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TEACHING ENGLISH AS A FOREIGN LANGUAGE**

**COMPARISON OF COMPUTER ADAPTIVE INDIVIDUAL VIDEO
TUTORING WITH WHOLE CLASS VIDEO LESSONS**

M.A. THESIS

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This thesis is titled as “**Comparison of Computer Adaptive Individual Video Tutoring With Whole Class Video Lessons**” and presented by Mehmet YOLCU has been approved as a thesis of Master of Arts in English Language Teaching.

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ABSTRACT

COMPARISON OF COMPUTER ADAPTIVE INDIVIDUAL VIDEO TUTORING WITH WHOLE CLASS VIDEO LESSONS

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The purpose of this study is twofold: first, to examine the recent developments in the field of computer assisted language learning/testing and to investigate how these developments can be best integrated with video utilization techniques in a language classroom. The special reason for trying to combine these developments with the use of video for language teaching was that; from the point of communicative approach, video is a motivating and meaningful teaching material which offers more clues to meaning and which can make learning in the classroom more like what occurs outside the classroom. The second purpose of this study -with the light of information gathered and on the basis of students' perspective on video and computers- is to suggest a new model of video tutoring, named as Computer Adaptive Individual Video Tutoring. A software was developed to integrate advantages of computer assisted language testing with the use of video in language teaching so that video lessons take place as an interactive and student centered learning process based on the principles of Communicative and Cognitive approaches. In order to reveal the effectiveness and pedagogic value of the software, a contrastive study was conducted. Lesson plans, classroom observations, four achievement tests and a questionnaire were used to reveal the difference between traditional whole class video lessons and the computer adaptive individual video lessons.

The data collected indicated that computer adaptive video tutoring might have a great positive impact on enhancing learning and retention of knowledge as well as dramatically increasing student motivation, participation and engagement.

ÖZET

BİLGİSAYAR DESTEKLİ BİREYSEL VİDEO UYGULAMALARININ TÜM SINIF VİDEO UYGULAMALARI İLE KARŞILAŞTIRILMASI

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Bu araştırmanın iki amacı bulunmaktadır: ilk olarak, dil becerilerinin bilgisayar destekli öğretimi/ölçülmesini sağlayan yazılım ve donanım alanlarındaki en son gelişmeleri inceleyerek bunların yabancı dil öğretiminde video kullanım teknikleri ile birleştirilmesini araştırmaktır. Yazılım ve donanım alanındaki gelişmelerin yabancı dil öğretiminde video kullanımı konusu ile birleştirilmesinin özel nedeni, iletişimsel ve bilişsel yaklaşım açısından bakıldığında videonun sınıf içerisinde gerçekleşen dil öğreniminin sınıf dışındaki gerçek hayatta gerçekleşen dil edinimine en yakın ortamı sağlayan, dolayısıyla anlamlı bir öğrenme için en fazla girdi sağlayan materyal olmasıdır. Araştırmanın ikinci amacı ise Zorluk Derecesi Kişiyeye Göre Uyarlanan Bilgisayar Destekli Video adı verilen yeni bir video dersi uygulamasının önerilmesidir. Araştırmacı tarafından, video derslerinin iletişimsel ve bilişsel yaklaşım ilkeleri dâhilinde öğrenci merkezli ve etkileşimli olarak işlenmesini sağlayacak bir yazılım geliştirilmiştir. Yazılımın etkinliği ve eğitsel değerinin ortaya çıkartılabilmesi için karşılaştırmalı bir çalışma yapılmıştır. Tüm sınıf video uygulamaları ile bilgisayar destekli video uygulamalarının farkının belirlenmesi için ders planları, gözlem tekniği, başarı testleri ve bir anket kullanılmıştır. Elde edilen veriler, bilgisayar destekli bireysel video uygulamasının öğrenme seviyesini artırma, bilginin kalıcılığını sağlama ve öğrenci motivasyonu ve derse katılımı konularında büyük bir olumlu etkiye sahip olabileceğini ortaya koymuştur.

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LIST OF ABBREVIATIONS

CALL	Computer Assisted Language Learning
CALT	Computer Adaptive Language Testing
CAT	Computer Adaptive Testing
CAV	Computer Adaptive Video
CBT	Computer Based Testing
ETS	Educational Testing Service
ESP	English for Specific Purposes
IRT	Item Response Theory
IBT	Internet Based TOEFL
TOEFL	Test of English as a Foreign Language

CHAPTER 1

INTRODUCTION

1.0 Presentation

Although nobody knows exactly how it originated, it is well known by all teachers of foreign languages that, since the first utterance of the very first “word” or “speech sound” by a human being, it has been a tackling issue for the mankind to teach or learn other “words” or “speech sounds”, in order to share the conveyed message or the meaning. As life gradually developed and mankind populated after the first word, came other words; and what to teach (or learn) and how to teach (or learn) have always been dependent on how people lived. The reason for this dependency was that people always lived in the world of words or words always lived in the world of people. Today, in the information age or in a world of information technologies, two of the most important technologies which have great impact on how people live, also play an important role on “how” and “what” people learn and teach.

These two technologies are the computer and the video. Since the day these two technologies were invented as a means to convey information, our lives have changed a lot, including ways of language teaching and learning. However, despite their deep impact and enormous capabilities in language teaching, how to integrate and exploit these two phenomena in language classrooms can play an important role whether a language classroom succeeds or fails.

The reasons which may cause failure and a suggested software solution which may increase the success in a language classroom will be introduced in this chapter.

1.1 Background to the Study

The computers have been the basis of continuous efforts to enhance the process of language learning. In this regard, Garrett (cited in Al-Seghayer, 2001: p2) points out that the adoption of computer technology in foreign language teaching is part of a larger phenomenon and “represents one of the most exciting developments coming out of the participation of advanced technology in education.” What distinguishes computers from all other teaching tools can be represented by a single concept: “interactivity”. As stated by Bork (1980), if we go back very far in human experience, we see that most learning takes place as individuals interacted with the environment, generalizing on the basis of that interaction, or with individuals interacting with other people. So, the emphasis should be on the words *individual and interaction*.

Computers really put the emphasis on the *individual and interaction*; because in contrast to the traditional passive learning occurring in most language classes, computer assisted language learning materials adapt themselves to students’ interaction in the successfully created language environment. Students with variety of interests and levels of English proficiency become the center of their own learning process, working at their own paces, levels and interests. As Hubbard (2005) points out, with computer assisted language learning learners can access materials or experience interactions that would otherwise be difficult or impossible. Albakri (2000: p.110) contends that interaction is the key to language learning. According to the interactionist view of language learning, language acquisition is the result of an interaction between the learner’s mental abilities and the linguistic environment.

The ability of the computers to adapt the linguistic environment according to the learner interaction and progress is not only limited to language teaching processes and materials. Computers are also gradually gaining an indispensable role in the testing of the language skills. From providing immediate feedback to item banking, from testing pronunciation through sound recognition to adaptive testing, computers provide maximal reliability, accuracy and variety in testing and evaluation of language skills.

A relatively new approach in using computers in language testing with substantial advantages is Computer Adaptive Language Testing (CALT). As defined by Dunkel (1999a) Computer Adaptive Language Testing is a technologically advanced method of assessment in which the computer selects and presents test items to test-takers according to the estimated level of the examinee's language ability. Computer-adaptive language testing is “uniquely tailored to each *individual*” (Madsen, 1991: 237). In computer adaptive language testing, each question delivered is based on a test-takers' answer to previous questions. The test software quickly determines the skill level of the test-taker and delivers questions that challenge the test-taker. Thus, each test taker gets a different set of questions that is fitted to his/her real level of language. Its ability to *individualize* tests, to make the tests shorter, to promote a more positive attitude toward tests, to report test results immediately with precision and high test security are some advantages which draw a keen attention from language testers.

Another technological development which has changed our life a lot and which has a unique place in language teaching is the video. According to the Sherman (2003) video allows us to introduce any aspect of real life into the language learning environment, contextualizing the learning process. Thus, video provides students with the opportunity to experience the target language in a more meaningful and natural context removing barriers between the learner (also the learner itself) and the target language. Video helps the language teachers make learning in the classroom more like what occurs outside of the classroom. Video, which is recognized as a meaningful activity by the learners, plays an important role in enhancing student's learning experience and language acquisition. According to well known linguist Stephen Krashen "acquisition requires meaningful interaction in the target language - natural communication - in which speakers are concerned not with the form of their utterances but with the messages they are conveying and understanding." Video provides this interaction, which is the initiation of the mental processes in user's mind through visual and audio input channels.

1.2 Statement of the Problem

In the previous section of the study, a condensed review of field of study (CALL and video) that are in the scope of this research, including current developments (CALT) have been given. However, this background discussion has not included controversies or some related problems that are encountered. This section of the study will identify and briefly state the problems that paved the way to this research, in regards to the use of computers and video in language teaching and testing.

Although there is an abundance of literature on the use of computers in language teaching and on the effectiveness of computer assisted language testing, there seems to be less literature on computer adaptive language testing. The literature on computer adaptive language testing generally includes the studies conducted for the assessment of listening, reading and writing skills or the language proficiency. The review of literature indicated that there are no studies on the use of computer adaptive testing for video lessons in teaching English. Though video lessons are an integral part of language teaching, there seems to be no examples of computer based and individualized video tutoring software/system which can in real time evaluate learners' answers to the related video and provide immediate assessment or provide more tools to enhance video tutoring. This is the first and foremost problem that led to this study.

The prevalence of video in language teaching does not make it problem free. Ignoring individual differences in language skills and interests, lack of a standardized recognized procedure for the use and testing of video teaching materials in the language classroom, misconception that the more student watch the more they would learn, that generally occurring as passive watching, difficulty in obtaining and providing graded content, that the student has no (or very limited) control on the video are some disadvantages of video. In addition, computers in video classrooms are not at the place they deserve. In most of the classrooms, they have only replaced DVD or CD players as more advanced media players. This is a misfortune for language teaching because computers provide more opportunities like individualized presentation of video, more interaction with the content and immediate assessment of student progress etc. This study will explore these opportunities.

Another persistent problem with the use of video in language teaching is that, the teaching process is dependent on the teacher and the classroom where the equipment is located. The teacher has to act like the operator of the devices instead of mingling among the students to assist and guide them in their own learning process whose responsibility was taken on by the students. The schools and the teachers should consider giving the responsibility of the “play” button to the students themselves.

In most schools video content is being presented to the students without being graded, pre-studied in detail by the teachers in accordance with the teaching objectives and needs. Lastly and more importantly, the outcome of the video lessons are not being assessed in a valid and reliable manner. This problem is one of the main research areas of this study.

The need to eliminate the above mentioned problems and bring solutions to misuse of video in language teaching and to design a computer adaptive video tutoring software which can present the video in a student centered and individualized way and which can more reliably assess the language skills in a standardized manner is the problem this study aims to address.

1.3 The Aim of the Research

The purpose of this study is twofold: first, to examine the recent developments in the field of computer assisted language learning/testing and to investigate how these developments can be best integrated with video utilization techniques in a language classroom. The special reason for trying to combine these developments with the use of video for language teaching was that; from the point of communicative approach, video is a motivating and meaningful teaching material which offers more clues to meaning and which can make learning in the classroom more like what occurs outside the classroom. The second purpose of this study -with the light of information gathered and on the basis of students’ perspective on video and computers- is to suggest a new model of video tutoring, named as Computer Adaptive Individual Video Tutoring.

Within this scope, a software was developed to integrate computer assisted language testing principles with the use of video in language teaching so that video lessons take place as an interactive and student centered learning process based on the principles of Communicative and Cognitive approaches.

In order to reveal the effectiveness and pedagogic value of the software, a contrastive study was conducted. Lesson plans, classroom observations, four achievement tests and a questionnaire were used to reveal the difference between traditional whole class video lessons and the computer adaptive individual video lessons.

It is expected that the data collected through this study and the utilization of the developed software will contribute to the more effective use of video in teaching English, by transforming video lessons from passive listening/watching to a student centered interactive process.

Within this framework, the aim of this study is to address the research question stated below:

Research Question: How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video and how can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?

In this context, this study also aims to seek answers to the following sub-research questions:

Sub-research Question 1 : Is there a significant difference between the mean scores of the students who attended computer adaptive video tutoring lessons and the students who attended whole class video lessons?

Sub-research Question 2 : What are the students' perceptions concerning the computer adaptive video lessons?

1.4 The Significance of the Research

Technologies which support a cognitive approach to language learning are those which allow learners maximum opportunity to interact within meaning-rich contexts through which they construct and acquire competence in the language (Warschauer, M. and Meskill, 2000, 4). However, there is limited literature and examples of such technologies. To this end, this study emphasizes the lack of studies and literature directly investigating especially how videos (meaning-rich contexts) and computer adaptive testing (interaction) can be combined to create meaningful and interactive environments for language acquisition, from the perspective of cognitive and communicative approach. For this purpose, a software has been designed and developed by the researcher. Figure 1 displays the student module of the developed software.



Figure 1: Screenshot from the software.

The software, as well as providing individual viewing of the video, also provides while-watching assessment of the student progress and target language skills. Different from many video displaying software, this program allows the teacher to divide the video into parts and enter test items for each part. For each part, the student has to score over 70 % to be able to advance to the next part. The questions and answers may include multimedia elements which enable to test different language skills more effectively. The students challenged with a semi-adaptive video software, would be forced to remain active and learn more from the video. The software, complemented with dictionaries and classroom management software, eliminates most of the currently existing problems and disadvantages teachers encounter while using video in their language lessons. With the experience and in the light of information gained from this software, which is first of its kind, it might be expected that a new video approach, named as Computer Adaptive Video Tutoring might be proposed.

The findings of this study may also contribute to development of better video techniques. The chapter which describes the software and the chapter which includes the lesson plan for computerized video lessons provide examples of improved techniques.

The results of the study will not be beneficial only to the teachers of English but also to the learners of English since there will be a teaching software available on their computers ready to provide video lessons at any time they wish, at any pace they can catch up with, at any level of interaction they can respond, at any level of proficiency they can reach, at any distance they are and in any world of their own which they can built while watching the video. With this software, a student doesn't have to look where other students look, but where his world and feelings takes him. This opens the door for a real learning experience.

Lastly, the software that has been developed within the scope of this study will set a good example in combining video and computer assisted testing systems which may lead to further studies in the field of language teaching.

1.5 Assumptions

The Assumptions below will be considered throughout this study:

1. The students participating in this study answer the questions in the questionnaire sincerely.
2. It is assumed that the statistics and references used in this thesis are of sound and worthy value.
4. It is assumed that computer adaptive individual video lessons can enhance and individualize learning process thus may provide more meaningful means for long retaining language acquisition.
5. Finally, it is assumed that the findings of this study and experience gained from the software developed within scope of this study might be supportive enough to suggest a new model of video tutoring.

1.6 Limitations

1. This study was conducted in Prestige English Language Center in Ankara in 2009. Participants were 36 students from upper-intermediate classes of the General English groups. The 36 students were divided as control and experimental group and an independent t-test was applied to determine if both groups had same the level of English. Prestige English Language Center was chosen because it was assumed by the researcher that learners with more variables such as age, occupation, purpose in language learning, living style and setting would be more reflective and informative in determining the effectiveness of the software in a broader sense. Secondly, it was assumed that students who attend a language center are more careful and conscious in identifying whether a new technology is useful for them or not.

2. This study is limited to the finding of study conducted with the upper-intermediate classes.

3. This study is limited to the software developed by the researcher within the scope of this study. However, although they may not yet be included in the software, in relation with the use of software, more features and video techniques might be referred or proposed in the study.

4. Every movie has its own distinctive features, this study will focus on one movie –Runaway Jury, hoping that results will apply to other type and forms of video in language classroom.

1.7 The Definitions of Terms

computer assisted testing : Tests that are administered at computer terminals, or on personal computers are called computer-assisted tests.

computer adaptive testing : A subtype of computer-assisted tests in which test items are selected and presented according to the estimated level of the test taker's language skills. The aim is to provide tailored test items to each individual test taker.

interaction : Despite the general misconception, interaction is not being able to click items on the computer screen, but the ability of the computer to initiate mental processes in user's mind through media to provide language input.

item banking : Any procedures that are used to create, pilot, analyze, store, manage, and select test items with established content specifications and parameters intended to measure examinees' abilities at various levels .

m-learning : e-learning (electronic learning) that uses mobile devices. Quinn (2000).

podcast : An audio broadcast file for playback in a digital music player. Although many podcasts are played in a regular computer, the original idea was to listen on a portable device; hence, the "pod" name from "iPod." Although podcasts are mostly verbal, they may contain music, images and video.

sound recognition :The ability of computers to recognize spoken words or sentences.

Video : Within the scope of this study, the expression “video” has been used to refer to both authentic and instructional videos including movies, news, TV podcasts, documentaries, educational productions, music clips, etc.

CHAPTER II

REVIEW OF LITERATURE

2.0 Presentation

This study aims to discuss two educational technologies, video and computer, from the perspective of cognitive and communicative approaches, contending that these two technologies can better be combined and utilized in language teaching to create authentic, interactive, meaningful and active learning processes. For this purpose, as well as investigating the literature on the use of video and computers in language teaching within the scope of these two approaches, this study also aims to exploit the results of literature search in developing a software which can integrate the advantages of video with the advantages of computer assisted language learning and testing.

In this sense, this chapter examines the related literature in three parts. In the first part, literature concerning the potential of video for language teaching and the pertinent issues will be reviewed, and in the second part, the literature relevant to the roles of computers in language teaching shall be examined. Finally, the developments and literature in the field of computer adaptive language testing will be investigated.

The literature indicates that language teaching technologies are as old as the language itself. Warschauer and Meskill (2000) provide a brief history:

Virtually every type of language teaching has had its own technologies to support it. Language teachers who followed the grammar-translation method relied on one of the most ubiquitous technologies in ... education, the blackboard—a perfect vehicle for the one-way transmission of information that method implied. The blackboard was later supplemented by the overhead projector, another excellent medium for the teacher-dominated classroom, as well as by early computer software programs which provided what were known as "drill-and-practice" (or, more pejoratively, "drill-and-kill") grammatical exercises (p.2)

Warschauer and Meskill (2000) continue as:

In contrast, the audio-tape was the perfect medium for the audio-lingual method (in which students were believed to learn best through constant repetition in the target language). University language classes in the 1970s and '80s generally included obligatory trips to the audio lab, where students would perform the repetition drills.

By the late 1970s, the audio-lingual method fell into disrepute, at least in part due to poor results achieved from expensive language laboratories. Whether in the lab or in the classroom, repetitive drills which focused only on language form and ignored communicative meaning achieved poor results.

The 1980s and 1990s have seen a full-scale shift in the direction of communicative language teaching, with an emphasis on student engagement with authentic, meaningful, contextualized discourse (p.3)

Though they have been used in different eras and with different language teaching techniques, the above-mentioned technologies were almost the same in principle: they were designed bearing teacher in mind and to be used mainly by teachers, for one-way presentation of the knowledge. However, this conflicted with the nature of learning.

The new technologies in 1980's and 1990's provided opportunities for students to involve in language processes as participants so that they could understand not the rules of language but the language itself and also the culture and paralinguistic features that are embedded in that language.

The acceptance of communicative and humanistic approaches by most educators and linguists in the last decades brought new technologies, especially computer and video, in the center of efforts to make learning more authentic, functional, meaningful and contextualized.

Though their technologies were different, the following Native American saying provides insights into the learning process which today's new educational technologies should also be based on: *Tell me, I forget, Show me, I remember and Involve me, I understand*

2.1 Authentic Discourse in the Classroom

Widdowson (1978) views language learning not merely as acquiring the knowledge of the rules of grammar, but also as acquiring the ability to use the language. According to him, knowing a language is more than how to understand, speak, read and write sentences, but how sentences are used to communicate:

“We do not only learn how to compose and comprehend correct sentences as isolated linguistic units of random occurrence; but also how to use sentences appropriately to achieve communicative purposes.”

He contends that, the idea that once grammatical competence is acquired, performance will take care of itself is false . According to him, that six or more years of instruction in English does not guarantee normal language communication. He suggests that communicative abilities have to be developed at the same time as the linguistic skills; otherwise the mere acquisition of the linguistic skills may inhibit the development of communicative abilities.

However, both for the “accountability” reasons (schools have to test and score what they teach; some researchers dubbed this as “test-score-is-everything tradition”) and due to lack of sufficient tools to assess communicative skills in real language environments, the main objective of studies on learning and teaching of English was to analyze linguistic (grammatical) competence. One additional reason for this was the teaching methodology used. But for some years on, the communicative approach has put grammar competency focused classes to one side and fostered the use of pragmatics. The role of pragmatics is clearly stated by Hwang (2001):

Between L1 and L2, there are inevitably loads of implicit symbols in concepts and expressions that are hardly correspondent word for word. If the learners are incapable of intuitively detecting information gaps, implicatures, and the different phrasing and cultural norms in their L2, they lack real communicative competence and thus cannot cope with unpredictable or ambiguous authentic texts and situations. This belongs to the area of pragmatics (p.6)

According to Gutiérrez-Colón Plana (2000) in the light of this new vision many researchers studied to define or redefine terms such as pragmatic and communicative competence. For him;

“many of these researchers have considered that pragmatic competence, as well as communicative competence, can be defined as the learner’s ability to put into practice the knowledge that he/she has of the target language in order to express intentions, feelings, etc. and interpret those of the speakers.” (p.1)

In this respect, how can a learner be taught to express his/her feeling in the foreign language? The answer would probably be “when he shares it in a context”. Then, what’s the best way of having a learner share how a native speaker feels and express his/her feeling? The answer would probably be “through authentic materials, especially audio visual ones”. Morrow (1977: p. 13) defines authentic material as a stretch of real language, produced by a real speaker or writer for a real audience and designed to convey a real message of some sort. The importance of authentic materials lies in the “exposure of the learner to real language in real cultural contexts” and the assumption that students can acquire authentic competence only if they understand target culture. Shanahan (1997: p. 168) states that cultural content provides exposure to living language that a foreign language student lacks. So, for him culture is not something consisting of facts to be learnt, but a helpful tool to make learners feel the need to speak and use the target language. Since every language is embedded in its own culture and vice versa, learning a language without the culture is like eating strawberry without knowing its taste. Valdes (1986) has pointed out that:

The most successful language learners are able to take on the “mindset” of the speakers of the second language, assuming the culture along with the language. (p. 2)

For this reason, authentic materials are significant because they increase students' motivation through meaningful activities and makes the learner be exposed to the 'real' language as discussed by Guariento & Morley (2001, p. 347).

Research on the use of authentic materials have proved that there is an overall increase in motivation to learn, a more positive attitude towards learning, as well as increased involvement and interest in the subject matter (Srinivas, 2009).

The literature also shows that there are some studies which studied the deficiency of authentic materials in language teaching textbooks. For example, both Mindt (1996) and Kennedy (1998) have made remarks of particular relevance:

A comparative study of authentic language data and textbooks for teaching English as a foreign language has revealed that the use of grammatical structures in textbooks differs considerably from the use of these structures in authentic English. (Mindt, p.186)

On the basis of a comparison between a corpus analysis and the linguistic devices taught in textbooks...there can be a significant mismatch between normal use of English and what is taught to second language learners. (Kennedy, p. 284)

Authentic materials provide the learners an experience of real language and so do the videos and the computer. To this end, the significance of authentic materials and the study of relevant literature within the scope of this study is that, computer adaptive video lessons, which the findings in this section constitutes one reason for the need of developing such a software, can not only interactively present, individualize and enhance the use of the authentic videos but also be very useful in the real-time assessment of language skills based on the authentic and communicative content.

In the age of Internet and “computer literacy”, each single user is exposed to authentic language in some with different reasons, even though they are not in the aim of learning a language. Also in our native language environments, it happens that people are exposed to authentic English in different forms. If this is the case in real life, why shouldn’t it occur more in the language classroom?

2.2 The Use of Video in Language Teaching

Although recent years have seen an increasing volume of literature about video and language teaching, there has really been little research on the effectiveness of the medium for this purpose. The medium includes both the methodological content and the related technology in the classroom. Majority of the literature on the use of video in language teaching is based on the use of video tapes and DVD's and almost all of them refer to the same concepts in terms of advantages and video activities in the classroom. However, video first emerged as moving pictures on TV monitor and now has evolved into new phenomena including 3D realistic video games, virtual reality, Internet and mobile devices content and even holograms. Today, a study on video has to include more than those made it past, not only in regards to video sources but also in regards to effective utilization of video via new sources and technologies. One of these technologies is the *hologram* which is a special type of image made with laser and in which the objects shown look solid, as if they are real, rather than flat. Within 10 years, it is expected to have hologram TV sets at home. Bilkent Univeristy in Ankara is successfully leading an international consortium for the development of hologram systems. In Figure-2, a screenshot from CNN news channel, in which a correspondent is incorporated into the studio through three-dimensional holograms is shown. This is a TV first but not the first hologram application. From Shangai city museum to many international conferences hologram is gaining pace. Hologram is just an example to show how video has evolved. It is also a reminder that teachers have to look to the future of video rather than the past.

The most popular web sites are video sharing sites, today almost everyone has a video capable mobile phone or device. In the abundance of video resources and technologies, it is more important than past to examine which technologies can be more effectively utilized to take most from videos. In this respect, because the purpose of this study is to develop and suggest an computer adaptive video software, the literature review of this research will focus on general potential of video in language teaching and examples of studies in which computers were used to utilize video.



