T.C
**BAHÇEŞEHİR ÜNİVERSİTESİ**
**INSTITUTE OF SCIENCE**
**INFORMATION TECHNOLOGIES**
**IN COMPUTER ENGINEERING**

# ROLE OF COMPUTER ASSISTED ACTIVE LEARNING SYSTEM IN HISTORY OF CIVILIZATION TEACHING

**Master Thesis**

**İLKER YENGİN**

**İSTANBUL, 2008**

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**Supervisor: ASSC. PROF. DR. ADEM KARAHOCA**
**Co supervisor: LECT. DİLEK KARAHOCA**

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The thesis has been approved by the Institute of Science.

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I certify that this thesis meets all the requirements as a thesis for the degree of Master of Science.

Asst. Prof. Dr. Orhan Gökçöl
Program Coordinator

_____

This is to certify that we have read this thesis and that we find it fully adequate in scope, quality and content, as a thesis for the degree of Master of Science.

| Examining Committee Members | Signature |
|---|---|
| Assc. Prof. Dr. Adem KARAHOCA | _____ |
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| Prof. Dr. Nizamettin AYDIN | _____ |

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**February, 2008**

**İlker YENGİN**

# ABSTRACT


ROLE OF COMPUTER ASSISTED ACTIVE LEARNING SYSTEM IN HISTORY OF CIVILIZATION TEACHING

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This empirical study was generated in two phases within the domain of the History of Civilization courses in University of Bahcesehir, Istanbul. The first phase of the study was covered in the first semester where the initial investigation, prototype design and pre-tests were executed. In the second phase of the study, spring semester, the designed computer based learning tools has been implemented into classroom usage whereas a focus study was administered to conduct further analysis. The designed learning system aims to create an active learning environment by enhancing students critical thinking with aid of several computer applications which are designed to change the linear logic based power point presentation lectures in first semester. Instead, the developed computer tools are intending to support an active learning with non linear dynamic cognitive mappings, films applications creating chances for classroom discussion, flash cards where grouping structures within keyword learning and several quiz applications.

After the designed learning system implemented in second semester, the learners' attitudes toward the system was investigated. Accordingly , the goals of the empirical research are to answer how the system is meaningful and enjoyable for the students and how the students achievements changed between pre test (first semester grades with power point based presentation) and post test ( second semester grades with learning system). Additionally the flow concept was examined as a means of being in a experience where a student feels cognitively efficient, motivated, and happy. After analysis of qualitative and quantitative studies the results interpreted that the system has been perceived positively by the students (1) , also motivates students (2) and supports active learning / critical thinking (3) whereas creating a feeling of success and challenge (4) somewhat better than classical lessons such as power point based lessons (5) when used in proper environments (6). Also the learning system improves student

achievements (7) especially for those whose pressure/tension is less (8) and preferred learning style matches (9) with the nature of the lesson.

Within the results it's also argued that the learning system helps flow construct (10) where flow is a significant predictor of perceived competence(11) ,course enjoyment (12), value – usefulness of the course (13) and (14) challenge – learning style match according to nature of course.

According to findings our prototype learning system with support of computer applications implementation discussed to create a learning system which is more meaningful and enjoyable for the students in the context of history of civilization lessons.

**Keywords:** Computer Assisted Learning, Active Learning, Critical Thinking, Flow.

# ÖZET


BİLGİSAYAR DESTEKLİ AKTİF ÖĞRENME SİSTEMİNİN MEDENİYETLER TARİHİ DERSİ ÖĞRENİMİNDEKİ ROLÜ

YENGİN, İlker

Bilgi Teknolojileri
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Bu deneysel çalışma iki aşama olarak Bahçeşehir Üniversitesindeki Medeniyetler Tarihi dersi kapsamında yapılmıştır. Çalışmanın birinci aşaması güz dönemi ders yarı yılında olup , ön araştırmlar, prototip tasarımları ve ön test uygulamaları yapılmıştır. İkinci aşamada ise tasarlanan bilgisayar tabanlı araçlar sınıf içi uygulamaya konmuş ve detaylı analizler yapmak amacıyla da odak grup çalışmaları yapılmıştır.

Tasarlanan eğitim sisteminin amacı ilk dönemde yer alan power point sunusuna dayalı doğrusal bir yolla işlenen dersler yerine aktif bir öğrenme ortamı oluşturmak için öğrencilerin kritik düşünmelerini çeşitli bilgisayar uygulamaları ile desteklemektir.
Bu değişimi sağlamak için hazırlanan bilgisayar araçlarında kullanılan dinamik zihin haritaları, sınıf içi tartışmalara fırsat veren film uygulamaları, anahtar kelime öğreniminin ve grup yapılarının olduğu flash kartlar ve çeşitli sınav uygulamaları ile aktif öğrenme destekelenmektedir.

İkinci dönemde öğrenme sistemi uygulamaya konulduktan sonra kullanıcıların sisteme karşı tutumları incelenmiştir. Bunun için, araştırma hedeflerleri öğrenme sisteminin öğrenciler için ne kadar anlamlı ve zevkli olduğu, sistem ile öğrenci başarılarının ne kadar değiştiğinin (ilk test ve son testler arası değişim) cevaplanması olarak belirlenmiştir. Ayrıca flow (akış) kosepti öğrencilerin zihinsel olarak etkin , motive ve mutlu oldukları deneyimler anlamında incelenmiştir. Çalışmadaki nitel ve nicel analizlerin sonuçları şu şekilde yorumlanabilir : sistem öğrenciler tarafından olumlu yönde algılanmıştır (1), ayrıca sınıf ortamında doğru uygulandığında (6) öğrencileri motive etmekte (2) onların aktif öğrenmeleri / kritik düşünmelerini(3) desteklerken diğer klasik methodlarla, örneğin power point sunusuna dayalı (5), işlenen derslerden birşekilde daha iyi bir başarma ve rekabet duygusu (4) yaratmaktadır. Ayrıca bu öğrenme sistemi özellikle baskı/gerginlik hissi daha az olan (8), tercih edilen öğrenme tarzı ile dersin doğası örtüşen (9), öğrencilerin başarılarını arttırmaktadır(7).

Sonuçlar kapsamında ayrıca öğrenim sisteminin flow oluşumuna yardımcı olduğu (10), flowun algılanan yeterlik (11), dersten zevk alma (12), dersin değerli ve yararlı görülmesi (13) ve dersteki mücadeleye çağırma – öğrenme tarzının dersin doğası ile uyuşması (14) gibi parametrelerin önceden tahmin edebilirliğinde anlamlı olduğu görülmüştür.

Sonuçlar bütün olarak değrlendirildiğinde çalışma kapsamında oluşturulan bu tip bir öğrenme sisteminin öğrencilerin Medeniyetler Tarihi dersinden zevk alarak anlamlı bir öğrenme yapmalarına olanak verdiği yorumu yapılabilinir.

**Anahtar Kelimeler :** Bilgisayar Destekli Öğrenme, Aktif Öğrenme , Eleştirel Düşünme, Akış.

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# LIST OF ABBREVIATIONS

| | | |
|---|---|---|
| Experience Sampling Method | : | ESM |
| Index of Learning Styles | : | ILS |
| Intrinsic Motivation Inventory | : | IMI |
| Power Point | : | PP |
| Subject Matter Expert | : | SME |

# LIST of SYMBOLS

| | | |
|---|---|---|
| Alpha | : | α |
| Degree of fredom | : | df |
| F test | : | F |
| Number | : | n |
| Significance | : | p |
| Standard devietion | : | SD |
| T test | : | t |
| Mean | : | M |

# 1. INTRODUCTION

Instructional activities involving students in doing things and thinking about what they are doing is proposed as active learning. To be actively involved students must engage in such higher order thinking tasks such as analysis, synthesis and evaluation. Use of these techniques in the classroom is vital because of their powerful impact upon students' learning. For example several studies have shown that students prefer strategies promoting active learning to traditional lectures where evaluating students' achievement have demonstrated that many strategies promoting active learning are comparable to lectures in promoting the mastery of content but superior to lectures in promoting the development of students' skills in thinking and writing (Bonwell& Eison,1991). Several strategies promoting active learning have been similarly shown to influence favorably students' attitudes and achievement. Visual based instruction, can provide a helpful focal point for other interactive techniques. Computer assisted learning environment which heavily based on multimedia and hypermedia usage involves different activities like interactivity, entertainment, exploration, communication, knowledge and learning. This kind of environment also provide good opportunity to enhance active learning. In those environment students feel the interactivity, involvement, and motivation in their learning (Chen ,1998 ; Clark ,1994).

In such a computer mediated environment , several studies shows that there are some factors and conditions such as enjoyment, tele-presence, focused attention, engagement and time distortion associated with the concept of flow (Chen,1998); Shin,2006; Novak et al.,2000) that is a psychological state in where an individual feels cognitively efficient, motivated, and happy (Csikszentmihalyi, 1996, p. 277).A person in flow state is intrinsically motivated, interested in challenging tasks at hand, being unconscious while performing the tasks, feeling a unity between consciousness and activities, and oftentimes losing the sense of physical time (Csikszentmihalyi, 1990, pp. 48–66).

In this study a learning system designed and investigated by aiming to create an active learning environment for the students with help of computer tools which enhance students critical thinking . Specifically, the learning system in this study implemented to change the linear logical power point presentation based lectures with the help of developed computer tools which are intending to support an active learning with non linear dynamic cognitive mappings, chances for the learners to provide ideas in classroom discussion on films, grouping structures within keyword learning in flash cards and several quiz applications.

This empirical study was generated in the History of Civilization courses in University of Bahcesehir , Istanbul. The study was taken in two phases. The first phase of the study was covered in the first semester where the initial investigation, prototype design and pre-test were executed. In the spring semester the second phase of the study have been performed. In this second phase the designed computer based learning tools has been implemented into classroom usage whereas a focus study was administered to conduct further analysis. These analysis are proposed to investigate learners' attitudes toward the system within the goals to answer how this system is meaningful and enjoyable for the students and how does the students achievement differentiate between pre test and post test. Additionally the flow experiences of the students are examined.

After analysis of qualitative and quantitative studies the results interpreted that the system has been perceived positively by the students (1) . The system also motivates students (2) and supports active learning / critical thinking (3) whereas creating a feeling of success and challenge (4) for the students somewhat better than classical lessons such as power point based (5) when used in proper environments (6). In addition, the learning system improves student achievements (7) especially for those whose pressure/tension is less (8) and preferred learning style matches (9) with the nature of the lesson.

Within the results it's also argued that the learning system helps flow construct (10) where flow is a significant predictor of perceived competence(11) ,course enjoyment (12), value – usefulness of course (13) and (14) challenge – learning style match

according to nature of course. According to findings our prototype learning environment implementation discussed to create a learning system which is more meaningful and enjoyable for the students in the context of history of civilization lessons.

## 1.1. SIGNIFICANCE OF STUDY

In this study a proposed learning system addressing issues presented above designed and investigated according to learners' attitudes and achievements toward the system.

### 1.1.1. Using Computers To Help Students To Think Rather Than A Delivery Method

The various designed computer tools for this study provide a way of higher thinking for the students. First of all a meta-cognitive tool which supports students preferred learning styles was designed. The tool helps verbal and sequential learners who mostly have similar learning style toward the classical methods. Additionally using this tool the global learners who has non-linear logical thought patterns can learn the concepts by studying non-linear maps and thinking about the relations of concepts within the cognitive maps. In addition, the visual aids in the tool aimed to help students to understand the concepts more easily . Supporting to conceptual learning additional to meta cognitive tool a flash card tool was designed. The flash card tool helps students to learn key concept with their term , definition and visual representation, was developed to help linear thinking models rather than rote learning. Also in class applications with films and quizzes , computers are used to help critical thinking in learning within class discussions . The main purpose of this computer applications is to provide ideas, structures, information, and in some cases motivation to the learning process. These computer applications are only for the delivery usage as tools not the medium by all themselves at all , however when used

with a unity with as in proposed in the learning system they can be considered as a medium and create higher learning skills all together.

### 1.1.2. Using A Student Centered Learning Enhancing Critical Thinking Within Films And Quizzes

The system provides a chance to improve students achievement and the need of critical thinking in the class with film discussions which are essential for the history lessons as indicated previous sections . This learning system supports active participation and creative thinking within usage of computer applications.

### 1.1.3. The Learning System Helps Flow Experiences Of Students

The proposed learning system try to create an environment for students to experience flow in the lessons which means the learning activities creates feeling of happiness for them.

### 1.1.4. Learning System Efficiency And Students Attitudes Investigated

Additionally to the design process in the study according to properties of the system stated above , students attitudes toward such a learning system and their performances within this system has been investigated detailed by using quantitative and qualitative analysis.

# 2. LITERATURE

## 2.1. COMPUTERS AND TECHNOLOGY USAGE IN HISTORY LESSONS

The use of technology merely in history classes is not a magic tool by itself (Cuban, 1983). There are many things has to be considered when using technology in history lessons .The preferences of lecturer to use of technology and their beliefs about using it in lessons plays an important role (Doppen,2004). For example historians teach larger courses than other disciplines and make less use of technology in their classes (Townsend,2006). Further, the right use of technology is an important issue (Kelly,2001). Because technology can help enhance teaching and learning if only they are used properly. Proper use of technology in history lessons can be achieved through proper identification on the best way the technology can be applied (Stephens, 2005; Lyons, 2004).

On the other hand technology can be beneficial for both students and teachers. Teaching history lessons with using technology creates many new opportunities for the teachers and students. The use of computers into classroom changes the concept of a history course from textbook reading to authentic interpretation of historical material (Kozna & Johnston, 1991). There are various examples of studies discussing several technology usages in history classes (Stephens , 2005; Kornblith, 2003 ; Yang ,2003 ; Trentin,2000; Dollinger ,2000). Technology ;such as internet; can be used merely as a source of information for the history lessons (Street, 2007). In addition, the technological tools can be use as the part of the curriculum in history lessons. For example the use of technology can help students to have a sense of history as a process shaped by individuals and communities in an online format (Thorp,2005) or can be used as a communication tool such as weblogs where teachers can be interactive by posing questions and ask students to respond (Risinger,2006). Also technology can be a good opportunity to have students take their own responsibilities in their learning progress . Technological tools ;such as

web-based tools; can be used for this purpose in history learning, too (Ferster, Hammond, & Bull, 2006). Educational technology makes it possible to provide students with innovative ways to understand complex problems in history (Stephens , 2005). Also in specific occasions using the computer in a history lessons or social studies helps responding various learning styles of students (Dils,1999).

## 2.2. COMPUTERS IN LEARNING

In one of his article Clark (1964) discuss the usage of computers in education. First, he implies that :

*". . .media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition. (Clark, 1983, p. 445)."*

Therefore usage of computer as a delivery system with a replacement of old system without any methodology changes is little or no effect on improving learning. On the other hand in their article B. Hokanson and S. Hooper(2000) argue that the computer usages should be seen as a as a medium rather than a tool:

*" ... Conceptualizing computing as a medium rather than a tool changes our notions of how computers should be used in education. This approach shifts the focus from representative use (i.e. as a delivery system) to generative use for construction. Also if we view computing as a medium, a condition for cognitive growth, we will change our understanding of how computers can be used (Kay, 1990) ".*

Finally B. Hokanson and S. Hooper (2000) conclude about using of computer tools in learning more meaningfully as :

*"...our present school system generally values linear-logical thought patterns over other learning styles. How will schools react to students who possess well-*

*developed computer skills and non-linear logical thought patterns? Linear thought and linear logic are based on a directed, sequential organization of text that may be supplanted (or supplemented) by a dynamic non-linear system. Learners should provide ideas, structures, information, and in some cases motivation to the learning process."*

## 2.3. USE OF POWER POINT IN THE ( HISTORY) LESSONS

The studies showed that students prefer power point presentations more than overhead transparencies ( Harknett & Cobane, 1997; Blokzijl & Naeff, 2004). However the students performance increases with power point based lecturers are not very significant according to the relevant studies (Lowry , 1999 ; Bartsch & Cobern , 2003 ; Szabo & Hastings, 2000 ; Amare, 2006) . The effectiveness of technology usage in classroom depends on lecturer attitudes toward technology and teaching style so using power point does not ensure the success (Hacifazlioglu, Sacli & Yengin ,2006). Also misusing of these tools can cause the loss of understanding in lectures. For example a rigidly structured PP slides filled with too much text to presenters in dark rooms , the presentation graphics often alienate audiences and detract from rather than enhance messages (Gareis,2007). Because of not ensuring the success of PP usage in class without a proper teaching style ; the usage of PP in the history classes can have very little or no effect in lessons.

## 2.4. ACTIVE LEARNING AND CRITICAL THINKING WITH FILM DISCUSSION IN HISTORY LESSONS

On the other hand traditional lectures ;which dominated classrooms for much of the 20th century (Winn & Snyder, 1996) ; are using mostly teacher centered approaches (McKeachie, 1954 ; Anderson, 1959) where the teacher set the goals, where there was little verbal participation by the group and much by the teacher ,where individual work and teacher evaluation were promoted, and where the teacher made most of the

decisions. In addition, these kind of traditional lectures are mostly based on rote learning rather than critical thinking, has no benefit for the students, and could cause students to withdraw (Yang, 2007). Additionally teaching students how to think is a realization we have not achieved very much (Gibb et al., 2002).Therefore such a higher thinking abilities of students such as critical thinking and analysis must be related in the history lessons, too (Reed, 1998).

In fact history lectures are reputedly dull; they are repeatedly cited as a root cause of student somnolence and unrest. In contrast, cinema, sound, and television have come a long way toward filling up our daily lives with striking images (Raack , Smith, & Raack , 1973). Hence, usage of films in the history lessons can be more colorful for the students in history lessons if only we can create learning with some higher learning skills such as critical thinking within classroom context. According to Sexias (1993) ,

*"... teachers can discuss popular film in class. Also it is possible to say that most students discussing of these films outside of the of school. In studying history in school, historical characters often fail to "come to life." The problem with young students viewing of engaging historical film is related. Students are likely to be swept quite completely into the "historical" world as presented on film, but unlikely to exercise critical judgments of the filmic depiction of the past. The first problem in the classroom is thus to invite the student (imaginatively) into the circumstances of the past. The problem with studying popular film is to get the student to step out of the filmic depiction of the past.* "

Also many of students understandings of the history of war and peace, gender relations, intercultural relations, and national development are affected by presentations in the popular media (Matthew, Levstik, & Levstik, 1991). This can be also problematic for the student views of the history. Therefore, the study of popular films in the classroom is crucial for the students to understand history correctly

within its context. Also studying films and analyzing their topics according to real historical facts can enhance critical thinking. To create an environment a student centered approach can be implemented to prevent problems indicated above such as rote learning. A student-centered approach is more likely a teaching methodology and instructional activities involving students in doing things and thinking about what they are doing. The learner-centered instruction attempts to engage students in activities that support knowledge construction through media use, but which are not designed to control learning. In this model, learners use media to investigate and to think. This type of learning activity can lead to it being described as active learning (Bonwell & Eison ,1991).

Some of the strategies promoting active learning in the classroom are as follows:

- Students are involved in more than listening.
- Less emphasis is placed on transmitting information and more on developing
- students' skills.
- Students are engaged in activities (e.g., reading, discussing, and writing).
- Greater emphasis is placed on students' exploration of their own attitudes and values (Ragains, 1995).

Also the key principles of active learning suggested by (Barnes, 1989) are as follows:

- purposive: the task is seen by the learner as relevant to his/her concerns;
- reflective: the learner reflects on the meaning of what is being learnt;
- negotiated: the teacher and learner negotiate the goals and methods of learning;
- critical: the learner appreciates different ways of interpreting learning;
- complex: the learning tasks reflect real life complexity;
- situation-driven: the learning tasks arise out of the needs of the situation;
- engaged: the learning activities reflect real life tasks.

## 2.5. CONCEPT /COGNITIVE MAPS AND META COGNITION

University students have difficulties when creating relations between ideas, knowledge and integrating the information with their prior information (Novak & Gowin, ,1984). Concept mapping helps learning by serving a kind of template to organize and structure knowledge (Novak & Cañas , 2007). A concept map is a diagram showing the relationships among different concepts.

A well designed concept map shows the structure of the content at the first glance with a visual presentation that fosters learning of complex information more quickly rather than complex and heavy information loaded presentation of words and verbal contexts. Because of the ease of information retrieval (Novak & Iuli, 1991), concept maps are very useful for educational purposes. Studies, suggests that concept maps are helpful in fields that require creativity, complex structure design, learning assessment, brainstorming and communication of complex ideas (Plotnick , 1997). Concept maps can be used as a meta-cognitive tool that helps to organize ideas. The use of concept map approach can also help the users to understand the thought process of the subject matter experts (SME) who design the map. Also there is the possibility of employing concept maps as advance organizers (Novak & Gowin, 1984). An advance organizer is a global view of the material that is to be learned (Ausubel, Novak & Hanesian ,1978 ; Ausubel, 1968). Concept maps can be used to create a course description in the spirit of an advance organizer. This approach is essentially different from traditional linear sequencing of topics (Coffey ,2005). A well designed concept map can also help to improve and systemize learning processes of learners and to overcome difficulties in unaccustomed knowledge domains.[1] Presenting these students all of the concepts at once may not be a good solution (Novak & Cañas , 2007)

[1] For instance, engineering students are generally required to use their learning skills to create a thought process and communicate ideas using learning media that are not appropriate for them (Felder ,1988).

## 2.6. LEARNING STYLES

A learning style is a technique that an individual uses to acquire knowledge in a way that is most comfortable to her. Although there is no single perfect theory accepted by researchers for the learning styles (Brumby ,1982) ; implementing a learning style model can be useful in teaching/learning if it matches the learning modes of the students. Felder and Silverman (1998) explains that there are mismatches between the learning styles of engineering students and the traditional teaching styles of engineering professors. In those situations, students get bored and become inattentive in the class. They score lower on tests and get discouraged about the courses, the curriculum or themselves. The types of different learning styles are as follows; sensing and intuitive; visual and auditory; inductive and deductive; active and reflective; and sequential and global. Recently they dropped the deductive dimension, and changed the visual/auditory category to visual/verbal.

Felder (1989 & 1994) states that active learners retain and understand information best by doing something active with it— discussing or applying it or explaining it to others. Reflective learners prefer to think about it quietly first; sensing learners like learning facts, intuitive learners often prefer discovering possibilities and relationships; visual learners remember best what they see—pictures, diagrams, flow charts, time lines, films, and demonstrations and sequential learners tend to gain understanding in linear steps, with each step following logically from the previous one. Global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly.

# 3. METHODOLOGY

## 3.1. THE RESEARCH GOALS

The study investigates learners' attitudes and achievements toward the system. The goals of the empirical research are to answer how this system is meaningful and enjoyable for the students and how the students achievements differentiate between pre test and post test does. Additionally the flow state concept used as a measurement methodology to find how the system and students have a unity.

