recall of the learners, other research results have indicated that instrumental music has a positive effect on learning. Moreover, some researchers in other areas have revealed the possibility of a connection between cognitive abilities and exposure to music (Madsen, 1987; Radocy & Boyle, 1988).

Some explanations about this new generation is the environment that they grow up in with technology and a musical environment with TV, radio, ipod and PCs. Music sound surrounds them in their daily lives. Hence, many psychologists have become progressively concerned in studying the effects of music on diverse areas of learners' behaviors and activities and there is a growing area of study related to this field. According to Brewer (2005), "Beside emotional patterns, music can calm learners physically and mentally to achieve a state of profound focus and concentration in a way that large amounts of knowledge can be practiced and learned. However, although music develops some individuals learning in some way, it may be a kind of distraction for other learners. Currently, in fact, it is hard to find a completely quiet place; the sounds of manufacturing or other artificial and even natural environmental noises ruin nearly every aspect of daily life. Thus music effectively hides or covers up some of these distractions, as well as enhances the learning process.

Until now most researches were undertaken under the systematic laboratory condition. This laboratory condition doesn't show the real choice of the users such as the type of the BM selected by the researcher, not by participant. Thus, in spite of being stimulating or calming, it is like an overwhelming sound, and makes it impossible for the accurate interpretation of findings. Moreover, considering some

factors like the individual's characteristics (ability, age, musical expertise, personality, metacognitive strategies, how familiar they are with the music, the frequency of the BM, the background of their experiences in listening to music, and their culture). This is in addition to the nature of the music such as volume, relaxing or stimulating, complexity, type, like or dislike of the music, familiarity, or if the music was self-selected not being considered. These systematic laboratory measurements were testing students' performance while they were asked to complete a task while background music was playing. Each of the mentioned studies was undertaken in the laboratory or isolation condition and no development purpose or overall trend was considered (Kotsopoulou & Hallam, 2004). In general, the participants of these researches were not given the opportunity for selecting, controlling or evaluating the music, they were not asked if they were aware of the influence of music on their studying or their behavior, and if they normally listened to music at the time that they were studying.

1.2.2 Learning through asynchronous-learning

Currently, the new challenge would be to focus on how it would be possible to generate more interest for asynchronous learners in terms of more enjoyment in learning. Kim (2009), done a research about the factors that affect adult learners in self-directed e-learning. He claimed that not more than a half of the adult students complete their e-learning courses. He believed that the first factor that hinder their motivation is lack of interaction, whether this interaction between the learner and adjusted program, or between learner, and other human being. He believed that asynchronous learners need something more than just clicking the buttons. Kim, (2009) also done a phenomenological research about the motivational challenges that the adult e-learners faced with in self directed e-learning for finding how is it possible to create a motivating online environment. He found that courses with the positive learning climate, which gave the control over the pace and sequence of instruction was found motivating.

Therefore, Background music in this study was considered as the motivational aspect, which rooted in the learners' life experiences and they use it in order to manage and shape their learning process. This study is looking at this process through the self-directed learning theory which mentioning how learners diagnose their learning needs according to their recognition of their habits, physically and mentally, and how they find a personalized solution for it. These solutions could be identified as learners' learning factors. And these factors could be helpful for the instructional requirements which could be useful for the e-learning designers.

Many studies have proven the effectiveness of self-paced electronic instruction (Kim, 2009). However, he emphasized that the high "drop-out" rates have caused concern among e-learning designers. Studies of adult learner attribution in distance education suggest that the major causes are lack of time and lack of motivation. Although instructional designers do not control the adult learner's time, they can have some influence over motivation. Therefore, a logical conclusion is that improving adult learner motivation would also address the issue of adult learner attrition in e-Learning.

From another point of view, with the rapid growth in distance education highly motivated self-study students are in greater demand. Therefore, this research is conducted to find out how asynchronous learners manage their study time with BM. How do they define their learning styles and how do they manage it, in order to find a framework out of the learners' techniques and methods?

1.2.3 Effective Study Method

From the multimedia cognitive theory approach, multimedia learning and the principles of instructional design have been influenced by educational technology as well as learning theories. Mayer (2002) have formulated five major principles of instructional design according to cognitive theory, which is referring to the individual differences in learning styles and strategies. According to individual differences principle, the individual diversity in learning group is dependent on the

degree of contiguity effects and multimedia effects. in addition to split-attention effect. The issues of diversity in learning is become a core challenge for training among teachers at the present time.

Based on a 2011 survey of 2,500 colleges and universities in US, 65% responded that online education was a critical component of their long-term strategic plan (Allen & Seaman, 2011). These online learning environments allow students the flexibility to enroll in courses without being physically present on the college campus. They stated that approximately one in three college students enrolls in at least one online class (Allen & Seaman, 2011). These courses can be delivered through synchronous or asynchronous methods.

Van Buren (2003) stated that more than 62% of all learning technology initiatives fail to meet expectation. They said that these figures are discouraging, and e-learning leaders need to be concerned about measures to ensure the success of an e-learning program (Referenced by Eklund, 2004). They recommend that concentration on the specific problem which must be solved would lead to new design efforts. They believed that the more knowledge about how people learn, the better e-learning instructional design would be planned.