Figure-2: Hologram of a TV Correspondent in the Studio

Before starting to examine video literature, it would be useful to give a clear definition of video. As defined by Canning (2000) “video is best defined as the selection and sequence of messages in an audio-visual context”. As indicated by the definition, the purpose of the video is to convey a message. From this point of view, a video is like a language. Because, when people interact using a language, one person is speaking and the other is listening. The speaker has an idea or a feeling that he wants to convey to other person. This idea or feelings are subconsciously converted into a message that he trusts the listener will understand; in linguistics (semiotics) this process is called “encoding”. He “transmits” the message to the listener, who receives it and is hopefully able to convert it back into the idea that the speaker wants to convey, an interpretation process called “decoding”. The message from speaker to listener is composed of three primary components of language: the “lexicon”, the grammar and the sound system. While the language has three primary components to convey a message, how many components does video have for the same purpose? The answer is more components, because majority of the linguists agree that most of the communication is “non-verbal”.

The components that are embedded in a video to convey a message are more than the three a language has. Mehrabian and Ferris (1967) asserted that, the combined effect of simultaneous verbal, vocal and facial attitude communications is a weighted sum of their independent effects-with the coefficients of 0.7, .38 and 55, respectively. These “coefficients”, in turn, have been interpreted by some to mean that communication is 7% verbal, 38% vocal and % 55 facial. Body language, gestures, posture and facial expressions are visual components which carry the message. Also, because of the fact that language is ambiguous, “yes” does not always mean “yes”, sometimes it may mean “no”. Videos are perfect tools to help learners understand when “yes” means “no”.

Demirezen (1992) explains the importance visual elements (or components) in education as:

“... it is a fact that the visual element helps to the formation of students' self-confidence, familiarity with the physical, psycho-social aspect of a foreign language environment since it presents the slices of real-life situations in class atmosphere. The visual content compensates for the learner's deficiencies in language code and sensitivise them to what they learn since it has the potential of bringing into classroom a wide range of objects, places, concepts, and culture-specific knowledge. By seeing the authentic material in an authentic setting, the students easily contextualize the items to be learnt, and this very fact removes the intrinsic difficulties of a foreign language to some extent. it may even be stated that video can reduce the negative interferences of the mother tongue to a degree, since when contextualization comes in the negative transfers from the mother tongue will naturally subside. Thus, video motivates and sensitivizes the students, takes in the real-life situations into the classroom, contextualizes the items of the syllabus, and enables the students to practice the foreign language consciously in a controlled environment, and this helps the comprehension, and the retention of the lessons, and enhances the language interaction into a better communication.”

Video does not only explicitly transmits the visual elements but also joins the interrelations between the aural and visual channels of communication. In many speech situations the aural element may fall short to convey the message or some other verbal or non-verbal acts may be needed to support the aural channel. For example, explaining the directions on the phone is much harder, people still make gestures when speaking on the phone although they cannot be seen.

Türker (1993) gives the following example:

The students discussing what notes to take and not to take.

A: Shall I write the second sentence the teacher has written?

B: No, you needn't. You should write the third sentence.

In daily life they would say:

A: Shall I write the second one?

B: No, the third one.

The absence of references that the speakers refer to in the speech requires aural elements become more explicit to compensate it. However, video successfully provides the references for the speech which makes it a meaningful “discourse.”

The recent emphasis on different preferred learning styles and multiple intelligences has shown that people learn in different combinations of ways. Classroom visual activity often centers on texts and aural activity on teacher's lectures. Videos are richer in setting and nonverbal behavior and spoken language is more varied. Moreover, although the input is still via visual and aural modes, we can at least observe elements of movement, music, and texture and assume that these elements would appeal to the students with different intelligences. One section of the video would certainly be “unforgettable” for the students. There are charts available indicating what types of video can accommodate Howard Gardner's Multiple Intelligences.

2.2.1 The Variety of Video Materials

The previous section of the literature review has included a definition of video since today “video” means different things than the all the periods during which the relevant literature was produced. In the same way, may be next year or later, the term “video” will refer to more concepts and technologies than now. As the “video” itself, also the definition dates early. In this respect, as well as the definition, it might be useful to address varied forms of video materials.

The first distinction must be made between authentic video materials and the instructional video materials. As stated earlier in this chapter, authentic video materials are the materials which “expose” the learners with real language created for real audience. TV broadcasts, films, advertisements, documentaries, podcasts, videos produced for web sharing indeed any video produced in the target language and used unedited in the classroom are examples of authentic materials. Students can only acquire communicative competence if only they understand the target culture. So, authentic videos can be used to both to entertain the learners and teach the target culture, which is inseparable from language. However, authentic videos are not graded and require a careful selection and study by the teacher.

Instructional videos are the videos planned and produced for language teaching/learning purposes. In instructional videos the language to be taught is graded and presentation of language items are controlled. In addition, most of the instructional videos are accompanied with other published materials such as teacher’s book, course books and worksheets. Instructional videos can be selected at the earlier stages or for the presentation of specific areas of language.

Another variety of video materials are the English for Specific Purposes (ESP) video materials. ESP videos are tied closely to the specific subject areas of language use and the types of learners addressed. Content must address both vocabulary and linguistic structures typical of the register to be used in the subject area. Business English instructional videos are most common types of instructional videos.

2.2.2 The Advantages of Using Video

As it has been specified in the previous section, there are different types of video materials. Yet, when examining the literature one would see that the advantages of video in language teaching are generalized for all types of video materials. This is partially wrong, because even though different types of videos might have some common advantages for language learners, it would be amiss to assume that an instructional video which focuses on the simple past tense and a documentary which shows how things work would have the same impact and the advantages when student needs and interests are considered. The effectiveness of video in the classroom is strictly based on the selection of appropriate materials keeping the selection criteria in mind. The teachers must know the learners' needs and interests in order to define their teaching objectives and reach them. Pushing the play button would not be enough to exploit the advantages of video in the language classroom. Teachers should be selective and pre-prepared. Cates (1989) points out that:

In order to be effective, videos to be viewed must be selected and arranged on the basis of instructional needs and objectives. The teacher ought to list not only the students' needs, but also the objectives for the particular unit or instruction that he is planning and note where the video might go well. (405)

Therefore, rather than considering the general advantages of video, the teachers should assess which type, length or level of video can be most advantageous in regard to their teaching goals and student needs. The advantages of videos are countless as long as teachers follow accepted standards to make the best selection. Thus, videos may have more advantages than that are discussed in the literature. There are charts to help teachers select appropriate video for their language classes.

Even tough advantages are dependent on many variables such as teacher, students, classroom setting, video itself and the technology employed, as a general frame, this section will present advantages and disadvantages of video.

The advantages of using video in language teaching are:

1. "Video is an audio-visual aid, offering the still or moving pictures with or without accompanying sound. That's why, visual element when joined with the aural feature becomes an advantage and effects communication or intended message in general and language teaching in particular." (Demirezen, 1992:302)

2. "Video can give students realistic models to imitate for role-play; can increase awareness of other cultures by teaching appropriateness and suitability; can strengthen audio/visual linguistic perceptions simultaneously; can widen the classroom repertoire and range of activities; can help utilize the latest technology to facilitate language learning; can teach direct observation of the paralinguistic features found in association with the target language; can be used to help when training students in ESP related scenarios and language; can offer a visual reinforcement of the target language and can lower anxiety when practicing the skill of listening." (Arthur, 1999:4)

3. Videos provide authenticity. The authentic materials would not only provide student contextualized language but also help them to deal with different situations in the real world. Authentic exposure provides another sensory experience that allows concepts to actually be "experienced" and come to life while you guide your students on each adventure.

4. "Video provides visual stimuli such as the environment and this can lead to and generate prediction, speculation and a chance to activate background schemata when viewing a visual scene reenacted. It can be argued that language found in videos could help nonnative speakers understand stress patterns. Videos allow the learner to see body rhythm and speech rhythm in second language discourse through the use of authentic language and speed of speech in various situations. Videos allow contextual clues to be offered. In addition, video can stimulate and motivate student interest. The use of visuals overall can help learners to predict information, infer ideas and analyze the world that is brought into the classroom via the use of video instruction." (Canning, 2000)

5. Video allows us to introduce any aspect of real life into the language learning environment, contextualizing the learning process (Sherman, 2003:1).

6. Authentic videos contain a wealth of material from which task-based learning can be designed. Feature films are important audio-visual authentic materials and Eken (2003: p.53-54) examines feature films from four perspectives:

- Literacy aspects : narrative, characters, setting, theme, signs, genre
- Dramatic aspects: acting, costumes, make-up
- Cinematic aspects: camera angles, movements, positions, sound and vision, lighting
- Language work: vocabulary, skills.

7. Video can help to foster listening, speaking, reading and writing skills. Subtitles are not only useful in developing reading skill but also for vocabulary teaching.

8. In the real life video is associated with relaxation, pleasure and entertainment. Watching video is an enjoyable experience for everyone. Students also entertain watching video in the classroom and this provides positive attitude for learning.

9. Through effective and systematic exploitation of video sequences the students will become very evaluative viewers and be much better equipped to continue learning from video independently in the future. (Demirezen, 1992:302)

10. Today video is the most available authentic material for the language learners. TC channels, Internet, school libraries and other sources can provide abundant of video.

11. Video can be played everywhere: from computers to TV sets, from mobile phones/devices to portable players. This evaporates the classroom walls and provides learners to access the learning materials at any time that is best convenient for them.

12. Video is the fastest developing teaching material. The VCR's of the 30 years earlier are now found in the antique shops. Today, virtual reality allows a user to interact with a computer-simulated environment, be it a real or imagined one. The nerves are stimulated as the user interacts with the environment, thus giving the user a real sense of sensation.

2.2.3 Video and Language Skills

Video; whether in the form of a movie, TV advertisement, multimedia game, virtual museum, podcast, news or part of a multimedia program, plays an increasingly important part in the teaching and learning of languages skills at all levels in a communicative way. Videos help to improve communicative skills such as not just knowing what to say but also how to say it and how to react to what others say. Video is found useful for stimulating the ability to interpret the interaction of receptive (listening and reading) and productive (speaking and writing) skills within a total context and to act approximately. (Türker,1993: 42)

2.2.3.1. Video and Listening Skill

Language learning depends on listening and videos are even better than audio materials to develop listening skill. Because, as outlined by Meskill (1996:2) listening is not merely a receptive skill:

Theoretical models that attempt to capture the intricate nature of the listening process cannot hope to account for the myriad of cognitive and external environmental factors that influence reception, interpretation, and response construction. In short, rendering a complex activity like listening into a single construct has proved difficult. Models that have been attempted, however, share one underlying assumption: Listening is not simply a receptive act—multiple physiological and cognitive processes are engaged simultaneously.

According to many researchers and linguists, cognitive strategies are the mostly used strategies by the learners. The cognitive and external environmental factors that influence the listening process can best be examined and explained through video. Because, in video the listening is accompanied with visual elements which help the learner master the cognitive and external environmental factors.

2.2.3.2. Video and Speaking Skill

Since video is able to present real life or life-like situations in which the individuals interact, it promotes developing oral skills (Demirezen, 1992: p.300). When the real life is presented to the learner, the learner understands more about the language and the environment which makes the language possible. This understanding, in return encourages learners to produce language. Speaking is a productive skill and as stated by Türker (1993:34) production necessities understanding.

Video helps to improve speaking skill in many ways. Beginning from the traditional classroom activities to more recent computerized and web based techniques, this part shall try to examine video's contribution to speaking skill.

Silent viewing-sound substitution, prediction, dialogues, role-plays (based on the video) and drill exercises are some kind of video techniques in the classroom which motivate the learners to use the language in the context, social setting, status, and the role of the characters. Studies indicate that even shy students are encouraged to speak when video is employed.

How do professional actors and public speakers train themselves to actually look presentable? The answer is; they speak and record themselves on the video and then watch themselves looking for ways they can improve. That works the same way for language learners. Role plays, speeches and discussions can be recorded and learners be given a chance to watch themselves to see how they are doing with the language. Students enjoy watching themselves and it gives an opportunity for self-assessment and self-improvement. The literature on using video to record students reveals that in every single case positive results were achieved not only in language skills but also in intrapersonal skills. In addition to videotaping the learners, teachers should also have their students to produce their own videos. The studies indicate that assignments like video recording/producing engage and immerse students to the use of target language.

A study at Billingham Campus School and Arts College has shown that, after they produced their own videos, the students (www.billinghamcampus.stockton.sch.uk/):

- developed memorization skills, a key objective of this project
- demonstrated a capacity to re-draft, plan, and script
- focused on pronunciation, accuracy and range and learnt to appreciate the value of these for communicative effectiveness
- refined their critical judgments at all stages of the project: planning, scripting, filming and editing
- developed collaborative and investigative skills
- improved their technical skills demonstrably.

Video technologies available to learners today can make speaking activity a “live” experience through web conferencing or on-line messaging programs. As stated earlier in this chapter, “authentic” materials are increasingly turning into “live” materials. Abundant web sites, EFL/ESL forums, free software (Skype, MS Messenger, Paltalk to name a few), school intranets or many other sources allow users to conduct live video meetings. The learner has great opportunities to access native speakers or other learners from different countries, which would be impossible to be present in language classroom. Figure-2 shows a screenshot from the website www.buddyschool.com. This site, among 666.000 others, allows students to hire English language teachers for live video speaking lessons. The teachers are experienced teachers and one can find any type of teacher at any level and at any areas of interest. The rates are even cheaper than a movie ticket or hamburger. Added the excitement of meeting a new person, elimination of teacher pressure or error anxiety, being available at any time the learner needs, online video speaking lessons prove to be one of the biggest advantages of video for language purposes. Teachers may guide their students to choose proven teachers or web sites and sometimes include such an activity in the classroom or the computer lab.



Figure-3: www.buddyschool.com where students can hire on-line video speaking lessons

2.2.3.3. Video and Reading Skill

Though it might be assumed that video has relatively limited contribution to developing reading skill, it is wrong. The great value of video lies in its combination of sounds, images and sometimes text (both as embedded into the video or as subtitle), together with paralinguistic, socio-cultural information about habits, traditions, culture etc. Text in the video or video when couples text is as important as the other elements.

In the past it was possible to add only subtitles to the video. But a recent video software, which will be described in the coming sections, made it possible to add annotation to any area on the video screen. For example when the learner points to a car on the screen (while video is playing), a text message appears. Most of the news, documentaries or instructional videos include some amount of text to be displayed on the screen. Especially questions, results or similar text is often displayed on the screen.

Khalid Al-Seghayer (2001) from University of Pittsburgh conducted a study in which he aimed to examine whether dynamic video or still picture is more effective in aiding vocabulary acquisition (through reading). 30 participant students were introduced

a program designed by the researcher for reading comprehension. The program provided the users reading a narrative English text with a variety of glosses or annotations for words in the form of printed text, graphics, video, and sound, all of which are intended to aid in the understanding and learning of unknown words. The 30 participants were measured under three conditions: printed text definition alone, printed text definition coupled with still pictures, and printed text definition coupled with video clips. In order to assess the efficacy of each mode, two types of vocabulary tests were administered: recognition and production. In addition, a face-to-face interview was conducted, and questionnaires were distributed. The investigation has yielded the conclusion that a video clip is more effective in teaching unknown vocabulary words than a still picture. Among the suggested factors that explain such a result are that video better builds a mental image, better creates curiosity leading to increased concentration, and embodies an advantageous combination of modalities. This study was important in regard to show how video can assist reading processes.

One of the indispensable features of video, subtitles, can be used together with authentic video to improve word recognition and vocabulary acquisition skills in the language classroom. This combination authentic input through three different channels (written text, oral text and images) that contribute to offer a better and potentially longer lasting mental representation of new and old lexical items. Text in the form of subtitles helps learners monitor a speech that would probably be lost otherwise. Incorporation of subtitles provides instant feedback and a positive reinforcement that contributes to create a feeling of confidence.

Subtitles not only improve the reading skill but also can help to increase reading speed and to develop better skimming and scanning abilities for information.

(www.tesol-spain.org/newsletter/Article%202.doc).

2.2.3.4. Video and Writing Skill

So many video utilization activities help to improve writing skills. According to Demirezen (1992) the commonest activities are:

- A silent video (sound off) sequence may be shown to set up a narrative writing
- Exercise or role play. Silent viewing is an excellent way of arousing interest and provoking thought.
- Elementary composing and comprehending exercises, training the learned to recognize and copy letters, word and structures could be visually presented.
- Correction of tests and dictation may be achieved.
- Written summary of the context may be taken down.
- Taking formal notes may be utilized.
- Précis and summaries may be made.
- Guided, free, and controlled composition can be achieved.
- Reports, criticism, and reviews can be prepared.

When a language learner is asked to write a composition for example about cars or his best friend, the very first thing he would do is to create or recall an imagination in his mind and then start to write. While writing he would deposit the mental image. This is enough to show how important the video is in developing writing skill. When learners are provided with ready images, they would have more to write with more motivation and joy. In this way, one the most disliked activities, writing, can be more fun, fruitful, richer and longer lasting. For example, rather than asking the students to write about their best friends, the teacher can display an video of their peers for some time and ask students to write he/she as their best friend. The differences in writings would be enjoyable to discover both for the teacher and the students.

2.2.4 Techniques and Activities through Video

In the previous section, how video can help to develop language skills has been discussed. When used with well defined objectives and guides, video exploitation techniques and activities can assure success with all language skills and areas of language. In order to help teachers determine which video technique or activity can be utilized to achieve specific objectives, this section of the study will briefly explain video techniques and activities. It should be noted that these techniques are far from new. Yet, when possible, it will also be explained how some of these techniques can be applied via computers more effectively. For example, in order to develop listening skill, in a traditional video classroom the teacher may ask students to act a role play or complete a dialogue from the video. However in a computerized video class the student may record the dialogue on the computer to later upload it to his/her mobile phone, media player, computer for later evaluation and study. This would also allow teacher to store student recordings for assessment.

Studies indicate that if students are explained the purpose of the viewing they are more active and absorbed in the movie. So, before exploiting any of the following techniques the teachers should clearly share the objectives with their students.

Some of the video techniques are:

Sound off/vision on (silent viewing)

Watching a video sequence without the soundtrack does more than activating learners' schema and prior experience in interpreting what they see. Without the 'distraction' of the spoken word, learners can focus on the essence of communication among people: body language, gestures, facial expressions and the setting. Learners are more motivated to use English by visualizing this common need to communicate irrespective of the language spoken. In their second viewing with the sound on, they are better able to fit the language they hear into the context they have built in their silent

viewing (Chau, 2003). Silent viewing will be a prediction technique when students are viewing for the first time and a reproduction technique when they have already seen and heard the section being used for silent viewing. Some silent viewing techniques:

- 1) Catching the characters: Who is who?
- 2) Oral description: What do you see now?
- 3) Written description: Describe a place, person, object or feelings of the people, etc.
- 4) Prediction : Students can talk about what will happen, who will do what?
- 5) Dialog : The students can role play a dialog.
- 6) Information gap activities

Sound on/vision off (no picture)

With the vision off, students listen to sounds and make predictions what is happening: where the characters are and what they are doing, etc. This technique might be useful in intriguing the students (Türker, 75). It includes:

- 1) Prediction: (There are gunshots) Who will talk first?
- 2) Video dictation: Write the verbs you hear.
- 3) Listen and repeat : Listen and repeat only male/female voices.
- 4) Pronunciation and intonation practice: Repeat the question sentences.
- 5) Mystery sounds : This sound belongs to
- 6) Songs and moods: Try to sing the song

Sound on/vision on

At advanced levels and for general comprehension this “most” prevailing technique may be suitable. It includes:

- 1) General comprehension: What’s the main reason of the dispute?
- 2) Specific listening: What’s the name of firearms company?
- 3) True or false : This is the first she has been to New York. (T) (F)
- 4) Summary (oral or written "narration"):
- 5) Vocabulary/expressions: to __ under whether
- 6) Discussions: What if.....

Jigsaw viewing/listening

Jigsaw viewing/listening aims to create a situation in which learners have to collaborate in working out what is actually happening on the video. Besides generating a lot interaction among learners, this can also help learners appreciate the value of peer support in the learning process. Jigsaw viewing/listening can be set up by making half of the class do silent viewing while the other half only listen to the soundtrack of the same segment in another room. Teachers can provide viewing and listening task sheets to help learners record information. When the class reunites, viewers and listeners then work in pairs to arrive at the original 'story' by sharing the information they have got.

(http://www.viney.uk.com/original_articles/vidtech/vidtech.htm)

Backwards viewing

The video sequence is played backwards and the students are asked to reconstruct the story in chronological order. Then the sequence is played normally and students compare it with their version.

Freeze frame (still picture)

If A Picture is Worth A Thousand Words - The Question is How Many Words is A Video Worth? By trying the freeze frame techniques, teachers can find the answer. When a character has an interesting expression on his / her face, is about to react to something or answer a question, etc. teacher can freeze the video to have students get engaged. (http://www.viney.uk.com/original_articles/vidtech/vidtech.htm) It includes:

- 1) Prediction (what next?)
- 2) DIALOGUES (what are they saying?/ what are they going to say next?)
- 3) Using the background.
- 4) Thoughts and emotions.
- 5) Physical settings.

Paired viewing activities.

They take more effort in setting up, but the results justify the trouble.

Examples:

1) Description. In this activity one student in each pair turns their back to the screen. The other student faces the screen, and the video is played silently. The student who can see the screen describes what he/she can see to his/her partner.

2) Narration. This is more difficult to organize, as it involves sending half the class out of the room while the remaining half watch a section of a video. When they return they are told about the video in pairs by those who saw it.

(http://www.viney.uk.com/original_articles/vidtech/vidtech.htm)

High speed viewing – backwards or forwards

Slow rewind or *slow fast forward* features can be used to give students a preview of what they will see or to remind them what they have seen. It can be used to predict events and pre-teach vocabulary.

Gapped Scripts

It can be applied in two ways. In the traditional way the students are given a part of the script or a dialogue and fill in the gaps as they watch. In the second way, the students are again provided with a part of script but yet have not seen the video. They are asked to fill the gaps with appropriate answers. Then the students watch the sequence and check and compare their own answers.

Strip Dialogue Scenes

A dialogue, narration, description from the video is written on separate strips of paper and randomly distributed to the students. The students recreate the scene by putting the lines together. The class can be divided into two groups to motivate students through competition.

Note-Taking Activity

For learners who will need to use a foreign language for study, business, commerce or for vocational purposes, note taking is an important skill. Knowing what to listen for; what is relevant and what is peripheral is the first essential for successful note-taking. Improving the note taking exercises within the scope of student needs might as important as the teaching of the language. Note taking exercises might be conducted as free note-taking exercises or guided note-taking exercises. The impact of notetaking strategy on learning performance is called the Directed Overt Activity Strategy (DOA).(Türker, 1993)

The above mentioned techniques are proven techniques, however, in order to be able to meet teaching goals, develop language skills effectively and to be able to achieve student motivation and participation, a language teacher needs to make preparation and set objectives before a video lesson. Teachers pre-screen videos carefully to check for appropriateness/suitability, curriculum match, length and overall quality. This requires careful planning and appropriate teacher guidance of pre-viewing, viewing, and post-viewing activities. Most of the research indicates that video lessons are more effective when planned as three-part lesson including pre-viewing, viewing, and post-viewing activities.

The guide book *Using Educational Video Effectively* published by ERAC (Educational Resource Acquisition Consortium) in May 2, 2005 provides insights to pre-viewing, while-viewing and post-viewing activities which could be very beneficial both for the teachers and the students. The following titles on pre-viewing, while-viewing and post-viewing activities will be summarized from this book to provide teacher a compact guide and reference.

Pre-viewing activities

Pre-viewing activities are designed to familiarize students with the content, spark their interest and curiosity, set the stage, and focus attention on the material that students are going to view and facilitate easier and better comprehension, thus achieving successful results in language teaching. Pre-viewing activities are used to draw the students' background knowledge.

Pre-viewing activities include: reading, researching, discussing, dramatizing, hypothesizing, problem-solving, writing, and brainstorming, prediction, inducing, deducing, mind mapping, role playing, speaking activities etc.

Some specific examples of pre-viewing activities are:

- Relate the video to the title being studied through inviting the students brainstorm or summarize their understandings of the title.
- With the sound off, focus on the images for prediction and discussion. Introduce the video through the discussion of relevant contemporary issues.
- Invite students to predict responses to issues, problems, or key questions.
- Ask key questions or invite students formulate key questions.
- Establish a focus for viewing e.g., specific details, information, skills, feelings, atmospheres, etc.
- Have students research other sources of information on the topic before watching the video.
- Suggest students imagine themselves in the situation presented in the video.
- Show a brief clip of the video to raise students' curiosity and to generate pre-view discussion.
- Pre-teach any unusual vocabulary and grammatical points in context.
- Provide a focus/reason for viewing. Give the students something specific to look for or to listen for in the video segment.

While-viewing activities

While viewing activities are focused on the gist of the content and through inference, comprehension, details and matching etc. exercises teachers try to make sure that students don't miss any important point. Who, what, when, where, why and how questions may be useful to assess general comprehension.