## 3.2. RESEARCH DESIGN

This empirical study was generated in the History of Civilization courses in the University of Bahcesehir , in Istanbul. The study was taken in two phases. The first phase of the study was covered in the first semester where the initial investigation, prototype design and pre-test were executed. In the spring semester the second phase of the study have been taken. In this phase designed computer applications has been implemented into classroom usage whereas a focus study was administrated to conduct further analysis.

### 3.2.1. Phase I

The first phase of the study was conducted with a sample group of 166 students where the participants are the undergraduates taking the "History of Civilizations "course in Faculty of Engineering at the University of Bahcesehir. The age range was between 18 and 20. The number of female participants was roughly same as males.

Here, the instructor followed a traditional teaching style using PP presentations. She lectured three chapters of the History of Civilization course for 5 weeks using PP slides that just display texts and pictures. After this 5 weeks of classical classroom instruction all participants were asked to respond to the questionnaire and their

responses were guaranteed confidentiality. With the help of this questionnaire , the participants were classified according to their learning styles using the inventory called Index of Learning Styles (ILS) which is extensively used in the literature(Felder 1988). In our study only the visual/verbal and sequential/global dimensions were analyzed since some of the computer tools are designed according to these dimensions . After that the instructor lectured some other three chapters of the course ;which also took 5 weeks ; using PP slides as in previous weeks. Additionally to weekly lectures several tests (weekly quizzes ,midterm and a final exam) have been applied to determine students first semester achievements. After analyzing the students relevant learning styles , a meta cognitive learning tool was developed according to this learning style and the tool analyzed according its usability issues. When the bugs and other problems has been solved according to usability analysis (Karahoca et al., 2007) the tool was introduced into in class usage for the second semester. Prior the start of the class, the students and instructor were trained for using the tool and they were given a week to get used .The tool also integrated into e-learning system of the university for online self usage. Also just before the second phase of this study other computer application were designed additionally to meta cognitive learning tool to enhance active learning in the class.

### 3.2.2. Phase II

The second phase of the study was conducted with a focus group study that was committed with 54 students selected randomly from the previous group of 166 students whose learning styles have been collected within the first phase of the study. The meta cognitive tool and other additional computer applications used by students in or out of the class for another 10 weeks .Then the learners' attitudes toward this computer-assisted learning system were investigated within focus group which took 3 weeks (See Fig. 3.1). The data for this second phase of the study was gathered by using several instruments explained detailed in the following section.

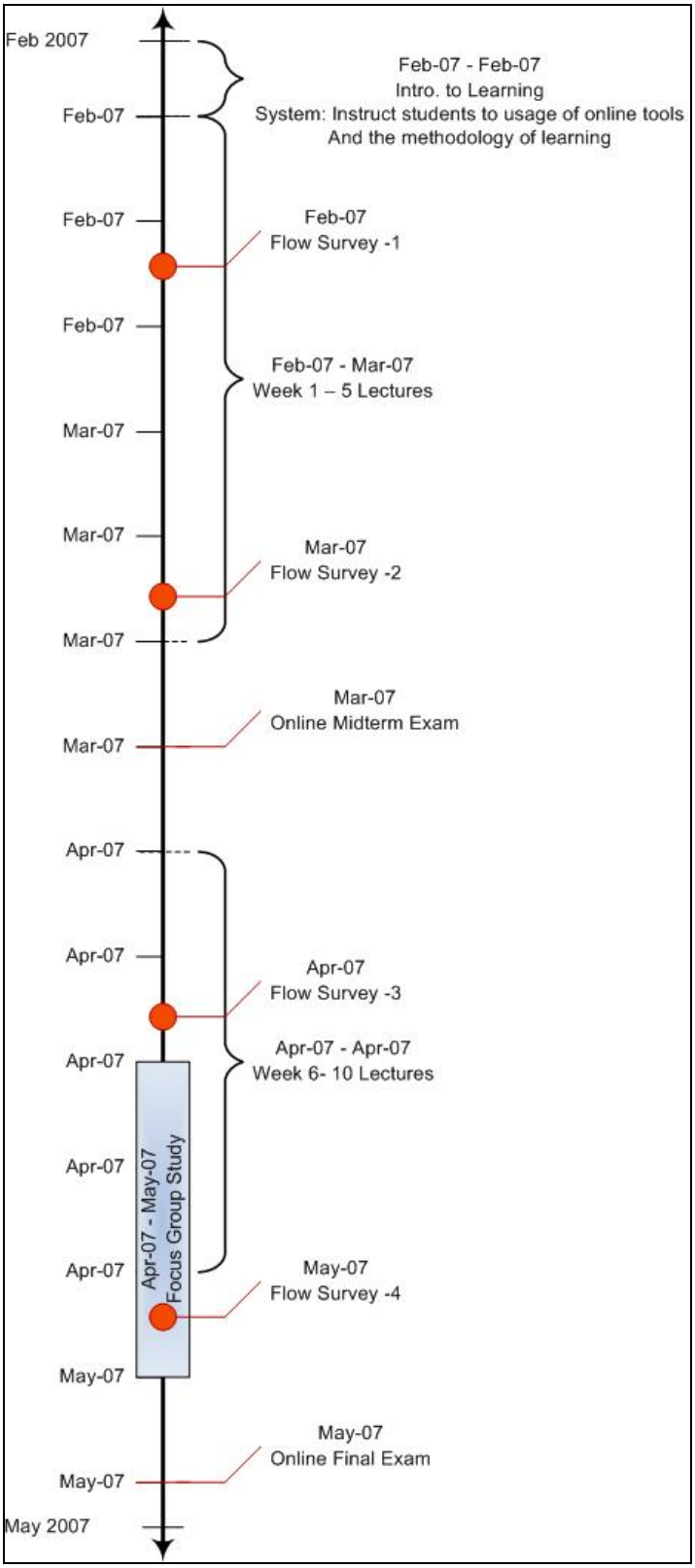


**Figure 3.1 : The Research Schedule for Phase II**

## 3.3. QUANTITATIVE RESEARCH

Through the quantitative method, data from the survey questionnaire were analyzed using descriptive statistics through a statistical package, Statistical Package for Social Sciences (SPSS) version 12.0.

### 3.3.1. Null hypothesis

The null hypotheses tested in the study are as follows:

$H0_1$ : There is no significant differences in the locus of control types of the subjects that are meaningful on the flow experiences.

$H0_2$ : There is no significant differences in the perceived competence of the subjects which are meaningful on the flow experiences.

$H0_3$ : There is no significant differences in interest/ enjoyment perception levels of the subjects which are meaningful on the flow experiences.

$H0_4$ : There is no significant differences in Effort / Importance levels of the subjects which are meaningful on the flow experiences.

$H0_5$ : There is no significant differences in Perceived Choice levels of the subjects which are meaningful on the flow experiences.

$H0_6$ : There is no significant differences in Value - Usefulness perception levels of the subjects which are meaningful on the flow experiences.

$H0_7$ : There is no significant differences in Pressure-Tension levels of the subjects which are meaningful on the flow experiences.

$H0_8$: There is no significant differences in Vis/Verb learner styles of the subjects which are meaningful on the flow experiences

$H0_9$ There is no significant differences in Seq/Glo learner styles of the subjects which are meaningful on the flow experiences

$H0_{10}$ : There is no significant differences in first semester grades and s second semester grades .

$H0_{11}$ : There is no significant differences in the students success as a means of GPA in second semester of the subjects which are meaningful on the flow experiences.

$H0_{12}$ : There is no significant differences in Pressure/Tension and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{12}.1$: The students who have less pressure / tension are those who also has an increase their grades.

$H0_{12}.2$: The students who have same pressure / tension are those who also has an decrease in their grades.

$H0_{12}.3$: The students who have more pressure / tension are those who also has an no change in their grades.

$H0_{13}$ : There is no significant differences in SEQ/GLO learning style scores and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{13}.1$: The students who have more global learning style tendency in their scores are those who also has an increase their grades.

$H0_{13}.2$: The students who have more global learning style tendency in their scores are those who also has an decrease their grades.

$H0_{13}$.3: The students who have more global learning style tendency in their scores are those who also has an no change in their grades.

$H0_{14}$ : There is no significant differences in locus of control and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{15}$ : There is no significant differences in Perceived Competence and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{16}$ : There is no significant differences in Interest/Enjoyment and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{17}$ : There is no significant differences in Effort/Importance and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{18}$ : There is no significant differences in Perceived Choice and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{19}$: There is no significant differences in Value Usefulness and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{20}$ : There is no significant differences in Visual / Verbal learning style preference and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{21}$ : There is no significant differences in overall flow experiences mean and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

$H0_{22}$: The learning system can not provide an enviroenment flow construct of students .

### 3.3.2. Instrumentation

**Index of Learning Styles**

The participants completed a questionnaire so they were classified according to the Index of Learning Styles (ILS) which is extensively used in the literature (Felder, 1988). The instrument was developed by Richard M. Felder and Barbara A. Soloman and identifies four dimensions of learning styles: active/reflective, sensing/intuitive, visual/verbal, and sequential/global. The reliability and validity of the ILS has been tested in several studies and advocated as a psychometric tool (Litzinger, Wise, & Felder ,2005 ; Zywno , 2003). In this study only the visual/verbal and sequential/global dimensions were analyzed since our software is designed according to these dimensions. In the scoring procedure for visual/verbal learning styles, lower scores indicates tendency of having the type of visual and higher scores indicates type of verbal learning style. The same scoring is also valid for the sequential/global learning styles, lower score are sequential and higher scores global.

According to Richard M. Felder (1990) visual learners remember best if they see pictures, diagrams, flow charts, time lines, films, and demonstrations .A verbal learner learns more when the information is presented both visually and verbally. As

Felder (1990) claims that in most of the college classes, very little visual information is presented and the most of the students do not get nearly as much as they would if more visual presentation were used in class. Another dimension we have considered in the study is for sequential learners, who like to receive information in linear steps, with each step following logically from the previous one. On the other hand, global learners tend to learn in large jumps, absorbing material almost randomly without seeing connections, and then suddenly "getting it" (Felder 1990).

**Rotter' s Locus of Control**

The participants in the focus groups were asked to complete the Rotter's Locus of Control inventory to find out their extent of internal or external reinforcement beliefs. This inventory was developed by the Julian B. Rotter who is famous about his social leaning theory. The reliability and validity of the Rotter Locus of control has been tested in several studies and advocated as a psychometric tool .The Spearman-Brown and KR reliability values of this test is .65 - .79 and repeated validity values are .49 and .83 (Rotter, 1966).Also the usage of this inventory in Turkish universities has been advised in a validity study by Dag (1991). The students responded this 29-itemed inventory and these responds are scored as follows:

0-3 - Internal Locus of Control (extreme)
4-11 - Internal Locus of Control (healthy)
12-23 - External Locus of Control

The Locus of Control concept is about individuals attributes their outcomes to internal or external forces (Rotter, 1966). A person with a high internal locus of control acts events result primarily from his or her own behavior and resources. On the other hand, a person with a high external locus of control believes that forces are out of their control. The students with high internal locus of control tend to assume themselves responsible for their outcomes, they are more active in seeking information concerning their situation their efforts will be successful. Also generally

achieve more than external. On the other hand, a student with a high an external locus believes his successes or failures are mostly depends on external factors such as luck or chance.

**Intrinsic Motivation Inventory**

The participants in the focus groups were asked to complete the Intrinsic Motivation Inventory to investigate their relevant attitudes and experiences the proposed learning system that includes computer tools usage. This instrument assesses participants' interest/enjoyment, perceived competence, effort, value/usefulness, felt pressure and tension, and perceived choice while performing a given activity. The interest/enjoyment subscale is considered the self-report measure of intrinsic motivation. The perceived choice and perceived competence concepts are theorized to be positive predictors of both self-report and behavioral measures of intrinsic motivation, and pressure/tension is theorized to be a negative predictor of intrinsic motivation. Effort is a separate variable that is relevant to some motivation questions, so is used it its relevant. The value/usefulness subscale is used in internalization studies (Deci et al, 1994), the idea being that people internalize and become self-regulating with respect to activities that they experience as useful or valuable for themselves.

The IMI consists of varied numbers of items from these subscales, all of which have been shown to be factor analytically coherent and stable across a variety of tasks, conditions, and settings. The general criteria for inclusion of items on subscales have been a factor loading of at least 0.6 on the appropriate subscale, and no cross loadings above 0.4. Typically, loadings substantially exceed these criteria. McAuley, Duncan, and Tammen (1987) did a study to examine the validity of the IMI and found strong support for its validity.

### 3.3.3. Flow Survey

Csikszentmihalyi's concept of flow was used as a measure of evidence of positive feelings toward the learning system where flow experience can be assumed the an enjoyable experiences and happiness (Csikszentmihalyi, 1982)

In several researches computer mediated environment suggested as an activity that can facilitate the flow experiences (Novak, Hoffman, & Yung, 2000; Chen, Wigand & Nilan, 1998; Hoffman & Novak, 1996).The use of flow measurement in learning are covered in several studies. For example for the online learning such a study was administrated (Pearce, Ainley, Howard, 2005) where the constructs of flow to explore learning in an online environment. Another study investigates online flow experience of learners in a virtual-course, provided flow measure, and administered (Shin, 2006).

The first and original methodology used to measure flow is Csikszentmihalyi's Experience Sampling Method (ESM). In ESM, study subjects are required to respond survey questions in several times randomly during their daily activities. There is an electronic device reminds them these question during they are experiencing those daily life activities. (Csikszentmihalyi & Larson, 1987; Csikszentmihalyi, Larson, & Prescott, 1977). The other method used in studies is **questionnaire** surveys, which have been the most popular method of collecting data. According Finneran (2005) used surveys to study flow by several researchers (Ghani & Deshpande, 1994; Novak et al., 2000; Trevino and Webster, 1992) are limited in that they typically use closed-ended questions and in that respondents are asked to rate factors according to the general case, not regarding a specific experience. However, in this study we are not trying to find the dynamism of each factor and how its fluctuation influences flow. Instead, the flow is taking account as a factor by itself. Therefore, the generalized flow experience of the individuals and the frequency of that experience reported by the focus group students are enough. Additionally, the survey proposed more than once, therefore the probability of taking fair results is much more grater. The participants in the focus groups were asked to complete the survey to investigate their relevant flow experiences via proposed learning system and tools where this

study based on. The survey has a one question which firstly describe a desired flow state examples to students than other questions asks whether they have experienced such an experience and how often. The survey was proposed randomly to students at the end of the courses. In total, the survey was implemented 4 times.

The survey question was as follows:
*Please read the four cases below :*

*1. My mind is not wandering. I am not thinking of something else then the lessons.*
*2. I am totally involved in what I am doing. My body feels good. I don't seem to hear anything. The world seems to be cut off from me. I am less aware of myself and my problems.*
*3. My concentration is like breathing. I never think of it. I am really quite oblivious to my surroundings after I really get going. I think that the phone could ring, and the doorbell could ring, or the house burn down or something likes that. When I*
*start, I really do shut out the whole world. Once I stop, I can let it back in again.*
*4. I am so involved in what I am doing. I don't see myself as separate from what I am doing.*

Q1 . Have you ever felt like all, some or partially of the above cases when you are, taking films in the application in class today.

a) Yes
b) No

Q2. If you answered yes for previous question, please indicate how often do you think you feel like that?

a) Rarely
b) Often
c) Always

Q3. Have you ever felt like all, some or partially of the above cases when you are taking quizzes in the application in class today.

a) Yes
b) No

Q4. If you answered yes for previous question, please indicate how often do you think you feel like that?

a) Rarely
b) Often
c) Always

## 3.4. QUALITATIVE RESEARCH

All individual interviews and focus group interviews were conducted in person by the researcher. Initial open coding of the interview data revealed components that fit into categories. Axial coding methods were used to chart recurring codes into categories (Cresswell , 1994). The coding process included identifying concepts embedded within the data, organizing discrete concepts into categories.

According to their responds, the interview texts were analyzed with using software named as Nvivo 7.

### 3.4.1. Instrumentation

**Focus Group Interviews and Survey**

The focus group study was also followed by semi-structured interviews conducted with the students (n=54) for three weeks. These interviews investigate the attitudes and prior experiences of the students to usage of proposed tools and learning system in class. While the focus group interviews taking, the proposed learning system was introduced as a two separate part to ensure simplicity in the interviews. The part including movies, presentation and feedbacks via class discussion in the application was called as “Film Application”. The part with standard quizzes, keyword matching, flash cards and cognitive maps usage was called as “Quiz Application”. In addition, the parts were taken account as a whole and no discrimination was conducted in the focus group questions. The interview was followed by a survey as the question where as in appendix.

## 3.5. SYSTEM OVERVIEW

To conduct further analysis a learning system design is needed. Because the power point tools are not enough to improve students achievement and the need of critical thinking in the class with film discussions are essential for the history lessons, a learning system that support active participation within several methods has been proposed in this study.

The main properties of this system as follows:

- The system supports active learning and critical thinking with :
    - Films application where class room discussions held
    - Quiz application in the class
- The system uses computer tools both in class and out class (online)
    - Meta cognitive learning tool (Online Tool)
    - Flash card quiz (Online Tool)
    - Film and Quiz application (Multimedia Tool; Prototype PP and programmed in FLASH ; in class)

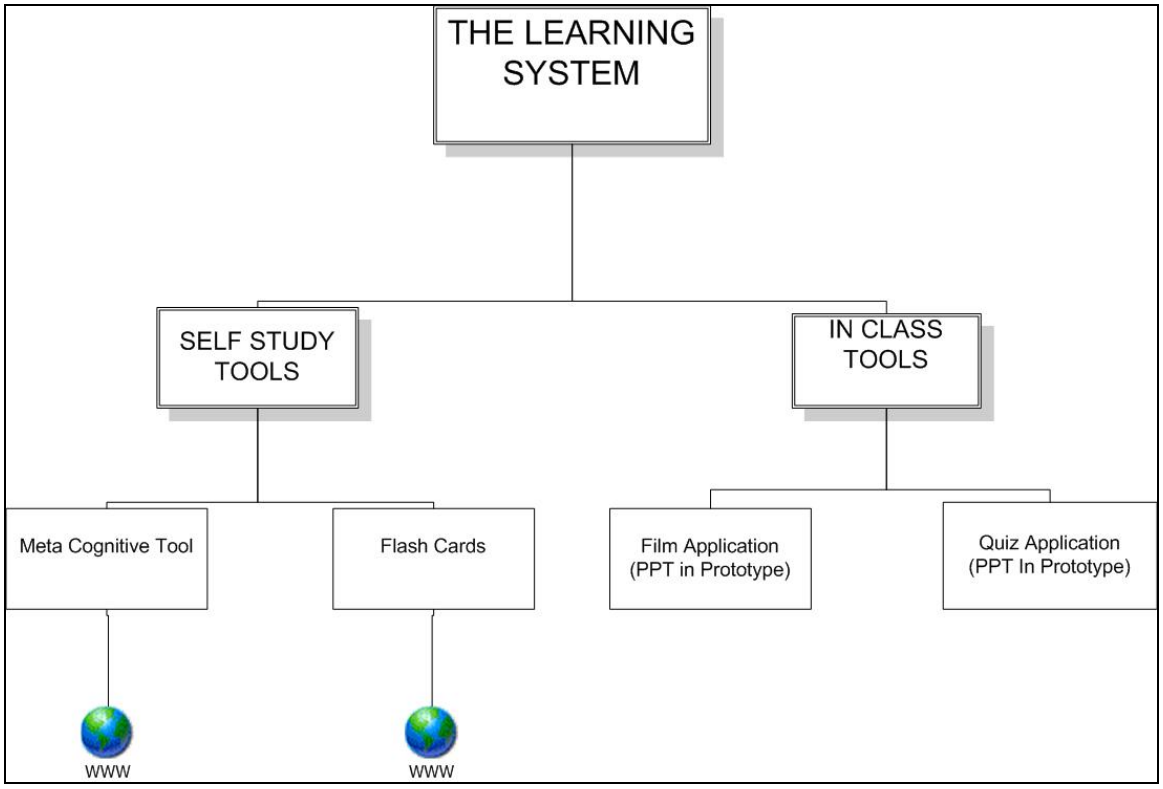


**Figure 3.2:The Parts of Learning System**

The proposed learning system suggested that student's take more of active control in the learning process .To provide such control to the students the group and peer learning was allowed in the class discussions and term projects.

The following learning system model was implemented to enhance active learning (See Fig. 3.2 an d Fig. 3.3) In the main base of that model the active participation of students was essential. The role of the instructor is a facilitator. The computer-based applications are only tools that aid learning by themselves if used alone. The computer applications cannot be considered alone independently from the learning environment in the system. Therefore, the success of the computer applications was depended on the students' attitudes toward the proposed learning environment within the help of the computer tools.

In the first phase of the study the user requirements and their preferred learning styles has been determined to develop computer tools. As long as these tools need to be used by students without the instructor help, they must match according to user needs well. Therefore the necessarily adjustment have been done within in that tool according to learning style analysis. In addition, a usability study for the tool has been conducted.

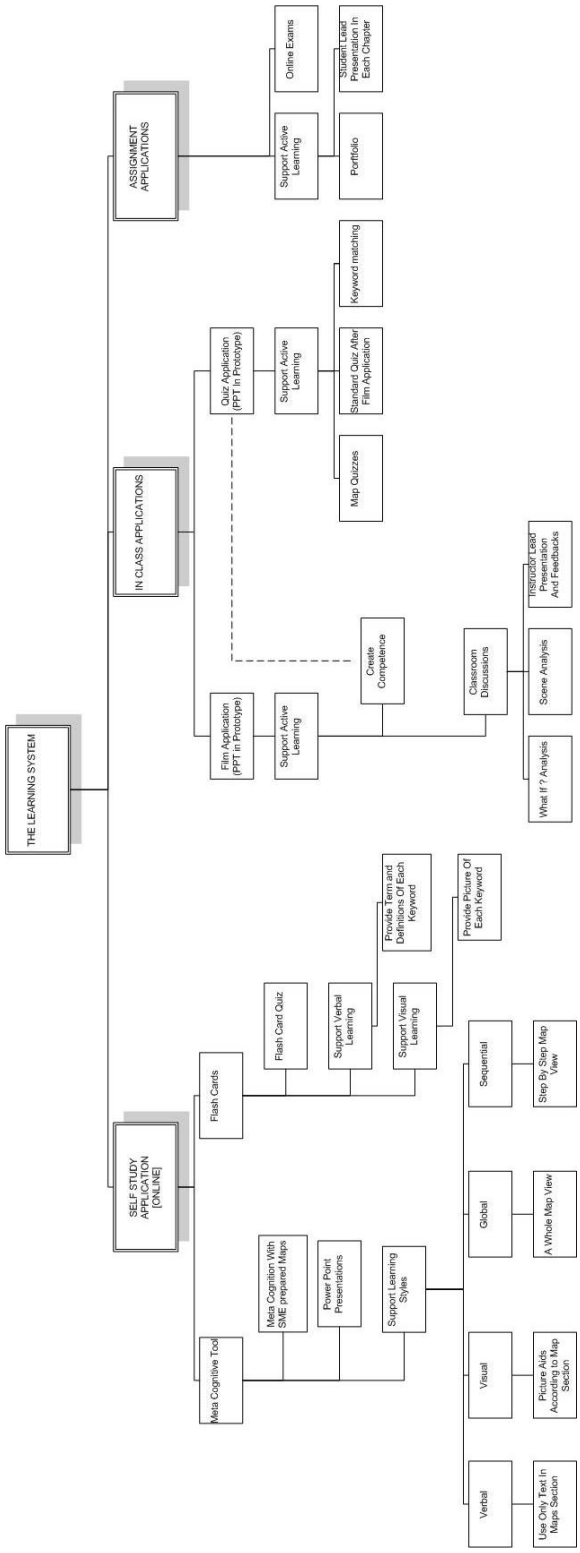


**Figure 3.3:The Learning System In Detail**

## 3.6. HOW THE SYSTEM SUPPORTS ACTIVE LEARNING

### 3.6.1. The Nature Of The System and Participations

First of all the system force the students naturally to participate into class and attend the class. The class quizzes are graded, the term project is also presented in the class and some of the midterm and final questions are based in the in class learning. Therefore, a student who missed several class courses cannot earn high grades.

