Tertiary Students' Comprehension and Remembering of the News from Traditional versus New Media

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ABSTRACT

The effects of traditional news media on comprehension and remembering have been one of the important topics of research in communication studies. With the inclusion of the Internet and later technological developments that lead to the convergence of media instruments, the issue has become more complex than ever.

The aim of the present study is to evaluate the preference shown towards of single or compound presentational formats and their effects on comprehension and remembering of university students as far as obtaining the news is concerned. In the study, single presentational formats used are: text and audio; dual presentational formats are: text-audio, text-video; and audio-video-text as the triple presentational format.

This research consists of two steps. The first step which took place at the Eastern Mediterranean University located in North Cyprus consists of two controlled experimental studies. The topic of the news story chosen for the first experiment is the “benefits of breast feeding for the mother”. The topic of the news story chosen for the second experiment is the “benefits of the celery”. For the first experiment 240 students whose cumulative grade average was between 2.00 and 2.50 out of 4.00 in fall semester of 2003–2004 academic year participated. Students were grouped in 20’s and were exposed to single, double or triple stimuli. After the experiment, they were asked to answer comprehension and remembering questions. In the second experiment 112 students whose cumulative grade average are equal to or below 1.99 (n=56) and students whose cumulative grade average are 3.00 or above (n=56)

participated. Groups of 14 students were formed and the same procedure of the first experiment was repeated. In the second step, a questionnaire on the preference for obtaining the news was prepared and administered on tertiary students both on North and South Cyprus.

The results of this study suggest that comprehension and remembering are not formed based on individual effects of a stimulus or a stimulus compound. It depends on an increase in the forms of a stimuli and the preference of users. In other words, as users are exposed to multiple stimuli, they show preference towards the dual stimuli format which is familiar to them. The results of the second step indicate that there is no significant difference between the results obtained from the tertiary students studying on the North or South of Cyprus in terms of their preferences. Lastly, university students prefer to obtain news from double stimuli in the video – text format in which two-thirds of the screen is allocated to the video and bottom one-third is allocated to the text.

Keywords: Media effects, Convergence, Comprehension and remembering, News

ÖZ

Geleneksel medya araçlarının kavrama ve anımsama üzerindeki etkileri iletişim çalışmaları içerisinde önemli bir araştırma konusu oluşturmaktadır. Internet'in ve son teknolojik gelişmelerin katılımı ve medya araçlarının bütünleşik medyaya doğru gitmesi bu durumu daha da karmaşık hale getirmiştir.

Bu çalışmanın amacı, haber almanın söz konusu olduğu durumlarda, üniversite öğrencilerinin tercih ettikleri tekli veya çoklu uyaranlardan oluşan sunum biçimlerinin etkilerinin ölçülmesidir. Bu çalışmada yazı ve ses tekli uyaran biçimlerini, yazı-ses ve yazı-video ikili uyaran biçimlerini, yazı-ses-video ise üçlü uyaran biçimini anlatmaktadır.

Bu çalışma iki aşamada gerçekleştirilmiştir. Kuzey Kıbrıs Türk Cumhuriyeti Doğu Akdeniz Üniversitesi'nde gerçekleştirilen ilk aşama iki deneysel çalışmayı içermektedir. Birinci deney için seçilen haberin konusu emzirmenin anneye faydalarıdır. İkinci deney için seçilen haber konusu ise kerevizin yararlarıdır. Birinci deneyde, 2003-2004 güz döneminde genel not ortalamaları 4 üzerinden 2.00 ve 2.50 arasında olan 240 öğrenci 20'şerli gruplara ayrılarak tekli, çiftli ve üçlü uyaranlara tabi tutulmuşlardır. Deneyden sonra öğrencilere konu ile ilgili kavrama ve anımsamaya yönelik sorular sorulmuştur. İkinci deneye ise genel not ortalamaları 1.99 veya altında (n=56) ve 3.00 veya üzerinde olan (n=56) 112 öğrenci katılmıştır. Öğrenciler 14'lü gruplara ayrılarak birinci deneydeki yöntem izlenmiştir. İkinci

aşamada ise Kuzey ve Güney Kıbrıs'ta eğitim gören üniversite öğrencilerine haber izlemede tercih ettikleri sunum biçimlerini içeren bir anket sunulmuştur.