1.2.4 E-learning Development

Many researches have been done in the last decade in order to find a better instructional design of learning to determine under which conditions learners could benefit the most from multimedia learning materials (Mayer, 2001). The rapid development of delivery and practice of e-learning has occurred and now they are in a strong place of technological environment along with the support and advisory service. However, the new challenges are increasing in a rapidly changing technological environment, a world in which students expect to be able to personalize and choose the devices and their own learning and working environments. At present, many flexible and popular external services challenging with educational system needs and institutional assistances to identify this new

condition and find a way to work with it, instead of resist it. Mayer (2001) also mentioned that instructional message in multimedia learning must be designed according to the functions of the human mind. Norman (1993) pointed out that technology was concerned with fitting people's body, while today it must fit people's minds. Hence it is needed to understand and experiment with ways in which technology interacts with people's minds and human cognition (John, P., & Wheeler, S., 2008).

Effective studying requires the creation of an effective study environment that fosters learning. A perfect study environment differs from person to person. The numbers of diverse studies mentioned that the number of the diverse study environments are the same as the number of different learners. According to some reports, some learners are not able to study in really quiet environment, because any sound may ruin their concentration. In contrast, some other students prefer lively and busy environment. In other words, what is conducive to one is not necessarily encouraging to another. Some others like to have TV as the background sound, maybe not exactly in front of them, as they use the TV sound to cover other noises. Still, there are others who believe that the TV is distracting for them. Thus giving learners a chance to choose and create their learning environment even in e-learning might not be far-fetched for an educational system that was offered by Bower (2001).

Finally considering the aim of this research, which is trying to make a reasonable structure among learners, background music and e-learning environment, through asynchronous-learning is shown in Figure 1.1.

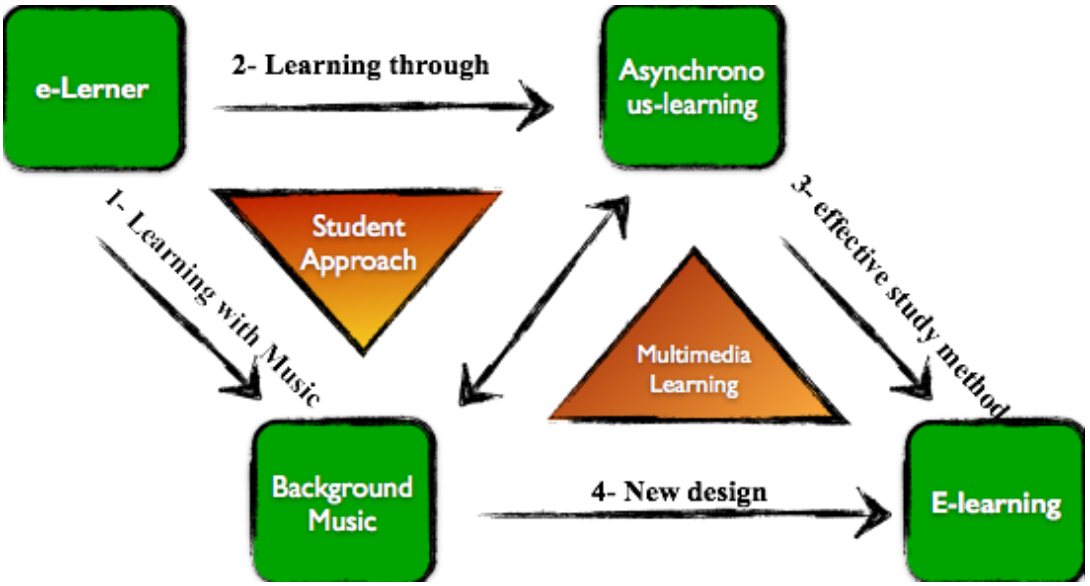

Figure 1.1 Background of the Problem

1.3 Statement of the Problem

With the ever-increasing integration of e-learning into university courses, there is strong need for practical guidelines and recommendations to facilitate the development and delivery of pedagogically effective e-learning environments. (Siragusa, *et al.,* 2007). The literature investigated by Siragusa and Dixon (2005) suggest that there are gaps between the bodies of knowledge relating to learning theories, instructional design principles and student learning in higher education, (Siragusa & Dixon, 2005). Bates (2000) warned that the main challenge for the management of educational technologies is to develop a system that promotes innovation and quick responses to accommodate the needs of students and teachers.

According to Dunn and Kenneth (1978), human beings begin to concentrate on, absorb, process and retain new and difficult information through learning styles. Similarly working style can be defined as the way people in the workforce usually absorb and retain new formation, think or concentrate, generally do their daily work and effectively solve problems. If people are allowed to learn and work through their own style and find suitable environment for their activities there is no limit to what human beings can achieve and they can actually do it with much less stress and much

more joy (Milgram & Dunn, 2009). After having investigated why students have learning problems and why many people find it so difficult to keep up their work performance, it is obvious that the secret to success in learning and teaching lies in knowing one's learning style and one's potential and their resulting consequences (Milgram & Dunn, 2009). The huge benefit from all the aspects of self-knowledge could be noticeable not only in areas of learning, teaching and studying, but also in one's personal and professional life.