### 3.6.2. Support of Participation and Collaboration With Discussions

According to Val Farmer and McKinney (2008) the class discussions and peer assistance is a relevant strategy to enhance active learning. In this study, the learning environment allows students to have implemented creative thinking and discussions with questions between the movie scenes. The teacher mostly leads the discussions and the students are encouraged to propose their ideas in the class. Also in these discussions student peers offer support and feedback. The majority of the discussions were carried in student groups where mostly close friends in the class naturally conduct a group together.

### 3.6.3. Usage of Computer Tools

The medium of delivery in the class is heavily relying on multimedia. Therefore, the most of the lessons are carried within the assist of computer tools discussed above.

### 3.6.4. Provide Students With Choice and a Sense of Control – Increase Self Esteem

According Val Farmer and McKinney (2008) to support active learning the teachers should give students options and choices in planning the course, in assignments, in ways to demonstrate their learning, and in how they are evaluated. In the term project presentations, students have the chance to present their works into class in the opening of the each course.

### 3.6.5. Create The Feeling of Curiosity and Competence

With using the standard quiz question which comes from the content learned at that day and the nature of the in class discussion proposed learning system aims to create curiosity and competence for the students.

### 3.6.6. Support Short and Long Term Memory and Recall

With weekly quizzes, learning system ensures to support, short-term memory on the other hand with midterms, final exam and online tools quizzes system support long-term memory.

### 3.6.7. The Usage of The Tools In the Class and Out of The Class

The usage of the computer tools is taken in two parts .In the first part the online tools are take place. The meta-cognitive learning tool and flash card tool are the online learning tools. The students are required to use these tools just before coming the current week course to be ready for in the class quizzes. Those tools are implemented the current e-learning system of the university. In addition, an online testing service is available in this e-learning system. The other tools are based on FLASH prototype applications. The Film Application and Quiz Application are those tools, where implemented in the classroom usage. In the class lecturer projects the screen of her computer via a projector to class. Students fallow films and quizzes by watching these projections. All the quiz responses are collected by a paper format forms from the students. Please refer Figure 3.4 below to see flow of a particular film – quiz application in class.

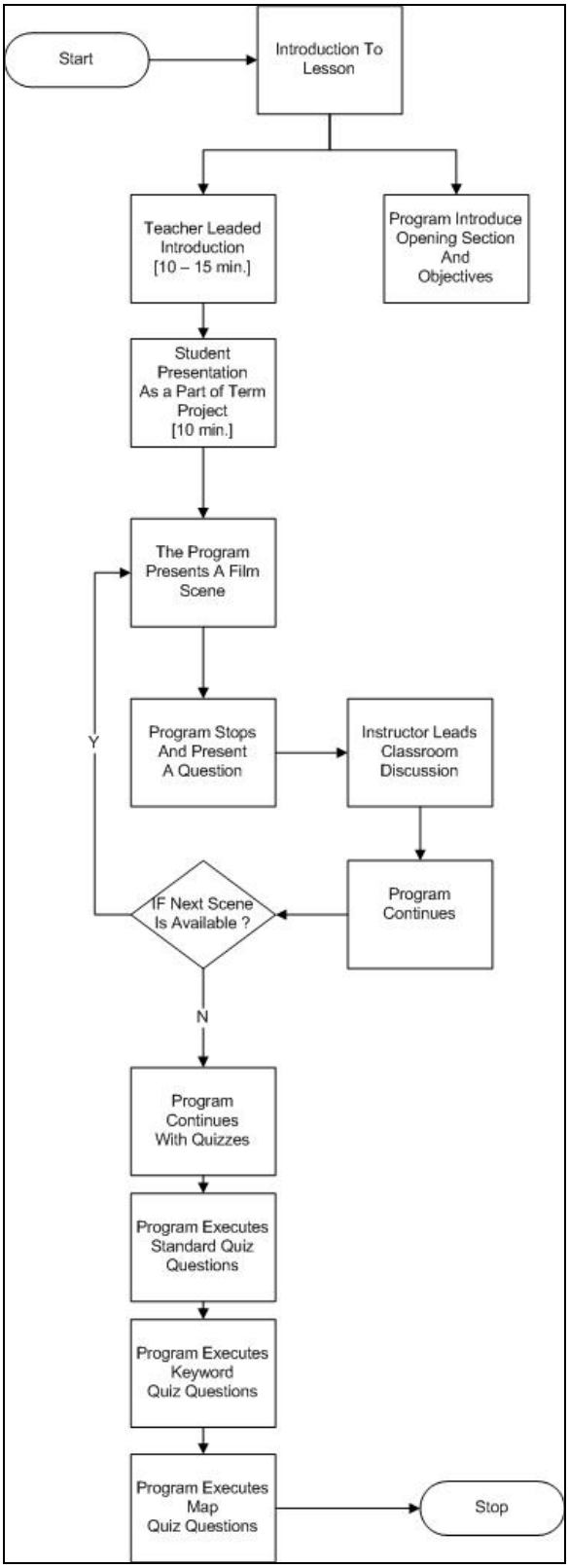


**Figure 3.4:In Class Applications Flow Chart**

### 3.6.8. Films Application

Because of the nature of active learning students has to involve into the learning process and participate into learning. According to this purpose, in the design of the learning environment the instructor centered teaching was switched to student centered learning. In the film application, the course starts with the introduction of the lecturer. The program also helps instructors at the opening by indicating important points and objectives of the lessons. In those openings students are presented the clear goals of the current days topic so they can be get ready to the lesson and be aware of the concepts. After this quick opening a group study (term project) given to students before was presented by that group students to the class in a 10 min. time limits.

After that, the historical films are presented the students within the tool. In this application selected films parts are watched by students and the program automatically stops between these parts to present some questions and information to help students to understand concepts more easily. In addition, the instructor can stop movie by herself. In those stoppages, the aim is to support critical thinking of the students providing what if analysis and case studies. In those breaks a class discussion is carried on by the lecturer, (The current technology is not allowing us to carry such a class discussion within the program itself).In that class discussion teacher also provides feedbacks to students. This film session continues until the entire scene and class discussions are completed. After the film, session over the application carries on within the quiz applications. The instructor always gives a break in class and let the students to relax in 10 min. before continuing to quiz process.

### 3.6.9. Quiz Applications

The quizzes application in class is performed in three parts. In the first parts of the quiz, there are standard quiz questions that are multiple-choice tests. In those quizzes, students are presented 10 questions allowing 15 min. to complete each of them. Those questions often based on the scenes of the film that is presented just before the quiz application. After these quizzes have been finished, the keyword quiz is presented to students after 3 min. break. The rest of the quiz application questions were based on the previous week chapter. The students are supposed to participate in the previous class and study form the online tools by their selves. In those keyword quizzes, students are asked to match the relation or a title of grouped keywords. The entire keywords question comes from the flash card, map and presentations. Finally, after a 3 min break, the last quiz application is presented. In those application students are asked to complete the missing relation nodes in the maps.

## 3.7. DEVELOPED TOOLS

### 3.7.1. Meta Cognitive Learning Tool

Concept maps can be used as a meta-cognitive tool that helps to organize ideas. The use of concept map approach can also help the users to understand the thought process of the SME who design the map. Also concept maps organize the concepts so that they are accessible to the learners having different learning styles. As indicated before, the main objective of this first phase of the study was to collect student s data for developing some software application. The concept maps as are used in a meta cognitive learning which supports different learning styles (See Fig. 3.5).

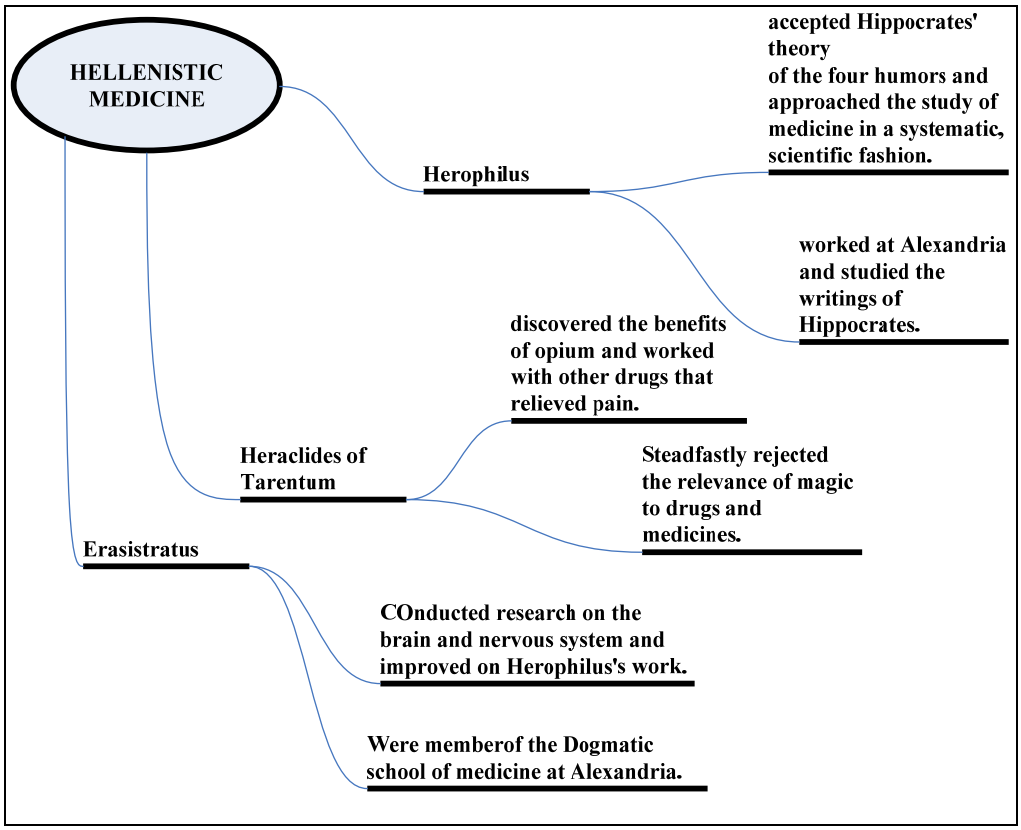


**Figure 3.5: A Map View in Meta Cognitive Tool**

The software interacts with users and allows them to choose from different interfaces according to users' preferred learning styles. Sub objectives in creating such a tool can be listed as follows: design of a multi-modal interface for the learning tool,

testing the usability problems in the developed prototypes, integration of the concept map based learning meta-cognitive tool into the online learning management system.

### The First Prototype

The development stages of the first interfaces were been started with the analyzing and designing of the course content by instructors and was transformed into concept maps. They also created the links between each node in the concept maps and the visual materials. Branching hierarchy of the concept maps was limited with the three levels for the youngsters. Because the information that must be learned at working memory has a capacity of about four chunks in young adults (Cowan, 2001). There is no single correct way of creating concept maps on a specific content (Cañas et. al). The way we created concept maps involved presenting knowledge using a graph form (Safayeni, Derbentseva , &. Cañas.2007).

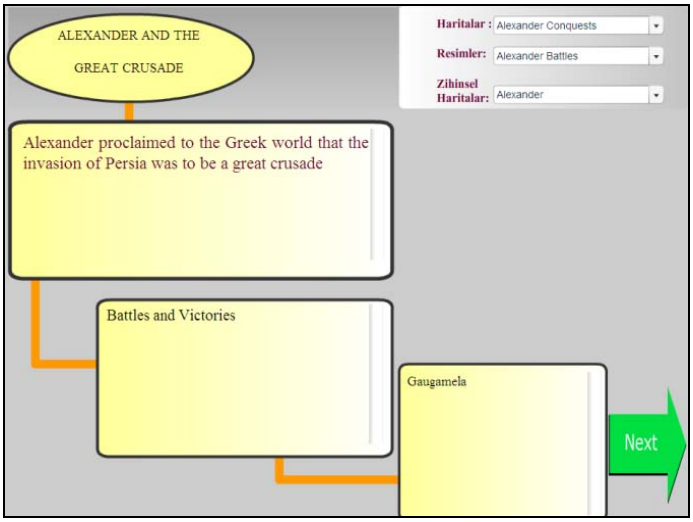


**Figure 3.6: First Prototype Main Interface**

To create such concept maps a software tool can be utilized. There are some commercial tools available at the market. A recent study of a development of a

software tool called LEO, an approach to the creation of a course depiction from a Concept Map, were announced by (Coffey, 2005). In our study, the Microsoft Visio software was used to create the visual presentation of the concept maps. We selected this software because it is user-friendly especially for the instructors. For the developer, the Visio's ability of exporting the visual presentation of the concept maps to XML format is crucial. Once the content design was finished, the learning tool was developed to fit the contents into concept maps. Complex concept maps must be presented in both sequential/global forms and verbal/visual forms. The developed software just loads XML and presents concept maps in either sequential or global layouts. The software interfaces were designed according to our students' most preferred learning styles; which are sequential and verbal domains; as ILS scores indicates. In sequential forms, the learner interacts with the software using a step by step approach to study concept maps. In global forms, users are presented a global view of the concept maps and they interact with the software in a holistic way. All the concept map presentations are in verbal layouts and supported with visual aids.

After the development, the meta cognitive learning tool was integrated into an online course management system that had been previously used within an e–learning system in the university. In this way, learners can access the tool online. We added an extra module to the online course management system.

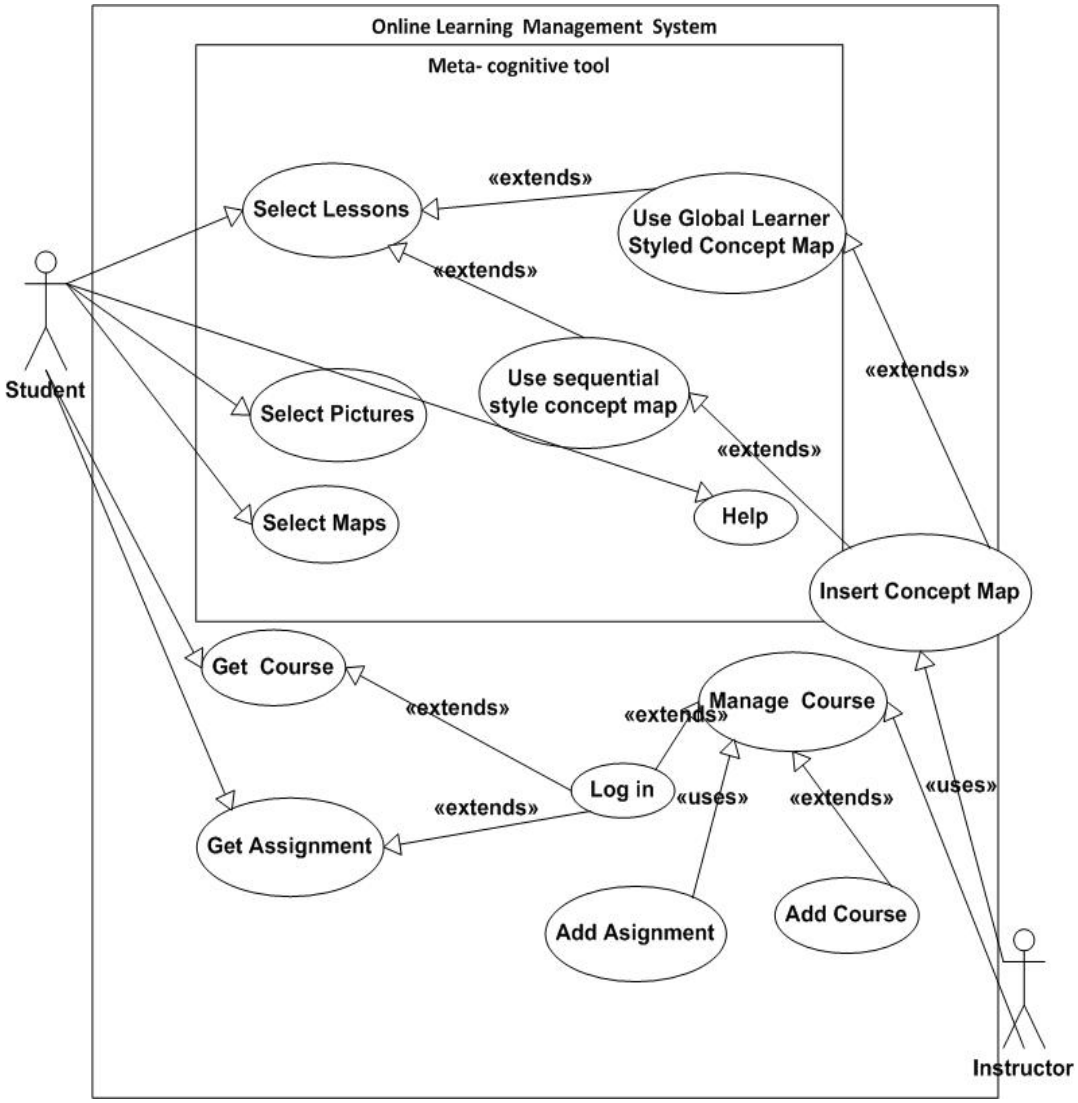


**Figure 3.7:Use Case Diagram of Online System Integration**

The module provides an interface which enables the instructor to add concept maps' XML and visual aids into the system. Then, the meta–cognitive tool can be associated with an online assignment module. Figure 3.7 depicts the use case diagram where all the students have taken the midterm and final exams.

### The User Interfaces

The most important factors in the user interface development are the transfer of the exact information displayed in the concept maps into the software and the support of different learner requirements depending on their learning styles. The software distributes the contents into the nodes specified in the XML. Then, it presents the concept-mapped information either as a whole or in sequential steps. In addition, the software presents the information both verbally (the depiction of the content maps) and visually (pictures and maps related to the content).

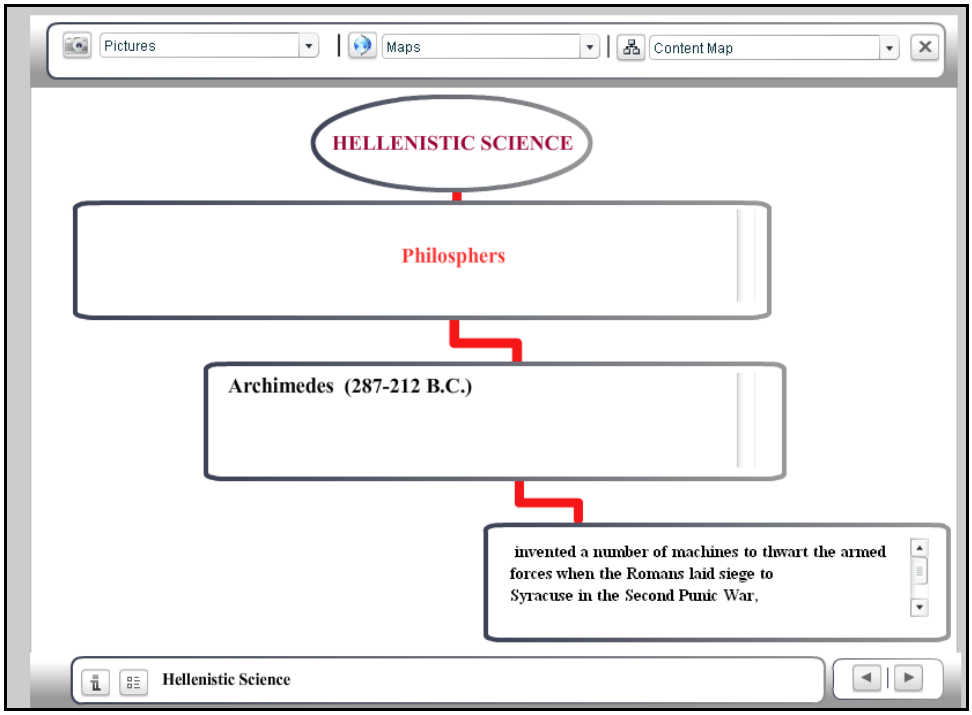


**Figure 3.8: The User Interface of Meta Cognitive Tool after Interface Study**

User interactions and the interface design in the first prototype are as in the Figure 3.8. Navigational interactions include the following: the "Next" labeled button in the bottom right corner of the screen and the three lists that are placed at the right top

corner of the screen labeled respectively as “Maps”, “Pictures”, and “Content Maps”. In the first prototype, sequential learners can follow a one-way navigation that always goes forward. In this way, the learner has to click only the “Next” button. Here, the nodes of the content maps are displayed in three leveled boxes connected by orange color lines. This display is a hierarchal flow that is from left to right to match the natural eye movement of the readers. The users just need to read the hierarchical texts starts from the left top of the corner and follow orange lines. Then the users click the “Next” button to proceed further. Also the global learners can reach the whole concept map using the concept maps list control to see the information at a glance.

### 3.7.2. Flash Card Application

Flash cards are strips of cardboard on which are printed various words, phrases or numbers. They are used for rapid drill on topics that have been thoroughly studied. (Gianella, 1916). The main objective of using flash cards is to make students accommodated into keywords and concepts for the related topics. Because of the nature of the history lessons there are many new concepts and words that must be learned by the students. These keywords comes from the characteristic of the topics. For example, a student needs to know some concepts and names in various cultures. In our learning system, flash card software has been developed to help students to learn these concepts. The software is for the self study form online access via in university e-learning system. Additional to this software students were taken some question in periodical quizzes where they are required make keyword and definition matches. All the keywords and their definitions were used in those questions also placed in the flash card tool so the students had a chance to study before the quiz.

In our application, students are presented three sets of cards (See Figure 3.9). One of this three card is a keyword or a concept form related topic , other is the description of this keyword or concept and the last one is a representative picture of this keyword and description .The additional picture is either an iconic representation , a picture or

a scene from the movies (See Figure 3.10). All the visual images for the picture cards are also used in the learning materials that are meta cognitive tool, presentations, movies or quizzes.