Some specific examples of while-viewing activities are:

- Stop the video just before a character's point of decision. Ask students to clarify:
 - the conflict
 - what options may be available
 - what the consequences and benefits of each option might be
 - what underlying values might help the character make his or her decision
- Show part of a documentary or other fact-based video and have students work with researched data to predict outcomes.
- Stop the video at strategic points and have the students:
 - process the information in small groups
 - share their views
 - question the content
 - compare their understandings
 - discuss ways to make their new learning relevant
- Have students take notes answering and answer who, what, when, where, why and how.
- Focus on visual cues such as signs, notices, buildings, vehicles etc.;
- Have students listen for general comprehension, specific information (names, dates, number).
- Having students create the narrative, dialogue etc. for themselves.
- Play half of the video without sound, and then running the other half of the video with sound only (no visual). Compare students' interpretations.

Post-viewing activities

It is crucial that learning experience does not end when the video finishes. Post-viewing activities serve to consolidate learning, explore the implications of the video, and extend the learning to new understandings. Post-viewing activities can also form the basis of assessment of learning. Again, a large variety of strategies are available.

Generic post-viewing activities can include: reading, testing, concluding, role-playing, discussing, personalizing, abstracting, generalizing, criticizing, describing, evaluating, creating, visualizing, organizing, reflecting, etc.

Some examples of post-viewing activities are:

- Hands-on activities such as experiments, field trips, drama, visual arts, poetry
- Research projects
- Class or small group discussion
- Writing in response to the video (e.g., journals, blogs, storyboards, poems etc)
- Activity sheets analyzing the issues or data
- Discussing feelings provoked by the video
- Extending thinking about video to "what if..."
- Evaluating the content of the video in relation to other information sources
- Having students produce their own video (language functions for example)
- Clarifying details, checking for comprehension, exploring concepts contained.
- Reviewing the major points, and asking students to think of concrete, real-life examples illustrating these points
- Playing the sound only and having students discuss what the scene might look like.
- Do information-gap activity. The viewers are eyewitnesses, the others are journalists. They interview the first group about the event.
- Role playing sequences they have seen or whatever they guess from having seen the video

Some more video techniques within pre-viewing, while-viewing and post-viewing activities can be included and examined. Teachers may also create their own techniques based on the interaction and ties between them and their students. However, almost all of these techniques are developed or designed according to the whole class/group video learning environments where the teacher is the only pacemaker and the controller. Whether a student will talk or not or what s/he will be thinking of is determined by the teacher, not by the interactive language environment where the student is by himself and where she is prompted to use his/her language skills. On the other hand, individualized computer based video lessons can more effectively utilize and assess the above mentioned techniques. An example would be enough to set the difference.

In traditional video classroom, the teacher turns the vision off and gets the students listen to a sequence. Then, he asks what the people in the sequence are talking about. On his luckiest day, half of the class would respond and the top students will make him satisfied with their answers while others would stay passive.

In contrast, this scene in a computer assisted video lesson would progress as follows: In the video sequence, two people will be talking about an object, but that object will be removed from the scene. After their talk, the movie stops and some objects and vocabulary items appear on the screen. The student is required to match the related vocabulary with the objects. For this, he drags the vocabulary items on each relevant object. When does this correctly, he is given a chance to move the object where it should be on the screen. After he places it on the correct place, the video resumes. At the same time, with a click the student can reach a dictionary with definition, annotations, web-search or other exercises with the related object. Meanwhile, the teacher prints to see analysis of the analysis of the activity including all students' answers, the time they spend, extra activity they have done, etc.

2.2.5 Testing and Evaluation of Video Lessons

What is the didactic purpose for showing video? The answers to this question not only determines which of the above mentioned viewing activities should be employed but also how the teacher should utilize video activities and assess the related outcomes. For example, if the purpose of showing video is to develop writing skills, then evaluation of the activity outcome should be assessed regarding writing skills. Before using a sequence of video teachers should consider their goals and define assessment of the objectives.

Among some assessment methods in a video classroom, three of them are more common: (1) informal assessments done during classroom discussions and when monitoring individual or pair/group work, (2) occasional collection of activity handouts to check comprehension, and (3) through some questions included in the exams. However, all these and other assessment methods or tools are in contradiction with the video itself. Because, video is live, authentic and communicative. So must be the assessment of student progress.

Despite some studies on specific evaluation of how video helps to develop language skills communicatively, there is no standardized video testing and assessment procedures. However, as with all teaching materials there should be a valid and reliable testing method for video lessons. Video lessons would provide teachers an opportunity to test not what their students know about language (grammar rules, structure) but how they can use language after they acquire it through four channels.

The lack of standardized testing tools for video lessons and need to develop other methods which can assess language skills more communicatively are some of the reasons which led to this study. In Chapter 3, the need and benefits of multimedia testing (in the form of video), why video should be separated into segments and each segment should be individually tested and other reasons for the development of computer adaptive video program, in regards to testing will be explained more in detail.

2.2.6 Examples of Video Utilization Software

After providing a general theoretical background encompassing the definition, types, advantages of video and some video exploitation techniques in the previous sections of the literature review, now this point on, the literature will focus on more specific examples to establish basis to practical background of the study. In this part of, some video utilization software shall be given as example to demonstrate recent developments in the field of the study. It is assumed that the examples would also be useful to set the difference between traditional whole class/group viewing and the individualized and computerized video viewing.

The first example shown in Figure-4 shows a video player which allows users to click any area on the video screen and access annotations. For example, while watching a sitcom taking place in a house interior, students can click on the objects in the house to get more information, explanation, and translation to mother tongue or even a small test about that object. Or while a character takes a sip of coffee, upon clicking on the coffee cup, student may get list of coffee related verbs.

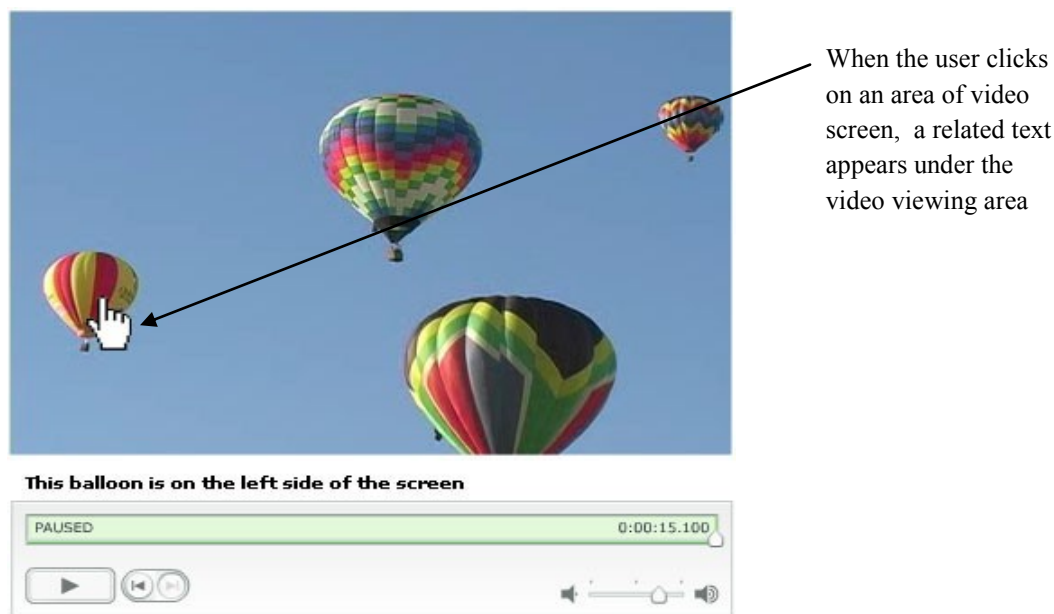


Figure 4: A video player where users can click on the video screen to get annotations

This video player offers limitless opportunities for the language teachers. It is especially good for vocabulary study. While the movie is going on, the user can click any point on the screen and get annotations even in video and audio forms.

The second example is the Learn to Speak English software. The software has video content related to the most common tasks in real life. One of the video based exercises is the Simulated Conversations, in which user gives possible answers to the statements made by the native speaker. In other video based parts of program, new vocabulary of each unit is presented in context with a short video giving examples and explanation. There are also cultural movies section, which is observed by the researcher in computer assisted language lab that, most of the students are eager to explore these videos.



Figure 5: Simulated Conversations

The next example shown in 6 is the Tell Me More software. Tell Me More is one of the bestselling video English package with millions of users worldwide. The program includes dialogues which play or stop according to the user response. For example, in the screenshot shown in Figure-6, the video and the dialog's theme is window shopping. The user is given the topic and video plays for a time, then, it stops and the user is requested to speak one of the three possible answers to a question in the video. If he gives correct answer the video resumes. This software is a good example how video can be used to develop listening and speaking skills in a language classroom.

The software has an advanced sound recognition feature which determines whether a sentence spoken by the user is understandable or not.



Figure 6: Tell Me More

The example is from New Interchange CD-ROM. In this software each unit has a video based theme. In one of the video exercises shown below in Figure 7, the video is divided into six parts and by listening each part individually, the user reorders video segments

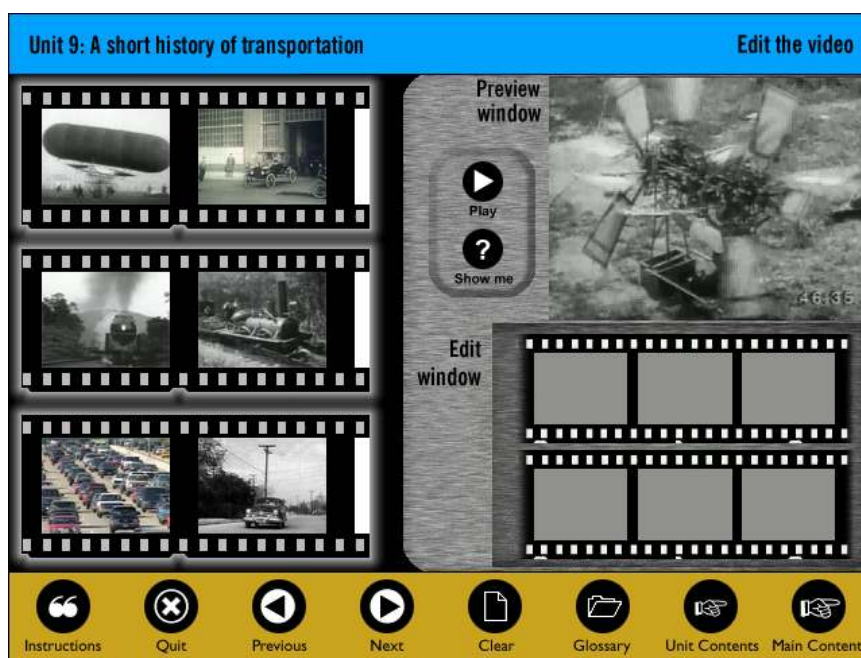


Figure 7: Reordering the video segments exercise

Second Life, among others, is a virtual world on the Internet. Its users, called Residents, can interact with each other through avatars (their representations through virtual characters). Residents can explore, meet other residents, socialize, participate in individual and group activities, and create and trade virtual property and services with one another, or travel throughout the world, which residents refer to as the grid. Second Life has millions of users and also created an intriguing new space for virtual classrooms that act very much like 'real-life' classrooms. It offers the potential for authentic communication with real native speakers as well as a host of potential for designing tasks for learners that would be impossible in ordinary classrooms or distance learning platforms. Today Second Life has gained place in English language teaching literature and annual conferences, workshops and meetings are gradually increasing in number.

All the technology has social origins and that Second Life established itself as an arena for innovative online education and gained millions of Residents, attracted universities like Harvard and Oxford and also specialized e-learning institutes. Figure 8 shows two virtual worlds from Second Life, in which each avatar on the screen represents a real user.

The following abstract of the research study conducted by the Division of Instructional Innovation and Assessment of the University of Texas in Austin credits Second Life as an effective teaching tool :

Interest in the instructional application of virtual worlds, such as Second Life, has grown significantly. However, little information is available about effective instructional activities using virtual worlds. This case study illustrates lessons learned from a pilot integrating Second Life into a two-semester English course at a large southwestern university. The paper focuses on the process of implementing Second Life in the classroom, conducting a formative evaluation of the students' relevant experiences, and modifying instructional activities for the second semester based on the results of qualitative and quantitative data analyses. The changes significantly enhanced students' learning experiences. This study demonstrates the importance of combining careful instructional design with ongoing assessment when implementing emerging technologies. It also indicates that course learning goals and students' needs should be considered first and foremost when adopting new technology. (www.utexas.edu/academic/diia/about/AnnualReport2008.pdf)



Figure 8: Second Life as a virtual classroom

2.2.7 Examples of Case Studies

In addition to “on the shelf” (commercially available) software for using video in language classroom -some of which are mentioned above, some researchers also designed their own software to assess how effective is video in some specific language skills. In this part of the study examples of such studies shall be provided.

Staddon and Branch (1999) from Australia Monash University used McIVER (Multicampus InteractiVe Educational Resource) video-on-demand system – developed by the university to deliver high quality video clips over the school network. Some integrated features of MCIVER helped researchers to introduce the video more effectively. For example, Bookmark function was used to annotate the scenes within the sequences of the video and Note taking function was used to guide and quiz the students as they worked through the video sequence. After students worked through the exercises, they were given a questionnaire to determine the strong and weak points of the software in regards to its contribution to language learning. According to the researchers, students who experienced the system showed entirely positive reactions and from the trial with their students, the researchers concluded that they believed interactive video-on-demand system has great potential for language learning, in particular in the area of listening skills.

Al-Seghayer (2001) conducted a research to examine which of the image modalities -dynamic video or still picture- is more effective in aiding vocabulary acquisition. He designed a hypermedia-learning program with the aim of developing reading skill. 30 ESL students participated in his research and used the program. The program provided users reading a narrative English text with a variety of glosses or annotations for words in the form of printed text, graphics, video, and sound, all of which are intended to aid in the understanding and learning of unknown words. The 30 participants were measured under three conditions: printed text definition alone, printed text definition coupled with still pictures, and printed text definition coupled with video

clips. In order to assess the efficacy of each mode, a vocabulary test was designed by the researcher and administered to participants after they had read the English narrative. The tests were recognition and production based tests. Added to the tests, a face-to-face interview was conducted and questionnaires were distributed to the students by the researcher. Analysis of variance procedures were applied to the results of both tests. The investigation has yielded the conclusion that a video clip is more effective in teaching unknown vocabulary words than a still picture. Among the suggested factors that explain such a result are that video better builds a mental image, better creates curiosity leading to increased concentration, and embodies an advantageous combination of modalities (vivid or dynamic image, sound, and printed text).

IN-VISION project was developed and implemented in Iowa-Nebraska to show how computer technologies provide an effective way to overcome the obstacles such as cost, distance, time and accessibility that hinder progress toward better foreign language education for rural children. Although the program was used to teach Spanish, the results can be applied to teaching of English as well. The project established foreign language programs with the use of a children's Spanish video series (SALSA), Spanish-speaking teaching aides who teach a 20- to 30-minute Spanish class weekly, elementary classroom teachers who learn Spanish and integrate language and culture into their teaching of other disciplines, and other support materials. At the end of first year, results indicated that students acquired basic Spanish listening and speaking skills. Most scores on the Student Oral Proficiency Assessment (SOPA) were at the junior novice-mid level for listening comprehension (students understand predictable questions, statements, and commands in a familiar topic area, though at slower rates of speech) and the junior novice-low level for oral fluency (students produce isolated words and/or high frequency expressions). In addition, students developed a positive attitude toward Spanish and Hispanic cultures (Rosenbusch, García and Padgitt, 2003)

In addition to three studies cited above, it might be useful to mention here a recent study which examined the effect of video on motivation, and lend support to the theoretical basis for using video materials. As stated by Williams and Lutes (2007) motivation is a key element in the learning process. It is a factor that must be maintained and considered throughout any lesson. The researchers set two groups of 30 sophomores, as the control and the test group, both majoring in engineering. Both groups had the same material but the test group had a video material added to the teaching materials. The test group used the video component for eight classes. Both groups had the same teachers and the curriculum. 100 out of 120 distributed questionnaires were returned by the students indicated that the test group has more positive attitudes and reactions to the lessons. Students reporting they enjoyed the class clearly indicated that video materials motivated them highly. Moreover, a higher number of students in the test group indicated they looked forward to lessons. The researchers concluded that, the responses would lend support to the contention that the video was an intrinsic motivating factor.

2.2.8 Conclusion

This part of the study has examined the video in language teaching. First, the importance of video as an authentic material was examined. Then, a broader definition of video was given. With the advent of new technologies video has transformed into many different forms that would suit to different definitions. Each separate definition in fact reflected another advantage video could provide. Then, video teaching techniques and activities to make most of these advantages were given. Next, within the scope of examining recent video utilization programs, some new software were given as examples. The part concluded with citation to specific studies by some researcher to develop language skills through the software they have designed.

2.3 Computer Assisted language Learning

After surviving the initial Hollywood effect in the first years of computers in education, today every teacher is well aware of what computers can do and what they can't do. To be able to answer what computers can do in a language classroom, this part of the literature review will examine general advantages and capabilities of the computer assisted language teaching (CALL). The general advantages and features of computers that will be discussed in this part can lend support to some aspects of the theoretical background for the development of the software that is subject of this thesis.

CALL emphasizes learning, not teaching within the principles of bidirectional learning and individualized learning. CALL materials are designed as student centered materials which enhance learning process through interaction between the learner and established language environment. Students also work at their own pace and levels and they stay active during the whole class. These features of the CALL are in line with the Communicative CALL definition introduced by Warschauer (1996).

According to Warschauer Communicative CALL;

- focuses more on using functions/forms rather than on forms/functions themselves;
- teaches grammar implicitly rather than explicitly;
- allows and encourages students to generate original utterances rather than just manipulate prefabricated language;
- does not judge and evaluate everything the students nor reward them with congratulatory messages, lights, or bells;
- avoids telling students they are wrong and is flexible to a student responses; uses the target language exclusively and creates an environment in which using the target language feels natural, both on and off the screen; and
- will never try to do anything that a book can do just as well

The technological developments which broadened the definition of video have also changed the concepts which computer represents in education. Computers now refer to internet, World Wide Web, multimedia, mobile phones and devices. The variety of sources and forms of computer technology makes it possible to access contents that fit to all specific needs.

A Citation Analysis study conducted by Uzunboyulu and Çınarlı (2009) revealed the prevalence of CALL and the momentum it gained in the recent years. Citation Analysis is a research method conducted to identify research made or inclinations within a discipline/field of study. According to the researchers, in the face of challenging developments in science and technology in the recent years, it was necessary to identify the researches and progress in the field of computer assisted language learning. The literature review study conducted indicates that no citation analysis was made earlier within CALL field. For this reasons, the researchers deemed it necessary to conduct such a citation analysis study.

The purpose of their study was to identify computer assisted language learning related researches and inclinations between 1990-2008. To accomplish this purpose, computer assisted language learning studies were examined according to document type, language, year of publication, the source, authors, frequently used key words, distribution of citation in years and mostly cited publications. *Web of Science*, *Scopus*, *EBSCOhost* and *ScienceDirect* databases were examined for the CALL related publications between 1990-2008 by entering key words like “computer assisted language learning”, “computer assisted language teaching”, “technology assisted language learning” etc. As a result of the search 1309 documents have been found. The documents revealed were analyzed according to document type, language, year of publication, the source, authors, frequently used key words, distribution of citation in years and mostly cited publications.

At the end of the analysis, it was identified that with an amount of 76.24% scientific materials were the commonest document type.

When the computer assisted language teaching materials were examined in regards to year of publication, it was found that there is gradual increase with every year. While the number of articles was 26 in 1990, it reached to 118 in 2005. The citation to above mentioned documents in 2005 was nearing 1.000, which is an indication that more institutions, academic personnel, teachers and students are considering CALL as an important way of language learning.

2.3.1 Advantages of Computer Assisted Language Learning

The advantages of CALL are well understood by the educators. To begin with, the most important advantage of CALL is independent, motivated and interested learners. As stated earlier, motivation is key to learning and challenging, imaginative and multimedia embedded CALL software increase learner motivation.

Most of the students need extra time and individualized practice to meet learning objectives. Without complaining and getting tired computers can repeat a context till the users gives up. In addition, for students who learn faster, there will be extra material available, independent of the rest of the class and the teacher.

CALL removes the wall. Despite the classroom based traditional teaching, CALL makes it possible to reach educational content at any time of the day, at any distance.

Use of computer improves self-concept and self awareness. The more student-centered learning, the more active processing. This in return improves higher-order thinking skills.

Computers provide immediate feedback. Learners get maximum benefit from feedback only when it is provided immediately. Delayed classroom feedbacks cause students to lose interest and reduce receptivity. Positive feedbacks encourages students.

Through use of authentic multimedia content teachers can grasp student attention. These elements are provided in an interactive way which further removes the barriers between the learner and the target language.

2.3.2 A Case Study: Movie Based CALL

As stated in the introduction chapter, the purpose of this research is to study how computers can be used in video lessons more effectively. In this context, citing a study conducted by Yamamoto (2007) and his friends titled “Class Research on Learning Methods in Movie-based Computer Assisted Language Learning” could be useful to demonstrate how computers can contribute to video lessons in language classroom. According to the researchers, the use of movies in English language education offers one way for students to experience authentic rhythm and intonation in conversation. This is significantly important because English education in the fields of medicine, nursing, social welfare and other service industries should be on the acquisition of practical English skills that students can immediately use in real situations (p 125). So, in order to provide effective language education using movies, they combined the use of movies with an interactive computer English program called “Synchronized Multimedia Interactive Learning Environment for Multi-mode Education (SMILE for ME)”, which was developed by one of the researches Takaaki Okura.

Their study investigated the effectiveness of computer assisted language leaning (CALL) utilizing the SMILE for ME program for improving students English skills. In an attempt to determine how effective the computer video program was, they have employed three different teaching methods: one class used a movie but not the SMILE for ME program, one class used SMILE for ME only at home for preparation, and one class used SMILE for ME in the classroom. The program was first introduced to the classes in 2003 and based on the perspective gained from their classroom research they have modified the 2004 course to focus on improving listening competence. Students from three English language classes were the subjects for the action research carried out in 2004 for the comparative study of the effectiveness of the SMILE for ME listening program in English classes. The total 97 students were divided into three groups as follows:

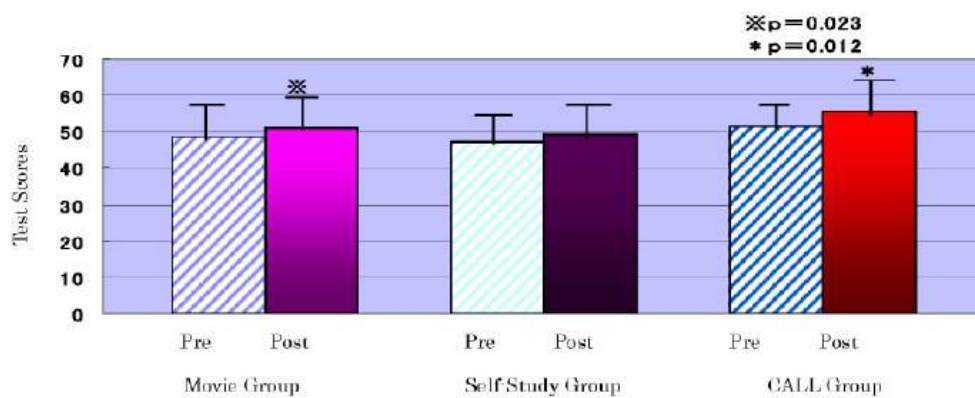
Movie group: 39 participant students attended the classes in a traditional LL classroom without access to computers. In class, students watched the movie

Awakenings and used paper-based materials. They could also use the audio recordings of the movie at any time outside class for practice.

Self-study Group: 38 students were enrolled. The class was held in an LL classroom without access to computers. SMILE for ME was used exclusively for self-study at home. In class, paper-based materials were used and the results of self-study were reviewed.

CALL Group: 20 students were enrolled. The class was held in a computer assisted LL classroom. In class, students made extensive use of SMILE for ME on computers and used paper-based materials. They had no access to the SMILE for ME program outside the classroom. Class time was divided into two halves; the first half was used for listening practice with LL or CALL, and the second half was used for checking the created material, focusing on comprehension of the story, vocabulary and idiom identification.

Standardized tests for general listening competence were used before and after the program. To assess improvements in the students' listening competence after the use of SMILE for ME, they compared the mean score of the posttest with that of the pretest for each group using the paired t-test. Their results are shown in Graph 1. The most significant improvement in listening competence was observed in the posttest of the CALL Group, followed by the Movie Group. The CALL Group showed the highest mean posttest score of 55.6 ± 10.03 ($p \leq 0.01$), compared to the mean pretest score of 51.4 ± 8.39 .



Graph 1: Results of listening comprehension test (2004 research)

2.4 Computer Assisted Language Testing (CALT)

The case study presented in the previous section on the effectiveness of computers in improving language skills is one example among many others. Schools, teachers and learners are getting more aware of advantages of computers and are more successfully finding ways to benefit from computers. One of the biggest advantages of use of computers in language teaching has been utilization of computers in language testing, evaluation and assessment.