Actually, some academics have discovered that there is a probable relationship between cognitive abilities and exposure to music (Wolf, 1983; Madsen,1987; Radocy & Boyle, 1988; Mammarella, *et al.,* 2007). Indeed, it seems that more study is needed to enhance learning among all types of learners through technology-based education in order to harmonize and adapt technology in a way that humans learn (Koenig, 2009; Mayer *et al*., 2002). This could lead to better attitudes towards learning in a large group of students who cannot learn well with traditional teaching method. If they are encouraged to learn in their own way and learn how utilizing their unique style they become more interested about learning tasks and can actually become lifelong learners. Everyone also be more effective in their intrapersonal relationships and socializing because understanding human diversity gives them new and better tools for interacting much more successfully. Then human beings know their potential, their unique style and how to go about effective information intake. They could naturally become what they are meant to be: successful lifelong learners in their own style.

Till now most of the research consequences lead to the beneficial effect of music on the human body and mind, and the impact of the musical arts on learning has been proposed many times in different fields. The way that music influences human's integrated sensory system (Van den Stock, *et al.*, 2009), emotions (Hunter & Schellenberg, 2010), attention and motor capacity could back up learning (Patston, Hogg & Tippett, 2007). The evidence suggests that music could reduce stress, influence teenager's brain (Juslin, & Västfjäll, 2008), increase brain activity, add self-discipline (Hallam, 2010), support creativity (Zhu, & Meyers-Levy 2005), and

help students to feel more relaxed and more individualized. However, all types of music in any loudness level could not be beneficial for learning environments.

However, some researchers still believe that the silence environment is the most effective environment for verbal short term memory (Daud, S. & Sudirman, R. 2015). Also some other researches claim that not all types of music are really being beneficial for cognitive learning. Many studies have found that listening to hard rock music has some negative effects on the human mind (Friedman, 1959), while other research investigates whether or not music genre and musical tempo hinder the formation of correct and false memories and they reject this hypothesis (Kamal, A. & Berry, D. 2015). Greenberg and Fisher (1971) conducted a study in which they played some background music to people who were studying, and it was discovered that those subjects who heard loud, hard rock type music did not attempt the test very well. Researchers at Temple University, Wilson and Aiken (1977), found that students who were exposed to rock music (Beatles, Hendrix, Stones, Led Zeppelin) breathed faster, showed reduced skin resistance to stimuli and had an increased heart rate in comparison to those who listened to random background noise. (The Rolling Stones' Honky Tonk Woman generally produced the strongest responses, while the Beatles Sergeant Pepper's Lonely Hearts Club Band reprised the least). A study conducted by Henderson, *et al.,* (1945) discovered that some of the subjects on a paragraph comprehension test were distracted by popular music while hard rock music had adverse effects on vocabulary test scores. Wolf and Weiner (1972) conducted a study that concluded that there were significant differences between the performances of students on arithmetic tests who listened to hard rock music while studying and those who studied in softer music, or in complete silence. These differences were, however, attributed to habituation as most of the test subjects said that they listened to "hard rock" while studying. Differences in mathematic test scores were found with varying levels of music loudness by the study conducted by Wolfe (1983). These mentioned researchers were conducted in the systematic or laboratory conditions. The types of the background music didn't choose by the participants. Also non of them were asked if they like to study with background music?

This is completely obvious that not all types of learners or students like to study with background music. Therefore, this research aims to ask straightly from the participants who are the real users of background music while they are studying. Beside that these participants are using asynchronous learning environment in order to improve their learning. These participants found their ways through their personal experiences and if their techniques were working for them it would be possible that it working for other users too. Therefore, this research aims to find a new framework in e-learning with combination and consideration of different factors in learners and learning process, with BM. Besides making a reasonable way to build this connection between e-learning and background music logical and acceptable.

1.4 Research Objective

i. To identify what is user's definition of BM while they are studying.
ii. To study the role of BM in user's study time from users point of view.
iii. To discover the approaches in which users employ Background Music in e-learning.
iv. To explore the ways that background music assists users' asynchronous learning.
v. To find a possible framework of using Background Music in e-learning.

1.5 Research Questions

i. What is the users' definition of studying with BM?
ii. What are the roles of BM to a learner?
iii. How do users' employ Background Music in e-learning?
iv. How can Background Music assist users' learning in Asynchronous-learning?
v. What is a possible framework for utilizing background music through e-learning?

1.6 Scope of the Research

The scope of this study is to find out how learners use background music for improving or facilitating their learning while they are using asynchronous learning environment. The outcome techniques may help e-learning designers to improve their designs. Thus, many learners considered music in this research as a phenomenon that already exists and they have experience of studying with it. The scope includes taking a look at music as one of the means of asynchronous learning sound element which helping some students learn better by using it as a background sound in asynchronous learning application. This background music may facilitate their learning by reducing the level of stress and helping them to control their emotions. Asynchronous learning conditions is considered because it supposed to help learners to log on to an e-learning environment at any time and any place as far as they have access to their digital devices and do their study. This may help them to have more contribution in their programs.