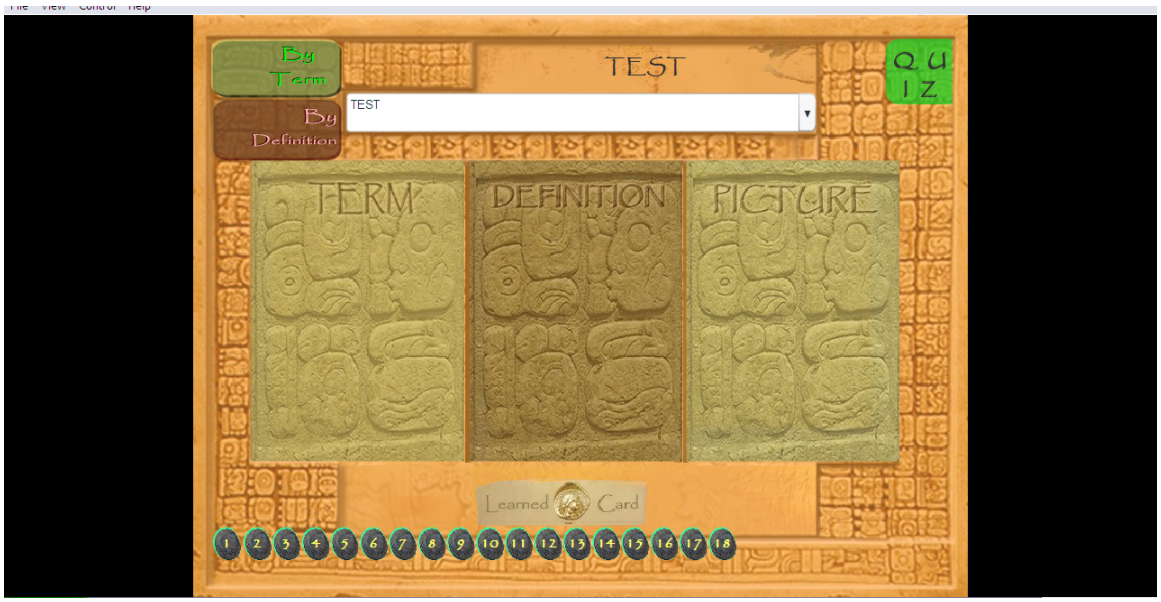


**Figure 3.9:Flash Card Software Main Screen**

By providing a picture card, we also aimed to strong statements visual memory. In the opening of the program, all of the cards are closed. Student review all the cards in the deck by opening each closed card set. If a student believes she has learned the card she marks the card as a learned one by clicking "Learned Card Button " .She also can increase the challenge by locking one of the card if she likes; if she clicks on one of the definition or term button (keyword or concept) .

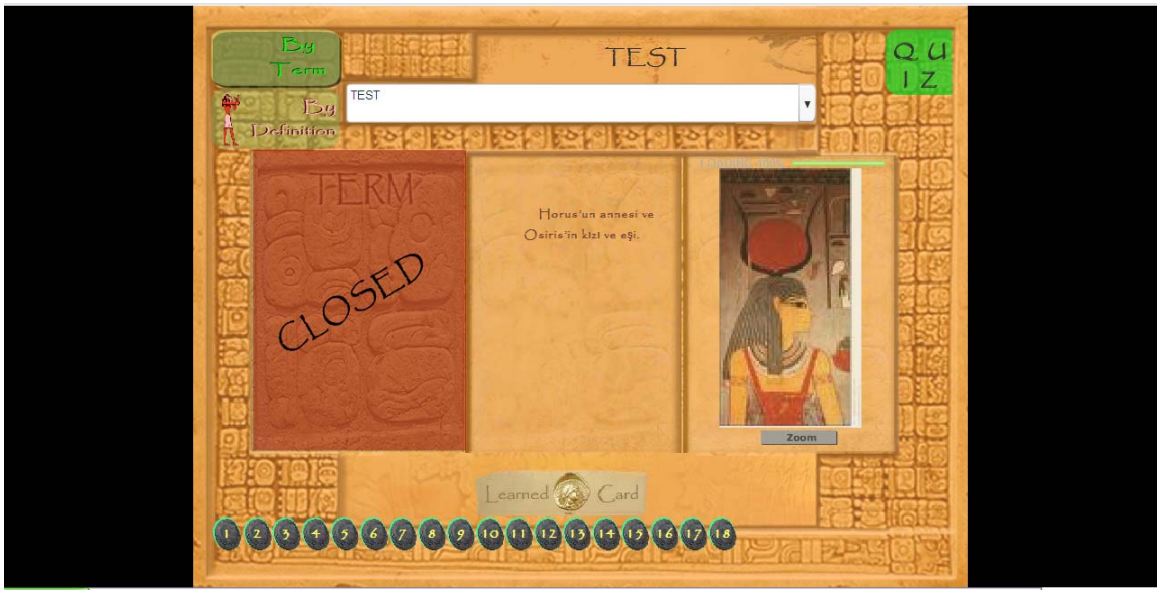


**Figure 3.10:Flash Card Software, Students See Scenes From Movie Or Image of A Concept**

After a student completes all the cards in the deck, she can take a quiz by clicking the "QUIZ" button at the right top corner of the screen (see Figure 3.11 below). The different quiz questions are provided randomly each time the quiz starts. In the quiz students required to match terms with definitions. According to students selection the quiz question can be a term or a definitions. Also according to student selection the items are provided form the cards in the deck which means that all the items are different from each other and related to topic in the deck because the all the cards' terms and definitions are related to a specific topic and there are no card comes from other topics.


**Figure 3.11:Flash Card Software , Quiz Screen**

As mentioned before this self study quiz question comes from the cards and were prepared by the subject expert. After questions implemented into system they were transformed into XML file so this information can be used both in this software and in online exams. The software was designed using Adobe Flash and action script 2.0.

### 3.7.3. Movies and Quizzes Application

In the class application a movie – software tool has been designed in the PP as prototype and coded in FLASH. Later the tool can be converted into an online learning tool if desired; because of the nature of our study, we did not program the application in other software technologies than FLASH. The main purpose of that tool is to use in class presentations. As long as our study heavily relies on in class applications, we have used FLASH that is easy to acquire and design. Design of our learning system uses a provided embedded movie in the FLASH and a quiz application.

The sequences of the presentation are as follows:

1. The Goals of the current topics are presented
2. The quick overview of the lesson is presented
3. The movie is presented
4. The key concepts and scenes in the movie presented for feedback
5. The quiz based on keyword matching , concept maps (form previous week) and standard question presented

Additionally to above steps there were some random questions related to our research were presented randomly in the presentations that are embedded in FLASH.

**The Goals of the current topics are presented**

In the presentations all the openings has a specific picture in the beginning as a cover (See Figure 3.12). This specific picture also used in other materials such as in meta cognitive tool and flash card tool as a reminder of the lessons.

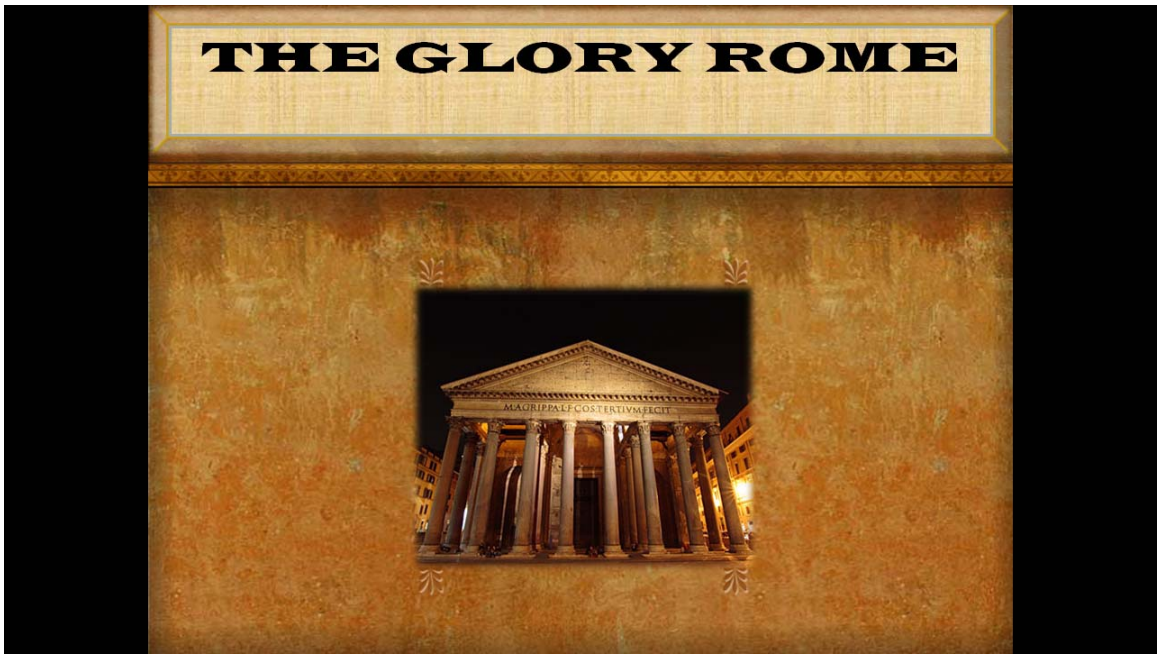


**Figure 3.12:Film Application , Opening**

In the beginning of the each class the topic and goals were presented by the lecturer also, this introduction is placed in the opening section. The lecturer states the important points where students will need to have attention during the class. . After the opening a quick review and objective lists presented to students (See: Figure 3.13 and Figure 3.14).

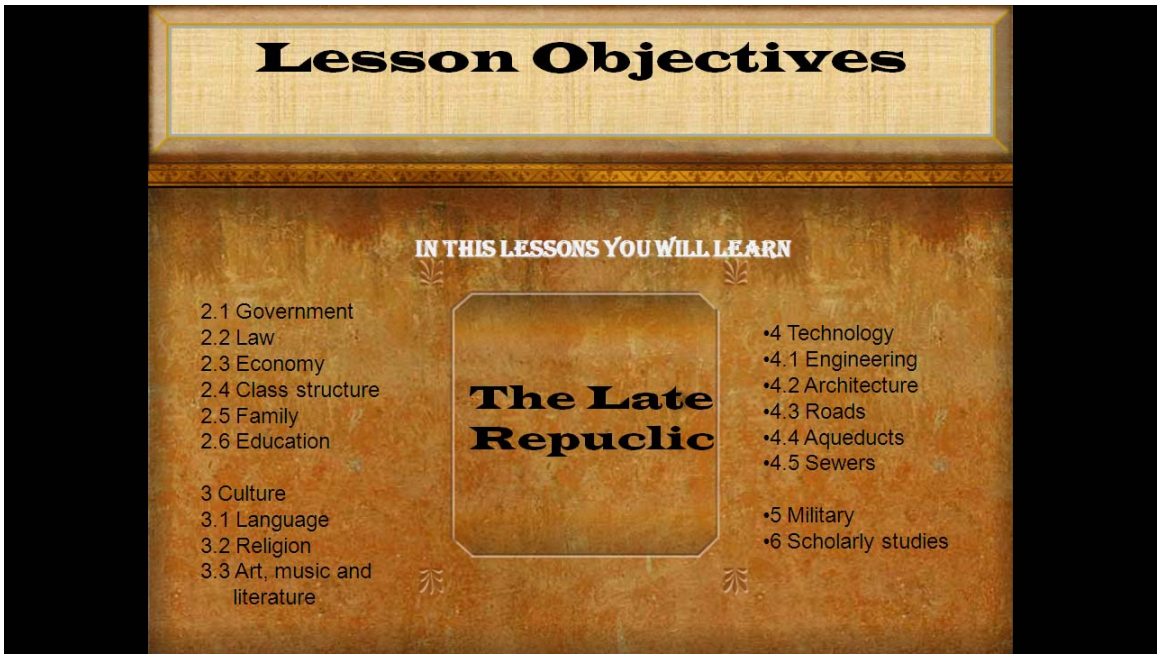


**Figure 3.13:Film Application , Lesson Objectives**

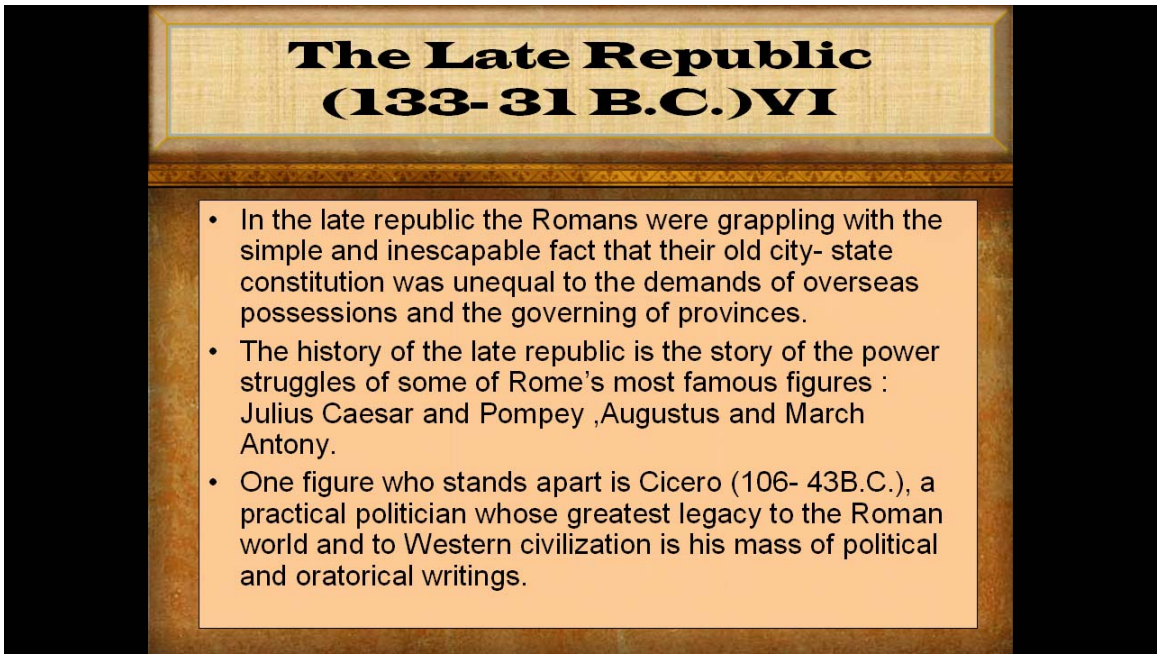


**Figure 3.14:Film Application, Quick Presentation**

**The movie is presented**

After quick overview and objectives are presented the rest of the lessons are continue within the aids of the movies selected before .In the movie presentation the lecturer can control the movie flow by using the controls of the media player.


**Figure 3.15:Film Application , Player Screen**

**The key concepts and scenes in the movie presented for feedback**

When the movie is completely studied or between the scenes , the lecturer can proceed into key scene and concept slides. In those slides students are reminded key historical concepts by the help of the scenes in the presentation. For example at the middle of the movie, application stops between the scene and present a question to start a classroom discussion.

**The quiz based on keyword matching, concept maps (form previous week) and standard question presented**

After the lessons are completely finished, the drill part of the lecture started in the presentation.

**Keyword matching**

In the keyword, matching section students are required to match the presented keyword group with correct item. The keywords are grouped according to their occurrence in the movie or presentation and their relationships. All the keywords are comes from a previous week. The students are supposed to study this keyword both in class previous week and by their selves using online system; in this case flash card tools.

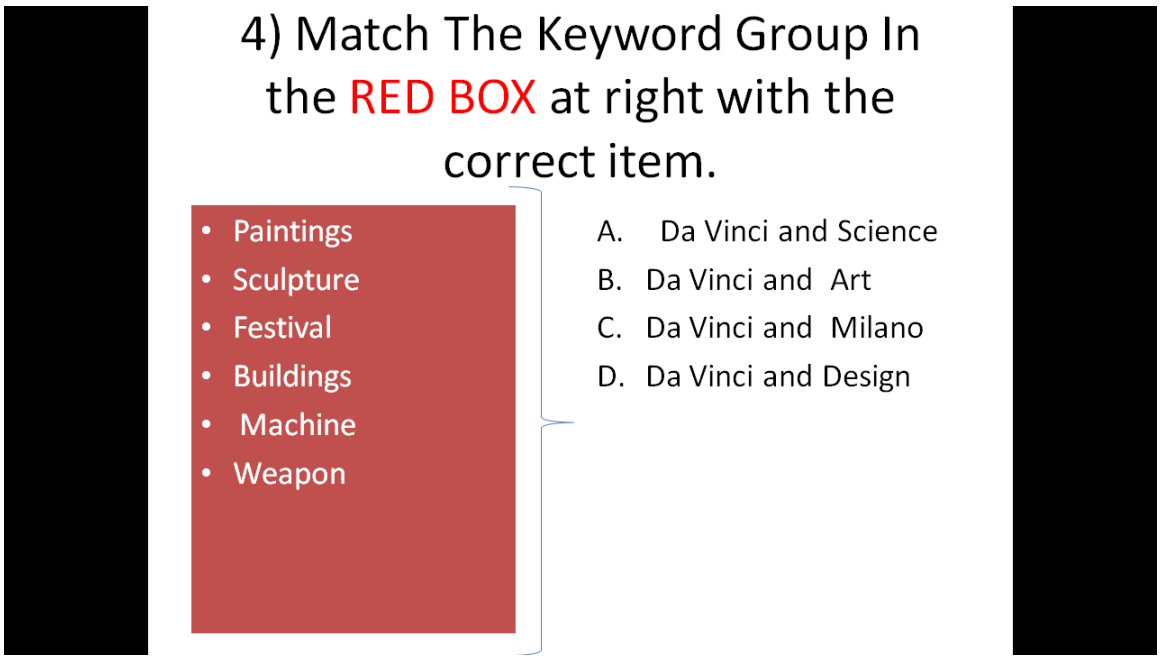


**Figure 3.16:Quiz Application, Key Word Matching**

**Presented Maps Quiz**

In the concept map, quiz section students are required to find the correct item for the missing branch indicated in the presentation. The students are supposed to study these maps both in class previous week or by their selves using online system; in this case meta cognitive tool.

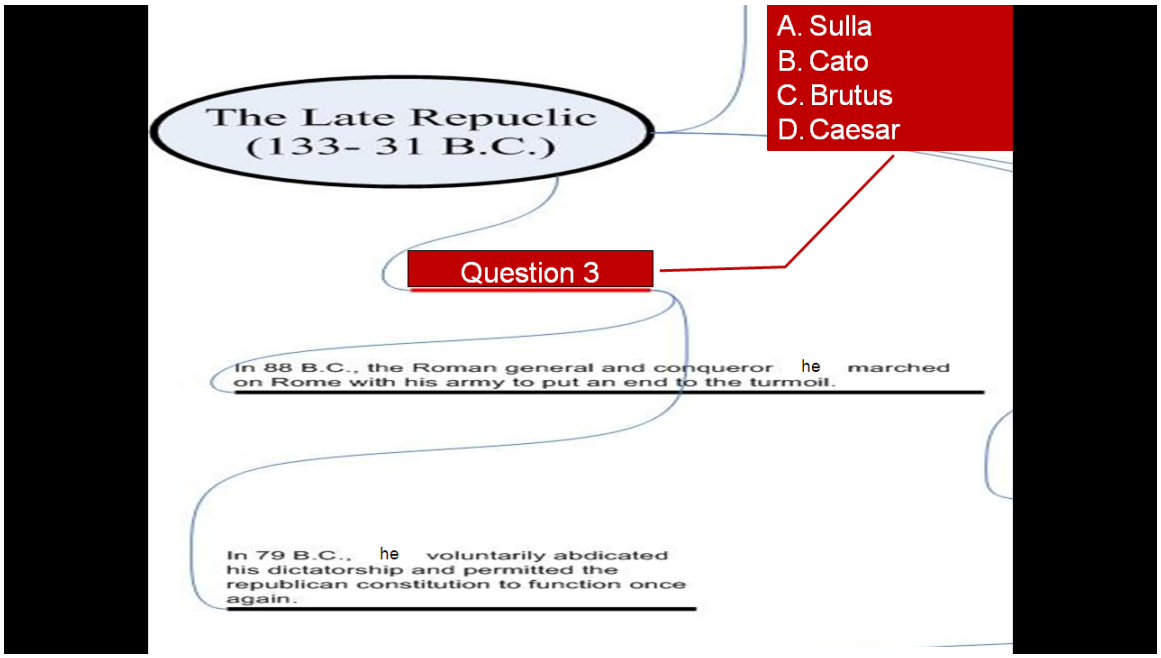


**Figure 3.17:Quiz Application, Map Part**

**Standard Quiz Questions Are Presented**

In standard question part, students are presented classical quiz questions that cover the current topic learned at that day. The questions are based on the movie and the points discussed in the class during movie.

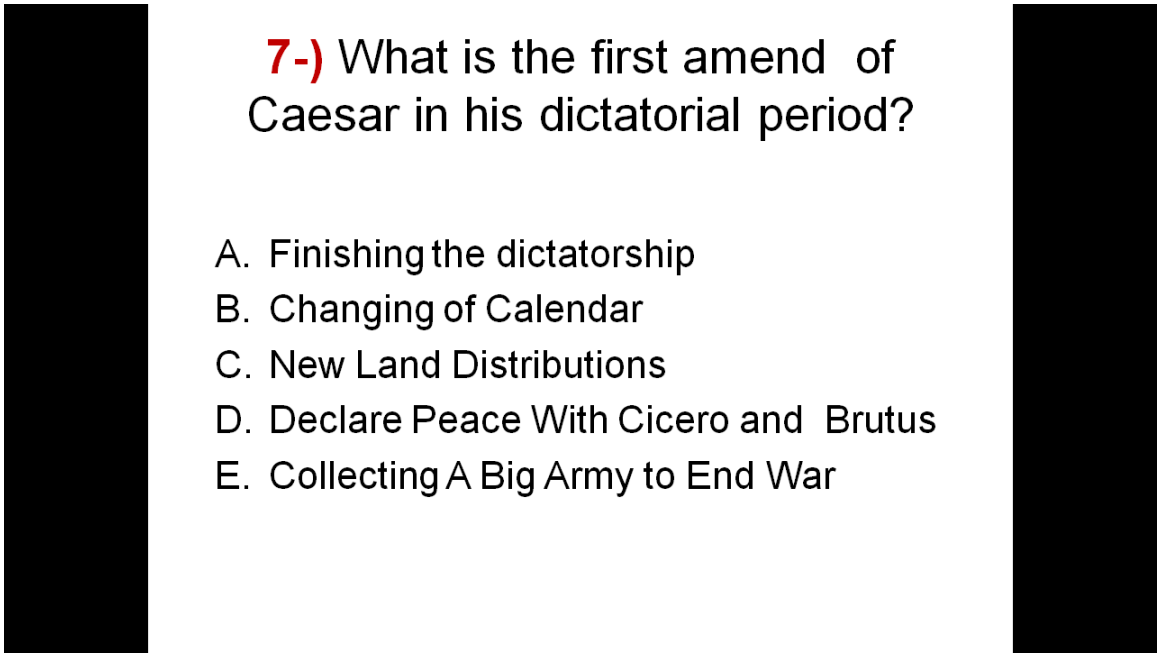


**Figure 3.18: Quiz Application, Classical Multiple Choice Test**

# 4. PRESENTATION AND ANALYSIS OF DATA

The study investigate a computer-assisted learning systems that enhance active learning was proposed and learners' attitudes toward the system with also considering their flow experiences. All the questions in both inventories and interviews presented to students consider the learning system as a whole that means that the computer tools are not taken into account specifically and separately. The designed research also consider and valid for the context of history of civilization lessons. The findings are considered in quantitative and supplemental qualitative analysis.