Language teaching is an important undertaking and therefore, it is crucial that its processes and outcomes be evaluated. Schools, teachers and the learners themselves have always wanted to learn how much learning has taken place. In this respect, testing and assessment of language skills play an important role in eliciting information that is relevant to several concerns in language teaching. Tests can help us improve the quality of instruction by providing evidence of the results and instruction, and hence on the effectiveness of the teaching program. Test can also provide information that is relevant to finding the differences between students to describe the extend they achieve the objectives. Tests do not only measure and evaluate the language knowledge or the skills but also physical and mental characteristics such as abilities: capacity of learning, aptitude: learning ability, attitude: liking and disliking towards learning, traits. Tests are also important for “accountability” since schools have to “grade” their students.

Reliability and validity are the two requirements which would make a set of questions a test. Reliability is the consistency of the test. Validity describes in how far the test fulfils its purpose. However highest reliability and validity does not ensure the success of a test. Another concept, washback effect, should also be considered by the teachers. The influence a test has on teaching and learning is commonly referred to as the ‘washback effect’. Washback effect can be positive or harmful. It’s argued that since most language tests aim at testing knowledge about the language, such as testing knowledge about vocabulary and grammar, they have a negative effect. However, because computers can provide authentic materials and more communicative content, it

is accepted by the educators that computer assisted testing has a positive washback effect and computerized tests are more reliable.

The video program developed within the scope of this research has a built in testing system. The video is divided into parts and the students can advance to next part only after answering the questions at the end of each part. Because this is a computer assisted testing to some extent, this section of the study will provide a brief literature on computer assisted language testing and its communicative way of language testing.

Tests that are administered and in which language performance is elicited and assessed with the help of a computer are called computer-assisted tests. Computer assisted language tests have many advantages over traditional tests:

- Computers are more accurate at scoring and reporting the scores.
- Computers give immediate feedback, both on the screen and as printed form. Diagnostic feedback can be provided very quickly to each student.
- With use of multimedia and authentic materials, computers can be used to test all language skills more effectively.
- Multimedia elements allow teachers to test all language skills via authentic materials and more effectively.
- As a general rule reliability of tests much depends on standardization. Test administered in identical circumstances tend to give more reliable results. CALT facilitates standardization, not only as far as the actual assignments are concerned, but also regarding the test format as a whole. (Noijons,1994)
- Individual tests allow test taker to work at his own pace. Computer assisted tests takes less time to finish than the paper-and-pencil tests.
- Because test items are submitted one at once, computer assisted tests are less frustrating and users develop more positive attitudes.

2.4.1 What and Why CAT?

Some of the distinct advantages of CALT mentioned above have resulted in the production of interactive, tailored tests where the test adapts itself to the measured ability of the candidate. Such testing is usually referred to as CAT, Computerized Adaptive Testing (Noijons, 1994: p.45). CAT had a serious impact on language testing and became appealing and efficient method of assessment leading to serious projects which utilize computers to varying degrees. CAT can typically be shorter by 50% than a fixed-item linear test and still maintain a higher level of precision and quality of measurement than a fixed linear test (Wise & Kingsbury, 2000).

In traditional paper-and-pencil tests or computer assisted language tests, same questions are administered to all students in a classroom or even at a school. Students with the poorest language skills and the students with the highest language skills get the same test. However, CAT is a tailored and individualized test; examinees take a unique test that is tailored to his/her ability level. CAT works as follows (Triantafillou, 2006):

As an alternative of giving each examinee the same fixed test, CAT item selection adapts to the ability level of individual examinees and after each response the ability estimate is updated and the next item is selected to have optimal properties at the new estimate. The CAT presents first an item of moderate difficulty in order to initially assess each individual's level. During the test, each answer is scored immediately and if the examinee answers correctly then the test statistically estimates her/his ability as higher and then presents an item that matches this higher ability. The opposite occurs if the item is answered incorrectly. The computer continuously re-evaluates the ability of the examinee until the accuracy of the estimate reaches a statistically acceptable level or when some limit is reached; such as a maximum number of test items. The score is determined from the level of the difficulty, and as a result, while all examinees may answer the same percentage of questions correctly the high ability ones will get a better score as they answer correctly more difficult items.

In other words, as test taker responds to test items, a computer-adaptive test "adapts" itself to test takers' level of proficiency by selecting the next item to be presented on the basis of performance to previous questions.

In contrast to fixed-item traditional tests, CAT is based on item-response-theory in which evaluation is done with a possible minimum number of questions that is selected according to the ability of the examinee. According to the Dunkel (1999a) CAT was developed to eliminate the time-consuming and inefficient (and traditional) test that presents easy questions to high-ability persons and excessively difficult questions to low-ability test takers. In this way, teachers are given an important opportunity to see exactly where every single student is.

2.4.2 Advantages of CAT

According to the Center for Advanced Research on Language Acquisition at the Minnesota University, the advantages of CAT include:

- Compared to paper-and-pencil tests, CAT technology requires fewer test items to arrive at a more accurate estimate of test takers' language proficiency.
- CAT scoring allows for finer distinctions than total number correct.
- CAT scoring takes into account not just the number of item answered correctly, but which items were answered correctly. A test taker who correctly answers a more difficult set of questions will score higher than a test taker who correctly answers an easier set of questions.
- The time required to take a CAT is shorter, since test items outside the test taker's proficiency level are excluded.
- The test taker is continuously faced with a realistic challenge--items are not too difficult or too easy.
- Because each test taker is potentially administered a different set of test items, test security is enhanced.
- CAT technology allows test takers to receive immediate feedback on their performance.

- For tests administered on a large scale, scheduling and supervision concerns are greatly reduced because individual administration is possible.
- CAT technologies have been found to improve test-taking motivation and to reduce average test score differences across ethnic groups.
(<http://www.carla.umn.edu/assessment/CATfaq.html>)

Dunkel (1999a) adds the following as other advantages of CAT:

Self-pacing: Test takers can work at their own pace. The speed of examinee responses could be used as additional information in assessing proficiency.

Challenge: Test takers are challenged by test items that fit their level. They are neither discouraged nor annoyed by items that are too easy or too difficult.

Multimedia Presentation. Tests can include text, graphics, photographs, and even full-motion video clips.

The literature on CAT indicates that as well as schools and educational institutions there are many foundations which use computer adaptive testing algorithm for different purposes from medical training to develop communication skills. Computer adaptive testing has come out of its age and it can be projected that in a near future it will be standard form of testing. Test of English as a Foreign Language (TOEFL) is the world's most common requirement for university and college admissions worldwide. In 1998, TOEFL left the paper-and-pencil tests and computer based system has been used (CBT) since then. Today, as well as CBT, Internet Based TOEFL is gaining more prevalence and two parts of IBT TOEFL (listening and structure) are computer adaptive. As well as TOEFL, other international tests such as GRE, IELTS and SAT also administered via CAT.

2.4.3 Ubiquitous CAT: Computer Adaptive Test on Mobile Devices

The advancements in communication and information technology have woven themselves in the education so tightly that, now no new technology or a technology based service surprise the users. Computers have been seamlessly integrated into education bringing new opportunities for teachers. This seamless integration can be referred as “ubiquitous” way of teaching/learning. In order to demonstrate how advanced technologies can provide benefit to e-learning and testing in the “ubiquitous environment”, this part of study will cite a study conducted by Triantafillou (2006) and his friends. Their study involved development and the implementation of a CAT on mobile devices, the CAT-MD (Computerized Adaptive Test on Mobile Devices). Ubiquitous environment is not the environment where the student has to be, where he is.

According to the researchers;

“The introduction of mobiles devices into the learning pedagogy can compliment e-learning by creating an additional channel of assessment with mobile devices such as PDAs, mobile phones, portable computers. Due to their convenient size and reasonable computing power, mobile devices have emerged as a potential platform for computer-based testing. Although, mobile computing has become an important and interesting research issue, little research has been done on the implementation of CAT using mobile devices and this is the focus of our research. The current study is an attempt to examine the design and development issues, which may be important in the implementation of a CAT using mobile devises such as mobile phones and PDAs. As a case study an educational assessment prototype was developed, called CAT-MD (Computerized Adaptive Test on Mobile Devices) (p. 774)”

The researchers have developed the mobile CAT program to support the assessment procedure of the subject “Physics”. However the program can also be used to deliver English language tests as well.

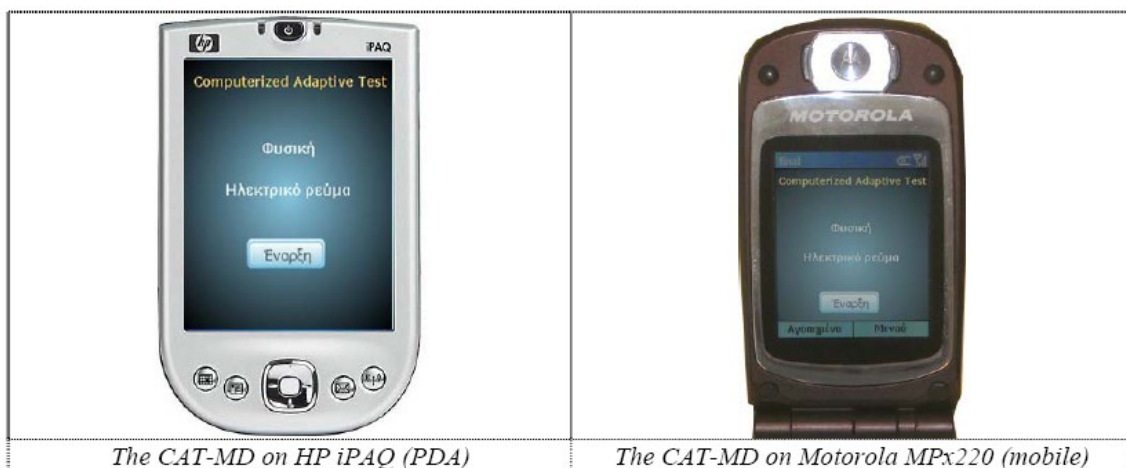


Figure 9: Interface of CAT-MD

The researchers state that formative evaluation is the next step of their research in order to investigate the effectiveness and efficiency of the system and also to assess its usability and appeal. Yet, without formative evaluation, this study is important in demonstrating where CAT is and how it can be implemented to develop and assess language skills.

CHAPTER III

A SUGGESTED VIDEO TUTORING MODEL: “COMPUTER ADAPTIVE VIDEO TUTORING”

3.0 Presentation

As stated earlier, this study aims to reveal the significant differences between the whole class video lessons (generally passive sessions for most students) and the computer adaptive individual video tutoring (suggested in this research) hoping the results would contribute to combine benefits of computers and videos in a new and effective way. After classroom observations in video lessons and in the computer assisted language teaching labs for more than 5 years and through close ties with the students to see their attitudes towards computers in language learning, the researcher believed that delivering the video on computer through a testing system for self assessment would be very fruitful in teaching English. To support this view, before starting to design and write the present program, experimental studies were conducted.

The experimental studies, in which movies were cut into parts and each part was placed in a Microsoft PowerPoint slide followed by several comprehension and vocabulary questions, were very promising in regards to dramatic increase in student motivation and engagement, and also in retention of vocabulary items. It was also observed that there were significant improvements in the listening skill related activities.

The PowerPoint slides were also installed on the school intranet and to the computer assisted language learning rooms which were open after the lessons. The slides were more popular than other installed language teaching software. In addition, a group of students regularly used them almost every day. All these factors guided the researcher to design and develop a new software considering pedagogical and didactic approaches to make video watching more fun and more learning, with the help of computers.

3.1 A Suggested Model: Computer Adaptive Video Tutoring

The pedagogical and didactic approaches as well as the major learning theories and concepts that have influenced the production of the present software material will be discussed under this title. But, before this discussion, it would be useful to define what “computer adaptive video tutoring” is, as suggested by the researcher. The type of software which estimates the test takers’ skill level and presents the next item according to the test takers estimated level are called adaptive systems. The content is adapted according to each test taker. Computer adaptive tests allow test-takers to receive immediate feedback on their performance and each test taker receives different sets of questions based on their individual level. Computer adaptive test takes into account not number of correct questions but also which items were answered correctly. More difficult items score more. However, despite these facts which make CAT sound and efficient, CAT has not yet totally replaced the traditional exams. This is due to the complexity of Item Response Theory (IRT) models that CAT systems are based on. In addition, large amounts of time, personnel and equipment should be spared to establish and maintain a CAT system. For this reason, CAT systems are available only in larger testing programs and institution such as ETS’s TOEFL or GRE tests. In the face of these difficulties, different algorithms were developed to make CAT systems less complicated and easy to develop. Tao and his team (2008) proposed Sequential Probability Ratio Test (SPRT) model while other researches came with other suggestions. In the same way, because of constraints such as time, equipment and complexity and since it would take several years to develop a IRT based adaptive software, the present “adaptive” software for this study was developed with a different logic. In this software, the video is divided into parts. For each part, teacher enters questions that are selected and classified in an item bank according to the Item Analysis method. While the video is being delivered to the students on the computer screen, at the end of the time set by the teacher for each part, the movie stops and the user needs to answer certain amount of questions correctly to be able to pass the next part.

The first part includes questions that have less difficulty according to the item mean (the higher the item mean, the easier the question is) and next parts include respectively more difficult questions (each part includes more difficult question than the previous part). Then, the teacher sets number of correct questions that should be answered correctly by the user to be able to successfully pass to the next part. Based on variables such as students' levels, objectives and the video content, etc., this could be set 50% for the first part, 60% for the second part, 70% for the third part, 80% for the fourth and 90% for the last (fifth) part. This would allow teachers to estimate student's language level and elicit his informative data. A student who passes more parts would mean he has better language skills. As he advances more parts, he will answer fewer questions with more difficulty level, while the students at first parts would be answering more questions with less difficulty level. This is how adaptive systems work. In Figure-10, the student interface of the computer adaptive video software designed by the researcher is displayed.

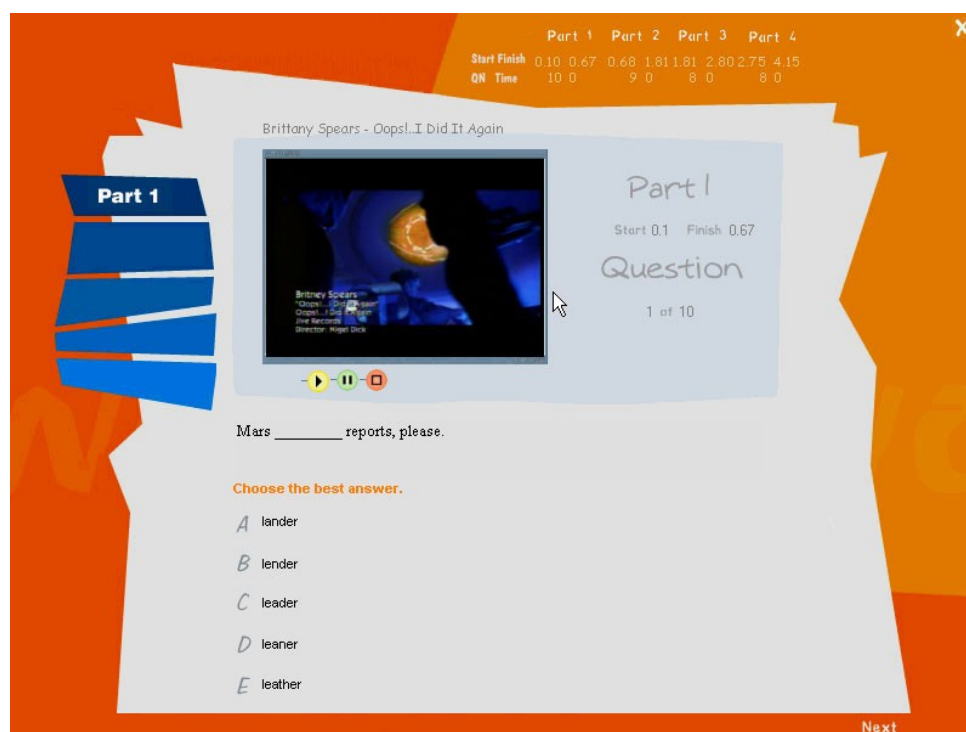


Figure 10: Computer Adaptive Video (CAV) Software, Student Interface

As shown in the screenshot in Figure-10, the video clip of a song was divided into four parts. The first part lasts less than one minute and includes 10 questions. If the user answers %70 of these questions correctly (for this clip), s/he will be able to advance to next part. At the end of the part, the user is given an opportunity to see his/her wrong answers and try again in case he fails to score over 70%.

The term “adaptive” for this study refers to above described principle of the software. It works with the same principle as the big scale Item Response Theory based computer adaptive tests. In both, first the test taker is provided with less difficult items and next items are determined according to the estimated language level. However in IRT based CAT systems there is much complicated algorithm to assess each response and there are larger number of items in the item bank to provide each test taker with a different set of questions. In the video software developed for this study, this is achieved by employing item analysis method and dividing video in the parts, in which one part is more difficult than the previous part. In the first part the user’s level of English is measured through his answers to the questions and according to the score he is given access to next part or prompted to watch the same part again. It is assumed by the researcher that, this feature of the software would be capable enough to demonstrate characteristics of a computer adaptive testing system.

Dividing the video into parts was not only for the purposes of making the software “adaptive”. The literature review indicates that video segments should be short (even very short) for pedagogical reasons. First reason, as Canning-Wilson (2000) pointed out; video segments should be short enough for the visual stimuli not to detract from the auditory component. Most researchers agree that it is better to exploit a short segment of video thoroughly and systematically rather than to play a long sequence. Dividing the video in parts (or short segments) would also help the teacher to focus on specific areas of language. For example, a scene with action verbs that includes target vocabulary, a scene or segment with a specific tense, a scene or segment with a target dialogue etc. In addition, dividing video in segments is also useful in promoting active viewing and listening by arousing curiosity and motivating students to seek more information. Moreover, the video should be short to have time to exploit it in detail for more specific language skills.

It was stated in the literature review chapter that, while choosing a video utilization technique in the classroom, the teacher has to consider the objectives of the lessons first. The video activities discussed in the literature review shows that a technique or activity should be selected according to the objectives of the lesson. In this sense, dividing video into segments could also help teachers to use a predetermined video activity more purposefully. For example, if the objective of the lesson is to increase writing skills, the video can be divided into segments and one segment has writing activity related scenes (the movie may stop when a character needs to write a letter for example and the teacher may ask his/her students to write the letter.)

The experimental studies before the development of present software project showed that dividing the video in predetermined break points has a number of advantages. As well as challenging and motivating the students (also creating a competitive environment in the classroom) it allows presenting easy to remember segments of information and it focuses learning while the information is still 'fresh'. Starting to watch the segment with a goal, to be able to pass next part, enhances students' attention and engagement with the subject. Another advantage is to force the students to get most of the video. During classroom observations it was seen that the students frequently used online dictionaries, Google search or other electronic tools to find the correct answers which dramatically increased the retention of both the vocabulary items and the knowledge. In a sense, it also supports constructivist way of teaching.

Another advantage is that it would allow teachers to more effectively plan and implement their video lessons. In video lessons in which long movies are used for more than several weeks, predetermined and divided segments would help for better planning and standardization among different teachers. Short segments would also make both the teacher and the students more familiar with the content.

3.1.1 Concepts and Practices in Language Teaching

Dividing the movie into segments and testing students between the segments has more advantages than stated in the previous section. According to the researchers Roediger and Karpicke (2006) although students dislike tests and for teachers, tests are a nuisance to give and a bother to grade, if teachers test their students frequently, students will probably better retain the presented material. And oddly enough, tested students can actually do better with less study. The researchers assert that:

A powerful way of improving one's memory for material is to be tested on that material. Tests enhance later retention more than additional study of the material, even when tests are given without feedback. This surprising phenomenon is called the testing effect, and although it has been studied by cognitive psychologists sporadically over the years, today there is a renewed effort to learn why testing is effective and to apply testing in educational settings. In this article, we selectively review laboratory studies that reveal the power of testing in improving retention and then turn to studies that demonstrate the basic effects in educational settings. We also consider the related concepts of dynamic testing and formative assessment as other means of using tests to improve learning... Frequent testing in the classroom may boost educational achievement at all levels of education.

According to a media report on the issue (www.ft.com, March 10 2006), Prof Henry Roediger explained that

“...students who relied on repeated study alone frequently developed a false sense of confidence about their mastery of the materials even while their grasp of important detail was sliding away. By comparison, students who were either tested repeatedly or tested themselves while revising scored dramatically higher marks. A group of students who read a piece of text 14 times, for example, recalled less than a self-testing group who had read the piece only three or four times. The cause of the phenomenon remains uncovered: one theory is that we learn more efficiently in difficult situations.”

These findings can be verified with other studies. There is much literature and case studies on Test Enhanced Learning approach which view testing as an opportunity for learning, instead of holding the traditional view of tests as assessment techniques. So, within this context, the pedagogical value of the present software is not only it is designed to administer tests while students watch the video but also to provide immediate feedback which improves the effect of testing. In addition in the present software the student is tested to evaluate his/her progress, rather than being compared to other students. The embedded database in the software records the date, time, the video watched by the students and answers given to question so that teachers can elicit detailed information on their students' language level, interests and progress over the time.

Tests for self-assessment, as in the present computer adaptive video software, increases intrinsic motivation. This raises learner awareness of the language and results in developing learner responsibility and autonomy.

Another advantage of the developed video software is that, it can use multimedia both in questions and answer options, which would allow teachers to test all language skills and reinforce the knowledge with visual and audio elements. The multimedia elements would not be effective in testing language skills but also other elements of authentic video such as cultural aspects, setting, visual elements, etc.

Some other benefits of the software may be summarized as follows:

- In whole class video lessons, the students are generally passive. On the other hand, in computer adaptive video (CAV) lessons, each student is actively engaged in the learning process. The student is given his/her own responsibility of learning.
- In whole class video lessons, there is generally a TV or a projection system which may cause some students to miss details. In CAV, the students watch the video on their own computer screen, they focus on the video better without being distracted by other students. Each student can set the volume, light or other settings as they wish and play, pause or forward or backward the video as many times as he needs, without considering other students.

- Whole class video lessons are time, place and teacher dependent. CAV can be installed on any computer (most of the students have their own computers) and they may be given opportunity to download videos from the school web pages.
- In whole class video lessons, videos are generally selected ad-hoc or without much preparation by the teachers. CAV requires pre-watching and detailed study by the movie, thus increasing the quality.
- Worksheets distributed in whole class video lessons are rarely returned, completed by the students, graded by teachers and feedback is provided to students. In CAT, all these are automatically done by the computers and students are given immediate feedback. In addition, results per student can be stored electronically for observing student progress.
- In whole class video lessons the technology is limited to players, projection systems and audio system. In CAV, classroom management software, digital dictionaries, Internet and other computer technology may assist video lessons.
- In whole class video lessons teacher will act as operator of the devices. However, in CAV he doesn't need to tackle with playing, stopping the video or with other technical issues. He can be more available as a facilitator in the classroom, sparing his time on students rather than equipment.
- CAV would standardize video techniques in a classroom. In whole class video lessons, there is not much guidance for the presentation and evaluation of the video sessions.
- In CAV, effective learning is generated since students take responsibility of their own learning. Students have different learning needs and styles and make use of various learning strategies. Computers fulfill the gap between students needs and the teaching.

In addition to advantages mentioned above, the benefits of computer assisted language learning and testing that are discussed in the literature review also apply for computer adaptive video lessons. This was especially stated in the purpose of literature review.

Communicative Approach and Constructivism are the two main approaches that have underlay the development of the present computer adaptive video software. These two popular methodologies also fall into the categories of Cognitive and Socio-cognitive Approaches both of which have implications in the integration of technologies in the language classroom (Warschauer 1996b). According to many educators cited in the literature review, well designed online environments may provide the socio-cognitive support for learning. The software programs developed under influence of Communicative Approach have communicative tasks that focus on communicative competence, rather than linguistic aspects and emphasize student engagement in authentic meaningful interaction. Also, the Constructivism approach is associated with learning and teaching that involves multiple perspectives, authentic activities and real-world environments.

The design and development of the CAV software aimed to transfer the above mentioned principles and advantages into language teaching classroom through authentic video and computers.

As well as the methodological principles for language learning and teaching, Chapelle's (1998) 'Seven hypotheses relevant for developing multimedia CALL' were seriously taken into consideration:

1. Making key linguistic characteristics salient.
2. Offering modifications of linguistic input.
3. Providing opportunities for "comprehensible output."
4. Providing opportunities for learners to notice their errors.
5. Providing opportunities for learners to correct their linguistic output.
6. Supporting modified interaction between the learner and the computer.
7. Learners engaging in L2 tasks designed to maximize opportunities for good interaction.

3.1.2 Description of the Software

This section will provide a description of the software. The software consists of two modules: the teacher module and the student module.

Teacher Module

The teacher module, shown in Figure 11, is used by teachers to divide the video into parts and enter multimedia questions for each part.