Phenomenology design could be helpful to investigate through the lived experience of the users finding a new path through self-motivation and self-directed learning in asynchronous learning, so the preliminary data are mainly from questionnaire and observation and through implication of the interview at the end. The participants were selected among the postgraduate students. As it is expected that this level of learners reaches to maturation enough for controlling and managing their learning process. this is considered as the metacognition.

To narrow down this new circumstance the researcher chose background music as the sound elements of e-learning which is also used by many e-learners. This study was conducted according to real people's life experience in using background music through the asynchronous-learning method of e-learning.

The research questions of this research are designed according to the selected phenomenology methodology. These are types of exploratory questions that try to get the information out of real experiences of the participants. These questions were

designed to uncover as many factors as possible about background music experiences while respondents are studying in an e-learning environment.

Thus, the first question sought the features of BM from their particular viewpoint, or the way that they consider it and define it with their own words.

The second question sought to find the real meaning of BM in their daily life including how much BM affected their life both affectively and cognitively in addition to their behavior.

The third question looked for their personal experiences besides their metacognitive skills in managing and controlling BM in order to benefit from the music to improve their study time.

The fourth research question pursued obtaining the participants' probable requests or recommendations in order to build a better environment for their learning process in e-learning setting.

The last question would be about the outcome framework out of this research.

1.7 Theoretical Framework

The development of a scientific method for this research involved an ongoing mixture of inductive and deductive reasoning. Considering the nature of this phenomenological qualitative research which tries to find out through not well known phenomenon, it would be inductive reasoning and the premises or tentative hypothesis which would emerge during the research process. Hence, in this study the researcher is not posing any hypotheses at the beginning of the research. As they emerge from the data with the progression of the research, they could be utilized, discarded, modified or replaced, and new ones formulated.

The angle of this research ‘s point of view is through the student approaches to Learning. This approach intends to explain how students take a different attitude towards learning and how they study depending upon the perceived objectives of the course they are studying. This approach is the result of a clinical study by two educational psychologists who found that when students are given any learning task, they are divided into two different groups: a group with the understanding approach toward learning, and another group who has a reproduction approach (Marton & Säljö, 1976).

In phenomenology it is a framework that investigates the number of qualitatively different ways that people experience something or think about something. Behavior is studied and it assumes that there are always a limited number of these. This research logical approach is shown in Figure 1.2.

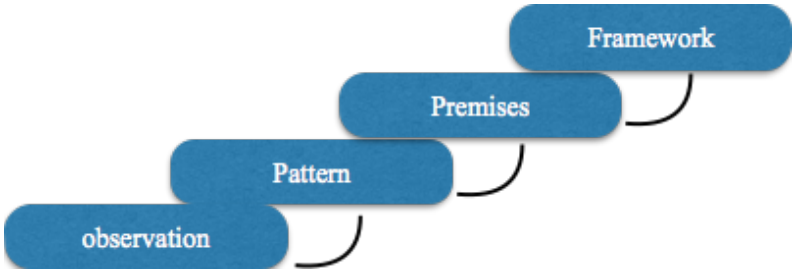

Figure 1.2 Research logical approach

Generally supporting the theories is a scientific method to develop and collect the interrelated concepts, which are different structures around which research can be designed and conducted like a theory but not necessarily so well worked-out. This approach guides a research, determining what things would be measured, and what logical relationships the researcher was looking for.

As a phenomenology study this research began with some pre determined data which is gathered from literature review, and during the research process and data collection it would be determined what general conclusion could logically be driven from those data. Considering some theories as the starting premises in this research would be supporting for the aim of this research. Moreover, the theory does

actually offer a reasonable explanation for the data. As the data is definitely derived under reasonable premises which are assumed to be true, then what else would have to be true if the premises are true would be determined. It begins with the assumption that if some learners use background music it means that they have some previous experiences and researches confirmed it in some ways but not any other ways, or with any type of music, then maybe this phenomenon must be known more specifically in order to search for ways that it could be used in other learning systems, and work from there. Thus, the considered theoretical framework considering the four main concepts of this research is shown as follow in Figure 1.3.