Bu çalışmanın sonuçları kavrama ve anımsamanın salt tekli uyaran veya uyaran bileşenlerinin etkilerine dayanmadığını göstermektedir. Kavrama ve anımsama etkileri artan uyaran biçimleri ve kullanıcıların tercihleri ile ilgilidir. Başka bir deyişle, kullanıcılar çoklu uyaranlara maruz bırakıldıklarında, kendilerine yakın olan ikili uyaranları tercih etmektedirler. İkinci aşamada gerçekleştirilen çalışma sonuçlarına göre, Kuzey ve Güney Kıbrıs'ta eğitim gören üniversite öğrencileri arasında sunum biçimleri tercihlerinde anlamlı bir farklılık bulunmamaktadır. Son olarak, üniversite öğrencileri haber edinmede yazı ve görüntüden oluşan ikili uyaran biçimini ekranın 2/3'ü görüntü ve alt tarafta 1/3'ü yazı olacak şekilde haberin sunulmasını tercih etmektedirler.

Anahtar Sözcükler: Medya etkileri, Bütünleşme, Kavrama ve anımsama, Haber

To My Wife and Son

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

Learning from media, within the media effects research, particularly in the last 40 years period, holds a considerably important place. This research is realized to find out which media instrument (namely newspaper, radio, and television) is more effective in terms of learning and remembering. Before the widespread use of the Internet in our daily lives, many studies had been realized over the traditional media instruments. Effects research includes the comparison of the traditional media instruments in relation to learning and remembering and generally news has been used as the subject of the research. With the technological developments and the widespread use of the digital technologies, their reflection on communication instruments and particularly after the second half of the 1990's, the Internet has been included in these comparisons.

Up to this period, in addition to the effect of single medium, double and triple comparisons of the media instruments were realized with different concepts such as text audio and/or visual materials used and with different research methods. These studies, since comprehension and remembering and thus learning are in question, not only realized in the field of communication and media studies but also in the field of education and psychology.

Tens of studies that are realized in different societies with different social and cultural structures (that is either within the same society or among different societies) do not reach a common consensus. Moreover, the developments in digital technologies lead to the convergence of the communication instruments. In other words, although the traditional media instruments save their original forms, new and converged media instruments intensively take their place in our lives. In such a case, the very first question that comes into mind is; “In which dimension will this research continue?” remains unanswered.

By taking into consideration research in the past and current communication tools, that are converging, it is clear that the question of which media instrument is more effective in learning and remembering lost its validity. In this case, the approach that comes into the agenda is related with learning and remembering, in the name of increasing the required effect to the utmost level, is connected with the presentational method.

Based on the above mentioned points, one of the two main aims of this study is to try to measure comprehension and remembering effect of the traditional media instruments and the Internet. It includes a comparison of the media instruments and the Internet in order to find out the most effective media instrument for remembering. The second aim of this study, after finding the most effective media instrument, is to find the preferences of the user of these instruments in terms of the presentational formats. More detailed information is presented in Chapter III.

The information included in this chapter comprises the following sections: Background of the Study, Motivation for the Study, Aims of the Study, Research Questions and Hypotheses, Significance of the Study, and Limitations of the Study.

1.1 Background of the Study

This study is set out with the assumption that learning from the media is related to the presentational format of the media content (news); by taking into consideration the traditional media instruments with the new and converging communication technologies. In this context, in the first stage of this two-staged study, different presentational formats for different media instruments have been prepared and participants are exposed to each media instrument under laboratory conditions and finally a test that is prepared from the presentational materials aimed at measuring learning and remembering is applied to participants. In the second stage of this study, the participants are asked about their presentational format preferences among the several possible presentational formats by using a questionnaire. In the first stage of the study, where different criteria and limitations are applied, participants are selected from the students of the Eastern Mediterranean University. For the second stage of the study, tertiary students studying in North and South Cyprus were chosen.

A number of studies related to learning from media are conducted for about 80 years (Williams, Paul, & Oglive (1957); Barrow & Westley (1959); Wilson (1974); Gunter (1985)). These studies compare learning and remembering; effect of the traditional media instruments (radio, television, and print). As it has been mentioned earlier, particularly after the second half of the 1990's, the Internet is added to these comparisons (Eveland & Dunwoody, 2001). An examination of this research indicates that these studies do not reach to a common consensus about

comprehension and remembering as effects of the media instruments. Although these studies exhibit consistent approach within itself, there is no doubt that it is inevitable for them to become more complex with the developing and emerging new communication technologies. Some of these studies compare the effectiveness of the media instruments and some of them look at the effectiveness of a medium by altering the presentational formats.