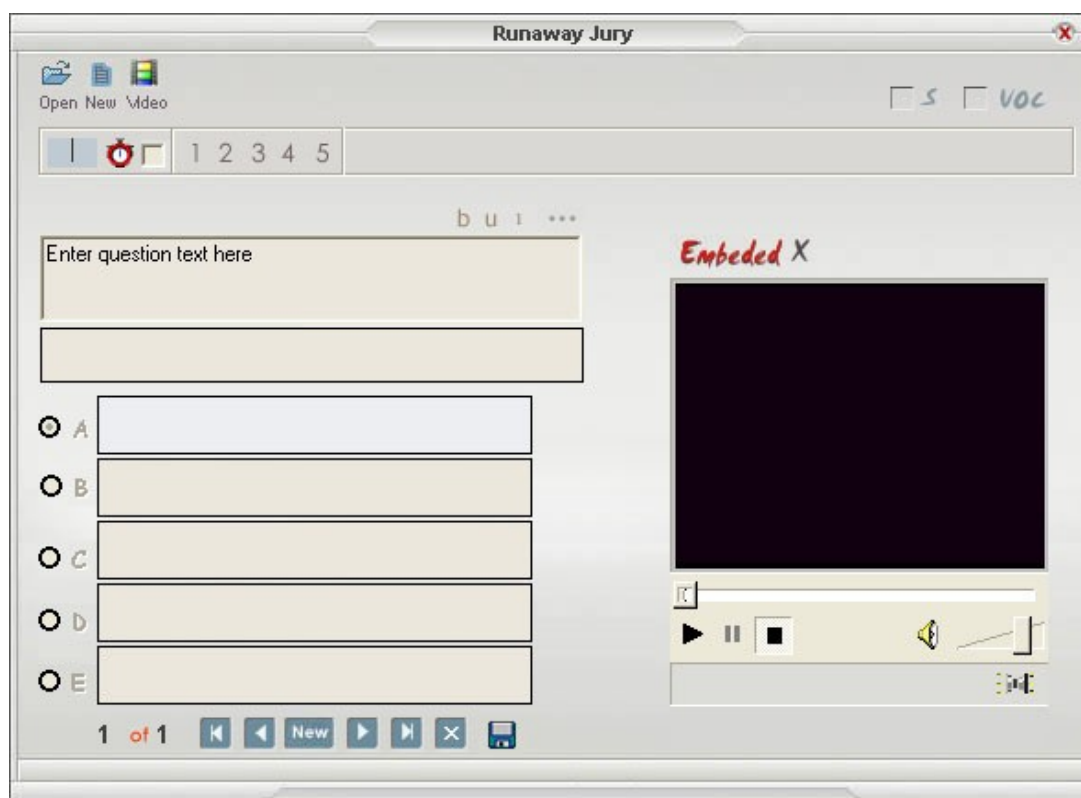


Figure 11: Computer Adaptive Video (CAV) Software, Teacher Interface

Using the Video  icon, the teacher can choose the video to be prepared for the video lesson. After choosing the video, he can set whether students will watch it in a timed or free fashion. If he wants to specify a certain time, he can enter the time in the box near the time icon:  No time is set.  Students are given total 20 minutes to watch this video, after 20 minutes the program will be inactive.

It is important that students be aware of key vocabulary or other issues before they watch the video. For this purpose, by clicking the Script or Vocabulary icons on the screen, the teacher can open the window shown below.

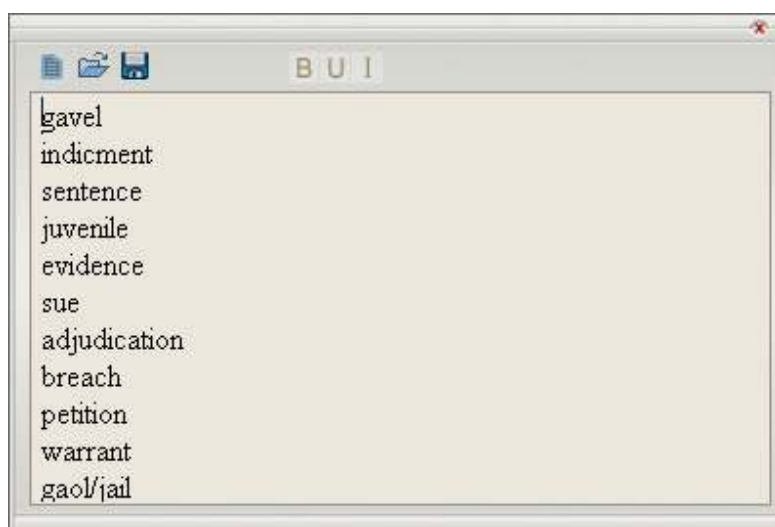


Figure 12: Window for entering key vocabulary or other notes

The vocabulary items entered here will be displayed on the screen before the student starts to watch the video. In this way, the objective of the video session will be made clearer for the student and students' awareness level will be heightened. It is possible to enter the script of the movie too so that students can read the script when necessary. The text here can be saved or directly imported from other files.

Numbers near the time icon indicate the number of segments the teacher can divide the video. For example, for this example clicking 4 means, the video will be divided into four parts:



Upon clicking the number, relevant part numbers will be displayed with two boxes next to them. The first box sets the time when the segment will start and the second box sets the time when the segment will stop. For example, for the example above, the first segment will start at 0.01 and finish at the 27.70 minutes.

After dividing the video in parts, the teacher can enter questions for each part. For this, he needs to click the part number before the boxes. As he clicks, part name is displayed over the question entering area indicating that questions are being entered for that part as shown in Figure 13. In the questions area, the first box is for the question body, and the box below the first box is for the instructions. Under the instruction box, there are five boxes for the answer options. The icons under the option boxes allow the teacher to add, delete or navigate the questions. The video window on the right allows the teacher to watch the video he/she has selected.

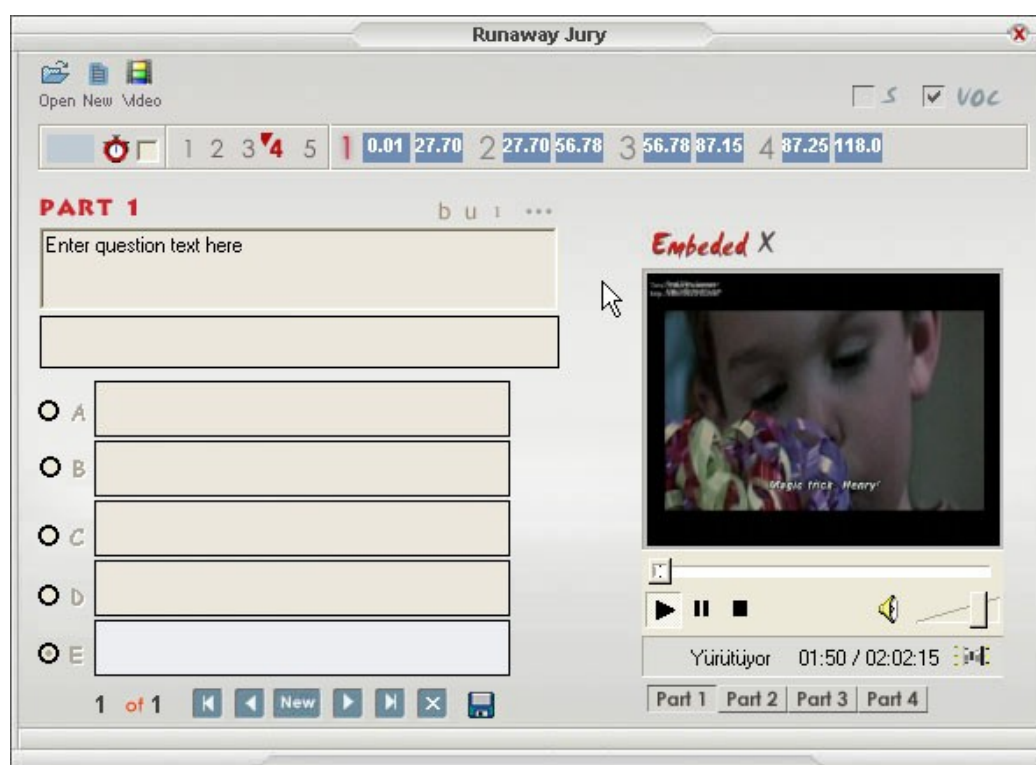


Figure 13: Selecting the parts to enter the questions.

If the teacher would like to embed the video in the test package, he can use Embed button to embed the video in the test. This is good for short videos. If the video is not embedded, the student module will display an Open button to allow students to chose and open a video.

By clicking the related part button under the video window, the teacher can play the video between time intervals set for that part. It's possible to add images, sounds and video content to the questions and answer options. This is especially important and useful for testing and improving language skills and to get most out of the test. For example, the question might include a very short silent video and options include sound extractions and the students may be asked to choose the best choice for the silent-off video. To add a multimedia element into a question or answer option, the teacher needs to click Add icon *** on the question box. When this icon is clicked, the window shown in Figure-14 is displayed.

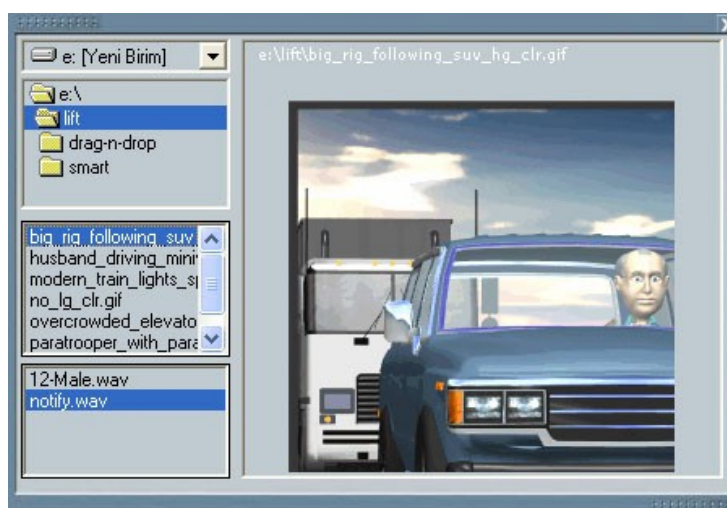


Figure 14: The window that allows teachers to select multimedia elements for the questions and answer options.

This window displays the names of images and other multimedia elements in the selected folder. When an item in one of the list boxes is clicked, the element is displayed/played on the right pane of the window. In order to embed this element into a question or an answer option, the teacher needs to drag it on the correct place (in the question box or the answer option box). When a multimedia element is embedded in a question or an answer option, a tick sign next to the box appears indicating that a multimedia is inserted. By clicking in the box, the teacher can see the embedded element

on the right of the window. Clicking the tick box would remove the inserted element. To continue entering questions, the teacher needs to click the save button. There are five answer options. To identify the correct answer, the teacher clicks the relevant box. The box changes color and the radio button is selected.

The Student Module

The student module delivers the video selected by the teacher to the students on a computer screen. The module can be installed on any computer. Each test package consists of the video divided into segments by the teacher and questions entered for each part.

When a student clicks the program icon, first the window shown in Figure- 15 appears. In this window, the student needs to write his school number to get access to installed music, video or other tests. The window records the user ID and number, date, time, name of the selected test and the time each student spent on that test.

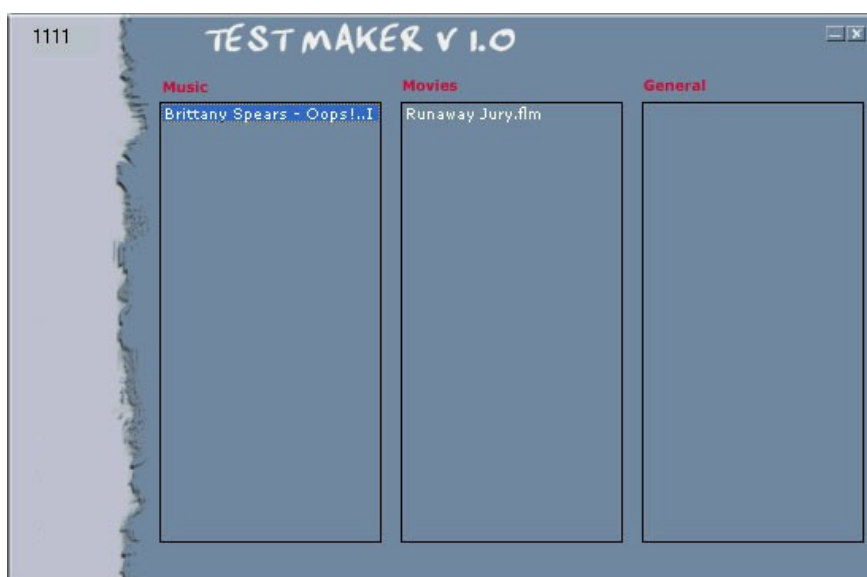


Figure 15: Student Module login and selection window

In this window, the student double clicks the video he wants to watch. (In this example, Oops! ... I did it again). After double clicking the window shown in Figure-16 appears.

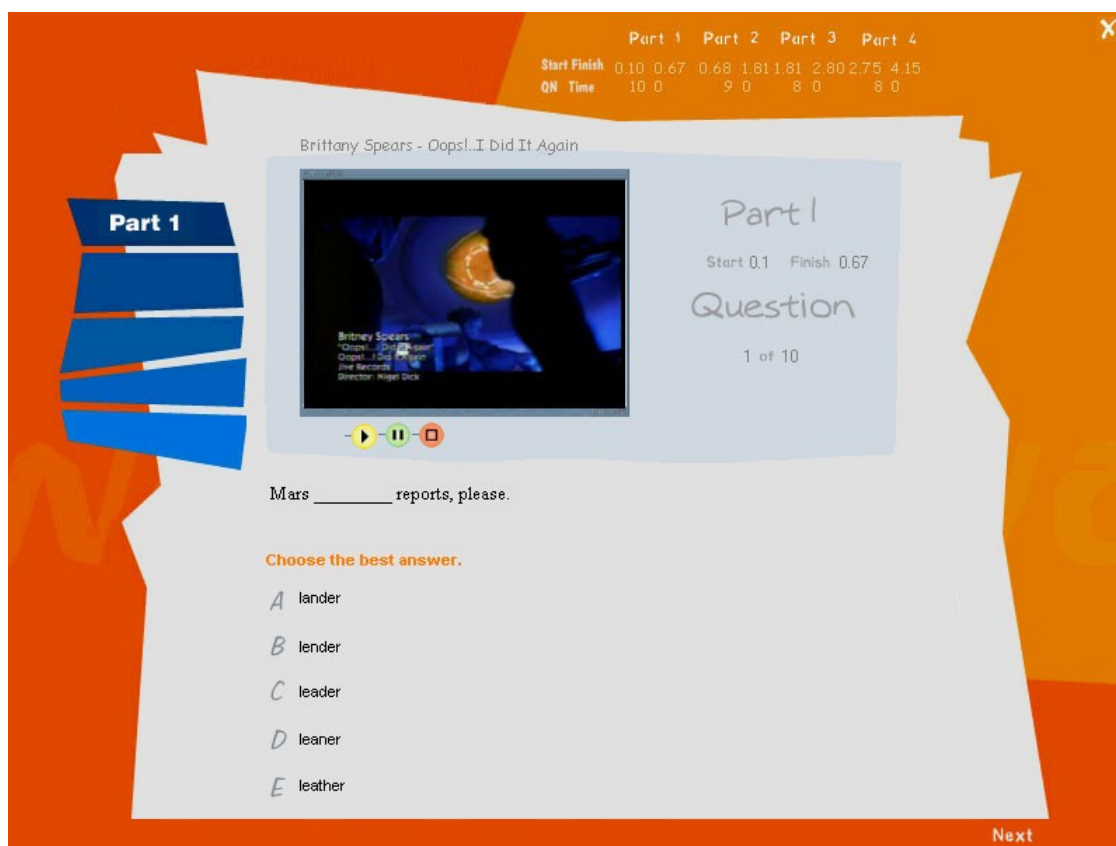


Figure 16: Student Module user interface

At the top of the window, number of parts is shown. As seen in the figure, this music clip is divided into four parts. The time intervals of each part, number of questions in each part and whether that part is timed or not are also shown.

By clicking Part 1 button on the left of the screen, the student can start watching the first part. By double clicking the frame of the video area, the video can be made full screen. At the end of the first part, the video will stop and the student will need to answer 70% of the questions correctly to be able to pass the next part.

If a multimedia element (a sound, video, image etc) is embedded in a question or answer options, a relevant icon will be shown in front of the question or the answer option. As in the TOEFL test delivering screens, the Back button has been hidden. However by clicking Part 1 button again the students can watch the video from the beginning again and check their answers to the questions.

If a key vocabulary list is inserted in the test, this list will be shown on the left bottom window.

The database that comes with the student module also keeps records of how many times a student tried each question and what his/her answers were. This was, it would be possible for the teacher to elicit important data.

While designing the student interface, user-friendly and simple utilization was aimed. Due to time restriction, much of the planned features have not been incorporated but the software shall be improved over the years with more experience in the classroom and feedback from the users.

3.1.3 Conclusion

The software, consisting of the Teacher Module and the Student Module entailed more time than estimated. The purpose was to bring together a variety of multimedia functions (especially video) in a pedagogically effective way to make video lessons a real experience for the students. Due to time constraints, some feature such as automatic feedback system, network connection and more interactivity such as voice recording have not been incorporated although they have been planned.

The basic function of the software is to deliver video to students on their own computers and while the students watch video administer them tests at certain intervals to promote active learning.

Experimental studies and the use of software in the computer labs so far proved that students liked the software; found it user friendly and a very effective way of teaching English through video.

The software is important in terms of being first example of its kind. The positive feedback from the users and results of the case study gives hopes that this software can be suggested as a new model of video teaching techniques in language classrooms.

CHAPTER IV

METHODOLOGY

4.0 Presentation

This study intends to give an examination of ways to exploit video in language teaching more effectively through computer assisted language learning and computer adaptive testing systems. The purpose is to find methods to combine these technologies so that video lessons take place as an interactive and student centered learning process based on the principles of Communicative and Cognitive approaches. The literature reviewed throughout this study revealed that learning cannot be achieved without active participation of the learner. This study examined how learner participation can be achieved and enhanced while increasing their motivation and engagement. To answer these questions, a computer adaptive video software was developed and a new model of video tutoring was suggested. Within the scope of these researches and software devolvment studies, this study aimed addresses the following questions:

1. How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video and how can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?
2. Is there a significant difference between the averages scores of the students who attended computer adaptive video tutoring lessons and the students who attended whole class video lessons?
3. What are the students' perceptions concerning the effectiveness of computer adaptive video lessons?

This chapter will provide information about the participants and setting of the study, the instruments used to obtain the data, the data collection procedures and the analysis of the collected data.

4.1 Setting

The study was carried out at Prestige English Language Center. The Language Center offers general and ESP English courses, university proficiency exam courses as well as KPDS, ÜDS, YDS and TOEFL preparation courses. The Center is also an authorized IBT TOEFL test center. Each course lasts between 6 and 12 weeks. The Center has an important population of students which made it an ideal environment to conduct this study. Moreover, instead of a students at a regular school who are likely same in their language learning settings and backgrounds, the learners at the Center from different age groups, occupations, interests, objectives and learning styles would be more informative and reflective in determining how different learners with different backgrounds and living styles would react and benefit. Secondly, as these learners are more aware of their needs to learn English (most of them also in a hurry), they could provide more accurate feedback on whether the computer adaptive video (CAV) software was useful (or effective) in developing their language skills or not. Broader scale of learners would provide more experiences from different points of view. Third, the Center develops its own course books and video content and pays a special interest in using videos. Due to copyright restrictions, commercially available videos would be difficult to engineer, use and deliver to the students. By making use of the Center's video sources, it is assumed that it would be possible to test the software for longer periods of time at different levels for different purposes. Lastly, the Center is among the schools and language teaching centers which accepted to provide feedback for further improvement of the project in the course of time. The researcher aims to improve the project in the coming years.

The study was conducted at the upper intermediate classes of the General English groups. In these courses, the students are exposed to all language skills which they are expected to use fluently and accurately. The students' achievements assessed by announced and unannounced quizzes, performance grades and predetermined tests.

As it stated earlier this research project also aimed at setting the difference between the whole class video lessons and the computer adaptive video lessons. For this purpose, a movie was prepared for both forms of the video lessons. Before preparing the movie “Runaway Jury” for video lessons, three movies were selected and presented to the students and they were asked to choose one. Upon the selection of “Runaway Jury” by the majority of the students, four lessons plans and achievement tests for each lesson were prepared.

4.2 Participants

The participants were 36 students selected from two different upper intermediate classes. The participating classes were selected according to the results of the last progress test. The classes were randomly assigned as the control and experimental group. There were 18 students in the control group and 18 students in the experimental group. 5 more students were also identified by the researcher as alternates to use in case of absentees. There were seven female and eleven male students in the control group, and ten female and eight male students in the experimental group. The student module login window was designed to accept four digit student number as login ID. That was because of a programming necessity. For this reason, the students in the control group were assigned login numbers between 0001-0018, while for the students in the experimental group, were assigned numbers between 0019-0036. In order to see whether their levels were equal, an independent t-test was conducted on the results of last progress test of the classes, and as it shown in the following Table-1, there was no significant difference between the results of the two classes.

n	Groups	n	Mean	SE	SD
36	control	18	80.4	2.93	12.4
	experimental	18	79.1	3.45	14.6

Mean difference	1.3	t statistic	0.28
95% CI	-7.9 to 10.5	DF	34.0
SE	4.53	2-tailed p	0.7795

Table 1: Mean scores and the results of the independent t-test for the two classes

Both groups consisted of a broad scale of learner profiles in terms of age, occupation and objectives which was an advantage for obtaining different perspectives on the software. Table -2 provides demographic information of the participants. Instead of real names, computer login IDs are used:

Control Group

Student ID	Gender	Age
0001	Female	18
0002	Male	32
0003	Male	24
0004	Female	22
0005	Male	21
0006	Male	25
0007	Female	29
0008	Female	33
0009	Female	30
0010	Male	28
0011	Male	28
0012	Male	32
0013	Female	21
0014	Male	25
0015	Female	25
0016	Male	27
0017	Male	22
0018	Male	24

Experimental Group

Student ID	Gender	Age
0001	male	23
0002	female	27
0003	female	33
0004	male	32
0005	female	25
0006	female	19
0007	male	26
0008	female	19
0009	female	30
0010	male	41
0011	female	29
0012	female	34
0013	male	22
0014	female	24
0015	female	17
0016	male	23
0017	male	37
0018	male	28

Table 2: Demographic information on the participants in both groups.

4.3 Instruments

A quantitative research design was used in this descriptive (subjects measured once) research study. Various data collection instruments such as classroom observations (including interviews), questionnaire, achievement tests and recall protocols were used. Also, a computer adaptive video software was designed and developed within the scope of this research. The main data collection instruments were the achievement tests and the questionnaires. The control group took the achievement tests on paper while the experimental group took them on individual computers.

4.3.1 Classroom Observations

Classroom observations were very important both in the generation and design of this thesis, as well as in the completion of this thesis. The researcher devoted an important amount of time to observing students in the video lessons. Classroom observations included both the observation of the students and observation of other teachers in video lessons. The classroom observations were conducted as informal observations. During an academic week, the researcher taught at least 4 video lessons. He observations even included informal interview with lab technicians to reveal the technical problems with the whole class video lessons.

4.3.2 Achievement Tests

The most important data collection instrument for this thesis was the achievement tests. The achievement tests fulfilled two crucial roles within this research project. The first role of the achievement tests was to test the students' understanding and progress on the chosen movie. For this purpose, the lesson plan that will be described in the next chapter was developed including the pre-, while- and post-viewing activities and tests. The tests were prepared to test vocabulary, listening comprehension, speaking, writing skills of the students within the context of the selected movie. The second purpose of the achievement tests was even more important. This study is based on the computer adaptive utilization of video content. A computer "adaptive" software needs to assess the language level of the students' while the student is actively taking the content and immediate measurement must be made to change the content according to the user's level. The achievement tests which were administered to the students through the present video software provided immediate assessment of the students' answers to the questions that were presented automatically at the end of each part. The second crucial role of the achievement tests in computer adaptive video lessons was to support "Test Enhanced Learning" or "assessment for learning" approach, discussed in the previous chapter. These approaches asserted that if learners are tested frequently and if

this testing is not for comparing the student with others but to make him aware of his current level and progress, tests are more effective in learning than a hard study of the subject. So, the achievement tests within the computer adaptive tests were also beneficial to assess advantages of “assessment for learning.” The difference between the whole class and the computer adaptive video tutoring in terms of administering the achievement tests is that, in whole class video lessons it is teachers responsibility to distribute, collect, check, assess and provide feedback to the students, which is an impractical procedure for many teachers. However, in computer video classroom these are done within seconds and it is the students’ task and responsibility.

As stated earlier, the software has a built-in database which stores the student ID, name of the selected video, number of tries on each test item and the answers given to test items by the students. Therefore, while assessing and comparing the results with results of paper based achievement test in whole class video lessons, these databases were used to elicit student data.

In addition to data collection instruments described above, recall protocols and classroom notebook were also used. Recall protocols, applied just at the end of each lesson, asked students to write down what they remember from the video lessons. This was applied in a voluntarily basis. Second, a notebook was placed on the teacher desk where the computer adaptive video lessons were conducted and each student were requested to use only one word to describe their impression of the video lessons.

4.3.2 Questionnaire

The questionnaire used in this study was prepared by the researcher after reviewing the literature on computer assisted language teaching, use of video in language teaching and computer assisted/adaptive language testing. In Appendix II, the English and Turkish versions of the questionnaire are presented. The questionnaire consists primarily of three parts. In the first part, background information about the participants was sought. In addition to eliciting gender and age, the questions in this part aimed to determine the familiarity of the participants with the computers. The six

questions in this part were important to determine whether computer ownership or familiarity with computers had a positive effect on learners' attitude towards language teaching technologies or not. The questions also aim to reveal whether familiarity with computers help participants to benefit more from the present software. The time spent by participants on computers and how much of this time was spared for language learning was also explored. Moreover, in order to reveal participants' interest in computer assisted language learning, Question number 6 in the first part was used to see if the participants had bought any language teaching software before.