## 4.1. QUANTITATIVE ANALYSIS

The responses to the instruments were analyzed with the Statistical Package for Social Sciences (SPSS), version 12.0. The data tables and the frequency tables for the descriptive statistics can be found at appendix 2.

The t-tests a was utilized to test significant differences between the variables. Numerous t-tests were run during this exploratory study. ANOVA tests are utilized to see the variances. Data for HO1 - HO22 are presented in Tables 4.1 through 4.21.

**Null hypothesis**

**Hypothesis 1**

H0 : There is no significant differences in the locus of control of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the locus of control of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.1, F > 0.1 Therefore equal variances are assumed . No significant differences exists in groups as a mean of Locus of Control df(52)= -.808 , p>.05. Therefore H0 null hypothesis is accepted. Therefore there is no significant differences in the locus of control of the subjects which are meaningful on the flow experiences.

**Table 4.1: T Table - Locus of Control and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Locus | Equal variances assumed | .014 | .905 | -.808 | 52 | .423 | -.11172 | .13819 | -.38903 | .16558 |
| | Equal variances not assumed | | | -.808 | 50.819 | .423 | -.11172 | .13820 | -.38920 | .16575 |

## Hypothesis 2

H0 : There is no significant differences in the perceived competence of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the perceived competence of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.2, F > 0.1 Therefore equal variances are assumed . There is a significant differences exists in groups as a mean of perceived competence levels df(52)= 2.072 , p< .05. Therefore H0 null hypothesis is rejected and H1 hypothesis is accepted. The mean of perceived competence level of Group1 (in flow) are 0.6 greater than the Group 2.

**Table 4. 2:T Table - Perceived Competence and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Perceived Competence | Equal variances assumed | 2.724 | .105 | 2.072 | 52 | .043 | .61517 | .29683 | .01954 | 1.21080 |
| | Equal variances not assumed | | | 2.011 | 40.342 | .051 | .61517 | .30590 | -.00292 | 1.23326 |

**Hypothesis 3**

H0 : There is no significant differences in interest/ enjoyment perception levels of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the interest/ enjoyment perception levels of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.3 F > 0.1 Therefore equal variances are assumed . There is a significant differences exists in groups as a mean of interest / enjoyment levels df(52)= 3.858 , p< .05. Therefore H0 null hypothesis is rejected and H1 hypothesis is accepted. The mean interest / enjoyment level of Group1 (in flow) are 0.8 greater than the Group 2.

**Table 4.3: T Table - Interest/Enjoyment and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Interest/Enjoyment | Equal variances assumed | .118 | .733 | 3.858 | 52 | .000 | .78759 | .20415 | .37792 | 1.19725 |
| | Equal variances not assumed | | | 3.867 | 51.275 | .000 | .78759 | .20365 | .37879 | 1.19638 |

**Hypothesis 4**

H0 : There is no significant differences in Effort / Importance levels of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the Effort / Importance levels of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.4 , F > 0.1 Therefore equal variances are assumed . No significant differences exists in groups as a mean of Effort / Importance df(52)= 1.358 , p>.05.Therefore H0 null hypothesis accepted

**Table 4.4:T Table - Effort Importance and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Effort Importance | Equal variances assumed | 1.311 | .257 | 1.358 | 52 | .180 | .42897 | .31579 | -.20472 | 1.06265 |
| | Equal variances not assumed | | | 1.384 | 51.495 | .172 | .42897 | .30997 | -.19318 | 1.05111 |

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**Hypothesis 5**

H0 : There is no significant differences in Perceived Choice levels of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the Perceived Choice levels of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.5 , F > 0.1 Therefore equal variances are assumed No significant differences exists in groups as a mean Perceived Choice df(52)= -1.905 , p>.05. Therefore H0 null hypothesis accepted.

**Table 4.5:T Table - Perceived Choice and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Perceived Choice | Equal variances assumed | 4.201 | .045 | -1.905 | 52 | .062 | -.87310 | .45824 | -1.79263 | .04642 |
| | Equal variances not assumed | | | -1.937 | 51.728 | .058 | -.87310 | .45066 | -1.77754 | .03133 |

**Hypothesis 6**

H0 : There is no significant differences in Value - Usefulness perception levels of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the Value - Usefulness perception levels of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.6, F > 0.1 Therefore equal variances are assumed . There is a significant differences exists in groups as a mean of Value - Usefulness df(52)= 2.180 , p< .05. Therefore H0 null hypothesis is rejected and H1 hypothesis is accepted. The mean Value - Usefulness level of Group1 (in flow) are 0.5 greater than the Group 2.

**Table 4.6:T Table - Value Usefulness and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Value - Usefulness | Equal variances assumed | 1.257 | .267 | 2.180 | 52 | .034 | .52828 | .24237 | .04192 | 1.01463 |
| | Equal variances not assumed | | | 2.141 | 45.338 | .038 | .52828 | .24674 | .03141 | 1.02514 |

**Hypothesis 7**

H0 : There is no significant differences in Pressure-Tension levels of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the Pressure-Tension levels of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.7 , F > 0.1 Therefore equal variances are assumed. . No significant differences exists in groups as a mean Pressure-Tension df(52)= - .799 , p>.05. Therefore H0 null hypothesis accepted.

**Table 4.7:T Table - Pressure/Tension and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Pressure-Tension | Equal variances assumed | 1.565 | .217 | -.799 | 52 | .428 | -.20690 | .25880 | -.72621 | .31242 |
| | Equal variances not assumed | | | -.783 | 44.331 | .438 | -.20690 | .26414 | -.73912 | .32532 |

## Hypothesis 8

H0: There is no significant differences in Vis/Verb learner styles of the subjects which are meaningful on the flow experiences

H1: There is a significant differences in Vis/Verb learner styles of the subjects which are meaningful on the flow experiences

According to independent samples t test in table 4.8 , F > 0.1 Therefore equal variances are assumed. . There is a significance in groups as a means of Vis/ Verb df(52)= -2.066, p< .05. Therefore H0 null hypothesis is rejected and H1 excepted. Regarding the learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed the mean for the visual/verbal learning style scores of the students in flow are less than the students that are rarely or never in flow during the experiences in the learning system. Low scores indicates type of visual and higher scores indicates type of verbal learning style. Hence , students whose preferred learner style is visual learning have a more tendency to get in a flow experience within the learning systems.

**Table 4.8:T Table - Vis/VRB and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Vis/VRB | Equal variances assumed | 2.968 | .091 | -2.066 | 52 | .044 | -2.31172 | 1.11870 | -4.55657 | -.06688 |
| | Equal variances not assumed | | | -2.117 | 50.400 | .039 | -2.31172 | 1.09179 | -4.50423 | -.11922 |

**Hypothesis 9:**

H0: There is no significant differences in Seq/Glo learner styles of the subjects which are meaningful on the flow experiences

H1: There is a significant differences in Seq/Glo learner styles of the subjects which are meaningful on the flow experiences

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed that there is significant differences in Seq/Glo learner styles of the subjects which are meaningful on the flow experiences .

According to independent samples t test in table 4.9 , F > 0.1 Therefore equal variances are assumed. . No significant differences exists in groups as a mean **SEQ/GLO** df(52)= .395, p>.05. Therefore H0 null hypothesis accepted.

**Table 4.9:T Table - SEQ/GLO and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| SEQ/GLO | Equal variances assumed | .003 | .958 | .859 | 52 | .395 | .79172 | .92219 | -1.05879 | 2.64224 |
| | Equal variances not assumed | | | .851 | 48.717 | .399 | .79172 | .92984 | -1.07712 | 2.66057 |

**Hypothesis 10**

H0 : There is no significant differences in first semester (Grade_Sem1) grades and second semester (Grade_Sem2) grades .

H1: There is a significant differences in first semester (Grade_Sem1) grades and second semester (Grade_Sem2) grades .

According to paired samples T – test table 4.10 the grades as a means of success are in second semester are lower df(53) =3.554, p<0.5 . Therefore H0 null hypothesis is rejected and H1 is accepted. There is an improvement on students scores in all groups for in Semester 2 which means a greater grade level (1=A,2=A- etc.).

**Table 4.10: Paired T Table - Grade Semester 1 and Grade Semester 2**

Paired Samples Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Grade_Sem1 Grade_Sem2 | 1.31481 | 2.71838 | .36992 | .57284 | 2.05679 | 3.554 | 53 | .001 |

**Hypothesis 11**

H0 : There is no significant differences in the students success as a means of GPA in second semester of the subjects which are meaningful on the flow experiences.

H1: There is a significant differences in the students success as a means of GPA in second semester of the subjects which are meaningful on the flow experiences.

According to independent samples t test in table 4.11 , F > 0.1 Therefore equal variances are assumed. . No significant differences exists in groups as a mean GPA in second semester df(52)= .612, p>.05. Therefore H0 null hypothesis accepted.

**Table 4.11:T Table - Grade Semester 2 and Flow**

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Grade_Sem2 | Equal variances assumed | .524 | .472 | .612 | 52 | .543 | .25931 | .42393 | -.59136 | 1.10998 |
| | Equal variances not assumed | | | .616 | 51.774 | .541 | .25931 | .42122 | -.58601 | 1.10463 |

**Hypothesis 12**

H0 : There is no significant differences in Pressure/Tension and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Pressure/Tension and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H0.1: The students who have less pressure / tension are those who also has an increase their grades.

H0.2: The students who have same pressure / tension are those who also has an decrease in their grades.

H0.3: The students who have more pressure / tension are those who also has an no change in their grades.

According to ANOVA results table 4.12 the F-ratio with an F-probability value less than .05 is significant, suggesting that grade change does significantly influenced by pressure / tension of student via learning system, $F(2,51) = 3.54$, $P < .05$. Therefore H0 null hypothesis is rejected and H1 accepted.

In the contrast case 1 grade decrease, No change (same ) and grade increase have coefficients of -1, -1 and 2 respectively. In the contrast case 2 grade decrease, No change (same ) and grade increase have coefficients of -1, 0 and 1respectively.In case 2 a T-value of -2.620 is significant (< .05). Therefore H1.1 hypothesis is accepted and others are rejected . It can be concluded that students which have less pressure / tension have an increase their grades .

**Table 4.8:ANOVA Tables -Pressure/Tension - Grade Groups**

ANOVA

Pressure/Tension

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| **Between Groups** | 5.775 | 2 | 2.887 | 3.543 | .036 |
| **Within Groups** | 41.559 | 51 | .815 | | |
| **Total** | 47.333 | 53 | | | |

Contrast Coefficients

| Contrast | Grade Stat | | |
|---|---|---|---|
| | decrease | same | increase |
| **1** | -1 | -1 | 2 |
| **2** | -1 | 0 | 1 |

Contrast Tests

| | | Contrast | Value of Contrast | Std. Error | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| Pressure/Tension | Assume equal variances | 1 | -.8382 | .51540 | -1.626 | 51 | .110 |
| | | 2 | -.7941 | .30311 | -2.620 | 51 | .012 |
| | Does not assume equal variances | 1 | -.8382 | .52047 | -1.611 | 32.596 | .117 |
| | | 2 | -.7941 | .32507 | -2.443 | 17.273 | .026 |

**Hypothesis 13**

H0 : There is no significant differences in SEQ/GLO learning style scores and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in SEQ/GLO learning style scores and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H0.1: The students who have more sequential learning style tendency in their scores are those who also has an increase their grades.

H0.2: The students who have more sequential learning style tendency in their scores are those who also has an decrease their grades.

H0.3: The students who have more sequential learning style tendency in their scores are those who also has an no change in their grades.

According to ANOVA results table 4.13 the F-ratio with an F-probability value less than .05 is significant, suggesting that grade change does significantly influenced by learning styles of student via learning system, $F(2,51) = 4.186 P < .05$.

In the contrast case 1 grade decrease, No change (same ) and grade increase have coefficients of -1, -1 and 2 respectively. In the contrast case 2 grade decrease, No change (same ) and grade increase have coefficients of -1, 0 and 1respectively.

In case 1 a T-value of -2.022 is significant (< .05). ). The increase differs from the average of the other two .

It can be concluded that students which have more sequential learning tendency in their scores have an increase their grades than do those less or same.

On the other hand, in case 2 a T-value of -2.888 is significant (< .05). It can be concluded that students which have more sequential learning style tendency in their scores have an increase their grades than do those less or same.

**Table 4.9:ANOVA Tables -Seq/Glo - Grade Groups**

ANOVA

SEQGLO

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| **Between Groups** | 84.913 | 2 | 42.456 | 4.186 | .021 |
| **Within Groups** | 517.235 | 51 | 10.142 | | |
| **Total** | 602.148 | 53 | | | |

Contrast Coefficients

| Contrast | Grade Stat | | |
|---|---|---|---|
| | decrease | same | increase |
| **1** | -1 | -1 | 2 |
| **2** | -1 | 0 | 1 |

Contrast Tests

| | | Contrast | Value of Contrast | Std. Error | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| **SEQ/GLO** | **Assume equal variances** | **1** | -3.6765 | 1.81825 | -2.022 | 51 | .048 |
| | | **2** | -3.0882 | 1.06932 | -2.888 | 51 | .006 |
| | **Does not assume equal variances** | **1** | -3.6765 | 1.72195 | -2.135 | 40.818 | .039 |
| | | **2** | -3.0882 | 1.15807 | -2.667 | 17.859 | .016 |

**Hypothesis 14**

H0 : There is no significant differences in locus of control and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in locus of control and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.14 suggesting that grade change does NOT significantly influenced by locus of control of student via learning system, $F(2,51) = 1.709, P > .05$.

**Table 4.10:ANOVA Table Locus of Control - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .848 | 2 | .424 | 1.709 | .191 |
| Within Groups | 12.652 | 51 | .248 | | |
| Total | 13.500 | 53 | | | |

**Hypothesis 15**

H0 : There is no significant differences in Perceived Competence and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Perceived Competence and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.15 suggesting that grade change does NOT significantly influenced by Perceived Competence of student via learning system, $F(2,51) = .272, P > .05$.

**Table 4.11: ANOVA Table Perceived Competence and Grades**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .703 | 2 | .351 | .272 | .763 |
| Within Groups | 65.890 | 51 | 1.292 | | |
| Total | 66.593 | 53 | | | |

**Hypothesis 16**

H0 : There is no significant differences in Interest/Enjoyment and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Interest/Enjoyment and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.16 suggesting that grade change does NOT significantly influenced by Interest/Enjoyment of student via learning system, $F(2,51) = 1.142, P > .05$.

**Table 4.12:ANOVA Tables - Interest/Enjoyment - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1.605 | 2 | .802 | 1.142 | .327 |
| Within Groups | 35.821 | 51 | .702 | | |
| Total | 37.426 | 53 | | | |

**Hypothesis 17**

H0 : There is no significant differences in Effort/Importance and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Effort/Importance and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.17 suggesting that grade change does NOT significantly influenced by Effort/Importance of student via learning system, $F(2,51) = 3.120, P > .05$.

**Table 4.13:ANOVA Table Effort/ Importance - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 7.860 | 2 | 3.930 | 3.120 | .053 |
| Within Groups | 64.233 | 51 | 1.259 | | |
| Total | 72.093 | 53 | | | |

**Hypothesis 18**

H0 : There is no significant differences in Perceived Choice and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Perceived Choice and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.18 suggesting that grade change does NOT significantly influenced by Perceived Choice of student via learning system, $F(2,51) = 1.718, P > .05$.

**Table 4.14:ANOVA Tables -Perceived Choice - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 9.900 | 2 | 4.950 | 1.718 | .190 |
| Within Groups | 146.934 | 51 | 2.881 | | |
| Total | 156.833 | 53 | | | |

**Hypothesis 19**

H0 : There is no significant differences in Value Usefulness and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Value Usefulness and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.19 suggesting that grade change does NOT significantly influenced by Value Usefulness of student via learning system, $F(2,51) = 1.168, P > .05$.

**Table 4.15:ANOVA Tables Value Usefulness - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1.960 | 2 | .980 | 1.168 | .319 |
| Within Groups | 42.799 | 51 | .839 | | |
| Total | 44.759 | 53 | | | |

**Hypothesis 20**

H0 : There is no significant differences in Visual / Verbal learning style preference and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in Visual / Verbal learning style preference and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.20 suggesting that grade change does NOT significantly influenced by Visual / Verbal learning style preference of student via learning system, $F(2,51) = 1.299, P > .05$.

**Table 4.20:ANOVA Tables -Vis / Vrb - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 45.844 | 2 | 22.922 | 1.299 | .282 |
| Within Groups | 899.637 | 51 | 17.640 | | |
| Total | 945.481 | 53 | | | |

**Hypothesis 21**

H0 : There is no significant differences in overall flow experiences mean and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

H1: There is a significant differences in overall flow experiences and the groups which are students with a GPA decrease in second semester , students with same GPA in second semester and student with GPA increase in second semester.

ANOVA table 4.21suggesting that grade change does NOT significantly influenced by overall flow experiences of student via learning system, $F(2,51) = 1.066, P > .05$.

**Table 4.21:ANOVA Tables -Flow - Grade Groups**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | .539 | 2 | .269 | 1.066 | .352 |
| Within Groups | 12.887 | 51 | .253 | | |
| Total | 13.426 | 53 | | | |

**Hypothesis 22**

H0: The learning system cannot provide an environment for flow construct of students .
H1: The learning system can provide an environment flow construct of students .

As indicated in research design part, the students are presented flow survey four different times. According to the students responds, the ones who indicated they are on flow in all of the four surveys are taken as students always in flow, the other less than four times are indicated as Never or Rarely in Flow.

According to table 4.22 the 53% of the students (n=29) are always in flow. Therefore the H0 null hypothesis is rejected and H1 accepted. The learning system can provide an environment flow construct of students .

**Table 4.22: Students In Flow**

| OVER_ALL_FLOW_EXPERIENCE | | | | | |
|---|---|---|---|---|---|
| | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| **Valid** | **Always In Flow** | 29 | 53.7 | 53.7 | 53.7 |
| | **Never or Rarely In Flow** | 25 | 46.3 | 46.3 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

**Summary Of Qualitative Analysis In the Means Of Flow**

- **Perceived competence and flow**

Regarding to learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed the mean for the perceived competence of students in flow are higher than the students that are rarely or never in flow during the experiences in the learning system (Mean Diff.= .06,df(52)= 2.072 , p< .05).Apparently, students who feel more that they are capable of doing the activities in the learning system and satisfied with their performance at these tasks are also tend to have more chance to be in a flow experience within the learning systems. This finding is also parallel within previous studies (Csikszentmihalyi,1982 ; Shin,2006).

- **Interest / Enjoyment And Flow**

Regarding to learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed the mean for the interest / enjoyment of the students in flow are higher than the students that are rarely or never in flow during the experiences in the learning system (Mean Diff.= .08, df(52)= 3.858 , p< .001.). Hence , students who thinks that this learning system and related activities as interesting and enjoyable more also have a strong tendency to get in a flow experience within the learning systems. This finding is also parallel within previous studies(Csikszentmihalyi,1982 ; Shin,2006 ; Pearce, Ainley, & Howard 2005).

- **Value - Usefulness And Flow**

By taking account the learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed the mean for the value / usefulness of the students in flow are higher than the students that are rarely or never in flow during the experiences in the learning system (Mean Diff.= .05, df(52)= 2.180 , p< .05). Hence , students who thinks more that this learning system and

related activities has some value and benefits to them; and believe more the importance of the learning system have a tendency to get in a flow experience within the learning systems.

- **Visual / Verbal Learning Styles And Flow**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the independent samples showed the mean for the visual/verbal learning style scores of the students in flow are less than the students that are rarely or never in flow during the experiences in the learning system (Mean Diff.= -2.3, df(52)= -2.066, $p < .05$). Low scores indicates type of visual and higher scores indicates type of verbal learning style. Hence , students whose preferred learner style is visual learning have a more tendency to get in a flow experience within the learning systems.

**The Parameters That Have No Significant Relation With Flow Parameter:**

- **Locus of Control and Flow**

The students in the phase II of the study are grouped as External and Internal Healthy. Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed that there is no significance differences exists in the groups of type of locus of control of the students and the flow experience df(52)= -.808 , $p > .05$. This result can be interpreted that regardless of the control source as external or internal healthy , students can have a focus experience. However there is a need of a further study on that issue.

- **Effort /Importance and Flow**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed that there is no significance differences exists in the groups of type as in effort / importance and

flow experiences df(52)= 1.358 , p>.05. According to this result it seems, there is no significant difference where students put a lot of effort into the activity or not and the tendency of having flow experience. However there is a need of a further study on that issue.

- **Perceived Choice and Flow**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed that there is no significance differences exists in the groups of type as in perceived choice and flow experiences df(52)= -1.905 , p>.05. According to this result it can be said that, there is no significant difference where students have a choice to do or not to do the activities included in the learning system and the tendency of having flow experience. However there is a need of a further study on that issue.

- **Pressure-Tension and Flow**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed that there is no significance differences exists in the groups of type having pressure-tension and flow experiences df(52)= - .799 , p>.05. According to this result it can be said that, there is no significant difference where students have or have not pressure-tension in the activities included in the learning system and the tendency of having flow experience. However there is a need of a further study on that issue.

- **Second Semester GPAs and Flow**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed that there is no significance differences exists in the groups of type of second semester GPAs and flow experiences df(52)= .612, p>.05.

This result can be interpreted that regardless of the flow experience there is no differences in GPAs as high or low. However there is a need of a further study on that issue.

**Summary Of Qualitative Analysis In the Means Of Student Achievements**

- **Improvement on GPA**

Regarding the learning system as a whole within the context of history of civilization lessons the t test for the paired samples showed the mean for the GPA for the posttest means are significantly higher than pretest means (M.= 1.3, df(53) =3.554, p<0.001).

Obviously, there is an improvement on students scores in all groups for in second semester where the proposed learning system are presented.

- **Pressure/Tension and GPA Improvement**

The students in the second phase of the study are grouped in to three according to their GPA changes . Group 1 are the students who has a decrease in GPA in second semester , Group 2 are the students that have no GPA change in second semester, and last group are the students who has an improvement in their GPA in the second semester, where the learning system has been presented.

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does significantly influenced by the pressure / tension of student via learning system, $F(2,51) = 3.54$, $P < .05$. In case of T-value of -2.620 is significant ($p< .05$). where can be concluded that students which have less pressure / tension have an increase their grades than do those more pressure/tension within this learning system.