1.2 Motivation for the Study

The motivation for the present study is the concern for the audience. The studies up to now do not take the preference or the opinions of the masses into consideration. Thus, to set out with such a drive, it is possible to bring a new dimension to the studies that are not producing a common denominator.

Coming from an engineering background, I watch with an astonishment and interest of how people adapted continuously to developing and changing technologies. In other words, I always wonder how far this situation would go on, from which media we learn more and if chance is given which presentational format we prefer.

The tradition is that technology has always been used in communication. In other words, equipments produced technology and people use it to communicate with each other. Due to pragmatic reasons, the users or the public are never asked what they prefer. One of the aims of this study is to ask the users what sort of presentational format they like if they had the chance.

1.3 Aims of the Study

The present study has ultimately three aims:

1. To measure the stimulus or stimuli-components that maximize the user's comprehension and remembering;

2. To explore the audience preferences of presentational formats where single and compound stimuli (text-audio-video) are presented via technological media;
3. To explore the harmony between the preferences of the audiences and the stimulus or stimuli-components that maximizes the memorization.

1.4 Research Questions and Hypotheses

The common point of the studies mentioned in the "1.1 Background of the Study" section is the measurement of the effects of media instruments whereas the stimulator which creates learning is the message. On the other hand, the content and the technological convergence of the media instruments bring an opportunity to present either single or multiple stimulus combination through a different media instruments. In such a situation, more than the effects of a medium, the effect of a stimulus becomes important. The aim of this study is neither to measure the effects of technological developments nor to compare technologies currently in place. Hence, the goal is primarily to measure audio, visual, and text and their various combinations for comprehension and remembering. Therefore, the present study poses three questions:

RQ1: Which stimulus or stimuli-components maximize comprehension and remembering?

RQ2: What arrangement of stimuli components, in terms of the format employed maximizes user comprehension?

The first two experiments of this two-staged study are composed of two similar experiments to measure the effects of a variety of stimulus and stimuli-components.

The second stage, depending on the outcome of the first two stages, is to determine the best presentational format for different stimulus or stimuli-components. By considering the Dual Coding Hypothesis, it is expected that:

H1: The effects of dual stimuli are greater than the effects of a single stimulus, and that presentation including all the stimuli is the most efficient.

In studies investigating the effectiveness of media instruments in terms of perception, comprehension, and remembering, it is also necessary to investigate which medium the user use to obtain the news from, and the trust in the media instruments employed. There is also a need to consider the form and frequency of users' utilization of the media instruments. Thus:

H2: There is a positive relation between the frequency of use of the mass media instruments, and media sources from which news is obtained.

H2A: There is a positive relation between the frequency of use of the mass media instruments, and trust in the media instruments.

H2B: There is a positive relation between the frequency of use of the mass media instruments, and comprehension and remembering.

Anderson (1995) states that people find it easier to recall information, if they can revise the emotional and physical state in which they learn the information. On the other hand, Lang, Potter and Grabe (2003) mention that revised stories are remembered and evaluated better. Therefore, it is expected that:

H3: In repeated exposures, for every stimulus or compound-stimuli presentation comprehension and remembering increases.

Furthermore, audio and visual stimuli are natural for human beings. Sign and the text, ways of expression and communication are almost as old as the human history. In other words, parallel to the studies conducted until today, separating these stimuli from each other means desiccating the whole. Therefore, without damaging the nature of the whole, in this study, an answer to the following questions has been sought;

RQ3: Which one of the stimuli or compound stimuli presentation would be preferred by the audience?

A number of studies realized up to now in order to measure the effects of the media instruments on the audience related to comprehension and remembering either in the experimental environments or as field studies, without taken into consideration the media preferences of the participants in having news in their daily lives, researchers tried to test the level of comprehension. However, due to the social environment, cultural, economical conditions and habits of the audience, different media instruments are used for reaching the news. It is also known that, while communicating, an individual gets many of the values, meaning, attitudes the society in which they live in. This study seeks to answer the following questions.