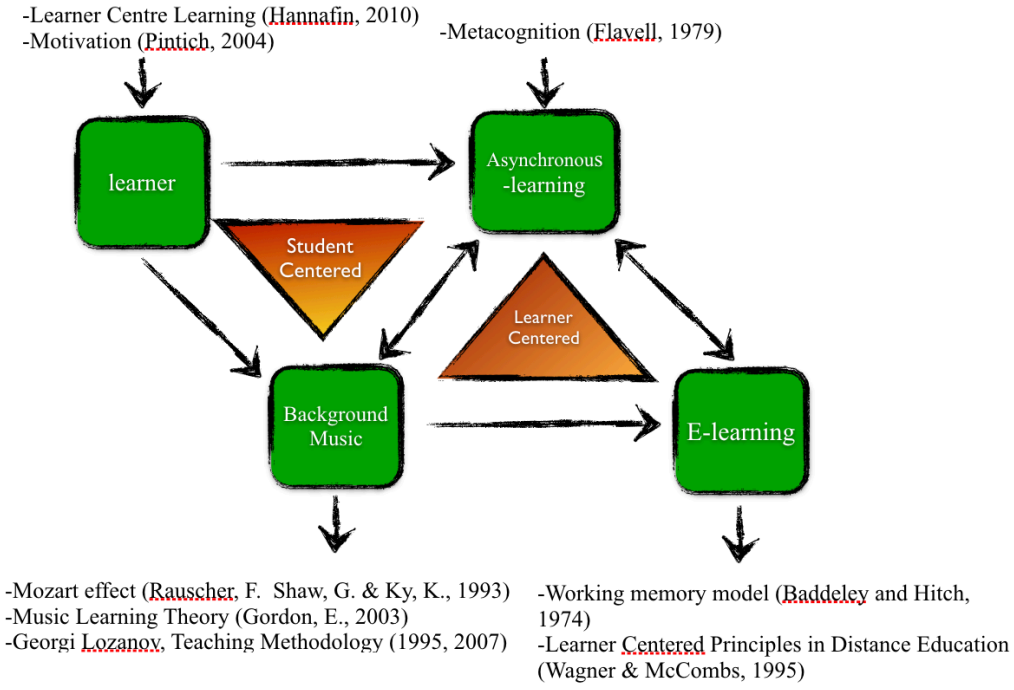

Figure 1.3 Theoretical Frameworks

This research tries to contribute to the theoretical foundations of e-learning by investigating two different approaches to this research: The theories and applications of background music in learning process, as well as the theories and findings of student's experiences beside their expectations' in e-learning. Consequently, by the end of this research the researcher not only expects to find a reasonable relationship among the mentioned concepts, but also to find a new framework to confirm and design a new scenario in e-learning process.

1.7.1 Student Centered Learning

Theorists like John Dewey, Jean Piaget, and Lev Vygotsky, whose collective work focused on how students learn, have motivated to move to student-centered learning. Carl Rogers' ideas about the formation of the individual also contributed to student-centered learning. Rogers, (2009) wrote, "The only learning which significantly influences behavior is self-discovery". Maria, a forerunner of student-centered learning, mentioned that preschool children learn through independent self-directed interaction (Kraft, 1994).

Student-centered learning, also known as learner-centered education, broadly encompasses methods of teaching that shift the focus of instruction from the teacher to the student. In original usage, student-centered learning aims to develop learner autonomy and independence by putting responsibility for the learning path in the hands of students (Hannafin, 2010). The student-centered learning environment has been shown to be effective in higher education. In Europe, it has been defined specifically within Higher Education to represent both a mindset and a culture within a given educational institution and is a learning approach which is broadly related to, and supported by, constructivist theories of learning (Wright, G. 2011).

1.7.2 Learner Centered Principles in Distance Education

Basically distance education consists of usual frameworks regarding learner-centered principles. E-learning integrates the use of communicating multimedia technology to develop individual learning, and the teacher role would be more like a facilitator.

The recent aim of e-learning is to encourage individuals to guide their own knowledge, and take control over their personal learning and education. Promoting adjustment of education, the American Psychological Association (APA) designed a task force to plan new strategies for the enhancement of learning and teaching for

learner-centered environments, with emphasis on the importance of personal learning preferences, which should receive individual attention (Wagner & McCombs, 1995).

1.7.3 Music and learning

Mathews (1806) proposed that operating music could pace and direct the learner from one emotional state to another. Later it was developed by others such as Gatewood (1921), Muzak and Altschuler, (referred to in Davis, 2003), and Pignatiello (1989). Some researchers suggest that listening to the music of Mozart may provoke a short-term development on the performance of some certain types of mental activities, or so called "spatial-temporal reasoning". Iwanaga (1995), McLaughlin (1970) and Sachs (1953) declared that the most relaxed or ordinary pace for music is the average heart rate (80 bpm). This is considered as the golden mean. At present most individuals are profoundly affected ranging from hormonal secretions to blood pressure, emotions and mood by the type of music which they like (Davis, 2003). Therefore, even if a piece of music has been exactly planned to organize something, if the learner doesn't like it the effect of that music would be diminished. Thus learners should use their own favorite recordings.

Musical aptitude and musical intelligence (Gardner, & Moran, 2006) refer explicitly to music learning theory (Gordon, 2003) in the belief that students have diverse abilities for musical achievement while designing their own learning programs. According to this theory, musical aptitude is distributed among the population, with a few people having high or low musical aptitude and the majority having moderate musical aptitude.

1.7.4 Working memory model

The model of working memory proposed by Baddeley and Hitch in 1974, supports the brain's capability to simultaneously process information received from

both eyes and ears. This theory is supporting the possibility of learning through both visual and audio channels.

Cognitive system contains two different channels for receiving and processing data; the auditory or verbal channel, and visual or pictorial channel (Paivio, 1986, Baddeley, 1999). Pictures get into the cognitive system through the eyes and could operate as pictorial exposure in the visual/pictorial channel. Any other sounds like music and spoken words can go through the cognitive system by the ears and may progress as verbal demonstrations in the auditory/verbal channel. Also, Bishop and Cates (2001) claimed the theoretical foundations for use of sound in multimedia instruction. They mentioned that the full integration of sound in technology helps to gain the learners' attention.