The second part of the questionnaire included 15 statements and two open ended questions. The options to these statements were designed according to the 5-point Lickert scale. Thus, each item includes the following options: “strongly disagree”, “disagree”, “undecided”, “agree”, and “strongly agree”. Before the questionnaire was administered in a large scale, it was piloted and revised according to feedback from the teachers and the students. The fifteen statements in the second part aimed to determine students' perception on the computer adaptive video software and the lessons conducted with this software. The students were requested to respond the statements in this part according to their class experience with the computer adaptive video software used for the movie “Runaway Jury”. The first question asked the students idea about the software. The other questions aimed at determining students' perspectives on the effectiveness and pedagogical use of the computer adaptive video software. The software was developed using a simple and user-friendly interface. To gain feedback for further improvements on the interface, one question was dedicated to get students' views on the user interface of the software.

4.4 Data Collection Procedure

The first data collection procedure was the design and development of the present software. It was also the main outcome of this research study. Before designing the present video software, the researcher made an intensive research on the present video utilization software on the market. Most of the available software were purchased

and tested by the researcher. At the end of the examination of the video utilization software, it was seen that all the software packages were fixed and were able to present the content embedded in the package. So, they didn't give a chance to teachers to customize video content to meet lessons objectives, students' level and interests. For example, in Learn to Speak English software some cities were being described through videos but what would a teacher do if he needed to describe London or Moscow at a different language level and teaching objectives. To address this problem, the researcher decided that teacher should be able to prepare and customize video content and s/he should be able to use any videos from TV ads. to movies. To address this problem, the teacher module was designed first. The teacher module allowed the teacher to select and prepare any video for classroom use. Then after searching the literature on use of video, the student module was designed and developed considering communicative way of presenting and testing the video lesson. After designing the general principles and the graphics of the user interface, the researcher was assisted by a student of his in the programming phase of the software. The programming lasted more than estimated and became a challenging process. After working model was reached, the software was delivered and installed at different schools and institutions in Ankara and İzmir. Two music clips (Oopps! I did it again and My Heart Will Go On) and a movie (Scary Movie 2) were prepared for pilot studies. All the feedback were very positive and teachers confirmed that it was a very effective way of utilizing video in the classroom. Even one year later, a student with whom the researcher met coincidentally stated that he remembered every single question and word of the Oopps! I did It Again test, which gave boast to this research project.

After completion of the software, the researcher identified three movies that can be prepared and used for the comparative study that is subject of this thesis. In order to increase students' interest in the movie, before preparation of the lesson plans and achievement tests for each lesson, the researcher met the upper-intermediate students and asked to learn which movie they would prefer to watch. As majority of the students chose Runaway Jury, the researcher started to design lesson plans for the

implementation of the movie both for whole class lessons and for the computer adaptive video lessons. The lesson plans are given in the next chapter. While preparing the lesson plans, video utilization techniques and methods were taken into consideration. The movie was divided into four parts and four lesson plans were prepared for each part. As well as the paper tests, the teacher module has been used to prepare electronic form of the lesson plans and the achievement tests.

Based on the feedback from the schools and the institutions and the literature review and upon completion of lesson plans, in the midst of November 2008 a questionnaire was prepared. The questionnaire was revised and piloted by one of the teachers who used the software in his video lessons. It was administered to preparation class students and necessary modifications were made.

After the instrument questionnaire was finalized permission was requested from the director of Prestige English Language center. The administration accepted this request, and the researcher installed the student module on 20 computers through which the study would be conducted. In addition, a general classroom with a big screen LCD TV was selected for whole class video lessons. Total 36 volunteer students from two upper intermediate classes participated. In March 2009, the lessons were conducted by the researcher (computer lessons) and the main course teacher of the control group. Before the lessons, the students were delivered the pre-study worksheet presented in Appendix II to make them aware of new vocabulary items and give a sense of the movie. The control group attended whole class lessons on Monday, Wednesday and Friday. The fourth lesson was planned on next Wednesday and the students were told that they were free to attend or not. This had two purposes, first to determine retention of knowledge between two groups after almost a week and to get a clue of student interest in the computer adaptive video lessons by observing the volunteer attendance.

The second main data collection procedure, questionnaire designed to gather information about student perceptions, took place just after the administration of the last achievement test. All the 18 questionnaires were returned back by the participating students.

4.5 Data Analysis

The quantitative data obtained from the achievement tests and the questionnaire were analyzed in various ways to seek answers to the research questions. Descriptive and inferential statistics were applied by using the Statistical Package for Social Sciences (SPSS Version 13.0). The achievement tests of both groups were quantitatively analyzed by comparing the mean scores of the results of the two classes to find out whether computer adaptive video lessons were effective in learning and retention of knowledge. The data from the 5-point Lickert scale were gathered, and frequencies and averages for each of the 29 items were calculated.

4.6 Conclusion

In this chapter which discussed the methodology of the study, the aim of the study and the research questions were restated. In addition, detailed information on the setting, participants, instruments, data collection procedures and methods of data analyses was provided. The data analysis procedure and results will be discussed in detail in Chapter 6 titled “Results and Discussion”.

CHAPTER V

SAMPLE LESSON PLAN FOR THE WHOLE VIDEO CLASS AND THE COMPUTER ASSISTED VIDEO CLASS

5.0 Presentation

After the selection of the movie by the students, the researcher designed lesson plans for the movie considering the sub research questions of this study. Runaway Jury, the movie selected for this study was first divided into four parts and for each part a lesson plan was designed and prepared employing the previously discussed video utilization techniques. Each part consisted of around 25 minutes of video and the lessons were 40 minutes long. Lesson plans included pre-, while and post-viewing activities as well as test items to test what students have acquired from the video. In order to obtain data to compare both groups, same lesson plans and test items were used for the whole class and computer adaptive video lessons except that in computer adaptive video lessons the test items in the while-viewing section were administered on individual computers as well as the video itself. For a better comparison between the two groups, pre-viewing and post-viewing activities were almost the same except for small differences resulting from physical settings and technical equipments. While the test items aimed to assess general comprehension and language skills, the pre-viewing and post viewing activities were basically indented to evaluate student participation, motivation, engagement and reaction, mainly towards the computer adaptive video lessons.

Each lesson plan included 17 test items. In this chapter, the lesson plan for Lesson One is described in detail with all pre-, while and post-viewing activities as an example to set the difference between the conduct of the whole class video lessons and computer adaptive video lessons.

The lesson plans were important data collection instruments since the results of the achievement tests within each lesson plan would be used to compare and determine the effectiveness of the computer assisted video lessons. The effectiveness will be evaluated not only according to the results of the achievements tests, but also to the classroom observations in which students are observed in regards to active participation, motivation, dealing with technology and retention of knowledge. The following objectives were set by the lesson plans:

1. Understanding the background information
2. Observing the characters
3. Prediction and inferring
4. Listening for general comprehension
5. Listening for detailed information
6. Describing a situation/event/character
7. Understanding culture and the legal system
8. Retelling/producing the whole story and stating opinions

On the last lesson before the video classes; in order to determine reason for viewing and help the students develop a schemata to facilitate comprehension, the study paper enclosed in Appendix I was distributed. Students were asked to study the vocabulary items and complete the writing part at the end of the worksheet before they come to first video lesson.

After completion of the lesson plans, by using the teacher module of the present CAV software, the movie was prepared for computer adaptive lessons. The time intervals for each part (1st part 0.01-27.70, 2nd part 27.70-56.78, 3rd part 56.78-87.15, 4th part 87.25-118) Then, the video was installed on the individual computers. Both lessons were conducted in accordance with the lesson plans.

5.1 Sample Lesson Plan for Lesson One

RUNAWAY JURY LESSON PLAN 1

(Chapters 1-7, Approximately 27 min. 37 sec.)

1. Pre-viewing activities

The teacher starts the lesson with a warm up activity by telling the following joke:

ATTORNEY: What was the first thing your husband said to you that morning?

WITNESS: He said, 'Where am I, Jennifer?'

ATTORNEY: And why did that upset you?

WITNESS: My name is Cathy!

Then, he asks where this conversation is possibly taking place and if students had ever been to such a place. Next, in order to check whether the students have studied the worksheet distributed in the previous week and to assess their knowledge of target vocabulary, the teacher displays the following image from the movie on the screen and asks the learners to guess who these people, why they are in the courtroom and what the case might be about. The teacher also asks the students how they would feel if they were in the same courtroom too. Then, the teacher asks the students to draw a picture in their notebooks, so that the missing sections of the courtroom in the image are shown and labeled. At the same time he also draws a picture on the board and by writing related vocabulary on the correct places, he introduces and checks the key vocabulary.



After this, the teacher introduces the name of the movie; “Runaway Jury” and ask students to elaborate on the title and the topic.

Finally in the pre-viewing stage, the plays the first 3 minutes of the movie with vision off. At the point where the secretary calls 911, he stops the movie and asks students to act as if they are calling 911 and talk to the operator. This might also be conducted as pair work, one student as the operator, the other secretary. The aim is to simulate and see if the students are also excited to call 911 in an emergency case. (For computer adaptive video lessons, in this activity the students are requested to talk to the microphones and record their voices. While in whole class video lesson, the teacher is not able to listen all 18 students and even if he listened their words are gone since they are not recorded, in computer video lesson each student’s words are recorded and stored on the computers for further evaluation by the teacher and the students themselves. This is a great motivation and self assessment method that works well. Moreover, talking to microphone knowing that his/her own voice shall be recorded, would be a real life experience for the students) Then, upon what they have listened in the first three minutes, the teacher asks students how will the movie continue. This is to “anchor” the students to the movie. It is assumed that throughout the movie the students will instinctively compare their own version with the current course of events.

2. While-viewing activities

The teacher plays the whole sequence from the beginning till end of the Chapter 7 and asks the students to check their answers to the questions in the pre-viewing stage. He also asks students to answer the questions on their worksheet as they watch. (In computer adaptive video lessons, after the pre-viewing activities the teacher ask the students to login the student module and start watching part one. Each student decides on his/her own to play, resume, rewind or forward the movie while answering the questions. In contrast to whole class video lessons, where the teacher is the operator, in CAV lessons the teacher has more time to assist and guide the students).

A. Vocabulary and Comprehension Questions

The test items are sorted according to the sequence of events in the movie, so the students can watch the movie keeping this in mind and be more alerted to catch the answers. In computer adaptive video lessons, as shown in Figure-17, the test items are presented on the same screen with the video. Students see only one question at a time. That only one question is displayed at once and each student has chance to control (play, pause, rewind, forward) the video is an advantage of CAV over the whole class video lessons. In addition, in the paper based tests the students can only read the questions. However, in CAV each question or answer may include a multimedia element to provide more clues to better comprehension and retention. For example, in the first question, answer options are not given only as written text, but as spoken words recorded from a dictionary. The speaker icons indicate that a sound is embedded. By clicking the icon, students can listen to the related sound. Addressing more channels would reinforce learning. In this case, even if the student doesn't know the correct answer, he has a chance to learn correct pronunciation of four words.

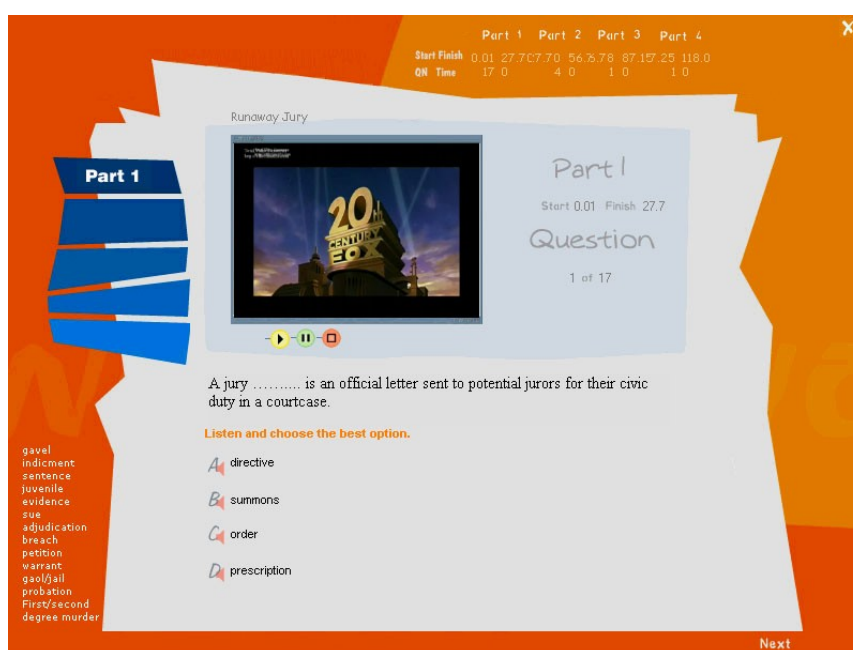


Figure 17: Student module displaying the questions for the first part.

- 1) A jury is an official letter sent to potential jurors for their civic duty in a court.
a) directive b) **summons** c) order d) prescription
- 2) Chose the best definition for the word “adjourn”.
a) To announce a decision or consider something, especially officially.
b) To cancel an event or meeting.
c) To take the time of a meeting or trial to a further time.
d) **To have a pause or rest during a formal meeting or trial.**
- 3) A is a serious crime which can be punished by one or more years in prison.
a) abortion b) **felony** c) de-registration d) dog trick
- 4) "Fitch's team will be scientifically picking jurors predisposed in his favor by using video surveillance, _____, psych profiles, graphology..."
a) **wiretaps** b) crullers c) approvals d) conferences
- 5) "2 \$ billion. Whoo! Where I come from, that's a lot of money. What I'm asking for is a compared to what a negative verdict is gonna cost you."
a) patience b) **pittance** c) security d) investment

For the computer adaptive video lessons, the fourth and the fifth sentences are extracted as audio files from the movie and the target vocabularies were omitted from the sentences. So, the students were asked to listen to the sentences and choose the best word that completes each sentence. This is again a good technique to improve listening skill.

In addition to the vocabulary questions given above, the following 3 listening for details type questions were administered in both classes.

B. Listening for details

- 1) Which gun company is accused in this court case?
a) **Vicksburg Firearms** b) Fitch's Team c) Ernie Strode
- 2) Why is this case so important?
a) **Gun industry hasn't lost a gun case in a court before.**
b) Gun industry has already lost lots of money.
c) There has been other courts in other states.
- 3) When Mr. Fitch goes to talk to the bosses of the gun companies he mentions about several numbers/figures. What does **30 thousand** stand for?
a) Gun injuries every year
b) **Gun deaths every year**
c) The money gun companies will pay for the court
- 4) Rankin Fitch is
a) defense attorney.
b) **defense jury consultant.**
c) an attorney for the plaintiff.
- 5) When Mr. Fitch tells the gentlemen that he will put them in grocery business, he means
a) he will invest the money in the grocery business.
b) Many of the jurors are from the grocery business.
c) **He will acquire a grocery business to manipulate a juror.**
- 6) The court was heard years after Jacob Wood was murdered.
a) **2**
b) 1
c) only six months

In whole class group, at the 24th minute the teacher stops the video and asks the following three questions:



Who do you think these people are? Why are they here? Who do you think is the owner of the filed company?

The purpose in asking these questions are to check whether the students have correctly understood the above given 3 questions. However, in CAV class it is responsibility of the students to check whether their answers are correct or not.

At the end of the first part (27th) minute, the teacher stops the video and asks the students to do the True or False exercises, which in a sense are a summary of the first part. In whole class video lesson, the teacher doesn't have a chance to ask each question to every individual student and assess their answers. On contrast, in CAV while the students have more time to deal with the questions on their own computers with automatic feedback and assessment, instead of acting as the operator of the video equipment, the teacher can mingle among the students to assist and guide the students with their answers. Also in CAV, students who did better than others don't need the teacher to press the play button or don't need to wait for the rest of the class. They can start watching next part of the movie or the teacher can assign them new tasks which would further enhance their learning process. By checking which question a student is

answering, the teacher can elicit more specific data about the student and ask specific questions that would help the student more. Instead of asking same question to all students, he can have a chance to ask “customized” questions for each student.

True (T) or False (F)

- 1) ☐ T ☐ F The story takes place in New Orleans.
- 2) ☐ F ☐ T Mr. Fitch and his team have all the details about Nick’s life in the past.
- 3) ☐ F ☐ T The gun industry has lost such gun cases before.
- 4) ☐ F ☐ T The prosecuting attorney thinks the gun company is liable for the death of people in the brokerage house.
- 5) ☐ T ☐ F Mr. Fitch thinks that Frank Herrera, the ex-marine, is going to be their best leading juror in this gun case.
- 6) ☐ F ☐ T The judge doesn’t want to accept Herman Grimes – the blind man – for the jury duty because he is not in the list of jury pool.

2. Post-viewing activities

A student finished the questions 5 minutes ago and he is getting bored. A student is only at 2nd question. A student even didn’t understand the question. Two students started chatting. Many students need to watch some parts of the video again. A proficient student is angry because he needs to wait the rest of the class. A student is complaining because he couldn’t read the subtitles. A student can’t even start answering because he has forgotten his worksheet. A student needs dictionary but doesn’t have it with him. Some students are thinking of the break and reluctant to stay in the classroom. The teacher can’t leave the desk because he needs to control the equipment. The teacher doesn’t know what percentage of the questions was answered correctly by the students. The teacher doesn’t know which skills, vocabulary items need to be reinforced.

More things can be added to the above mentioned condition which is a general case at the end of a traditional whole class video lesson. To advance to a post viewing exercise, the teacher is dependent on the time rather than assessment of the students' progress or individual needs. In contrast in CAV, the teacher can assign a post viewing exercise that best fits to the level need of individual students. For example, he can ask the students who has finished earlier to prepare a post viewing exercise for the rest of the class. This is a hands-on exercise that will enhance their learning. Or, he can assign them internet search exercises, writing exercises or other activities by deciding with them. A constructivist way of learning would be achieved. In CAV, the teacher can also check the database which records the answers given to the test items and decide a specific post viewing activity for individual students.

For the whole class video lesson, the teacher shall do the following post-viewing activity: After his meeting with the gun company share holders, Mr. Fitch needs to write a report to his boss. You are Mr. Fitch and write a report which includes the course of events, jury selection and the agreement made with the gun company owners.

For CAV lesson, no prescription is made because as stated above, the teacher shall decide according to the progress by each individual student. For example, by checking the database which records how many times a student tried a question, he can determine the content of the post viewing activity. If a student had scored bad in the vocabulary section, he may provide him with the script and guide him to study vocabulary. For good students he may ask them to make internet searches on the movie characters or other gun cases companies. Or he may ask students if they are for or against gun control and let them enough time to search internet to support their ideas, before the class starts the debate.

CHAPTER VI

RESULTS AND DISCUSSION

6.0 Overview of the Study

The main purpose of this study was to investigate how video in language teaching could be utilized more effectively through computer assisted language learning and computer adaptive testing systems. The research also sought to find methods to combine these technologies so that video lessons take place as an interactive and student centered learning process based on the principles of Communicative and Cognitive approaches. The literature reviewed throughout this study revealed that learning cannot be achieved without active participation of the learner. This study examined how learner participation could be achieved and enhanced while increasing their motivation and engagement. To answer these questions, a computer adaptive video software was developed and a new model of video tutoring named “computer adaptive video tutoring” was suggested. Based on the utilization of the developed software with 18 participants, this chapter presents the results of the data collected and analyzed to address the following research questions:

1. How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video and how can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?
2. Is there a significant difference between the averages scores of the students who attended computer adaptive video tutoring lessons and the students who attended whole class video lessons?
3. What are the students’ perceptions concerning the effectiveness of computer adaptive video lessons?

6.1 Data Analysis Procedures

In order to address the above-mentioned research questions, different data collection instruments were used. These included classroom observations, informal interviews with the students and the teachers, achievement tests, recall protocols and a questionnaire. Non statistical data gathered from interviews and classroom observations were used to verify the statistical data obtained achievement tests and the questionnaire.

Four achievement tests were administered to the control group and the test group in order to reveal the effectiveness of present software. A questionnaire was also administered to identify students' perceptions of the present CAV software. The results of the achievement tests and the questionnaire were analyzed statistically. The data obtained from the questionnaire were entered into the Statistical Packages for Social Sciences (SPSS – version 13) and before running the descriptive statistics the internal consistency of the questionnaire was checked; in the preliminary reliability analysis, the questionnaire was found to have an alpha coefficient of .7876. This indicated that the questionnaire had a high level of reliability. Then, frequencies and percentages were calculated in order to find answers to the research questions. In order to address the second research question, results of the each achievement tests were analyzed and averages of four tests were used to determine if there was a meaningful difference between the whole class video group (control group) and the computer adaptive video group (control group). Independent Sample T-test was applied to estimate the difference between two groups. In order to examine the effects of computer skill level, gender and perceived effectiveness of the present software, t-tests and ANOVA tests were used. Finally, the participants' achievement test scores were gathered and the correlation between positive attitude towards the software and achievement in computer adaptive video lessons was investigated.

6.2 Research Questions and Results

The research questions which were introduced as the main objective of this study shall be addressed here in detail based on the findings from several data collection instruments.

6.2.1. Research Question 1: **How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video and how can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?**

This question, which is the main research question of this thesis, has many answers. To address the **How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video** part, the researcher has designed, developed and tested a video utilization software which was believed both by the researcher and the participating students that, was a successful and effective example of computer technology in video lessons. Today in many language teaching classrooms computers are being used for presenting the video content to the learners. But, in most cases they have only replaced CD or DVD players and are at teachers' disposal. The teacher turns on the computer which is connected to a TV or a projection system and presses the play button to deliver the video to whole class. However, as stated in literature review without learners' interaction with the linguistic environment and without his/her active participation, learning does not take place. In a learning environment where the student is not present with his involvement and feelings, only "teaching" occurs and this is not enough for "learning". To save the computers from the role of just video players and have students involved in the video process, the CAV software, as an answer to main research question was designed and developed. The software aimed an interactive way of presenting the video, through individual participation of the students and immediate assessment of the student progress. These roles of computers were new and more than current applications.

There are many ways computers can enhance and individualize learning in a video classroom. Presenting the video on individual monitors, giving the responsibility of learning to the students themselves, having students actively get involved in the video process, making video available after the class hours, providing a graded video content according to the teaching objectives and providing self testing feature to have students assess themselves immediately and to use testing as an effective way of teaching were some of the advantages. Recording and storing student responses to test items for further evaluation, combining motivation of video with the motivation of computer assisted language learning, providing access to authentic and attractive video sources on the Internet, making the subtitles more readable, providing more details of the video on the computer screen and leaving the control of the video to the students so that students can advance according to their level are some other advantages. All these advantages and many more were incorporated into the present CAV software developed for this study.

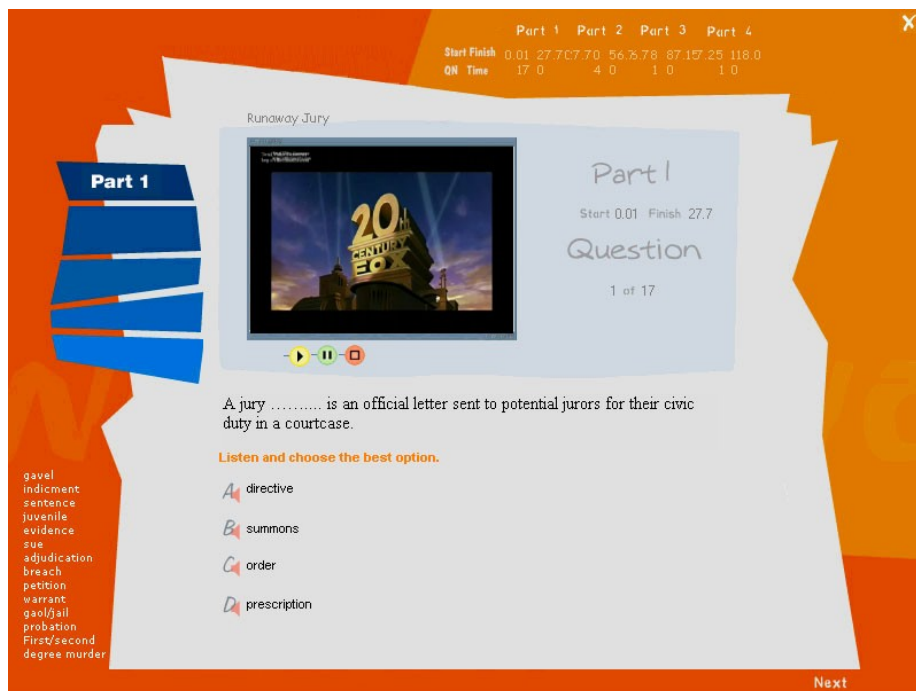


Figure 18: Student module of the CAV software.