RQ4: Is there a difference between the responses given to the variety of stimuli and academic success of the participants?

RQ5: Is there a difference between the preference shown to the media tools for obtaining news, trust felt towards these devices and the use of existing mass media tools between the university students who live in North and South Cyprus?

Related to the above question, another aim of this study is to answer the following question.

RQ6: Is there a difference between the participants' preference towards the media tool used to reach the news the trust felt towards these tools and presentational style?

H4: There is a positive relation between the preferences of the user and the stimulus or stimuli-components that maximizes the comprehension and remembering of the audiences.

1.5 Significance of the Study

The effects of the media on individuals and as a result on societies, is almost as old as the history of television. Despite the hundreds of studies and tens of different effect methods, common opinions about the definite and social effects of the media (when comprehension and remembering is in question) still not come into existence. On the other hand, the media effects research that was conducted on the traditional media instruments until the beginning of the 1970's; gain a new dimension with the invention of the digital technologies within these years (so-called second media age). Moreover, with the intensive use of the Internet from the mid 1990's onwards, a new perspective is added to the problem. In other words, the Internet is also added to the studies as a new medium and communication instrument besides the traditional media. The revolution that exists with the digital technologies causes the convergence of the traditional media instruments with the new communication technologies. Many communication technologies are now used on the same instrument.

In this case, the continuation of the existing studies, become much more difficult with the new and converging media instruments. One instrument reaching to many structural forms, which are one of the main aspects of the traditional media instruments, with the new communication technologies turns into one to one

structural form. In other words, nowadays the concept of mass is getting weaker, time and space limitations are gradually disappearing. In such a case where the individual comes to the fore, the degree that the individual is affected from the media and its manner becomes directly proportional to the degree of learning and manner of the individual. On the other hand, learning, motivation and moreover the preferences of the instruments and the presentational formats which are the reasons for the individuals for preferring these instruments are directly related to the individuals.

Primarily this study, in order to increase learning, includes the measurement of the preferences of the individuals related with the message that are presented by the media instruments in different formats, and connected with the results obtained. It includes the measurement of the effects in terms of learning and remembering that are presented with different media instruments in different formats. The results obtained indicate that preference shown towards the media is not directly related with the media instrument but it is directly proportional with their stimuli combination and presentational formats which are increase the learning.

1.6 Limitations of the Study

This study has some limitations. For the first part of the research, the most evident limitation of the study is the external validity of the experiments. In existing presentational instruments, presentational materials consist of several news items. In both experiments, a single news item was used. This highlights problems that arise from the differences in the attention span of the participants between their natural and experimental environments. The concepts of comprehension and remembering, and hence understanding, are related to the news for which different media channels emphasize various properties. In other words, in showing preference to the topic

areas that convey information, education, and entertainment are avoided. This study is limited in terms of the target audience, because the results that will be obtained by the research, apply only to students of EMU. In other words, the participants represent only certain age groups and level of education. On the other hand, since the students who study at the Faculty of Communication and Media Studies have courses on mass media and media effects; they are conscious about the effects of media. In order to establish equality of awareness among participants, these students are excluded from the experiments. Hence this study is limited in its ability to suggest general applicability of the results to different age groups and educational levels. Related to this limitation, since the participants are students, there is also a possibility that the reading skills of the participants are developed. This can be the reason why they find this stimulus more effective. Such a possibility implies inequality of effect among the different stimuli. The absence of an exact common measuring instrument for comprehension and remembering in this area creates a problem for the internal validity of the experiments performed in the study. Finally, it was noted above that the use of still pictures in combination with text contributes to comprehension and remembering.

For the second part of the research, the present study, with its content, population and method, has certain limitations. It is limited in terms of the target audience, because the results that will be obtained by the research, applied to the university students. In other words, research participants represent only certain age and educational level groups. In this case, this study is limited to generalize the results to different age and educational level group. Another limitation of the study is that all universities provide Internet facilities for the students. This widespread use of the Internet among

the students may not be possible for the other sectors of the societies. Although the societies in question have some social, cultural and economical differences they all carry the characteristics of the Mediterranean region. Therefore, there is a need to repeat such a study for the other societies and in the other geographical areas.