1.7.5 Metacognition

This higher-level cognition was given the label metacognition by American developmental psychologist John Flavell (1979). Later, some revolutionary researchers called it a survival tool across cultures (Wright, 2008). Flavell defined metacognition as knowledge about cognition and control of cognition. Metacognition includes thinking about one's own thinking process such as study skills, memory capabilities, and the ability to monitor learning. Metacognitive knowledge is about one's own cognitive processes and understanding of how to regulate those processes to maximize learning.

Metacognition has some components such as metacognitive knowledge and metacognitive regulation. Some types of metacognitive knowledge would include:

i. Personal knowledge (declarative knowledge), which is understanding one's own capabilities

ii. Task knowledge (procedural knowledge), which is how one perceives the difficulty of a task based on the content, length, and type of assignment

iii. Strategic knowledge (conditional knowledge), which is one's own capability for using strategies to learn information. Young children are not particularly good at this.

Similar to metacognitive knowledge, metacognitive regulation or "regulation of cognition" contains three skills that are as follows;

iv. Planning: refers to the appropriate selection of strategies and the correct allocation of resources that affect task performance.

v. Monitoring: refers to one's awareness of comprehension and task performance

vi. Evaluating: refers to appraising the final product of a task and the efficiency at which the task was performed. This can include re-evaluating strategies that were used (Schraw, G., 1998).

Considering rapid development in technology, change in educational and social system in all modern societies and the breakdown of traditional structures it is more important than ever that human beings know what are they and why they do things. They need to know who they are. This is called self-knowledge that plays an important role in this fast changing world. This self-knowledge is a helpful tool which could facilitate the understanding of people in ones communicative (Prashing, 2005). She believed that people with better understanding of their own and their brain’s process can utilize their brain power much better, also they have more fun doing things and above all living in greater harmony in society.

Another domain of metacognition is in cognitive neuroscience. Metacognitive monitoring and control has been viewed as a function of the prefrontal cortex in the brain which receives (monitors) sensory signals from other cortical regions and through feedback loops implements control (Dunlosky, & Bjork, 2008). This domain is playing an important role when some areas are affected by the music waves in the brain.

The weakness of this component is in its assessment. The assessment of metacognition is challenging for a number of reasons: it is a complex structure, cannot be directly observed, it may be confused with both working memory ability and verbal ability, and existing measures are inclined to be narrow in focus and decontextualized form in learning (Emily, 2011)

These shortages can be adequately explained from a metacognitive perspective according to phenomenological design of this research. Asking about the participant's experience in this research enables study of the metacognitive regulation of their strategic knowledge. In addition, the sampling process in which all of the participants are postgraduate students could cover the shortage of strategic knowledge.

1.7.6 Motivation

Significant research in education has disclosed that motivational components have a great impact on student learning (Kizilgunes, *et al,* 2009). It has proposed that student motivation is associated to the use of students' learning tactics, which effect their academic achievements (Pintrich, 2004). Motivation directs the learner's thoughts, feelings and behavior toward the achievement of their goals in studying, and this was repeated by some other researchers too. (Reid, & Petocz, (2008); Seli & Bembo, (2008); Schunk, *et al,* (2012). Greene & Azevedo, (2007); Zimmerman & Schunk, (2001), described that students regulated their learning based on past experiences and current environment. Self-regulated learners are meta-cognitively, behaviorally, motivationally and socially effective participants in the learning process. Such a process involves developing and adjusting knowledge, skills, beliefs, strategies, behaviors and attitudes, and is influenced and identified by the learners.

Pintrich (2004) explained that viewpoint contains motivational, cognitive, affective and contextual social factors, which assumes that students able to:

i. Become dynamic learners in the learning procedures and build their own goals, meaning and strategies. For BM users it is acting as a trigger to start studying.
ii. Regulate, control and monitor specific features of their cognition, motivation, behavior and environment. This is known as metacognition skills and implies the ability to know ones knowledge and to control it for better understanding.
iii. Set goals, standards and conditions to evaluate their learning process. this is the way that users of BM monitor their learning along with.
iv. Self-regulate their motivation, cognition and behavior to meditate the connections between context, person, and performances. Finally they get to know themsleves and choose their BM styles accordingly in order to benefit from its energy.

1.8 Conceptual Framework

The relationship between this research aim and approach, and type of research questions provide guideline on the direction of this study. Accordingly, to facilitate the initial work of data gathering and analysis, a conceptual framework was developed by researcher as shown in Figure 1.4. This conceptual framework provides an interpretative approach to some types of learner's life reality.

This framework is from multidisciplinary bodies of knowledge, a systematic combination of findings from qualitative studies that attempt to generate new interpretations. Thus this framework was formulated by integrating some elements that affect the e-learning through asynchronous-learning method. Users in this research are the learners who are using electronic devices for their studying while listening to background-music