- **Sequential / Global Learning Styles and GPA Improvement**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does significantly influenced by global learning style of student via learning system, $F(2,51) = 4.186 P < .05$. On the other hand, in case of a T-value of -2.888 is significant ($p < .05$). It can be concluded that students which have more tendency in sequential learning style have more increase in their grades than do those have a sequential learning style .

**The Parameters That Have No Significant Relation With Achievement (GPA) Parameter:**

- **Locus of Control and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by locus of control of student via learning system, $F(2,51) = 1.709, P > .05$.

- **Perceived Competence and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by perceived competence of student via learning system, $F(2,51) = .272, P > .05$.

- **Interest/enjoyment and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by interest/enjoyment of student via learning system, $F(2,51) = 1.142, P > .05$.

- **Effort/Importance and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by effort/importance of student via learning system, $F(2,51) = 3.120, P > .05$.

- **Perceived Choice and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by perceived choice of student via learning system, $F(2,51) = 1.718, P > .05$.

- **Value usefulness and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by value usefulness of student via learning system, $F(2,51) = 1.168, P > .05$.

- **Visual / Verbal Learning Styles and Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by visual and verbal learning styles choice of student via learning system, $F(2,51) = 1.299, P > .05$.

- **Over All Flow Experiences And Grade Change**

Regarding the learning system as a whole within the context of history of civilization lessons the ANOVA results for the groups suggesting that grade change does NOT significantly influenced by over all flow experience of student via learning system, $F(2,51) = 1.066, P > .05$.

## 4.2. QUALITATIVE ANALYSIS :

### 4.2.1. Focus Group Interview And Close Ended Questions

In the second phase of the study three weeks long focus group study was also followed by semi-structured interviews which was conducted with the students(n=54) aiming to investigate the attitudes and prior experiences of the students to usage of proposed tools and learning system in class. In the interviews, students were asked several close-ended questions where they need to indicate their responses as Yes or No. The first of these questions is: *"Have you ever felt that the time passed so fast? "*.The 94% of students (n=51) responded positively to this question whereas only 6% of the student (n=3) responded negatively.

Another of these questions; which is "*Did you ever felt that you had enjoyed in the lesson? " ;* was responded positively by the 93% of students (n=50) whereas only 7% of the student (n=4) responded negatively. After immediately this question the students asked to them "*What Is the part that makes the lessons enjoyable more ? "*; the 82 % of students (n=44) indicated that they enjoyed the films applications with supported computer tools, 7% of the student (n=4) indicated quizzes after films with supported computer tools and 11% of them (n=6) indicated as computer tools only.
The question "Do you think these application (learning system ) in the lessons create a feeling of success in you ? " was responded positively by the 74% (n=40) of the students whereas 26% of the students (n=14) responded negatively.
Another question asking "Do you think these applications are challenging , compelling, and forceful with opportunities " was responded positively by 76% (n=41) of the students where as negatively by 24% of students (n=13). Students also wanted to compare the learning system and its methodologies (tools and application ) with previous (first semester ) lectures and presentations in the History of Civilization classes . To have such a comparison students were asked the question : "Do you think the application in this lessons creates a feeling of success more than presentation and other lectures.". The 57% of the students(n=31) responded

positively on this question and the 43% of them (n=23) responded negatively. This indicates a little more than half of the study group thinks that this learning system creates feeling of success more than other classical presentation which was applied in first semester. On the other hand the less than half of the study group thinks the system creates feeling of success either less than classical presentations or same as classical presentation.

Another comparison question asking :" Do you think these applications are challenging , compelling, and forceful with opportunities more than other presentation and other lectures " responded positively by the 65% of the students (n=35) and negatively by the 35% of the students(n=19). Again this result indicates more than half of the study group thinks that this learning system creates feeling of challenge more than other classical presentation which was applied in first semester. On the other hand the less than half of the study group thinks the system creates feeling of challenge either less than classical presentations or same as classical presentation. When we asked to student what creates the challenge factor other than the classical presentations the 10 of the students indicate as films application, 9 of them topic and context of films and lecture itself , 10 of them indicated as quiz application and 8 of them indicated other such as term projects , having higher in grades and peer influences in the class. The summary of the students responds are as graph below.

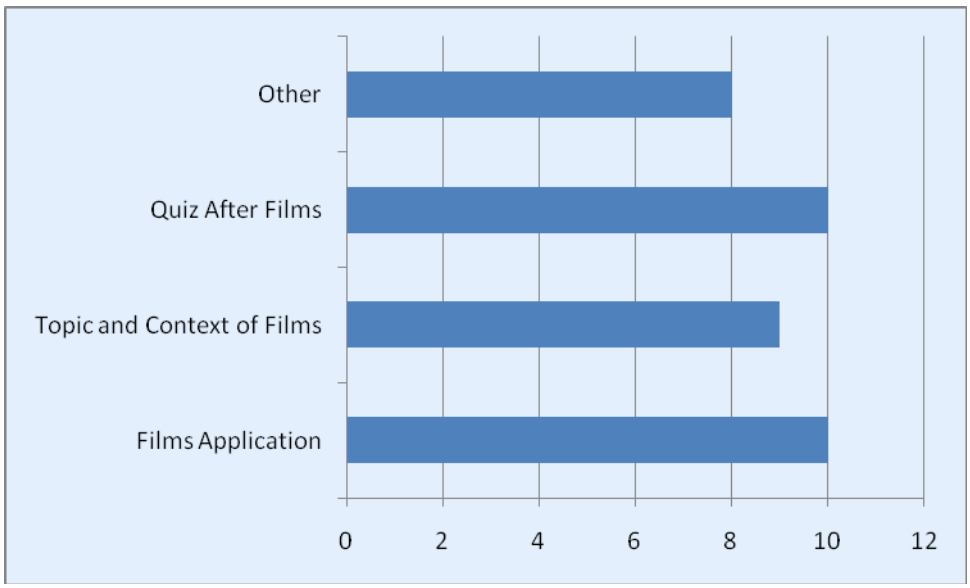


**Figure 4.1 : Challenge Factors Indicated By Students**

Finally students are asked to compare the learning system and its methodologies (tools and application ) in History of Civilization classes with any other class in the university. The question ; ". Do you think the applications in this lessons creates a feeling of success more than any other classes." ; were asked have comparison . The 52% of the students(n=28) responded positively on this question and the 48% of them (n=26) responded negatively. This indicates a little more than half of the study group thinks that this learning system creates feeling of success more than other classes which are giving in the university. On the other hand the less than half of the study group thinks the system creates feeling of success either less than other classes or same as them. Final comparison question asking Do you think these applications are challenging , compelling, and forceful with opportunities more than any other classes " responded positively by the 65% of the students (n=35) and negatively by the 35% of the students(n=19). Again this result indicates more than half of the study group thinks that this learning system creates feeling of challenge more than other classes which are giving in the university. On the other hand the less than half of the study group thinks the system creates feeling of challenge either less than classes or same as them.

### 4.2.2. Focus Group Interview: Open Ended Questions

After completing the structured questions the students (n=54) in the focus study were asked to indicate their point of view, feelings and recommendations about the learning system via these questions as follow :

Q1. Please describe your point of view about the application used in the History of Civilization lessons which includes Films and Quizzes and Online applications as a whole .

Q2. Please describe your feelings (anxiety, relaxation ,enjoy etc.) while you are taking application within films supported with computer tools in the History of Civilization lessons.

Q3. Please describe your feelings (anxiety, relaxation ,enjoy etc.) while you are taking the application with quizzes supported with computer tools in the History of Civilization lessons.

Q7. Please describe other things do you think that ensured the lessons to be enjoyable .

Q8. Please describe the things that can be done more for this lesson to be enjoyable.

Q16. Please indicate your recommendations, thoughts , ideas or anything else would you like to say about these methodologies (computer tools and in class applications) in History of civilization ?

After the coding part the following findings has gathered for that question as in table 5.1 . According to coding the data findings has been interpreted. The interpreted results are coded and revealed in eight primary themes with subthemes embedded within each of the primary themes.

**Table 4.23 : Main Results Coding After Focus Interviews**

| |
|---|
| A1 - Methodology Success of Learning and Likable [Based on Q1] |
| B-Bad Conditions [Based on Q1] |
| C- Dislike The methodology (Negative Attitude To Methodology) [Based on Q1] |
| D-Feelings At Film Application [Based on Q2] |
| E-Feelings at Quiz Application [Based on Q3] |
| F-What is Enjoyable [Based on Q7] |
| G-What can be done more to be enjoyable [Based on Q8] |
| H-Other Recommendations [Based on Q16] |

- **Details of Focus Group Interview Coding Findings**

## A. Methodology (Supports) Success of Students' Learning and Likable (Positive Attitudes )

**Table 4.164: A - Methodology (Supports) Success For Students' Learning and Likable**

| A – Methodology (Supports) Success For Students' Learning and Likable |
|---|
| 1. Catch The Students |
| 2. Like The methodology (Positive Attitude) To Methodology [Based on Q1] |
| 3. Methodology helps to understand better [based on Q1] |
| 4. Methodology Strengthen Knowledge [Based on Q1] |

According the coding of students responds on indicated question, it can be inferred that the methodology supports the student success in their learning (H1). Because within the student responds there are four subscales coded indicating the support for student success. These subscale are coded as catching the students into lesson (attention and participation ) , students positive attitude (like) the methodology , helping to understand lesson better and strengthen the knowledge in the lesson.

### A1.1 Catch The Students (n=13):

**Table 17:A1.1 Catch The Students**

| A1.1 Catch The Students | | |
|---|---|---|
| | | |
| | Attention on lessons with films | 5 |
| | Interested | 3 |
| | Prejudgment (Positive) | 2 |
| | Related | 3 |
| | TOTAL | 13 |

According to question 1 ,some of the students responds (n=13) which signify the learning system catch them were coded under the "Catch The Student" title (see table above) as a subscale of A. According to this coding students who has an attention to lesson, feel interested, feel related and have a positive prejudgment changes toward the lesson were grouped according to their interview responds in the focus study. This results indicates that for the learning system and proposed applications have a role of catching students interest and make them more related to the lesson of history of civilization. This can be assumed as a sub function of the learning system where is the students success is supported. Some of the student responds are highlighted as follows:

1. **Attention on lessons with films (n=5) :**

- "….I think this method is very helpful because films makes us to understand the lessons better. [ I also believe ] Films make learning permanent for me. *Also films improve my concentration in the lessons. (S)*
- Very successful methodology .*It avoid distraction of attention from the course* .
- Quizzes after film is more good for us . This methodology is very enjoyable than classical lessons because its different style of process. *This methodology improves the participation into lessons.*
- I believe the visual learning with movies ensures learning quicker and more enjoyable. It definitely makes learning permanent. *We have learned the lessons because we watched films without boring and losing attention* . The quizzes after the movies improve the success because the knowledge were fresh .In the final exam I remembered the questions that I have that I had confused.
- *It is very enjoyable and makes attention better*. It is very helpful on learning also makes it permanent,

**2. Interested (n=3)**

- I like *films interesting* but I can't stop myself that I watch them because I have to . I believe they are useful for general culture.
- *Films are very nice methods and helpful . Films improves my interest on lessons.* But I sometimes find the quizzes long and boring . I did not like the quizzes so much
- *"....The films makes my interest on the lessons more.* It avoids monotone teaching. Quizzes makes us more exercise. "

**3. Prejudgment (Positive) (n=2)**

- *The films makes lessons enjoyable for the engineers who has a bias and prejudgment on social lessons like history*
- *I haven't think that I could enjoy the history until this lessons. The classical lessons makes the knowledge to vanish . After this lesson , I interested into history for the first time .*

**4. Related(n=3)**

- *I feel more related to history lessons now* . I have no difficulties to answer quizzes
- This is more beneficial than classical lessons. *It helps me to be more related to history lessons.*
- Films are more permanent than power point presentations *and I think that I like these films more related to learn something in history and I like to study as that way* . Quizzes are good exercises for final exam.

### A.2 Like The methodology (Positive Attitude) To Methodology (n=38) :

**Table 4.26: A.2 Like The methodology (Positive Attitude) To Methodology**

| A.2 Like The methodology (Positive Attitude) To Methodology [Based on Q1] | | |
|---|---|---|
| | Enjoyable Lessons With Films Quizzes and Online Tools | 12 |
| | Methodology useful for culture | 1 |
| | Likes methodology (Films and quizzes) more than classical learning | 25 |
| | TOTAL | 38 |

Another sub dimension supporting A is titled as "Like The methodology (Positive Attitude) To Methodology". This coding is based on the students positive attitudes over the learning system according to responds of qestion1 in the interviews. The coding group (n=38) includes the students responds conveying the lesson is enjoyable with films quizzes and online tools ,methodology is useful for culture and like methodology more than classical learning. According to this responds students have a positive attitude over the learning system and proposed applications. This likeability attribute of the learning system can be considered as a sub function of A. Some of the student responds are highlighted as follows:

#### 1. Enjoyable Lessons With Films:

- Very helpful method. *I find the lessons more enjoyable and helpful with films*
- like movies so the films in the class is also very enjoyable for me . *Also I think that is very effective method of using visuals*
- Quizzes and films makes learning permanent. Very efficient methodology. *This methodology makes the boredom of the lessons lower , I think.*

- *I believe the visual learning with movies ensures learning quicker and more enjoyable.* It definitely makes learning permanent. We have learned the lessons because we watched films without boring and losing attention . The quizzes after the movies improve the success because the knowledge were fresh .In the final exam I remembered the questions that I have that I had confused.

2. **Likes methodology (Films and quizzes) more than classical learning**

    - *…Very effective method,* it makes learning really easier .I believe this method is very effective to improve my knowledge in history lessons
    - *It could be more boring if we had classical lessons* but the films makes the lessons more enjoyable and understandable. It makes learning easier.
    - *I believe this is much more better than the lectures that only based on presentation and no real visual materials*
    - *Films are more appealing and successful than the classical lessons.* Quizzes makes learning strong
    - I believe this method deals more senses to be helpful and permanent. *Multimedia is very important in the learning.*

    *……The films as audio visual materials makes history lessons become not to be a lesson makes us sleepy at the class.* The films creates curiosity and this is the critical point of learning

### A.3Methodology helps to understand better (n=29)

**Table 4.2718: Methodology helps to understand better**

| 3 Methodology helps to understand better [based on Q1] | | |
|---|---|---|
| | Understand lessons better with films | 17 |
| | Understand lessons better with Quiz | 12 |
| | TOTAL | 29 |

The third sub dimension supporting A is titled as "Methodology helps to understand better". This coding is based on the students responds (n=29) indicating they have better understanding with film application and quiz application ,separately.

According to student responds they think the learning system us helpful to their understanding of lesson therefore this attribute is coded as sub function of A. Some of the student responds under this title are highlighted as follows:

1. **Understand lessons better with this methodology (strong implication on films application )**

    - *The visual learning makes it easier to understand so this is a very helpful methodology.*
    - *.Films supports learning*. The lessons are more permanent in every aspects. This methodology supports our success.
    - *I can understand lessons more with films.* Because of visual learning the lesson is more fluent and remembering of the knowledge is more easier. Quizzes makes learning stronger.

- *Films are better to understand and more permanent.* I enjoy to watch and it creates curiosity. I think everybody is fine with the method

- I think this is a method more helpful than classical learning. *This makes lessons more understandable* .

2. **Understand lessons better with this methodology (strong implications on quiz application )**

- *.....Quizzes after the films are very good . Maps are makes to understand better*
- *Quizzes really makes learning easier and helps to understand the topics*

- *The quizzes are helpful to highlight important parts in the lessons and films* .The quizzes makes lessons more permanent in our minds.

- *.... in practice I found the quizzes are very helpful to understand and make learning strong*

- *Quizzes are moderate in difficulty. Sometimes easy sometimes difficult but creates a good repetition*

- *....The quizzes make the concepts more understandable and creates an opportunity to be ready for the exams*

## A.4 Methodology Strengthen Knowledge (n=41)

**Table 4.28: A.4 Methodology Strengthen Knowledge**

| A.4 Methodology Strengthen Knowledge [Based on Q1] | | |
|---|---|---|
| | | |
| | Permanent learning and easy to remember with Films (2) | 21 |
| | Quizzes strengthen the knowledge | 20 |
| | TOTAL | 41 |

The last sub dimension supporting A is titled as "Methodology Strengthen Knowledge". This coding is based on the students responds (n=41) indicating they see their knowledge will be more permanent and easy to remember with films application and they believe the quizzes application will strengthen their knowledge,

According to student responds they think the learning system helps to strengthen knowledge of lesson therefore this attribute is coded as sub function of A. Some of the student responds under this title are highlighted as follows:

Permanent learning and easy to remember with Films and Repetition With Quiz (2)

- *....The films are very good method to learn and the visual things always permanent.*

- *It stronger the knowledge and makes it easier to remember Films makes lessons understandable and more learnable* but the noise in the class

- *I like and satisfied this method very much. Visual things makes it easier to remember* . Also this makes learning more enjoyable . The lessons are very helpful for the

- … .so I believe this methodology is very helpful for us. I enjoyed films so much , *Also I felt that are memorable*

- *Quizzes very good to strengthen the knowledge*, There should be same kind of them at the quantitative lessons

**B-Bad Conditions [Based on Q1]**

**Table 4.2919: B Bad Conditions**

| B Bad Conditions | | |
|---|---|---|
| | 1.Sound and Physical Environment | 3 |
| | 2.Quiz and Security | 3 |
| | 3.Crowded Classes and Noise | 7 |
| | TOTAL | 13 |

According the coding of students responds on indicated question 1, it can be inferred that for the methodology there are some negative effects of the learning system in classroom usage especially in films application and quiz application. These problems are encoded in the title of " Bad Conditions " (B). There are three subscales coded for this property as Sound (Problems) And Physical Environment , quiz and security (for the quiz) and crowded class (environment) and Noise . These subscale are indication of bad conditions to use the learning system .

**B.1.Sound (Problems ) and Physical Environment (n=3):**

The Sound (Problems) And Physical Environment groups are coded according to students complaint about the sound system or the lighting of the class or the screening of projection. This problems noticed by the students are coded as a sub dimension of bad condition. Some of the students under this title are highlighted as follows:

- More attractive and enjoyable than other materials of lesson. *But the sound system creates problems so it makes concentration harder.*

- *.....I have difficulties because sound is very bad in the class.*

**B.2. Quiz and Security (n=3):**

The quiz and security groups are coded according to students complaint about the quiz security . There are complaints conveying that some of the students in the class does not answered all the question by themselves and cheated at the quiz.
This problems noticed by the students are coded as a sub dimension of bad condition. Some of the students under this title are highlighted as follows:

- …think that is very good to make learning permanent with films. *But I think the quizzes were not implemented as it should be .*

- *I like the quizzes but I think everyone answer by their selves*

- *The methodology is very helpful in theory , But in practice it is not implemented because of the size of the class. Some of the students makes it hard to do because of their reckless behaviors. But I believe it is very helpful method for the student that wants to learn and open minded*

**B.3. Crowded Classes and Noise (n=7):**

The crowded class and noise group are coded according to students complaint about the class size and the noise in the class during the application. Some of the students also think that there are too much noise during the class discussions so they cannot understand the lesson clearly. This problems noticed by the students are coded as a sub dimension of bad condition. Some of the students under this title are highlighted as follows:

- *Films are helpful but it is difficult to understand without a silence in the classroom*

- …films makes lessons understandable and more learnable *but the noise in the class makes concentration harder*

- *Everything will be fine if only there is no noise in the class. I answer the question very easily*

**C-Dislike The methodology (Negative Attitude To Methodology)**

**Table 4.30:H3-Dislike The methodology**

| C-Dislike The methodology (Negative Attitude To Methodology) [Based on Q1] | |
|---|---|
| Quizzes are boring | 1 |

According the coding of students responds on indicated question 1, it can be inferred for the methodology there are some negative effects of the learning system as a meanings of negative attitudes. These problem are encoded in the title of Dislike The methodology (Negative Attitude To Methodology) ” (H3). However there are only one student responded that completely dislike the methodology in the interviews. His respond is as follow.

- "…. I don't like to come and sit in the class to follow the lesson. Because in three hours each week I don't want to spent my time for the quizzes. The films are Ok , because I like the movies and the history can be an enjoyable thing in films. *But having quizzes in class each week is not meaningful to me , it is so boring . I don't like to sit in the class for the quiz , I get bored completely.*

**D-Feelings At Film Application**

**Table 4.31: D-Feelings At Film Application**

| D-Feelings At Film Application | | | |
|---|---|---|---|
| | | | |
| | D.1Attractive | | 12 |
| | D.2Criosity | | 6 |
| | D.3Enjoy | | 32 |
| | D.4 Involve and Lost in The Activity (n=16) | | |
| | | D.4.1Cant stop to watch | 1 |
| | | D.4.2Involved into activity | 11 |
| | | D.4.3Like in theater | 2 |
| | | D.4.4Time passes quickly | 2 |
| | D.5More attention and Concentrated | | 7 |
| | D.6Relaxed | | 6 |
| | D.7Self confidence | | 4 |

According to question 2 , the students feelings during the films application were investigated. Their feelings in the film application of the learning system was titled as

Feelings At Film Session (D). According to this coding of student responds there are sub dimensions of feelings at the film session which are also coded as “Attractive” , “Curiosity”, “Enjoy” , “Involve and Lost in The Activity” , “More Attention and Concentration”, “Relaxed” and “Self Confidence”. Also the sub dimension “Involve and Lost in The Activity” has sub scales in itself as coded “Can’t Stop to Watch” , “Involved Into Activity”,”(Feeling) Like In Theater’ and “Time Passes Quickly”.
This results indicates the students feelings while interacting in the learning system and proposed applications in class where they have the films application.

**D.1.Attractive (n=12) :**

The attractive sub dimension was grouped and coded according to students interview respond about in class film application. This coding dimension indicates that students have a feeling of attracted , interested in or influenced by the film application.
This feeling noticed by the students are coded as a sub dimension of feelings at film application . Some of the students responds under this title are highlighted as follows:

- .... *More attractive and enjoyable than other materials of lesson.* But the sound system creates problems so it makes concentration harder.