As well as the above mentioned advantages, the feature which made the present CAV software an effective way of utilizing video in language classroom was the **adaptive testing feature** incorporated in the software. The testing feature makes the CAV software “effective” and “important for video lessons” from several points of view. First, in order to be able to assess whether their video teaching process was successful or not; or has fulfilled the teaching objectives or not, the teachers need to test what their students have learnt. A teacher who follows communicative approach should also test his/her students to see if the students are able to use newly acquired knowledge in real life situations or not. Also, testing is again important for eliciting information on the language levels of the students. However, as there is lack of pre-studied, graded video content, there is also a testing deficiency in the video lessons. Despite individual efforts by some enthusiastic teachers, most schools do not have a standardized testing system or approaches for video lessons. The worksheets distributed in video lessons are not generally taken seriously by the students or not even fully completed or returned. Even if they are returned, teachers rarely have time or energy to check, score and return the worksheets back to the students. What’s more, even if worksheets are completed by the students and checked by the teachers, the paper-based worksheets lack testing communicative skills like listening and speaking. The testing module within the present CAV software aimed solving testing problem in video lessons as well as using testing as an effective way of enhancing learning. In this software, the video is divided into parts and at the end of each part the student is administered some test items which include multimedia elements (videos, animations, sound and images, mostly from the current video). Unless the student answers certain amount of questions correctly, he cannot pass to next part. This immediate assessment provides the teachers and learners with important data on the teaching objectives. The teachers can decide “what must be learnt” by their students to successfully complete the video lesson; and can make sure that the video software will force the students to find correct answers to “what must be learnt”. The software shall automatically administer and assess the test items and provide immediate feedback to the students.

Classroom observations and interviews with the participating students indicated that students do like being tested at the end of each part and this testing feature forces the students to learn more from the video. In order to support this finding by eliciting student views through the applied questionnaire, the sixth item in the questionnaire was: CAV software forces me to learn more from the video. Table-3 shows that among 18 participants only 2 participants were undecided with the percentage of 11,1 while 8 participants agreed and 8 other participants strongly agreed with the statement.

Q6

	Frequency	Percent	Cumulative Percent	Test Results
Valid NOT DECIDED	2	11,1	11,1	80,1
AGREE	8	44,4	44,4	87,6
STRONGLY AGREE	8	44,4	100,0	90,4
Total	18	100,0		

Table 3: Students' perceptions on the CAV software

The test scores of the participating groups also indicate that the CAV software forces students to learn more from the video. This will be elaborated under the next title of this chapter.

It was revealed in the literature review that, one of the most effective ways of enhancing learning was using testing. According to the supporters of the Test Enhanced Learning, taking short and frequent tests not only assesses what one knows, but also enhances later retention. As well as providing standardized multimedia testing that enhances learning, the present CAV software also provides "adaptive" testing. Adaptive tests are tests which present test items according to the estimated language level of the test taker. In the present software, the students' level is automatically assessed and in result, the learner is allowed to pass to the next stage or requested to watch the related part again and try to find correct answers. This helps teachers to elicit more data on their students while giving clues to the students about their language level and progress based on the video content.

The second part of the main research question; “How can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?” has also been sought throughout literature review and software development studies. According to the researcher, the main problem with the current video techniques is that these systems ignores individual differences in language skills and personal interests. In a whole class video lesson, all the students are assumed to understand the video in the same way. The present CAV software solves this problem by immediately assessing the students’ level and helping teachers elicit how the students are doing currently. The time spent on each question, on a part or on whole video can be stored and evaluated by the teacher. What’s more, for different language skills and teaching objectives, separate sets of multimedia questions can be prepared to customize the video lesson for a student, group or classroom. In addition, in regards to individual differences in interests, once prepared video sources can be stored on the computers and at computer assisted video lessons students can be given chance to watch their choice of video, which would motivate the students and increase their interest in the lesson.

The second problem the CAV software solves in regards to video lessons is the testing problem. Today, there is a deficiency of a standardized recognized procedure for the use of video teaching materials in the language classroom. The CAV software forces each single teacher and student to follow same procedures. Next, though video lessons are liked by the students, overuse and unplanned use may bore the students. In CAV, setting the objectives from the beginning keeps active and lively.

Providing pre-prepared and graded content is another problem CAV software has solved. Without graded content teachers may have a false sense of how much language students are learning. Another persistent problem with whole class video lessons is that, the teaching process and the control is dependent on the teacher and the video equipment rather than the students themselves. However in CAV, each student views the video on his/her individual screen with options to set volume, light, video size etc. For example, in most the whole class video lessons, it is problematic to read

subtitles on a TV screen. Whereas in CAV, since the students can more easily access and read subtitles, they can better understand the movies or other video content. As well as the subtitles, individual screens provide students to see more details on the video. What's more s/he can freely roam the video when needed. CAV also accompanies the video content with online or electronic dictionaries, search engines or other multimedia sources on the computer.

In every classroom there would be shy or reluctant students who wouldn't like to join the class or even answer the questions. CAV assures individual active participation of every student. In classroom observations, it was seen that all the students in the classroom are actively involved in the video presented by the software.

Today nearly all video sources are digital and Internet provides whole access to different types of video. CAV also makes utilization of varied kinds and sources of video possible. These are the video sources mostly favored by the learners.

As stated in the Methodology chapter, classroom observations were also used as a data collection procedure. The classroom observations both before and after the development of the present CAV software have proved that the project was a successful integration of computer technology with video utilization techniques to increase student motivation and enhance learning. To test and verify these findings four achievement tests and a questionnaire were used. The results and data analysis of these two separate studies will be provided in the following titles to support the assumptions which are proposed above to address the main research question.

In addition to the achievement tests and questionnaires, the participating students were requested to use only one word to describe their experience with the software. The answers were: "Mr. Fitch, superb, clever, computer, exam, so good, eye strain, fun, difficult, confirmed, new, I want it, interesting, unnecessary, try again, attractive, nice and born to teach". Despite two negative statements, there were 16 positive and very promising statements.

6.2.2 Is there a significant difference between the mean scores of the students who attended computer adaptive video tutoring lessons and the students who attended whole class video lessons?

In order to test if there was a significant difference between the test scores of the two groups, four achievement tests were administered to the control and the experimental groups. As shown in Table-4, the control group (hereafter will be mentioned as the whole class group) consisted of 18 students at upper-intermediate level and they took the achievement tests in a traditional whole class video setting; with one computer connected to large screen TV. The questions were distributed before they have watched the video. The experimental group (hereafter will be mentioned as the computer class group) took the achievement tests on their individual computers in a TOEFL preparation classroom. The software presented the video content and the test items at the same time. Though more multimedia rich and interactive test items could be prepared for the computer group, in order to test both groups with the same set of questions under the same conditions, minimum multimedia have been used. It can be assumed that, in an independent video tutoring, the CAV software can produce even better results since multimedia rich and interactive test items would enhance and reinforce learning and provide retention of knowledge.

Group Statistics

Factor		N	Mean	Std. Deviation	Std. Error Mean
Test_Mean	Whole Class	18	81,0458	4,99055	1,17628
	Computer Class	18	88,0719	5,70424	1,34450

Table 4: Group Statistics and Mean Scores for Both Groups

The mean scores of the four achievement tests for both groups are shown in Table 4. As seen in the table, the mean score of the computer class was higher than of the whole class group. The computer class has a mean score of 88, while the whole class has mean score of 81 in four achievement tests.

Based on the mean scores, two hypotheses were developed:

H_0 : There is no significant difference between the two groups.

H_1 : There is a significant difference between the two groups.

In order to test these two hypotheses, Independent Samples T-Test and Levene's Test for Equality of Variances were applied on the results of four achievement tests. The results are shown in Table 5.

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	
Test_Mean	Equal variances assumed	,398	,532	-3,933	34	,000	-7,02614	1,78643	-10,65661	-3,39568
	Equal variances not assumed			-3,933	33,410	,000	-7,02614	1,78643	-10,65897	-3,39332

Table 5: Independent Samples Test and Levene's Test for the Mean Scores

Levene's test is an inferential statistic used to assess the equality of variance in different samples. The Sig: 0,532>0,05 value according to the Levene's Test indicated the variances for both groups were homogenous. This result made it possible to apply Independent Samples T test to reveal if there was a significant difference between the means of two independent groups.

Independent Samples T test was applied and the result Sig(2-tailed) : 0,00< 0,05 showed that there was an significant difference between the mean scores of both groups and H_1 was accepted. The first sub-research question of this study, which is "Is there a significant difference between the mean scores of the students who attended computer adaptive video tutoring lessons and the students who attended whole class video lessons?" was addressed affirmatively by these statistical analysis. This finding also supported the effectiveness of the software claimed in the first research question.

In addition to the mean scores four achievement tests analyzed above, details for each achievement test are given in the following pages:

Achievement Test 1

The first achievement test included 17 test items and was administered to 18 participants in both groups. There were no missing values. As shown in Table 6, the mean score of the computer group was higher than the whole class group. The mean score for the computer class was 84,3 while the mean score for the whole class group was 78,1.

Group Statistics

	Factor	N	Mean	Std. Deviation	Std. Error Mean
Test1	Whole Class	18	78,1046	9,63523	2,27104
	Computer Class	18	84,3137	10,28794	2,42489

Table 6: Group Statistics and Mean Scores for the 1st Achievement Test.

Based on the mean scores, Independent Samples T-Test and Levene's Test for Equality of Variances were applied on the result to determine if there was a significant difference between the first test results of the two groups.

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
Test1	Equal variances assumed	,201	,657	-1,869	34	,070	-6,20915	3,32231	-12,96089	,54259
	Equal variances not assumed			-1,869	33,855	,070	-6,20915	3,32231	-12,96196	,54366

Table 7: Independent Samples Test and Levene's Test Results for the 1st Test

The results indicated that the variances were homogenous and because Sig.(2-tailed):0,07<0,05 was found, there was a significant difference between the scores of the two groups for the first achievement test.

Achievement Test 2

The second achievement test included 17 test items and was administered to 18 participants in both groups. Like in the first test, there were no missing items. As shown in Table 8, the mean score of the computer group was higher than of the whole class group. The mean score for the computer class was 87,5. while the mean score for the whole class group was 79,7.

Group Statistics

	Factor	N	Mean	Std. Deviation	Std. Error Mean
Test2	Whole Class	18	79,7386	9,29474	2,19079
	Computer Class	18	87,5817	8,04245	1,89562

Table 8: Group Statistics and Mean Scores for the Second Achievement Test.

Based on the mean scores, Independent Samples T-Test and Levene's Test for Equality of Variances were applied on the result to test if there was a significant difference between the second test results of the two groups.

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
Test2	Equal variances assumed	,300	,588	-2,707	34	,011	-7,84314	2,89706	-13,73067	-1,95560
	Equal variances not assumed			-2,707	33,312	,011	-7,84314	2,89706	-13,73515	-1,95112

Table 9: Independent Samples Test and Levene's Test Results for the 2nd Test

The results indicated that the variances were homogenous and because Sig.(2-tailed):0,011<0,05 was found, there was a significant difference between the scores of the two groups for the second achievement test.

Achievement Test 3

The third achievement test included 17 test items and was administered to 18 participants in both groups. As shown in Table 10, the mean score of the computer group was higher than of the whole class group. The mean score for the computer class was 82,6. while the mean score for the whole class group was 88,2.

Group Statistics

	Factor	N	Mean	Std. Deviation	Std. Error Mean
Test3	Whole Class	18	82,6797	8,67164	2,04392
	Computer Class	18	88,2353	7,54928	1,77938

Table 10: Group Statistics and Mean Scores for the Third Achievement Test.

Based on the mean scores, Independent Samples T-Test and Levene's Test for Equality of Variances were applied on the result to test if there was a significant difference between the third test results of the two groups.

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
Test3	Equal variances assumed	1,002	,324	-2,050	34	,048	-5,55556	2,70995	-11,06284	-,04827
	Equal variances not assumed			-2,050	33,367	,048	-5,55556	2,70995	-11,06669	-,04442

Table 11: Independent Samples Test and Levene's Test Results for the 3rd Test

The results indicated that the variances were homogenous and because Sig.(2-tailed):0,011<0,05 was found, there was a significant difference between the scores of the two groups for the third achievement test.

Achievement Test 4

The fourth achievement test included 17 test items and was administered to 18 participants in both groups. As shown in Table 12, the mean score of the computer group was higher than of the whole class group. The mean score for the computer class was 83,6. while the mean score for the whole class group was 92,1.

Group Statistics

	Factor	N	Mean	Std. Deviation	Std. Error Mean
Test4	Whole Class	18	83,6601	10,59123	2,49638
	Computer Class	18	92,1569	6,33815	1,25821

Table 12: Group Statistics and Mean Scores for the Fourth Achievement Test.

Based on the mean scores, Independent Samples T-Test and Levene's Test for Equality of Variances were applied on the result to test if there was a significant difference between the fourth test results of the two groups.

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
Test4	Equal variances assumed	5,081	,051	-3,039	34	,005	-8,49673	2,79553	-14,17793	-2,81553
	Equal variances not assumed			-3,039	25,114	,005	-8,49673	2,79553	-14,25292	-2,74055

Table 13: Independent Samples Test and Levene's Test Results for the 4^h Test

The results indicated that the variances were homogenous and because Sig.(2-tailed):0,005<0,05 was found, there was a significant difference between the scores of the two groups for the fourth achievement test.

6.2.3 What are the students' perceptions concerning the effectiveness of computer adaptive video lessons?

This study opposes “test results are everything approach” and considers students perceptions seriously. So, identifying students' perception concerning the effectiveness of computer adaptive video lessons was an important sub-research question of this study. The questionnaire was administered to the group who attended computer adaptive video lessons and consisted of two parts. The first part included six statements to gather information on age, gender and familiarity with the computers. The second part of the questionnaire included 15 statements to determine how students feel about the CAV software and the video lessons with this software.

Before analyzing and accepting the questionnaire results, the reliability and the validity of the questionnaire was estimated. The alpha value has been found as 0.7876 which indicated that the questionnaire was applicable and had a high reliability. Before this value was reached, the questionnaire was revised and edited and some questions were omitted upon students' criticism after the pilot study. Table 14 shows mean, median, standard deviation, variance, minimum and maximum values for each statement in the questionnaire. In addition to 15 statements, the questionnaire included two open ended questions asking the weak and strong points of the software.

		Statistics														
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
N	Valid	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		4,0556	4,2222	4,3333	1,9444	3,4444	4,3333	4,1111	4,0556	4,0000	4,3889	3,8333	4,7778	4,6111	4,3889	4,0000
Median		4,0000	4,0000	4,5000	2,0000	4,0000	4,0000	4,0000	4,0000	4,0000	4,0000	4,0000	5,0000	5,0000	5,0000	4,0000
Mode		4,00	4,00	5,00	2,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	4,00
Std. Deviation		,5393	,7321	,8402	,8024	,7838	,6860	,6764	,8024	,9701	,5016	,9235	,4278	,6077	,8498	1,0847
Variance		,2908	,5359	,7059	,6438	,6144	,4706	,4575	,6438	,9412	,2516	,8529	,1830	,3693	,7222	1,1765
Minimum		3,00	3,00	2,00	1,00	2,00	3,00	3,00	2,00	2,00	4,00	2,00	4,00	3,00	2,00	1,00
Maximum		5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	6,00
Sum		73,00	76,00	78,00	35,00	62,00	78,00	74,00	73,00	72,00	79,00	69,00	86,00	83,00	79,00	72,00

a. Multiple modes exist. The smallest value is shown

Table 14: Analysis of the statements in the questionnaire.

The participants were 8 male and 10 female students whose age distribution is shown in Table 15.

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-19	3	16,7	16,7	16,7
	20-29	9	50,0	50,0	66,7
	30-39	5	27,8	27,8	94,4
	40-49	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

Table 15: Distribution of the participants according to the age.

Analysis of the Questionnaire Items

In this part, each statement in the questionnaire shall be analyzed individually.

Statement 1: I found the computer adaptive video software a good idea.

Q1					
		Frequency	Percent	Cumulative Percent	Test Results
Valid	NOT DECIDED	2	11,1	11,1	83.82
	AGREE	3	16.7	27.8	87.22
	STRONGLY AGREE	13	72.2	100,0	94.61
	Total	18	100,0		

Table 16: Results for the 1st statement in the questionnaire.

The answers indicate that the CAV software was found as a very good idea by the overwhelming majority of the students. That 13 students among 18 agreed strongly shows the CAV software was successful in its aim to attract students' interest and involvement. The mean scores of the four achievement tests also show that students who strongly agreed had higher mean scores. The higher scores can be interpreted as: more positive attitude towards the software produces better utilization of the software by the students. So, in video lessons as well as the video content, the utilization techniques and methods are important and CAV software is a successful example.

Statement 2: I believe the CAV software really helps me improve my language skills.

Q2

		Frequency	Percent	Cumulative Percent	Test Results
Valid	NOT DECIDED	3	16,7	16,7	83,3
	AGREE	8	44,4	61,1	89,3
	STRONGLY AGREE	7	38,9	100,0	86,7
	Total	18	100,0		

Table 17: Results for the 2nd statement in the questionnaire.

With no negative answers and eight students agreeing and 7 students strongly agreeing, the answers to this statement show students find the CAV software effective in developing their language skills.

Statement 3: CAV software keeps me highly active during the whole class.

Q3

		Frequency	Percent	Cumulative Percent	Test Result
Valid	DISAGREE	1	5,6	5,6	77,9
	NOT DECIDED	1	5,6	11,1	79,4
	AGREE	7	38,9	50,0	87,6
	STRONGLY AGREE	9	50,0	100,0	90,5
	Total	18	100,0		

Table 18: Results for the 3rd statement in the questionnaire.

One of the factors in determining the effectiveness of the computer adaptive video lessons over whole class video lessons was the degree the students actively involved or participated. It was claimed at the beginning that CAV software provides active participation of the students' during the whole lesson. 9 strongly agree and 7 agree answers indicate the students are highly active during the CAV lessons. The students who marked disagree wrote "eye strain" when requested to express his idea about the software. It is understood that the student was not fully active due to his eye strain.

Statement 4: In CAV lessons, I have difficulty in using the video software.

Q4

		Frequency	Percent	Cumulative Percent	Test Results
Valid	STRONGLY DISAGREE	5	27,8	27,8	93,2
	DISAGREE	10	55,6	93,3	87,9
	NOT DECIDED	2	11,1	94,4	80,8
	AGREE	1	5,6	100,0	77,9
	Total	18	100,0		

Table 19: Results for the 4th statement in the questionnaire.

Keeping in mind that important number of CALL software is found complex and difficult to use by the users, the software was designed to be simple and easy to use. The statement which aimed how the students found using the software indicated that only one student has difficulty in using the software. According to the results a conclusion can be drawn that the software was easy to use. Statement 15 also aimed at eliciting information on the using ease of the software. 13 students agreed and 3 students strongly agreed with the statement “The software has a user-friendly design.” The mean scores to both statements reveal the software has user-friendly interface and is easy to use.

Statement 5: After using the CAV software I believe I have better pronunciation for some words.

Q5

		Frequency	Percent	Cumulative Percent	Test Results
Valid	DISAGREE	3	16,7	16,7	84,8
	NOT DECIDED	4	22,2	38,9	90,8
	AGREE	11	61,1	100,0	87,9
	Total	18	100,0		

Table 20: Results for the 5th statement in the questionnaire.

Correct pronunciation comes after effective listening. So, in order to see how effective was the software in developing listening and pronunciation skills this statement was included in the questionnaire. The total 11 markings show the software had impact on developing pronunciation of the students, though may be limited to some words or expressions from the movie.

Statement 6: CAV software forces me to learn more from the video.

Q6

		Frequency	Percent	Cumulative Percent	Test Results
Valid	NOT DECIDED	2	11,1	11,1	80,1
	AGREE	8	44,4	44,4	87,6
	STRONGLY AGREE	8	44,4	100,0	90,4
	Total	18	100,0		

Table 21: Results for the 6th statement in the questionnaire.

It was believed by the researcher that tests at the end of each part would force students to pay more attention to the video content and try to get most out of it. 8 strongly agree and 8 agree answers to this statement is promising that the CAV software is effective in having students learn more from the video. There has been no negative markings while there was only two “not decided” markings.

Statement 7: As I advance through the parts, I can understand a part better than the previous part.

Q7

		Frequency	Percent	Cumulative Percent	Test Results
Valid	NOT DECIDED	3	16,7	16,7	86,1
	AGREE	10	55,6	72,2	86,7
	STRONGLY AGREE	5	27,8	100,0	91,7
	Total	18	100,0		

Table 22: Results for the 7th statement in the questionnaire.

This statement was one of the most significant statements in determining the effectiveness of the CAV software. Being able to understand one part better than the previous one means the students: 1) don't miss important details 2) force themselves to learn more from the video 3) keep their level of awareness live during whole session 4) do not lose their interest or they are not distracted 5) they are concentrated on the video 6) tests help them to refresh and retain important details and information and the video is effective in regards to its teaching objectives. These factors would be enough to assume that CAV software is more effective than the whole class video lessons.

Statement 8: Tests at the end of each part are very useful in retention of knowledge.

Q8

	Frequency	Percent	Cumulative Percent	Test Results
Valid DISAGREE	1	5,6	5,6	77,9
NOT DECIDED	2	11,1	16,7	80,8
AGREE	10	55,6	72,2	87,9
STRONGLY AGREE	5	27,8	100,0	93,2
Total	18	100,0		

Table 23: Results for the 8th statement in the questionnaire.

10 agree and 5 strongly agree markings to this statement provides support to the development principle of the software, which was, when testing is not for comparing students with others and when not forced, is liked and enjoyed by students and increases the retention of knowledge at an important extent. Statement 10, which aimed to assess how students see the multimedia elements used in the test items, also brought positive conclusion that multimedia elements such as sounds, images and videos were useful in retention of the knowledge (Disagree 2; Not decided 2; agree 8; strongly agree 6)

Statement 9: Testing is a good way of learning.

Q9

	Frequency	Percent	Cumulative Percent	Test Results
Valid DISAGREE	2	11,1	11,1	78,7
NOT DECIDED	2	11,1	22,2	86,3
AGREE	8	44,4	66,7	88,3
STRONGLY AGREE	6	33,3	100,0	91,6
Total	18	100,0		

Table 24: Results for the 9th statement in the questionnaire.

6 students who strongly agreed with this statement had a average score of 91,6 I four achievement tests, while the scores of the two students who did not agree were 78,7. The answers to this statement and mean score provides ground to “Test Enhanced Learning” and its integration into the CAV software.

Statement 11: In CAV lessons, the teacher has more time to help the students.**Q11**

		Frequency	Percent	Cumulative Percent	Test Results
Valid	DISAGREE	2	11,1	11,1	86,7
	NOT DECIDED	3	16,7	27,8	87,7
	AGREE	9	50,0	77,8	86,7
	STRONGLY AGREE	4	22,2	100,0	91,9
	Total	18	100,0		

Table 25: Results for the 11th statement in the questionnaire.

For a student centered active learning the teacher should not be the “teller” but a guide who assists and directs his students. But this would be possible when the teacher has enough data about the student. In CAV lessons since the teacher does not need to operate the video equipment and gives the responsibility of learning to the students, has more time to monitor and individually assist his/her students. WinSchool or other similar classroom management software allow teachers to watch, record or interact with any or all student windows. So, the teacher has more clue and time to assist and guide the students. This assumption is verified with 13 positive markings (9 agree, 4 strongly agree) to this statement.

Statement 12: I feel more relaxed in CAV lessons.**Q12**

		Frequency	Percent	Cumulative Percent	Test Results
Valid	AGREE	4	22,2	22,2	86,7
	STRONGLY AGREE	14	77,8	100,0	88,5
	Total	18	100,0		

Table 26: Results for the 12th statement in the questionnaire.

The fear to make mistake in front of the classroom, shyness and teacher pressure hinders learning. Working at individual computer at his/her pace without these distracters offers a better learning environment. That 14 students strongly agreed with this statement is very significant in regards to contribution of the CAV software to enhance learning and creating positive learning environments.

Statement 13: I would like to use CAV software again.**Q13**

		Frequency	Percent	Cumulative Percent	Test Results
Valid	NOT DECIDED	1	5,6	5,6	77,9
	AGREE	5	27,8	27,8	88,4
	STRONGLY AGREE	12	66,7	66,7	88,4
	Total	18	100,0	100,0	

Table 27: Results for the 13th statement in the questionnaire.

The wish to use the CAV software again is an important indication that the CAV software was liked and found useful by the students. 12 students marked “strongly agree” option, while 5 students marked “agree” option. Only one student, most probably the one with eye strain, is undecided to use the software again.

Statement 14: The CAV lessons are more effective than whole class video lessons.**Q14**

		Frequency	Percent	Cumulative Percent	Test Results
Valid	DISAGREE	1	5,6	5,6	77,9
	NOT DECIDED	1	5,6	11,1	79,4
	AGREE	6	33,3	44,4	90,2
	STRONGLY AGREE	10	55,6	100,0	88,7
	Total	18	100,0		

Table 28: Results for the 14th statement in the questionnaire.

Before the questionnaire was distributed, it was made clear to the students that the purpose of this study was to reveal the differences between the computer adaptive video lessons and the whole class video lessons. So, while marking this statement, they were requested to keep this in mind and make a sound judgment. The answers were very promising in that 10 students strongly agreed and 6 students agreed CAV lessons were more effective than whole class video lessons.

6.3 Conclusion

This chapter focused on presenting the findings of the analysis of the data using statistical measurements. The results were examined in three main sections each dealing with one research question of this study. The discussion of the findings in the light of research questions, the limitations of the study and pedagogical implications will be discussed in the following chapter.

CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

7.0 Overview

According to the Sherman (2003) video is a wonderful resource for opening up the English language world and can be used with great pleasure and profit. The literature on the use of video in language teaching revealed that video has a compelling power on the students and is more motivating than any other teaching tool. Video provides more clues to meaning and makes learning more like what occurs outside the classroom. In the same way, computer assisted language teaching and testing gained ground and pace in recent years and new technologies offer more advantages and opportunities to language teachers. However, the integration of computers and video techniques in the language classrooms has been limited to replacement of CD or DVD players in a video classroom with a computer. Despite few examples in the literature on integration of computer technology and video teaching, there is not a comprehensible example of a successful integration. Within objective of increasing effectiveness of video lessons and combining video techniques with the principles of computer assisted language teaching and testing to make video lessons a more student centered, bidirectional and interactive learning process, this study suggested a new model of video tutoring named as computer adaptive individual video tutoring. This model of video tutoring was based on video software designed and developed by the researcher. The design and programming of the software entailed a very long time and contribution of dedicated students, teachers and directors. This video software can be accepted to be the first of its type in the literature in regards to its adaptive testing features which provide immediate assessment of student progress. While developing the software, weak points in the use of video, lack of standardized and reliable immediate assessment and individualization were sought to suggest working solutions.

The software was developed on the principles of Communicative and Cognitive approaches. From the cognitive point of view, the literature reviewed throughout this study revealed that learning cannot be achieved without active participation of the learner. This study examined how learner participation could be achieved and enhanced while increasing their motivation and engagement.

As shown in Figure 18, the software was designed with a warm and attractive interface considering that positive attitude towards the software could also support learning. In this software, the video is divided into parts. For each part, teacher enters questions that are selected and classified in an item bank according to the Item Analysis method. While the video is being delivered to the students on the computer screen, at the end of the time set by the teacher for each part, the movie stops and the user needs to answer certain amount of questions correctly to be able to pass the next part.

The first part includes questions that have less difficulty according to the item mean (the higher the item mean, the easier the question is) and next parts include respectively more difficult questions (each part includes more difficult question than the previous part). Then the teacher sets number of correct questions that should be answered correctly by the user to be able to successfully pass to the next part. Based on variables such as students' levels, objectives and the video content, etc., this could be set 50% for the first part, 60% for the second part, 70% for the third part, 80% for the fourth and 90% for the last (fifth) part. This would allow teachers to estimate student's language level and elicit his informative data. A student who passes more parts would mean he has better language skills. As he advances more parts, he will answer fewer questions with more difficulty level, while the students at first parts would be answering more questions with less difficulty level. This is how adaptive systems work.

Despite examples of computer adaptive reading, structure and listening tests, there was no example of computer adaptive video testing. This study is significant in regards to be the first example of its type.

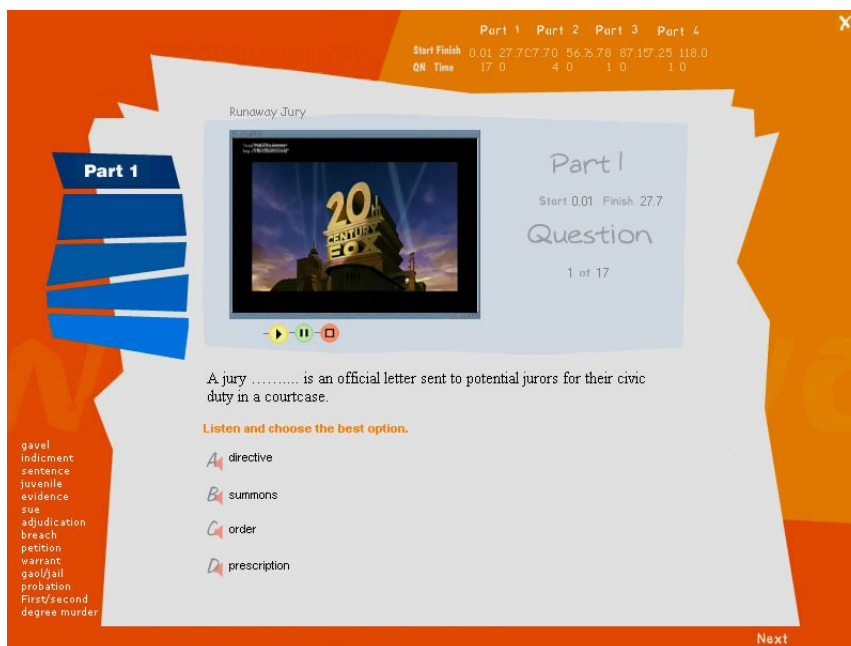


Figure 19: Student module of the CAV software.

From the generation of the video software idea to final touches, the researcher requested assistance and suggestions from many students and teachers. Based on these suggestions, classroom observations in video lessons/computer assisted language teaching labs and the pilot study conducted, the present software was designed and developed as a model to present video on individual computer screens to make video lessons bidirectional, self-motivating and attracting, active and assessed learning processes. The advantages and the innovation brought by the software, as discussed in Chapter 5, were tested and discussed several times in different teaching environments and majority of them were confirmed.

This study aimed at investigating and testing these findings and providing statistical analysis to determine the effectiveness of the present software. It was carried out over a four-week period with 36 students in two classes at upper-intermediate level. The students in the control group attended whole class video lessons and the students in the experimental group used the present software in a computer lab for four video lessons. In order to gather quantitative data, four achievement tests were created based on the selected movie to compare the scores of the both groups. In addition, a questionnaire was also administered to the experimental group to reveal their perception of the software and the computer adaptive video lessons.

7.0 Findings and Discussion

This section includes the findings and discussion in the light of the research questions, pedagogical implications, the limitations of the study, and suggestions further research. In the previous chapter, the research questions were answered in more detail based on statistical studies.

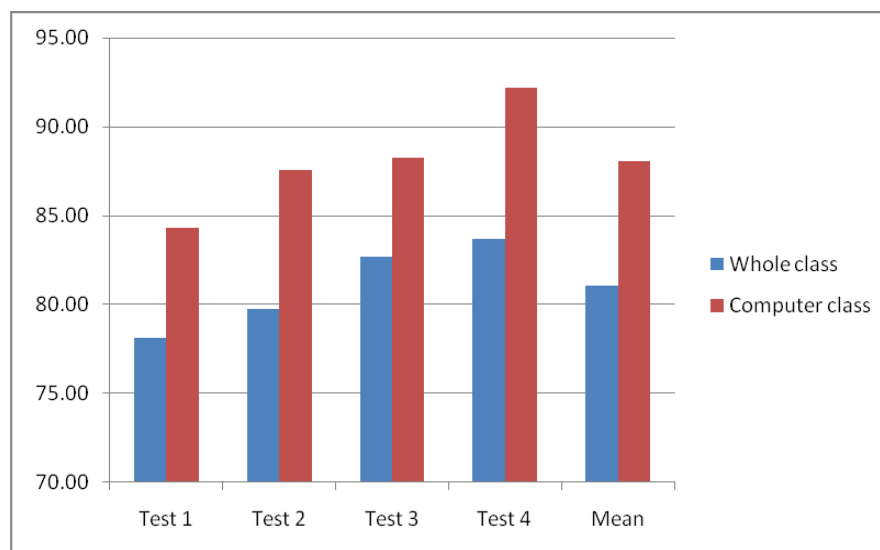
Main research question: *How can computer technologies be best utilized in a language classroom to enhance and individualize learning through video and how can computer technology help solve current problems and limitations as well as increasing the effectiveness of video use in language classroom?*

The present software developed within the scope of this study by the researcher has been suggested as a successful way of utilization of computer technologies in a language classroom to enhance and individualize learning through video. As well as the incorporated testing feature discussed in detail in Chapter 3, other assumptions which led the researcher to this conclusion are:

- In whole class video lessons, the students are generally in passive learning mode. Yet, in computer adaptive video (CAV) lessons, each student is actively engaged in the learning process and is given his/her own responsibility of learning.
- In whole class video lessons, there is generally a TV or a projection system which may cause some students to miss details. In CAV, the students watch the video on their own computer screen, better focusing on the video without being distracted by other students. Each student can set the volume, light or other settings according to himself and play, pause or forward or backward video as many times as he needs, without need to consider other students.

- Whole class video lessons are time, place and teacher dependent. CAV can be installed on any computer (most of the students have their own computers) and they may be given opportunity to download videos from school web pages.
- In whole class video lessons, videos are generally selected ad-hoc or without much preparation by the teachers. CAV requires pre-watching and detailed study of the movie by the teachers, thus increasing the lesson quality and effectiveness.
- Worksheets distributed in whole class video lessons are rarely returned, completed by the students, graded by teachers and feedback is provided to students. In CAT, all these are automatically done by the computers and students are given immediate feedback.
- In whole class video lessons the technology is limited to players, projection systems and audio system. In CAV, classroom management software, digital dictionaries, Internet and other computer technology may assist video lessons.
- In whole class video lessons teacher will act as operator of the devices. However, in CAV he doesn't need to tackle with playing, stopping the video or with other technical issues. He can be more available as a facilitator in the classroom, sparing his time on students rather than equipment.
- CAV would standardize video techniques in a classroom. In whole class video lessons there is not much guidance for the presentation and evaluation of the video sessions.
- In CAV effective learning is generated since students take responsibility of their own learning. Students have different learning needs and styles and make use of various learning strategies. For same video, teachers can prepare different set of question considering learning styles, objectives and multiple intelligence approach.
- In every classroom there are shy students or students with weak language level refrain from joining the lesson with the fear of making mistakes in front of the classroom. In whole class lessons such students may feel anxious while in CAV lessons a student may try a question as many as times he/she wishes by getting immediate feedback from the computer. According to Krashen, a low level of anxiety is required for learning.

In order to verify these assumptions, four achievement tests and a questionnaire consisting of 15 statements were administered. The mean score of the achievement tests and the results of the Independent Samples T-test applied to the mean score indicate that the CAV software was more effective than whole class video lessons.



Graph 2: Scores and Mean of Four Achievement Tests for Both Groups

The experimental group who attended computer adaptive video lessons had significantly higher scores in each achievement test. In addition to the scores of the achievement tests, it was observed that students were more motivated, enthusiastic and dedicated in using the CAV software. The positive attitude against the software could have contributed to higher scores as well.

However, it should be noted that test scores may vary according to another movie, classroom setting and group of students. So, it was important to gather data on how students perceived the software in regards to its effectiveness, usefulness and the design. For this purpose, the questionnaire shown in Table-XX, on the next page was administered to the experimental group. The number of total markings for each statement is shown on the table.

		DISAGREE	STRONGLY DISAGREE	NOT DECIDED	AGREE	STRONGLY AGREE
1.	I found the computer adaptive video software a good idea.			2	3	13
2.	I believe the CAV software really helps me improve my language skills.			3	8	7
3.	CAV software keeps me highly active during the whole class.	1		1	7	9
4.	In CAV lessons, I have difficulty in using the video software.	10	5	2	1	
5.	After using the CAV software I believe I have better pronunciation for some words.	3		4	11	
6.	CAV software forces me to learn more from the video.			2	8	8
7.	As I advance through the parts, I can understand a part better than the previous part.			3	10	5
8.	Tests at the end of each part are very useful in retention of knowledge.	1		2	10	5
9.	Testing is a good way of learning.	2		2	8	6
10.	Multimedia elements in test items are very useful in retention of knowledge.				11	7
11.	In CAV lessons, the teacher has more time to help the students.	2		3	9	4
12.	I feel more relaxed in CAV lessons.				4	14
13.	I would like to use CAV software again.			1	5	12
14.	The CAV lessons are more effective than whole class video lessons.	1		1	6	10
15.	The software has a user-friendly design.	1	1		13	3
16.	Please write strong points of the software.	* fun * motivating * well thought and preparing * has great educational value * interesting and addictive				
17.	Please write weak points of the software.	* causes eye strain * there should be customizable interface * feedback must be give not for the total of the questions but for each question * there should be chat, message window with the teacher or other students. * minimize button is missing * more interactivity				

Table-29: The number of total markings for each statement.

Despite only 12 negative, there were 231 positive markings (118 agree, 113 strongly agree). The results provide ground to the assumption that the CAV software was found very effective and useful by the students who participated in the study. The participants were also requested to write strong and weak points of the software. A student who wrote most of the weak points stated that her aim was to help improve the software.

In sum, the classroom observations, scores of the achievement tests and the statistical analysis of the questionnaire were very promising to prove that the study reached its objectives.

7.2 Pedagogical Implications of the Study

In the light of the findings mentioned above, some pedagogical implications can be drawn. First, the significant difference between the mean scores of the control and the experimental group and the high motivation and engagement observed during the classes suggest that computers can more successfully and fruitfully replace traditional video utilization techniques in a language classroom. In this respect, schools and teachers should pay more attention to using capabilities of computers rather than regarding them as sophisticated media players. The results also indicate that the educational value of video, which is praised by every language teacher, can be significantly increased when combined with computer assisted language teaching methods and techniques.

There have been examples of literature that student self-testing can greatly improve learning and retention of knowledge while reducing the test anxiety. From the point of communicative approach, it is not important to test what students know about the language but how students learn acquired language skills in communicative approaches. Although this view is well admired, there are many difficulties in achieving it. The curriculum based on “teaching for testing” cannot assess communicative

competence in a real sense. However, the present CAV software is equipped with multimedia testing features which would allow teachers to present communicative content and assess student progress from the communicative point of view. In regards to testing, another pedagogical implication of the study might be the need to test four skills. The present software is suitable for the assessment of all four skills which is gaining more importance. The software is not only designed to present video and provide tests on the presented video, but allows teachers to prepare general language tests with multimedia elements. Speaking for Turkey, that KPDS shall be soon replaced with a four-skills based TOEFL like test necessities more experience with such testing software. The present CAV software has unique advantages in preparing students for such tests and testing general communicative skills.

Another pedagogical implication of the study might be that when videos are pre-studied in detail by the teachers before being presented to the students, video lessons can be more customized to fit to the needs of the different students. In CAV classroom, the teacher can prepare different sets of questions (for writing, vocabulary, detailed listening etc.) and have their students take different tests while they all watch the same video. The software would also allow teachers to create and maintain an item bank on the computer which would significantly increase effectiveness of the video lessons. As well as the item bank it would also be possible to store student progress per each test item for further evaluation.

7.3 Limitations

This study has certain limitations in exploring the best way of integrating computer technologies with the use of video in language teaching. As the first and the most important limitation, the programming of the software was limited to the programming knowledge of the researcher and his student who helped him. With the involvement of a team of professional programmers, the software could have more

sophisticated features such as speech recognition or more techniques to test writing. Second limitation was with the adaptive testing feature which was not based on Item Response Theory. IRT theory requires several years to be functional; so, a testing system that could imitate IRT was developed.

The duration of the study was another important limitation of the study. The time left from the programming stage was short to conduct several case studies to increase reliability of the study. Though pilot studies were conducted beforehand, the data analyzed in this study was gathered from one group of participants based on one movie. The study lasted four lessons at upper-intermediate level. More examples at different levels and with different student groups could have resulted in more data. The number of participating students (36 total, 18 in CAV lesson) was also insufficient to draw conclusive data. If the software had been used and data gathered for a semester, more reliable and informative data could have been gathered.

Another limitation may be that the study was conducted in only one institution, at a language teaching center. The generalization of the results thus may be limited.

Another limitation concerns the achievement test items and the scores. Due to time restriction, item analysis could not been applied to the test items. The difficulty level has been designed according to estimates by the researcher. Lastly, the researcher had not piloted the achievement tests before he administered them, so the tests were not subjected to validity or reliability testing before they have been administered to the groups.

These limitations of this study necessitate further research. In the first place, there is a need for preparing content for at different language levels and for specific language teaching objectives. Secondly the software needs continuous improvements in parallel with the technological developments. The researcher is dedicated to elaborate on the project and improve the CAV software.

7.4 Conclusion

This study examined the recent developments in the field of computer assisted language learning/testing and investigated how these developments can be best integrated with video utilization techniques in a language classroom. Based on this research and review of related literature that included use of video in language teaching, computer adaptive video software was designed and developed as a suggested model to combine benefits of computer adaptive language testing with the benefits of video. In order to determine effectiveness of the software and elicit students' perception of the computer assisted video lessons, a case study was conducted in which students had attended four hours of CAV lessons. The results of the achievement tests and the classroom observations indicated that CAV had great impact on the mean score and student motivation and participation. The study revealed that computers can play a more important role in video lessons than anticipated.

In this scope, the study suggests that, traditional video techniques should be reconsidered in the light of opportunities offered by the computers.

To conclude, video and computers which is gradually occupying more place in people's lives, should also be given more importance and roles in the use of video in a language classroom. In accordance with the necessity to redefine the video, the teachers should also redefine their roles and techniques with video in a language classroom.

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APPENDIX I

Questionnaire

First of all thank you for your contribution to this study which aims to assess benefits of computer adaptive video lessons. Your answers have a great importance in determining how and why to use video in teaching English as a foreign language.

Age: **Gender :** male ☐ female ☐

PART I: For each question below please check appropriate option or options.

1. I have my own computer.

☐ Yes ☐ No

2. How long do you spend on using computers in a week?

☐ 1-5 Hours ☐ 5-10 Hours ☐ More than 10 hours

3. Your computer skills are

☐ novice
☐ average
☐ expert
☐ geek

4. Day by day, the time I spend on computers is

☐ increasing
☐ decreasing

5. Things you do when you use computers for pleasure.

☐ Social Forums
☐ Watch videos
☐ Study English
☐ School Work
☐ Other (Please specify:

6. Have you ever purchased any English Language Teaching software?

☐ Yes ☐ No

PART 2: Please mark the best choice for you.

		DISAGREE	STRONGLY DISAGREE	NOT DECIDED	AGREE	STRONGLY AGREE
1.	I found the computer adaptive video software a good idea.					
2.	I believe the CAV software really helps me improve my language skills.					
3.	CAV software keeps me highly active during the whole class.					
4.	In CAV lessons, I have difficulty in using the video software.					
5.	CAV lessons are not effective.					
6.	CAV software forces me to learn more from the video.					
7.	As I advance through the parts, I can understand a part better than the previous part.					
8.	Tests at the end of each part are very useful in retention of knowledge.					
9.	Testing is a good way of learning.					
10.	Multimedia elements in test items are very useful in retention of knowledge.					
11.	In CAV lessons, the teacher has more time to help the students.					
12.	I feel more relaxed in CAV lessons.					
13.	I would like to use CAV software again.					
14.	The CAV lessons are more effective than whole class video lessons.					
15.	The software has a user-friendly design.					
16.	Please write strong points of the software.					
17.	Please write weak points of the software.					

Other : Please specify other issues you would to make on video and learning English.

.....

THANK YOU FOR YOUR CONTRIBUTION!

Sevgili Kursiyerler,

Öncelikle, bilgisayar destekli video derslerinin etkinliğini ortaya koymak için yapılan bu çalışmaya katkınızdan dolayı teşekkür ederim. Aşağıdaki sorulara vereceğiniz yanıtlar, yabancı dil olarak İngilizce öğretiminde videonun niçin ve nasıl kullanılması gerektiğimin belirlenmesi konusunda büyük öneme sahip olacaktır.

Yaş:

Cinsiyet : bay ☐ bayan ☐

Bölüm 1: Aşağıdaki sorularda, sizin için doğru olan bir ya da daha fazla seçeneği işaretleyiniz.

1. Kendime ait bilgisayarım var.
☐ Evet ☐ Hayır
2. Bilgisayar başında bir haftada ne kadar süre geçiriyorsunuz?
☐ 1-5 Saat ☐ 5-10 Saat ☐ 10 Saatten daha fazla
3. Bilgisayar beceri düzeyiniz
☐ Acemi
☐ Orta
☐ Uzman
☐ Bağımlı
4. Her geçen gün bilgisayara ayırdığım süre
☐ artıyor
☐ azalıyor
5. Bilgisayar kullanırken en çok yaptıklarınız.
☐ Sosyal Forumlar
☐ Video izlemek
☐ İngilizce çalışmak
☐ Derslerle ilgili çalışmalar
☐ Diğer (Lütfen belirtin:)
6. Şu ana kadar hiç İngilizce öğretim yazılımı satın aldınız mı?
☐ Evet ☐ Hayır

Bölüm 2: Aşağıdaki sorularda, sizin için en doğru olan seçeneği işaretleyiniz

		KATILIYORUM	FAZLASIYLA KATILIYORUM	KARARSIZIM	KATILMIYORUM	HİÇ KATILMIYORUM
1.	Bilgisayar destekli video fikri çok iyi bir fikir.					
2.	Bilgisayar destekli video yazılımı dil becerilerimi geliştirmeme yardımcı oluyor.					
3.	Bilgisayar destekli video yazılımı tüm ders boyunca aktif kalmamı sağlıyor.					
4.	Bilgisayar destekli video yazılımını kullanmakta zorluk çekiyorum.					
5.	Bilgisayar destekli video dersleri çok etkili değil.					
6.	Bilgisayar destekli video dersleri, videodan daha fazlasını öğrenmem konusunda beni zorluyor.					
7.	Her bir bölümü, bir önceki bölümden daha iyi anlıyorum.					
8.	Bölüm sonlarındaki testler bilginin kalıcı olması açısından çok yararlı.					
9.	Testler iyi bir öğrenme yöntemi.					
10.	Sorulardaki multimedia öğeler başarılı bir pekiştireç.					
11.	Bilgisayar destekli video derslerinde öğrencilerine yardım etmek için öğretmenin daha fazla vakti var.					
12.	Bilgisayar destekli video derslerinde kendimi daha rahat hissediyorum.					
13.	Bu yazılımı tekrar kullanmak istiyorum.					
14.	Bilgisayar destekli video dersleri tüm sınıf video derslerine göre daha başarılı					
15.	Yazılım kullanıcı dostu bir tasarıma sahip.					
16.	Lütfen programın başarılı yönlerini yazınız.					
17.	Lütfen programın zayıf yönlerini yazınız.					

Diğer : Bilgisayar destekli video dersleri ve programı konusundaki diğer düşüncelerinizi yazınız.

.....

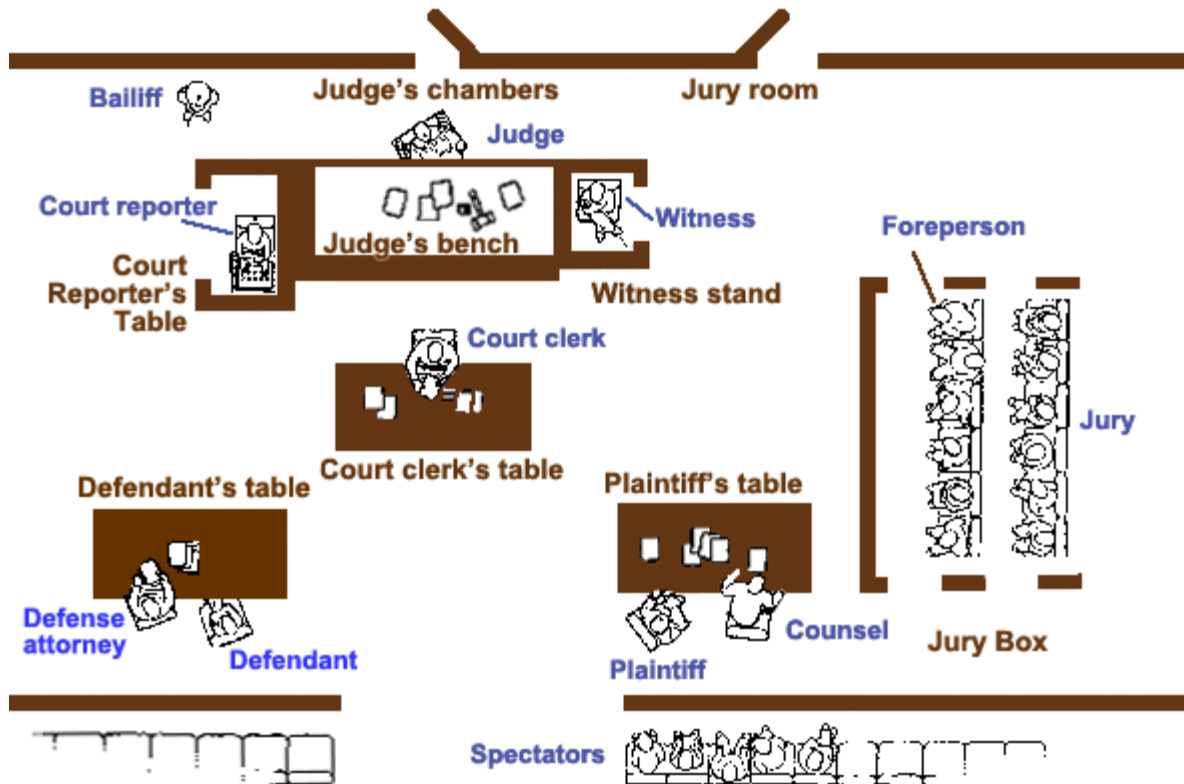
KATKILARINIZ İÇİN TEŞEKKÜR EDERİZ!

APPENDIX II

Worksheet Distributed to the Participants Before the Lessons.

A.GET READY !

- Have you ever been to a court room before? Write about it.
- Look at the typical courtroom layout and study the vocabulary.



Here are some other words you might need to know (optional word list):

Gavel	indictment	sentence	Juvenile
evidence	Sue	adjudication	Breach
Petition	warrant	gaol/jail	Probation
First/second degree murder		Community service	
Direct-examination		Cross-examination	