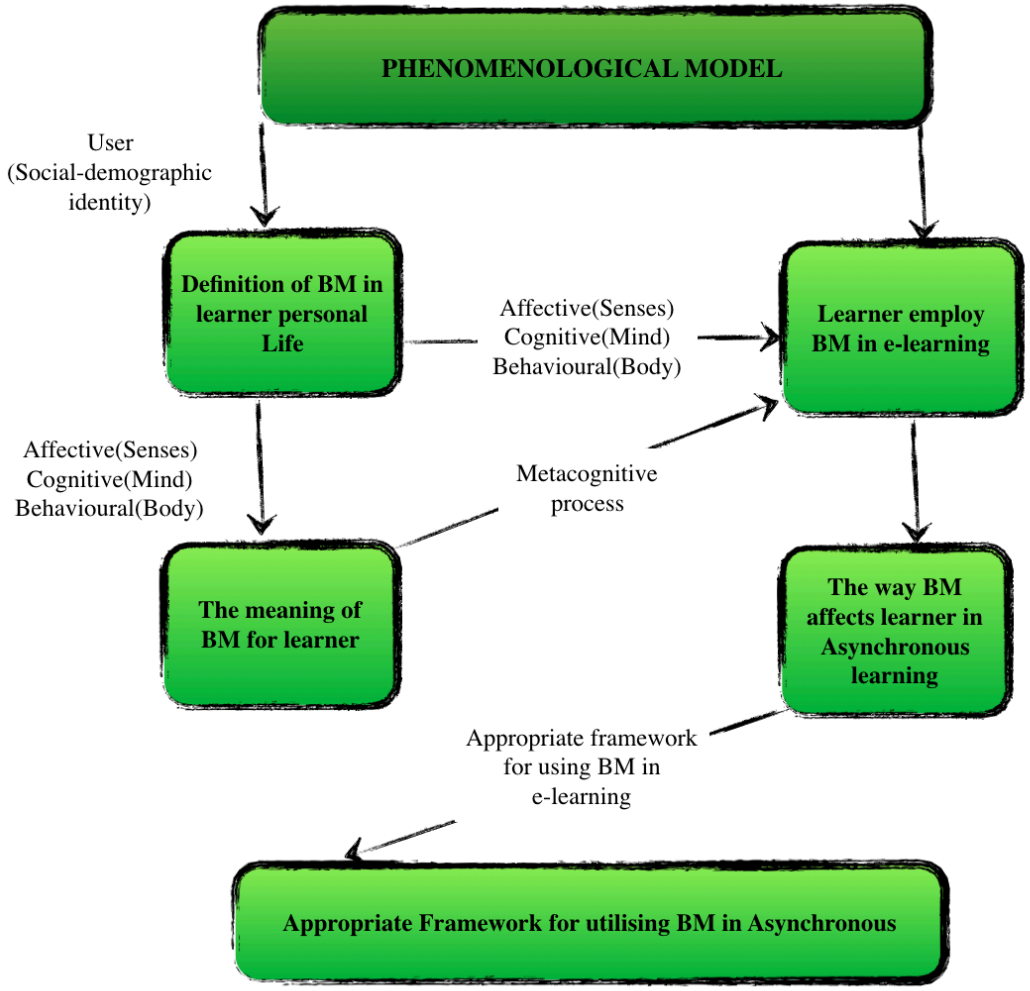

Figure 1.4 Conceptual Framework for factors influencing Asynchronous learning with background music

1.9 Significance of the Study

Identifying student's perceptions, attitudes and demographics related to asynchronous learning and using music as the background sound for enhancing learning in education is noteworthy. A study of this phenomena and scope of this method has not been undertaken in e-learning.

A survey of the learners with this special tendency of using background music in e-learning system is trying to find a way to improve learning among a

special types of learners by realizing the nature of this phenomena and its effect on learning for the individuals who belong to the new generation and need a special environment for their study. Hence this technique could help them as well as other students who need to reduce their stress and those who need something in their environment to increase their level of concentration, which could be a consequence of the reduction in stress. This research also assist school administrators, higher education or the parent's knowledge of their children. This go through methodological frameworks towards the empirical application in using background music in the realm of multimedia instruction in further use in the educational context in higher education.

Teachers who want to be successful in reaching all their students need to know about the individual learning needs as well as learning style differences, not only in their teaching but also for their preparation. When learners see that their individuality is accepted they are encouraged to learn, and when they are allowed to learn in their own way their motivation would increase, and studying become more enjoyable for them. Consequently, their study skills could improve and this positive development can boost their self-esteem.

For parents it is important to accept that their children have different learning styles in a way that their learning needs might vary far from their own. Once the parents begin to understand and support their children's individuality about the learning and homework the interaction and communication between them can change for the better, especially during the teenage years.

1.10 Rationale of the Study

The effective use of e-learning is considered an important part for improving the educational system. Meanwhile, the e-learning designers must consider that the learners' attitudes toward e-learning can have an effect on quality of their learning. Moreover, the effective implementation and management of e-learning requires an understanding of students' perceptions and concerns in e-learning area (Palloff &

Pratt, 2001). Some results from former studies showed the influence of music on learning and other skills like mathematics, speech and language, ability to convey emotions vocally in addition to memory and attention. And, some students prefer to study with music as a motivation or other reasons.

Although so many studies have done about the effect of music on learning few studies have been done to discover how students use it in the asynchronous learning environment to improve their learning. Moreover, how they use BM in asynchronous learning environment and what are their expectations. This study is significant because it adds new research to provide such data for designing and developing a richer e-learning environment among students who likes to study with BM in their own pace. In addition, this research has far-reaching implications. One possible implication of this study is a framework for the learners who likes to use BM while they are studying in asynchronous learning environment. This framework supposes to be helpful for parents, teachers, e-learning designers, educational administrators and some learners who likes to study with BM. The findings of this study could give more recognition of this types of learners to the parents and educational administrators. Besides that, the unfold study techniques of the participants may bring some new idea for other BM users or any other interested asynchronous learner.