Chapter 2

LITERATURE REVIEW

This chapter is structured under three main headings as the effects of the mass communication tools, related research and convergence. Part one starts with the functions of mass communication, media research, and effects research in communication. A considerable part of this chapter consisted of the theories related to the effects of mass media instruments. This is followed by the measurable effects, short term effects of mass communication on individuals, transmittal model in teaching the news and finally research on cognitive impact of media. The second part is devoted to the chronological order of related research and the last part presents convergence.

2.1 The Effects of the Mass Communication Tools

Before getting into the details of the effects of mass communication tools, in order to understand these effects in detail and the reasons why it is required to search for these effects, there is a necessity to go over the functions of mass communication. In other words, media effects are simply the result of the uses of the medium or medium is the source of effect.

2.1.1 Functions of Mass Communication

It is possible to find out plenty of definition and categorization about the functions of mass communication. Among all these definitions and categorization, a study which

is known as “McBride Report” (1980) prepared by a commission which was formed by UNESCO, defines the functions of mass communication as follow:

1) News and Information Providing Function: This function, explain the duty of media related with the information transmission and therefore to inform the masses (society) about the events and actions takes place in the society and in the world.
2) Function of the Socialization of Individuals: The function of socialization aims to inform and share the transfer of the news, information and the social, moral and material values among the members of the society.
3) Motivation Function: The encouragement and declaration of the objectives that the societies (societal objectives) designate and the efforts of the members of the society through the direction of these aims are defined as the motivational function of the media instruments.
4) The Function of Preparing Discussion: This function can be defined as to create discussion atmosphere within the society by the media instruments in order to contribute to the determination of the societal objectives or to gain clarity to the predetermined objectives.
5) Education Function: Transmission of information by the media instruments to the societies in order to raise the education and knowledge level is the educational function of the media.
6) The Function that Contributes to the Promotion and Development of Culture: It is the duty that is taken on by the media in promotion and in the development of the social culture and preservation of the cultural heritage.

7) Entertainment Function: It is the entertainment and spending time function of the media that helps the individuals who get bored and depressed from the social life.
8) Integration Function: Fulfilling the above mentioned seven functions by the media, the relations among the individuals and groups within the society have matured and living together in harmony becomes easier. As a result media carry out its integration function (Yüksel, 2001, pp. 7-8)

In another definition, the functions of media instruments are collected under four main headings as social functions, political functions, economical functions and informational functions. Gökçe (2003) mentions that; it is possible to separate the social function of the mass communication tools into two; as, socialization and entertainment. Furthermore, he emphasizes that the main function of mass communication tools is the socialization and adds that this function also covers the other functions such as integration, social interaction and personal identity. Also, he defines the entertainment function as another aspect of the social function (Gökçe, 2003, p. 174). Similar to the explanation given in the McBride report, it is defined as obtaining benefit from the media instrument by the members of the society who get embarrassed, depressed from the routines of the daily life and would like to put to good use of their free times. The political function which is pointed out as the second main function can be emphasized to be grouped as forming the subject, representation, political socialization, criticism and supervision function (Yüksel, 2001, p. 8), mentioning that the function of creating public opinion at a democratic level is the main function of the media, and points out that the control and the

criticism functions brings the media to the position of the fourth power after legislation, execution and judgment.

Gökçe (2003), by pointing out that the third main function of the mass media instruments is the economical function, and mentions that this function helps to vigor the goods-money relationship. Finally, he states the information providing function of the mass media instruments. Gökçe (2003) defines the information provision as the process of removing lack of knowledge of the receivers and points out that a person can be informed in two different forms. Individuals obtain information when they are faced with objects and by gaining experience. As the second possibility, an individual obtains information without facing the objects but through communication. Therefore functions of the mass communication can be defined within the framework of the second situation. Within this context, other three main functions mentioned in reality, are defined as the information provision functions (Gökçe, 2003, pp. 175-181).

2.1.2 Media Research

The earliest communication model that is put forward by Laswell (1948) and has been known as 5W model and used widely is defined as follows;

Who

Says What

In Which Channel

To Whom

With What Effect (p. 37)

Perry (2001) maintains that, mass communication researchers, in order to answer "who" question, try to define people that determine what can take place in the media. When they look at the "Says What" question they focus on the content of communication. When searching the answer to the "Which Channel" question, they look at the media instrument or instruments that the message is sent to the masses. Finally, research in this area, in order to find answer to the "With What Effect" question of the model, the researchers try to find the effects of the message on masses, whether the message causes any changes on masses and if there is any change they try to look at the direction of this change (p. 8). According to Perry, while trying to find out answer for the effect question other questions do not have much importance.