- *Films are very enjoyable to watch . The lessons are more attractive because of films.* Lessons are more memorable in the mind

- *It is very attractive and improves my attention into the class*

- *For example NEWTON and GALİLEO films are very attractive for me* . I like the topics and feel enjoy

- Very enjoyable . *It attracts me to history and concentrate better ,* I feel I have learned new things at the end of the lesson and it makes me happy

- *....In the lesson I feel attracted by the content and historical characters. Especially I impressed by the Hannibal .I learned a lot from his leaderships in the movie….*

**D.2.Curiosity (n=6):**

The curiosity sub dimension was grouped and coded according to students interview respond about in class film application. This coding dimension indicates that students have a feeling of curiosity in the film applications. This feeling noticed by the students are coded as a sub dimension of "feelings at film application" . Some of the students responds under this title are highlighted as follows:

- *When I came to the lesson I wonder what we would watch . I like films , films arouse curiosity . I like this methodology*

- The films as audio visual materials makes history lessons become not to be a lesson makes us sleepy at the class. *The films creates curiosity and this is the critical point of learning*

- I have a quality time when film watching *.Arouse curiosity and very interesting to watch*

- Better than classical lessons . *I watch with curiosity and attraction*

**D.3.Enjoy (n=32) :**

The enjoy sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of enjoy in the film applications. This feeling noticed by the students are coded as a sub dimension of "feelings at film application" . Notice that the enjoy in is the feeling in the film application and based on question 2 different than enjoy factor at question 1. Some of the students responds under this title are highlighted as follows:

- *I think films are very enjoyable* and makes learning permanent that cause self confidence

- *I really enjoy to watch films* but I feel anxiety in the quizzes.

- *Films make lessons enjoyable and make it more understandable.* While watching we learn without noticing

- *To enjoy or bore is about the topic of the film. The methodology is enjoyable*

- *Lessons are very relaxed and enjoyable with movie.* I think there are so few student that don't like to watch films

- *The films are effective as positively on me . I enjoyed and my knowledge is improved. I have no anxiety and problem in the lessons*

- *..... All the films are enjoyable, didactic , and fill in our brains without distraction of attention*

- *Films are enjoyable . I have no focus problem when watching .I am very comfortable when watching .*

## D.4. Involve and Lost in the Activity

The involve and lost in the activity sub dimension was grouped and coded according to students interview responds about in class film applications. Also the this dimension has sub dimension as in itself coded as "Can't Stop to Watch" , "Involved Into Activity","(Feeling) Like In Theater' and "Time Passes Quickly".
Involve and lost in the activity sub dimension coding indicates that students have a feeling of involvement and lost in the film applications. This feelings noticed by the students are coded as a sub dimension of "feelings at film application" and its self sub dimensions.

**Table 4.32:D.4 Involve and Lost in The Activity**

| **D.4 Involve and Lost in The Activity (n=16)** | | |
|---|---|---|
| | D.4.1Cant stop to watch | 1 |
| | D.4.2Involved into activity | 11 |
| | D.4.3Like in theater | 2 |
| | D.4.4Time passes quickly | 2 |

### D.4.1Cant stop to watch (n=1)

The cant stop watch sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of addiction to watch movie or can not stop themselves to watching films in the film applications. This feeling noticed by the students are coded as a sub dimension of the sub dimension "Involve and Lost in The Activity". The students responds are as follow :

- *.... I feel that I had to watch until the end of the movie when it starts. I don't know why but I think I like watching movies and can not stop myself to see until the end of it even I know the topic of the movie. For example in the film*

*about Maya cultures , I have seen that movie just two weeks before in class however I wanted to watch it again at the end… But this time I learned a lot within class discussion may be that can be a reason ….*

**D.4.2Involved into activity (n=11)**

The involved into activity sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of lost in films or involve into film. This feeling noticed by the students are coded as a sub dimension of the sub dimension "Involve and Lost in The Activity". Some of the students responds are as follow :

- I think films makes learning more permanent. *I learn more meaningfully while I watch the people and societies of the past , their clothing , their relations , images in the film . It is better than presentations.*

- *Some scenes are so enjoyable and sometimes I feel worried about the some scene because thy affects me so much*

- *"…We can observe the ancient societies life and their difficulties in the films. I feel that I was in there … "*

- *I like the historical films already. While watching I lost in the film.* Sometimes it could be boring but I prefer to learn from films rather than books

- I feel relaxed and I feel enjoy . *Also I lost in the film*

- *A historical film activates both analytical and emotional intelligence which makes us feel I lived in the history*

**D.4.3Like in theater (n=2)**

The like in theater sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling being in the theater rather than in class. This feeling noticed by the students are coded as a sub dimension of the sub dimension "Involve and Lost in The Activity". Some of the students responds are as follow :

- *"....some films makes me feel to be like watching in the theater but some of them are boring"*

**D.4.3.4 Time passes quickly (n=2):**

The time passes quickly sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling that they loose the track of time while in class film applications. This feeling noticed by the students are coded as a sub dimension of the sub dimension "Involve and Lost in The Activity". Some of the students responds are as follow :

- "…lessons becomes more enjoyable. *I dint realize how the 3 hours past.* It makes concentration ."

**D.5.More attention and Concentrated Within Films (n=7)**

The More attention and Concentrated Within Films sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of attention and concentration in the film applications. This feeling noticed by the students are

coded as a sub dimension of “feelings at film application” .Some of the students responds under this title are highlighted as follows:

- *……..I like films and watch them with great attention in the class.*

- *.... I like films because it is very attractive and improves my attention into the class.*

**D.6. Relaxed (n=6)**

The Relaxed sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of relaxation or comfort during the film applications. This feeling noticed by the students are coded as a sub dimension of “feelings at film application” .Some of the students responds under this title are highlighted as follows:

- *“....have relaxed and enjoyed in the films a lot* .I think this is a good way of having lesson and fun together ”

- *Films are enjoyable . I have no focus problem when watching .I am very comfortable when watching* .

**D.6.Self Confidence (n=4)**

The self confidence sub dimension was grouped and coded according to students interview responds about in class film applications. This coding dimension indicates that students have a feeling of self confidence because of having the film applications. This feeling noticed by the students are coded as a sub dimension of "feelings at film application" .Some of the students responds under this title are highlighted as follows:

- Very enjoyable and makes *learning permanent that cause self confidence for me.*

- *The films are effective as positively on me . I enjoyed and my knowledge is improved. I have no anxiety and problem in the lessons*

- *It fits more to this university and I feel more concession*. I think there must be much more lessons like that to help student to learn meaningfully.

**E-Feelings At Quiz (All )**

**Table 4.33:E-Feelings at Quiz**

| E-Feelings at Quiz | | |
|---|---|---|
| | | |
| | E.1Ease at quiz or reduced stress | 8 |
| | E.2.Anxiety | 6 |
| | E.3.Attention and concentration to lesson | 3 |
| | E.4.Bored | 2 |
| | E.5.Challenged | 2 |
| | E.6.Enjoy | 15 |
| | E.7Relaxed | 10 |
| | E.8Self confidence | 7 |

According to question 3 , the students feelings during the quiz applications were investigated as a whole . These feelings in the application of the learning system was titled as Feelings At Quiz (E). According to this coding of student responds there are sub dimensions of feelings at the quizzes which are also coded as "Ease at quiz or reduced stress", "Anxiety" , " Attention and Concentration to lesson", "Bored", "Challenged", "Enjoy", "Relaxed" and "Self Confidence". This results indicates the students feelings while interacting in the learning system and proposed applications in class where they have the quizzes application.

**E.1 Ease at quiz or reduced stress (n=8)**

The Ease at quiz or reduced stress sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students have a feeling of ease at quiz or reduced stress because of the nature of the quiz applications. This feelings noticed by the students are coded as a sub dimension of "feelings at quiz" .Some of the students responds under this title are highlighted as follows:

- I feel more related to history lessons now . *I have no difficulties to answer quizzes*

- *I trust my visual memory so I believe I can answer the questions easily after in the quiz after the films.* Lesson is more enjoyable with films

- *Quizzes are easy and I think I am successful at quizzes*..I believe this would be same in the final exam.

- *I am very comfortable on the quizzes and I can answer easily*

- *Quizzes are very enjoyable. Because of films are very useful to understand the topic I can easily answer the questions*

**E.2 Anxiety (n=6)**

The Anxiety sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students have a feeling of anxiety in the quiz applications. This feelings noticed by the students are coded as a sub dimension of "feelings at quiz" .Some of the students responds under this title are highlighted as follows:

- *I have difficulties even I watch the movies very carefully . Having help of my friends don't make sense because the quizzes gets far away from its objectives*

- *Quizzes in the very short time span causes panic..* Quizzes after film is helpful but it could be different

- *There were some tricks in the quizzes that causes some contradictions*

- **"….** *However in quiz I have a little anxiety*

**E.3.Attention and concentration to lesson (n=3)**

The Attention and concentration to lesson sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students have a feeling of attention or concentration in the quiz applications. This feelings noticed by the students are coded as a sub dimension of "feelings at quiz" .Some of the students responds under this title are highlighted as follows:

- *Quizzes makes the attraction of the lessons and makes learning*

- *Quizzes are good to analyze the things in the film and strengthen the lessons*

- **"….***The quizzes ensures to measure my attention of watching the movie"*

**E.4.Bored(n=2)**

The bored sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students have a feeling of boredom in the quiz applications. This feelings noticed by the students are coded as a sub dimension of "feelings at quiz" .Some of the students responds under this title are highlighted as follows:

- Films are very nice methods and helpful . Films improves my interest on lessons. *But I sometimes find the quizzes long and boring . I did not like the quizzes so much*

- "…. I don't like to come and sit in the class to follow the lesson. Because in three hours each week I don't want to spent my time for the quizzes. The films are Ok , because I like the movies and the history can be an enjoyable thing in films. *But having quizzes in class each week is not meaningful to me , it is so boring . I don't like to sit in the class for the quiz , I get bored completely.*

**E.5.Challenging (n=2)**

The challenging sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students thinks the find quizzes challenging and this property noticed by the students are coded as a sub dimension of "feelings at quiz" .Some of the students responds under this title are highlighted as follows:

- *....think the quizzes are challenging* . I wish we will have the right answers and check ours .

**E.6 Enjoy and Like (n=15)**

The enjoy and like sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students feels enjoy in quizzes .This feeling noticed by the students are coded as a sub dimension of "feelings at quiz" .Note that again this sub dimension was coded according to question 5. Some of the students responds under this title are highlighted as follows:

- *....I like the word matching. Most of the words stay in my mind*

- *...mostly I enjoy quizzes and quizzes strengthen the knowledge with films.*

- *Out of the classical . No monotone and attractive . Very interesting , super*

- *In general questions are easy to understand and have no anxiety . They are fun I can say*

**E.7 Relaxed (n=10)**

The relaxed sub dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students feels relaxed in quizzes .This feeling noticed by the students are coded as a sub dimension of "feelings at quiz" .Note that again this sub dimension was coded according to question 5. Some of the students responds under this title are highlighted as follows:

- *I feel I learned very much because of the quiz . So I feel relaxed*

- *I feel comfortable at the quizzes , Because I watched the films carefully. I have no anxiety when answering .*

- *I definitely don't feel anxiety . Because I watch the films very carefully than I can answer all of the questions easily. The quizzes related to movie is very helpful*

- *Quizzes are very comfortable and the things get stronger because we make it after the film*

**E.8 Self Confidence (n=7)**

The self confidence dimension was grouped and coded according to students interview responds about in class quiz applications. This coding dimension indicates that students feels confidence in quizzes .This feeling noticed by the students are coded as a sub dimension of "feelings at quiz" .Note that again this sub dimension was coded according to question 5. Some of the students responds under this title are highlighted as follows:

- *Quizzes help me to understand how successful I am*

- *Quizzes are very helpful . A little repeat of lesson was enough to succeed before the exams*

- *Quizzes strengthen the lessons. They creates self confidence*

**F-What is Enjoyable**

The student in the focus study are asked what makes the learning system enjoyable with question 6 in the interviews .Their responds are coded in the title What is Enjoyable ? (F). According to this coding of student responds there are sub dimensions as the following table.

**Table 4.34: F-What is Enjoyable**

| F-What is Enjoyable | | | |
|---|---|---|---|
| | F.1 Social Interactions and Collaborations | | |
| | F.1 Sub Dimensions | F.1.1.Collaboration at class | 17 |
| | | F.1.2.Films as in theater | 4 |
| | | F.1.3.Social Event | 2 |
| | | | |
| | F.2 Topic of The Films | | |
| | F.2 Sub Dimensions | F.2.1.Films Historical Characters | 3 |
| | | F.2.2.Films Topics | 4 |
| | | F.2.3.Topic as Fantasy | 1 |
| | | F.2.4.Topic as science | 1 |
| | | F.2.5.Topic creates curiosity | 5 |
| | | F.2.6.Topic like we are in history | 2 |
| | | | |
| | F.3 Watching Films Only | | |
| | F.3 Sub Dimensions | F.3.1.Films itself | 5 |
| | | F.3.2Visual Learning | 2 |
| | | | |
| | F.4 Q7.Different Than Classical Method | | 2 |

Some of the responds indicating what is enjoyable in the learning system (F) as the dimensions from the above table gives as follow:

- *The methodologies rather than classical methods is enough to ensure success*

- *....and the collaborative learning . We discuss the answers of the quizzes at the class and make comments . Everybody state their opinions*

- …. I enjoy at the *discussion and collaborative learning*

- *….Because of having interaction and collaboration in the class* .We feel we are not lecturing , we are making a social event.
- .. and collaborative learning and comments in the classes makes the lesson strengthen knowledge *so that makes lesson easy, fun a*nd more memorable.

- *We answer the quizzes all together ,We have to listen the lecture and watch films better. Also interaction with our friends gets more .*

- *… Maps and collaborative learning are most important and fun in the lesson.*

- … I think *discussion in the class was most enjoyable part of the lesson*

- *Films session are the fun part . I feel I am watching movie at theater with my friends which is fantastic.*

- Because of having interaction and collaboration in the class .*We feel we are not lecturing , we are making a social event.*

## G- What can be done more to be enjoyable

The student in the focus study are asked “What can be done more to be enjoyable” with question 7 in the interviews .Their responds are coded in the title “What can be done more to be enjoyable (G). According to this coding of student responds there are sub dimensions as the following table.

**Table 4.35: G-What can be done more to be enjoyable**

| G-What can be done more to be enjoyable | |
|---|---|
| G.1More Class Project | 3 |
| G.2.Good as it is. | 8 |
| G.3Less Quizzes | 3 |
| G.4.Lesson Topic Should Change | 3 |
| G.5More Concepts Maps | 1 |
| G.6More interactive lessons | 1 |
| G.7More visits to museum | 10 |
| G.8.More Visuals (simulation) | 3 |
| G.9Music of Historical Ages | 1 |
| G.10Short Lessons or more breaks in the lecture | 3 |

## H- Other Recommendations

The student in the focus study are asked for other "recommendations with question 16 in the interviews .Their responds are coded in the title "Other Recommendations (H). According to this coding of student responds there are sub dimensions as the following table.

**Table 4.36:H-Other Recommendations**

| H-Other Recommendations | |
|---|---|
| H.1Answers and results must be given immediately after quizzes | 6 |
| H.2More film must be showed | 1 |
| H.3More quality films must be showed | 2 |
| H.4.Only quizzes instead of midterms and finals | 1 |
| H.5.Better Environment for the class | 10 |
| H.6.Class projects are useful for who prepared in the lesson | 1 |
| H.7Topics Must Change Near History | 1 |

# 5. FINDINGS

According to design the research was aimed to investigate learners' attitudes and achievements toward the proposed learning system. The goals of the empirical research are to answer how this system is meaningful and enjoyable for the students, what is the differences of the student achievements between a classical power point based lecture (pretest group) and the learning system (posttest group). Additionally we had used the flow state concept as in the measurement methodology to find how the system and students have a unity in the system. According the quantitative and qualitative analysis findings several result has been conducted. For the sake of the detailed analysis ;only the small size focus group has been taken in the study therefore having a single institution and the lack of a control group the results cannot be generalized . However these results can give a good insight for understanding the success of the goals of the study. The results of the findings are as follows:

## 1. Students have Positive Attitudes and Feelings Within The Learning System

The students attitudes and feelings within this learning system can also be interpreted according analysis of interview questions. From results (D-Feelings At Film Application , E-Feelings at Quiz Application-What is Enjoyable and
G-What can be done more to be enjoyable) it can be concluded that students have positive attitudes and feelings in the learning system in both quiz applications and films applications. The most of the students believe that they have enjoyed in the lessons both in the films and quiz applications in that learning system. Also they have some positive feelings such as attraction, curiosity, positive attention

,concentration, relaxation, self confidence and reduced stress. Only a little portion of the students have anxiety in quizzes and bored. More importantly only a student in the focus study group indicated he dislikes the methodology completely.

When the students asked to them *"What Is the part that makes the lessons enjoyable more ? "*; the 82 % of students (n=44) indicated that they enjoyed the films applications with supported computer tools, 7% of the student (n=4) indicated quizzes after films with supported computer tools and 11% of them (n=6) indicated as computer tools only. Additionally the enjoyment parts of the learning system has been investigated in the focus study analysis. The student responds (F-What is Enjoyable) showed that the majority of the students indicated that the enjoyable part of the learning system is collaboration in class and being like in a social event in the class ;which are ensured by in class discussions in films application and quizzes after films. Also most of the students indicates that they liked the films application in classroom. It is clearly showed that the students enjoyed at the films application most of the time.

**2. The Learning System Motivates Students**

According to subscales of IM inventory, students have a positive attitude toward the perceived competence of the system (M=5.3; SD= 1.1) , effort /importance of the learning system and activities (M=4.9;SD= 1.1), perceived choice of doing the activities in the system (M=4.6;SD = 1.7) and value/ usefulness of the system (M=6.2;SD =.9) . Also students are having a little pressure / tension in performing activities in the system (M=1.9;SD=.9). All the conditions of motivation indicated IM is ensured in this system according to students responds. Also in the it has been concluded that students think this learning system helps their success in the lesson and they like it(A - Methodology Success of Learning and Likable). This positive attitude also can be a good motivation factor for the students toward the learning system.

### 3. The Learning System Provides A Student Centered Learning (or Active Learning) And Enhancing Critical Thinking

This learning system designed to help active participation of students in the lecture by taking account a learner centered approach. Also this approach considered as active learning via in class discussions. The discussion methods also aims to enhance critical learning . The students attitudes about their learning by this learning system can be interpreted according analysis of interview questions. From results it can be concluded that students think this methodology help their (active) learning in class ( A - Methodology Success of Learning and Likable). The sub dimension of A also showed that students think that this learning system helps them to involve in lessons (A.1.Catch The Students; n=13), helps to understand the lesson (A.3Methodology helps to understand better ;n=29 ) and helps them to recall easily ( A.4 Methodology Strengthen Knowledge ; n=41) .

### 4. The Learning System Creates Feeling of Success and Challenge

According to the responds of the question “Do you think these application (learning system ) in the lessons create a feeling of success in you ? the majority of the students ( 74%;n=40) thinks this learning system creates a feeling of success for them. This result is also parallel within the focus interview analysis where students think this learning system help their learning in class ( A - Methodology Success of Learning and Likable). This can be interpreted that the students believe the learning system is beneficial for their success. Also the majority of the students (76%;n=41) thinks the learning system is challenging , compelling, and forceful with opportunities according to the question asking this properties.

### 5. The Learning System Is Somewhat Better Than Classical Lessons

More than half of the study group (57% ;n=31) thinks that this learning system creates feeling of success more than other classical presentation which was applied in first semester. Also result indicates again, more than half of the study group (65% ;n=35) thinks that this learning system creates feeling of challenge more than other classical presentation which was applied in first semester. Those results showing that this learning system has been perceived by students as somewhat creating a feeling of success , and mostly challenging compelling, and forceful with opportunities rather than classical History of Civilization lessons with power points in first semester.

Also a little more than half of the study group (52% ;n=28 ) thinks that this learning system creates feeling of success more than other classes which are giving in the university. Finally more than half of the study group (65%; n=35) thinks that this learning system creates feeling of challenge more than other classes which are giving in the university. According to those results it can be concluded that students also thinks that this learning system is also have some properties of creating a feeling of success , and strongly challenging compelling, and forceful with opportunities rather than other classes in the university which are known as classical lessons.

### 6. The Learning System Can Only Be Used In Proper Classroom Environment

The students has some complaints about the administration of the learning system in class according to analysis of interview questions results (B- Bad Conditions).
In films application and quiz application there are some problems noticed by the students which are Sound (Problems) And Physical Environment , quiz and security (for the quiz) and crowded class (environment) and Noise. According to these problem it can be concluded that the class environment is important to apply these learning system. Especially the class size, sound system quality, proper lightening

and controlling of students action by the instructor can be considered before running such lectures. Also in the analysis of quantitative data there are some inferences which can be considered for this and this type of learning systems. All these inferences must be concluded by taking account of the nature of this study (learning system) and the History of Civilization courses.

### 7. The Learning System Effects Improvements on GPA in the course

Regarding the learning system as a whole within the context of history of civilization lessons the analysis results of ***hypothesis 10*** showed there is an improvement on students scores in all groups for in second semester where the proposed learning system are presented.

### 8. Pressure/Tension of Students Affects Their GPA Improvement In This Learning System

Regarding the learning system as a whole within the context of history of civilization lessons the analysis results for the ***hypothesis 12*** suggesting that students which have less pressure / tension have an increase their grades than do those more pressure/tension within this learning system.

### 9. Sequential / Global Learning Styles and GPA Improvement In Learning System

Regarding the learning system as a whole within the context of history of civilization lessons the analysis of the results for the ***hypothesis 13*** suggesting students which have more tendency in sequential learning style have more increase in their grades than do those have a global learning style . As long as this learning system has a tendency of having a sequential flow as a whole it can be assumed when the learning style and the characteristic of lessons are matched there

is a tendency of having GPA improvement. Interestingly there is no clear result supporting this assumption in the visual/verbal learning styles and GPA analysis. Therefore the evidences are somewhat weaker for that conclusion.

### 10. The Learning System Helps Flow Construct

According to findings of the study the proposed learning system provide a environment for students to experience flow in the lessons (***hypothesis 21***). More than half of the students in the second study indicates they have experienced flow. Also majority students in flow or not have felt enjoyment and time passed so quickly which can be stated as conditions or results of flow experience in various studies .

### 11. Flow is A Predictor of Perceived Competence of Courses

Regarding to learning system as a whole within the context of history of civilization lessons the analysis of ***hypothesis 2*** showed the students who feel more that they are capable of doing the activities in the learning system and satisfied with their performance at these tasks are also tend to have more chance to be in a flow experience within the learning systems. Hence, the flow is a good measure and can be a predictor of perceived competence of the courses.

### 12. Flow is A Predictor of Interest / Enjoyment in Courses

Regarding to learning system as a whole within the context of history of civilization lessons the analysis of ***hypothesis 3*** showed students who thinks that this learning system and related activities as interesting and enjoyable more also have a strong tendency to get in a flow experience within the learning systems. Hence, the flow is a good measure and can be a predictor of interest / enjoyment in the courses.

### 13. Flow is A Predictor of Value – Usefulness Perception of Students on Course

By taking account the learning system as a whole within the context of history of civilization lessons the analysis of ***hypothesis 6*** showed students who thinks more that this learning system and related activities has some value and benefits to them; and believe more the importance of the learning system have a tendency to get in a flow experience within the learning systems. Hence, the flow is a good measure and can be a predictor of value – usefulness perception of the students on the courses.