1.11 Operational Definition

Following are the definition of terms that is used in this research.

1.11.1 Metacognition

Automatic awareness of learner's own information and ability to comprehend, manipulate and control their own cognitive methods. It consists of metacognitive strategies, knowledge and theories. It contains knowledge about how and when to use specific strategies for learning. There are generally two components

of metacognition: information about cognition, and regulation of cognition. (Flavell, 1979). Considering metacognition in this research represents the two process of the learner's action during studying. It is metacognitive knowledge for them as they know about their needs and it is a metacognitive strategy because they found a way to improve their situation.

1.11.2 E-learning

For this study, e-learning is described as a learning process which is happening throughout the Internet via computer network. This involves online distance education completed over data communication networks. This research is focused mainly on using and conveying of instruction outside the limits of the classroom and the campus.

In this research the e-learner participants are university students who are participating and using the e-learning program of the university, as well as any other e-learning program for their studying. There are two well-known methods in e-learning; synchronous and asynchronous learning. The selected participants in this research are "Asynchronous-learners".

1.11.3 Asynchronous Learning

Generally asynchronous learning is used to explain a form of educational and/or instructional learning that does not happen in the same place or at the same time. It is a form of digital and online learning that students can learn from instructional materials like prerecorded video lessons, any kind of documented information format, and students can complete their assignments at their own pace and these assignments do not necessarily have to be delivered in person or in real time. In an asynchronous learning environment students are able to actively participate in their own learning, giving them the opportunity to interact with their peers, provide peer feedback, and reflect on the status of their personal learning goals

and outcomes (Er *et al*., 2009; Harris *et al*., 2009; Simonson *et al*., 2012). Synchronous and asynchronous learning technologies are the two most common online learning types (Hrastinski, 2008; Er *et al*., 2009; Simonson, Smaldino, Albright, & Zvacek, 2012).

In this research asynchronous learning is a learning environment where learners are using e-learning for their study, using technologies like blogs, wikis, audio and video courses such as YouTube as well as web supported texts books for downloading assignments, regardless of any limitation or order in their own time, place and pace.

1.11.3.1 Asynchronous learning with BM

In an asynchronous learning environment participants are able to actively participate in their own learning process, they have opportunity to easily log in to an e-learning platform from any virtual location at their convenience and then download/share documents and send emails to their peers and/or teachers. Students also have the ability to spend time polishing their assignments and contributions. The asynchronous learners in this study are the types of learners who likes to study while listening to background music. This research is just about to find out how they manage BM with their asynchronous learning study time. Also non of these variables would manipulate by the researcher.

1.11.4 Background Music

Background music is described as any type of music which is played while the listeners' attention is concentrated preliminary on an activity or task instead of listening to the music (Radocy & Boyle, 1988).

The participants of this study defined the characteristics of studying with background music. They defined it in different terms according to their individual experiences. New overall definition rose up accordingly, which made this study definition of studying with background music as "Any favorable audio elements rooted in user's culture and experience which can change their moods and emotions, and users use these capabilities to enhance their task at hand, accelerate their learning or advance their goals".

By "Any favorable audio elements" is meant that BM could consist of any background sound, any religious citation, and sounds of nature or even broadcasting programs like TV or radio sounds.

Having background in their "personal experiences" means that all those audios were chosen purposefully to be the BM in their study times. Each of those audios once touched their feelings for a reason. The users have some memory attached to that audio. Consequently, the types of audios (BM) are very different and it was hard to find any similar patterns even between two learners among all participants.

By "cultural" the difference in the melodies are rooted in a different culture, which still affects their choice in BM selections. Language and religious citations also have a powerful impact on this selection.

By "change their moods and emotions," it means that this audio affects their feelings and users use it or in other words this kind of energy to improve their learning.

1.11.5 Mozart Effect

Researchers declared in the early 1900's that learners implement better spatial abilities after listening to the music of Mozart (Husain, *et al*, 2001). When Frances Rauscher and Gordon Shaw published the outcomes of these researches with

the association between spatial task performance and music in 1993, the "Mozart effect" became a widespread term.

1.11.6 Phenomenology

The construct of the research study is that of a phenomenological qualitative design. Creswell (2012) defined it as a research strategy of inquiry in which the researcher identifies the essence of human experiences about a phenomenon as described by participants".

With this methodology design this research investigate that how the e-learning users utilize BM while they are studying in online learning environment, regardless of the time and place limitation according to their own pace.

1.11.7 Vocal and Instrumental music

Vocal music is a type of music performed by one or more singer's vocal music typically featured sung words called lyrics. In this research the vocal music is the representative of the music with lyrics/words.

An instrumental is a musical composition or recording without lyrics, or singing. In this study the instrumental music is music without lyrics.

1.11.8 Audio Learners

A person who learns through listening and mostly depends on hearing and speaking as a main method of learning are called audio learner (Kostelnik, *et al*., 2004).

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