2.1.2.1 Content Analysis

One of the most important methods of directly investigating media is the method of content analysis (Harris, 2004, p. 19). According to Harris, (2004) content analysis can be accepted as a prerequisite for exposure and effect research.

According to Wimmer and Dominick (1991) content analysis includes the studies on the recorded human communication. It includes the examination of texts (such as books, pictures, web sites and law) and the symbolic meanings and patterns of audio and visual materials by the researcher. The studies of content analysis can be classified under three different concepts. These are;

1) Systematic: Selection of the content according to the open and consistently applying rules that is going to be analyzed.
2) Impartial: The result of the research should not be affected by the personal opinion, thought and partiality of the researcher.

3) Grading: The aim of the content analysis is the definite and correct representation of the message. Grading provides truth to the researcher in reaching this target (Wimmer & Dominic, 1991).

The following steps can be used as a general frame for the content analysis studies.

1) The formulation of the hypothesis or the research questions,
2) The definition of the population for the study,
3) The selection of the appropriate sample from the population,
4) The selection and definition of the analysis unit,
5) The formation of the categories of the content that is going to be analyzed,
6) Formation of the grading system,
7) Education of the coders and the application of the pilot study,
8) Coding of the content according to the formed definitions,
9) Analysis of the collected data,
10) Driving conclusions and searching the signs (Wimmer & Dominic, 1991)

2.1.2.2. Exposure

Another method that is widely used in the media research is the measurement of amount of exposure to the media instruments by its users. For example, at a certain time period, the measurement of how long audience they listen to the radio, how long they watch television and how long they read newspaper are in the scope of the exposure studies.

2.1.3. Effect Research in Communication

As a result, due to its functions, media has inevitable effects on the society and the individuals that form the society. However, what is the level of this effect? Do media, in the scope of fulfilling the mentioned functions; create a necessary effect on

the individuals that form the society or at what level it creates this effect? Which instrument most effectively fulfills its functions? The studies that have been conducted in order to find answers to these questions go back to the very early dates of communication instruments (Defleur & Ball-Rockeah, 1998, p. 9). According to Schramm (1997), social sciences start to establish themselves as disciplines in the 1920s. The development of the social sciences and the formation and development of the quantitative methods led the researchers to work on the uses of the media and its effects (Perry, 2001, p. 18). In the history of the effect research, on the other hand resulting from the development and changing of the technology and the social order of the media instruments (Defleur & Ball-Rockeah, 1998, p. 146); on the other hand resulting from the different approaches to the effect research (Yüksel, 2001, p. 9) but as Severin and Tankard (1997, p. 322) and Althaus and Tewksbury (2000) mention, from the beginning until now, no single or compound theory has been put forward as a whole to show the effects of the mass communication by the communication researchers. Although, from the studies that were realized until now, media effects has not reached a common consensus and at the same time, since it is difficult to answer the effects of the messages on masses sent by the media instruments (Severin & Tankard, 1997, p. 297), by considering the changing societies and developing communication technologies, these studies will follow until a common consensus has been reached.

As Yüksel (2001, p. 11) points out, history of the effects research is as old as the history of communication research. Before getting into the details of the effect research in communication, evaluating research that has been done from the beginning until now on periodical basis would provide an insight to look at the case

as a whole. Among the studies that were done in this area, evaluation of McQuail (1990, p. 252) on the effects of the mass communication tools becomes the starting point for many researchers. McQuail (1990) evaluates the effect research in mass communication in three different periods.

1- Powerful Effects Period: Takes into consideration the period beginning with the 20th century up to the 1930's when the radio and television started to be used and. In this period, the main media tool considered to be so powerful that, they could change the life styles, thoughts and beliefs of the individuals. Based on this argument, the theory that communication scholars (such as Walter Lipmann and Harold Laswell) developed at this period, assumed that mass media had direct effect on people. This theory is explained by a model called 'hypodermic needle' or 'magic bullet' (Vivien, 2001, p. 359).