### 14. Flow is a predictor of challenge – learning style match according to nature of course

Regarding the learning system as a whole within the context of history of civilization lessons the analysis of ***hypothesis 8*** showed students whose preferred learner style is visual learning have a more tendency to get in a flow experience within the learning systems. As long as this learning system has a tendency of having a visual learning in its nature it can be assumed when the learning style and the characteristic of lessons are matched there is a tendency of having flow experiences. Therefore, it can be concluded that the flow is a good measure and can be a predictor challenge – learning style match according to nature of course. According to conclusions of analysis in quantitative and qualitative, all the findings can be visualized as the following in Table 5.1 , Figure 5.1 and Figure 5.2.

**Table 5.1:Results**

| |
|---|
| 1. **Students have Positive Attitudes and Feelings Within The Learning System** |
| **2. The Learning System Motivates Students** |
| **3. The Learning System Provides A Student Centered Learning (or Active Learning) And Enhancing Critical Thinking** |
| **4. The Learning System Creates Feeling of Success and Challenge** |
| **5. The Learning System Is Somewhat Better Than Classical Lessons** |
| **6. The Learning System Can Only Be Used In Proper Classroom Environment** |
| **7. The Learning System Effects Improvements on GPA in the course** |
| **8. Pressure/Tension of Students Affects Their GPA Improvement In This Learning System** |
| **9. Sequential Learning Styles Has GPA Improvement In Learning System** |
| **10. The Learning System Helps Flow Construct** |
| **11. Flow is A Predictor of Perceived Competence of Courses** |
| **12. Flow is A Predictor of Interest / Enjoyment in Courses** |
| **13. Flow is A Predictor of Value – Usefulness Perception of Students on Course** |
| **14. Flow is a predictor of challenge – learning style match according to nature of course** |

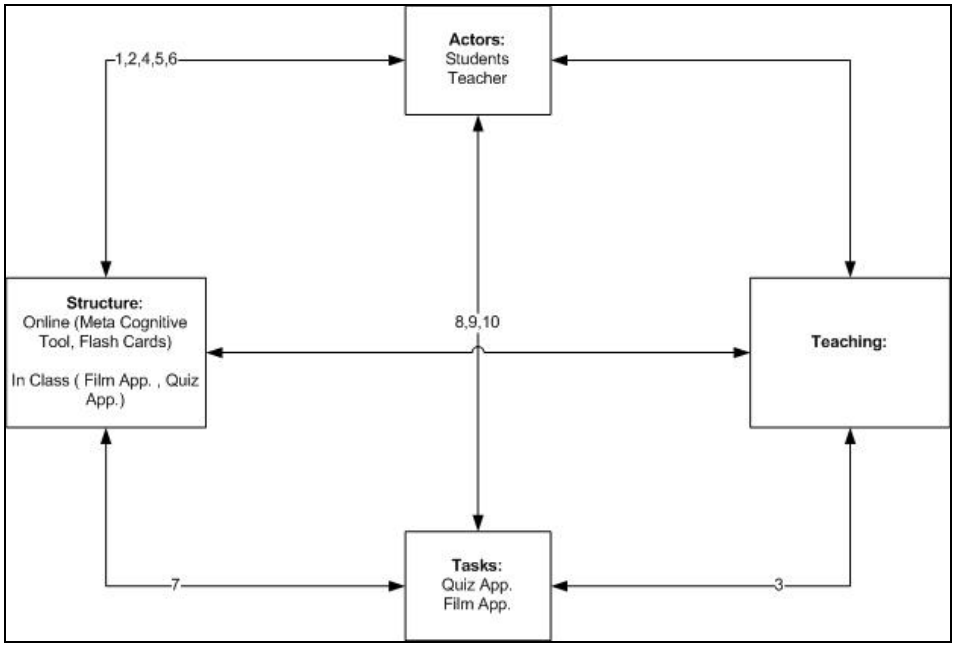


**Figure 18: Learning System- Social - Technical Interactions (Lyytienen, Mathiassen & Roppenen,1996)**

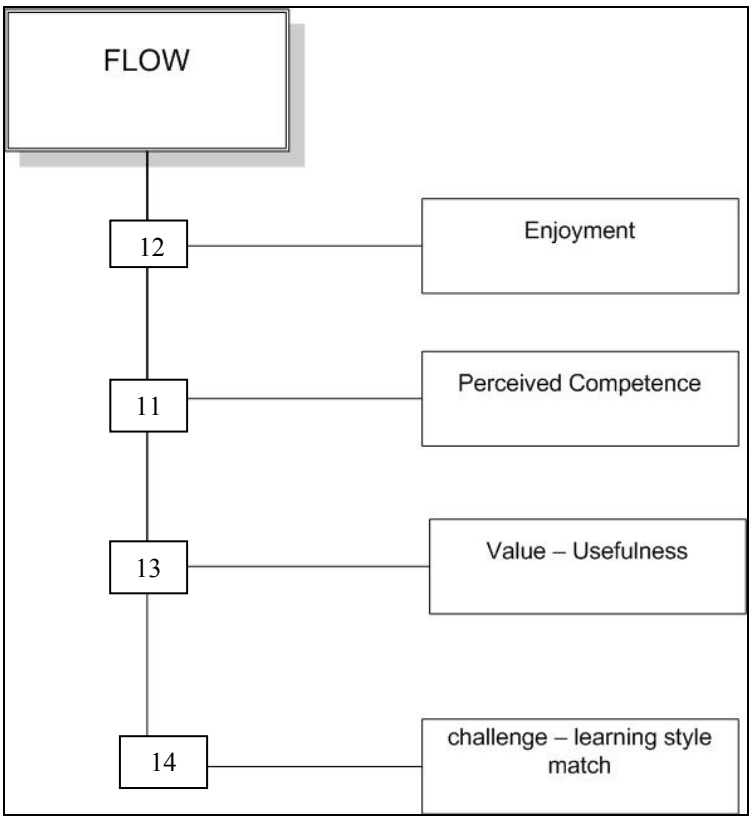


**Figure 19: Flow Construct in Learning System**

# 6. CONCLUSION DISCUSSION

According to all these results and findings above it can be said that students attitudes and perceptions are positive toward the learning system as a whole. The designed learning system aimed to create an active learning system enhancing students critical thinking. It uses computer applications with changing classical lessons methodology from power point presentations to a active learning strategy to improve learning. It also aims to change the linear logic based on a directed, sequential organization of text to a dynamic non-linear system by providing non linear dynamic concept mappings, chances for the learners to provide ideas in classroom discussion on films, grouping structures within keyword learning in flash cards and quizzes. Also the system creates cases to increase motivation to the learning process, mostly in films.
According to analysis and interviews it seems that the goal of switching to this learning system is succeeded .First of all there is a clear grade improvement by using this system. For example a student having a D increased to D + in second semester or a student having C to C+ (M=1.3). The second impressing benefits of the system is presenting an environment for the flow experiences for the students . As stated before , flow is a state of complete absorption or engagement in an activity. A flow activity is one in which the mind becomes effortlessly focused and engaged on an activity, rather than falling prey to distractions . The study results showed that some of the students experienced flow in the learning system.

Also results (see Table 5.1 , Figure 5.1 and 5.2) showed that in such a learning system the flow measure is a significant predictor of course enjoyment , (2) Perceived Competence of Course , (3) ,Value – Usefulness of Course and (4) overall improvement in course success in a active learning environment. Also flow is predictor of (5) challenge – learning style match according to nature of course.

Another significance result is the systems are supporting active learning meaningfully to students. Most of the students indicated that they liked the learning

system and its applications and thinks that they are involved into classroom activities. Collaboration as a social event is also highlighted by those student as a positive attribute of the learning system. Therefore it can be concluded that the system is somewhat meaningful to students in their learning .

The other important result is the learning system is enjoyable for the students.
Many of the students in the phase II of the study clearly stated that they have enjoyed in the activity.

The final results indicate that the system is beneficial according to student preferred learning styles in some cases. There are some indications of matching learning styles and the learning activities resulted learner benefits as being in flow and grade improvement . However there is no clear evidence the system supports all the learning style types.

This study demonstrated the value of integrating computer tools to create an active learning environment for the history of civilization lecture. However the usage of computer tools in learning can be different according to the lesson nature , instructional design and pedagogical contexts. Therefore there is a need of extended research for the other lessons or technologies. Also the usage of this system completely in online environment can also be investigated in a future study. Also the in class discussion can be transformed in to an online process such as forums or chat in a web environment and the effects of this transformation can be studied.
In conclusion, the developed and implemented learning system and its computer assisted applications in this study creates an opportunity for the students to have a meaningful and enjoyable lesson in the context of history of civilization lessons.

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# APPENDIXES

## APPENDIX 1: FOCUS GROUP INTERVIEWS AND SURVEY

Q1. Please describe your point of view about the application used in the History of Civilization lessons which includes Films and Quizzes and Online applications as a whole .

Q2. Please describe your feelings (anxiety, relaxation ,enjoy etc.) while you are taking application within films supported with computer tools in the History of Civilization lessons.

Q3. Please describe your feelings (anxiety, relaxation ,enjoy etc.) while you are taking the application with quizzes supported with computer tools in the History of Civilization lessons.

***When you consider the films and quizzes application as a whole in History of Civilization classes ;***

Q4. Have you ever felt that the time passed so fast ?

Yes
No

Q5. Did you ever felt that you had enjoyed in the lessons.
Yes
No

Q6. If your answer for the previous question is YES , which of the following is the part that makes the lessons enjoyable more .(Select Only One Option)

a) Films application With Supported Computer Tools

b) Quizzes after films in the application With Supported Computer Tools .

c) Online Computer Tools Only

Q7. **Please describe other things do you think that ensured the lessons to be enjoyable .**

.....

.....

.....

Q8. **Please describe the things that can be done more for this lesson to be enjoyable.**

.....

.....

.....

.....

.....

.....

.....

Q9. Do you think these application  in the lessons create a feeling of success in you ?

a) Yes

b) No

Q10. Do you think these applications are challenging  , compelling, and forceful with opportunities

a) Yes

b) No

***If you consider these methodologies (computer tools and in class applications) according to other previous lectures and presentations in the History of Civilization classes :***

Q11. Do you think the application in this lessons creates a feeling of success more than presentation and other lectures.

a) Yes

a) No (Same or Less )

Q12. Do you think these applications are challenging , compelling, and forceful with opportunities more than other presentation and other lectures

b) Yes

c) No (Same or Less )

Q13.. If your answer for the previous question is YES , which of the followings are the effective on this issue

- Q13.1. Watching films in the applications
- Q13.2. Topics or Context of the films and lesson itself
- Q13.3. Quizzes After Films in the application

Q13.4. Indicate if other exits : .....

***If you consider these methodologies (computer tools and in class applications) in History of civilization classes with any other class in the university.***

Q14. Do you think the applications in this lessons creates a feeling of success more than any other classes.

a) YES

b) No

Q15. Do you think these applications are challenging , compelling, and forceful with opportunities more than any other classes

a) Yes

b) No

Q16. Please indicate your recommendations, thoughts , ideas or anything else would you like to say about these methodologies (computer tools and in class applications) in History of civilization ?

## APPENDIX 2 :DATA TABLES

## FREQUENCY TABLES :

### Inventories Frequency Tables :

Locus Of Control

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | EXTERNAL LOCUS | 27 | 50.0 | 50.0 | 50.0 |
| | INTERNAL-HEALTHY LOCUS | 27 | 50.0 | 50.0 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Perceived Competence

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.9 | 1.9 | 1.9 |
| | 3.00 | 2 | 3.7 | 3.7 | 5.6 |
| | 4.00 | 7 | 13.0 | 13.0 | 18.5 |
| | 5.00 | 13 | 24.1 | 24.1 | 42.6 |
| | 6.00 | 27 | 50.0 | 50.0 | 92.6 |
| | 7.00 | 4 | 7.4 | 7.4 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Interest/Enjoyment

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 4.00 | 7 | 13.0 | 13.0 | 13.0 |
| | 5.00 | 20 | 37.0 | 37.0 | 50.0 |
| | 6.00 | 22 | 40.7 | 40.7 | 90.7 |
| | 7.00 | 5 | 9.3 | 9.3 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Effort/Importance

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 3.00 | 7 | 13.0 | 13.0 | 13.0 |
| | 4.00 | 15 | 27.8 | 27.8 | 40.7 |
| | 5.00 | 14 | 25.9 | 25.9 | 66.7 |
| | 6.00 | 14 | 25.9 | 25.9 | 92.6 |
| | 7.00 | 4 | 7.4 | 7.4 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Perceived Choice

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.6 | 5.6 | 5.6 |
| | 2.00 | 7 | 13.0 | 13.0 | 18.5 |
| | 3.00 | 3 | 5.6 | 5.6 | 24.1 |
| | 4.00 | 4 | 7.4 | 7.4 | 31.5 |
| | 5.00 | 23 | 42.6 | 42.6 | 74.1 |
| | 6.00 | 6 | 11.1 | 11.1 | 85.2 |
| | 7.00 | 8 | 14.8 | 14.8 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Value/Usefulness

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 4.00 | 2 | 3.7 | 3.7 | 3.7 |
| | 5.00 | 12 | 22.2 | 22.2 | 25.9 |
| | 6.00 | 13 | 24.1 | 24.1 | 50.0 |
| | 7.00 | 27 | 50.0 | 50.0 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Pressure/Tension

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Valid | **1.00** | 24 | 44.4 | 44.4 | 44.4 |
| | **2.00** | 15 | 27.8 | 27.8 | 72.2 |
| | **3.00** | 12 | 22.2 | 22.2 | 94.4 |
| | **4.00** | 3 | 5.6 | 5.6 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

Vis/ VRB Learning Style

| | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
|---|---|---|---|---|---|
| Valid | **4.00** | 2 | 3.7 | 3.7 | 3.7 |
| | **6.00** | 1 | 1.9 | 1.9 | 5.6 |
| | **8.00** | 2 | 3.7 | 3.7 | 9.3 |
| | **10.00** | 6 | 11.1 | 11.1 | 20.4 |
| | **12.00** | 4 | 7.4 | 7.4 | 27.8 |
| | **14.00** | 15 | 27.8 | 27.8 | 55.6 |
| | **16.00** | 8 | 14.8 | 14.8 | 70.4 |
| | **18.00** | 9 | 16.7 | 16.7 | 87.0 |
| | **20.00** | 4 | 7.4 | 7.4 | 94.4 |
| | **22.00** | 3 | 5.6 | 5.6 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

SEQ/ GLO Learning Styles

| | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
|---|---|---|---|---|---|
| Valid | **.00** | 1 | 1.9 | 1.9 | 1.9 |
| | **4.00** | 1 | 1.9 | 1.9 | 3.7 |
| | **6.00** | 7 | 13.0 | 13.0 | 16.7 |
| | **8.00** | 9 | 16.7 | 16.7 | 33.3 |
| | **10.00** | 15 | 27.8 | 27.8 | 61.1 |
| | **12.00** | 11 | 20.4 | 20.4 | 81.5 |
| | **14.00** | 7 | 13.0 | 13.0 | 94.4 |
| | **16.00** | 1 | 1.9 | 1.9 | 96.3 |
| | **18.00** | 2 | 3.7 | 3.7 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

GRADE_Sem1

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 6 | 11.1 | 11.1 | 11.1 |
| | 2.00 | 10 | 18.5 | 18.5 | 29.6 |
| | 3.00 | 10 | 18.5 | 18.5 | 48.1 |
| | 4.00 | 3 | 5.6 | 5.6 | 53.7 |
| | 5.00 | 4 | 7.4 | 7.4 | 61.1 |
| | 6.00 | 8 | 14.8 | 14.8 | 75.9 |
| | 7.00 | 4 | 7.4 | 7.4 | 83.3 |
| | 8.00 | 5 | 9.3 | 9.3 | 92.6 |
| | 9.00 | 1 | 1.9 | 1.9 | 94.4 |
| | 10.00 | 1 | 1.9 | 1.9 | 96.3 |
| | 12.00 | 2 | 3.7 | 3.7 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Grade__Sem2

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 6 | 11.1 | 11.1 | 11.1 |
| | 2.00 | 8 | 14.8 | 14.8 | 25.9 |
| | 3.00 | 23 | 42.6 | 42.6 | 68.5 |
| | 4.00 | 9 | 16.7 | 16.7 | 85.2 |
| | 5.00 | 3 | 5.6 | 5.6 | 90.7 |
| | 6.00 | 3 | 5.6 | 5.6 | 96.3 |
| | 8.00 | 2 | 3.7 | 3.7 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

Grade Change

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Grade Decrease | 12 | 22.2 | 22.2 | 22.2 |
| | Grade Same | 8 | 14.8 | 14.8 | 37.0 |
| | Grade Increase | 34 | 63.0 | 63.0 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

OVER_ALL_FLOW_EXPERIENCE

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | **Always In Flow** | 29 | 53.7 | 53.7 | 53.7 |
| | **Never or Rarely In Flow** | 25 | 46.3 | 46.3 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

## Interview Data Frequency Tables :

Time Passed So Fast (Interview Question)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | **Yes** | 51 | 94.4 | 94.4 | 94.4 |
| | **No** | 3 | 5.6 | 5.6 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

Enjoyed Lesson (Interview Question)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | **Yes** | 50 | 92.6 | 92.6 | 92.6 |
| | **No** | 4 | 7.4 | 7.4 | 100.0 |
| | **Total** | 54 | 100.0 | 100.0 | |

**What is Enjoyable (Interview Question)**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Tools Only | 4 | 7.4 | 7.4 | 7.4 |
| | Films Application and Tools | 44 | 81.5 | 81.5 | 88.9 |
| | Quiz Application In Class | 6 | 11.1 | 11.1 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**Create Feeling of success_**(Interview Question)

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Yes | 40 | 74.1 | 74.1 | 74.1 |
| | No | 14 | 25.9 | 25.9 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**Challenging (Interview Question)**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | yes | 13 | 24.1 | 24.1 | 24.1 |
| | no | 41 | 75.9 | 75.9 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**Creates Success More Than Presentation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | yes | 31 | 57.4 | 57.4 | 57.4 |
| | no | 23 | 42.6 | 42.6 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**Creates Challenges Than Presentation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | yes | 35 | 64.8 | 64.8 | 64.8 |
| | no | 19 | 35.2 | 35.2 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**feeling of success**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Yes | 28 | 51.9 | 51.9 | 51.9 |
| | No(or same) | 26 | 48.1 | 48.1 | 100.0 |
| | Total | 54 | 100.0 | 100.0 | |

**challenging More Than Other Class**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Yes | 35 | 64.8 | 64.8 | 100.0 |
| | No (or same) | 19 | 35.2 | 35.2 | 35.2 |
| | Total | 54 | 100.0 | 100.0 | |

## FOCUS GROUP DATA TABLE:

| | Gender = Male | Gender = Female | TOTAL |
|---|---|---|---|
| Likes methodology (Films and quizzes) more than classical learning | 10 | 13 | 23 |
| Enjoyable Lessons With Films | 3 | 9 | 12 |
| Films are useful for culture | 1 | 0 | 1 |
| Quizzes are boring | 1 | 0 | 1 |
| permanent learning and easy to remember with Films (2) | 5 | 15 | 20 |
| Quizzes strengthen the knowledge | 8 | 12 | 20 |
| Understand lessons better with Quiz | 5 | 7 | 12 |
| Understand lessons better with films | 7 | 10 | 17 |
| Prejudgment (Positive) | 1 | 1 | 2 |
| Attention on lessons with films | 1 | 4 | 5 |
| Interested | 2 | 1 | 3 |
| Related | 2 | 1 | 3 |
| C1.Sound and Physical Environment | 3 | 0 | 3 |
| C2.Quiz and Security | 3 | 0 | 3 |
| C3.Crowded Classes and Noise | 4 | 3 | 7 |
| Q2.Attractive | 6 | 6 | 12 |
| Q2.Cant stop to watch | 1 | 0 | 1 |
| Q2.Criosity | 4 | 2 | 6 |
| Q2.Enjoy | 12 | 20 | 32 |
| Q2.Involved into activity | 7 | 4 | 11 |
| Q2.Like in theater | 1 | 0 | 1 |
| Q2.More attention and Concentrated | 4 | 3 | 7 |
| Q2.Relaxed | 2 | 4 | 6 |
| Q2.Self confidence | 2 | 2 | 4 |
| Q2.Time passes quickly | 2 | 0 | 2 |
| Q3.Anxiety | 4 | 2 | 6 |
| Q3.Attention and concentration to lesson | 1 | 2 | 3 |
| Q3.Bored | 1 | 1 | 2 |
| Q3.Challenging | 1 | 1 | 2 |
| Q3.Enjoy | 6 | 9 | 15 |
| Q3.Relaxed | 5 | 5 | 10 |
| Q3.Self confidence | 3 | 4 | 7 |
| Ease at quiz or reduced stress | 1 | 7 | 8 |
| Quizzes ensures to film watching carefully. | 1 | 4 | 5 |
| Q18.Answers must be given | 0 | 6 | 6 |

| | | | |
|---|---|---|---|
| Q18.More film | 0 | 1 | 1 |
| Q18.More quality films | 1 | 1 | 2 |
| Q18.Only quizzes instead of midterms and finals | 1 | 0 | 1 |
| Q19.Better Environment | 8 | 2 | 10 |
| Q19.Class projects are useful for who prepared | 0 | 1 | 1 |
| Q19.Topic Change Near History | 1 | 0 | 1 |
| Q7.Collaboration at quizzes | 6 | 11 | 17 |
| Q7.Different Than Classical Method | 1 | 1 | 2 |
| Q7.Films as in theater | 1 | 3 | 4 |
| Q7.Films Historical Characters | 1 | 2 | 3 |
| Q7.Films itself | 2 | 3 | 5 |
| Q7.Films Topics | 3 | 1 | 4 |
| Q7.Social Event | 2 | 0 | 2 |
| Q7.Topic as Fantasy | 0 | 1 | 1 |
| Q7.Topic as science | 1 | 0 | 1 |
| Q7.Topic creates curiosity | 2 | 3 | 5 |
| Q7.Topic like we are in history | 2 | 0 | 2 |
| Q7.Visual Learning | 0 | 2 | 2 |
| Q8.Class Project | 1 | 2 | 3 |
| Q8.Good as it is. | 1 | 7 | 8 |
| Q8.Less Quizzes | 3 | 0 | 3 |
| Q8.Lesson Topic Should Change | 2 | 1 | 3 |
| Q8.More Concepts Maps | 0 | 1 | 1 |
| Q8.More interactive lessons | 1 | 0 | 1 |
| Q8.More visits | 2 | 8 | 10 |
| Q8.More Visuals | 1 | 2 | 3 |
| Q8.Music of Historical Ages | 1 | 0 | 1 |
| Q8.Short Lessons or more breaks | 1 | 2 | 3 |

# VITAE

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2. " Lecturers' attitudes towards the use of technology: alternative strategies for faculty administrators": Hacifazlioglu O., Asim O., Yengin I., 7th International Educational Technology Conference, North Cyprus, 2007
3. "Usability Evaluation of a Meta-Cognitive Tool": Karahoca, A., Karahoca, D., Yengin, I. ,etc., e-Learning '07 conference, Istanbul, 2007.
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