2- Limited Effects Period: According to McQuail (1990), the studies that were devoted to the effects of mass communication tools within the period that started in the 1930's and continued until the 1960's, has put forward that these instruments were not as effective and direct on individuals as it was thought before. The studies that were realized within this period, on the content of the mass communication tools, particularly targeted certain election campaigns and films as their subject. The main argument of these studies was in the direction that the effects of media instruments were limited. McQuail (1990) states that in this period, the nature of the research changed. New methods were developed and evidence and theory suggested new kinds of variables.

One of the important studies of this period is the “Army Research” study of the Hovland. Hovland conducted this study in 1949 on films that were used for the psychological education given to the soldiers in the United States during the Second World War. According to the results of this study, mass media instruments did not have any effects alone on changing the present attitudes of the individuals. (Severin & Tankard, 1997, pp. 180 - 182).

During the Limited Effects Period many different research had been realized. In these studies, the research methods that were applied in the Powerful Effects Period were also developed. According to the data obtained from the results of the research, a necessity that needs to include the individual differences and social environment as new variables to the agenda of research appeared (Yüksel, 2001, p. 14). Within this context, among the several studies that were done related to the subject Defleur’s “Individual Differences”, “Social Categories” and “Social Relations” can be shown as examples (Defleur & Ball-Rockeah, 1998, pp. 169 - 199).

3- Returning to the Powerful Effects: Coming to the 1960’s, together with the widespread use of television as a new mass media instrument, particularly when compared with the other mass media instruments, its biggest and more powerful attraction and becoming one of the important indicators of social life were the important signs that shows the end of the limited effect period and returning back to the powerful effect period (McQuail, 1990, p. 254).

In Returning to the Powerful Effects period, the measurement of the exposure to the mass media instruments which constitute the research of the first two periods and the

changes in the attitude, opinion or behavior, as McQuail (1990) mentions shift to the long term change; cognitions rather than effect and attitude and the part played by the intervening variables of context, disposition and motivation (McQuail, 1990, p. 254). It is said that this period is still continuing.

On the other hand, Perse (2001) states that the natural structure of the effect is in different form. Perse (2001) classifies them in three different groups as direct, conditional and cumulative.

1- Direct Effect Model: The model which is also named as Uniform Effect Theory, it overlaps with McQuail's definition for the powerful effect's period. Uniform Effect theory puts forward that the individual gets the message from the mass media instrument in the form that the instrument intended to send and show reaction in the same power and similar way. This model is also known as the magic bullet theory (Harris, 2004, p. 21).

2- Conditional Effect Model: It is the model which asserts that the effect of the media is only valid for certain conditions and for certain users (Harris, 2004, p. 21).

3- Cumulative Effect Model: It is the model which claimed that media affect its users not as a result of single exposure but with multiple exposures (Harris, 2004, p. 2).

The discussions on media effects have different dimensions. Massey and Baran (2001) consider these discussions under the following headings with their pros and cons.

1- Media content has limited impact on audiences because it only makes them believe; people know it isn't real. The counter argument is: People willingly accept media content as real what is put in front of them.

2- Media content has limited impact on audience because it is only play and just entertainment. The counter argument is: News is not play or entertainment.

3- If media have any effect at all, they are not the media's fault; media simply hold a mirror to society. They reflect the status quo, showing us and our world how they already are. The counter argument is: Media hold a very selective mirror. It is not possible to represent the whole world in the media. Media people act as gatekeepers.

4- If media have any effect at all, it is only to reinforce preexisting values and beliefs. Family, school and other socializing agents have much more influence. The counter argument is: Traditional socializing agents have lost their power.

5- If media have any effect at all, this is only on the important things in our lives, like fads and fashions. The counter argument is: Media spend considerable amount of money for to sway audience opinions about important social issues (Massey & Baran, 2001, pp. 385 - 387)

2.2 Theories Related with the Effects of Mass Media Instruments

The intellectual differences related with the effects of the mass communication tools briefly explained chronologically. Based on the intellectual differences, a variety of models arose in order to theorize the effect in different periods. Within this context, many theories have been developed until now that put forward different dimensions of effects. Despite the differences among these models, there is no general theory or model that explains the effects of mass communication tools. However, in order to shed light for the future studies there is a necessity to investigate the progress of the research.

The research related to the effects of mass communication instruments have been examined in different ways with its various aspects. However, as Gökçe (2003) mentions, it is more appropriate to take into consideration these models in the form of stimulus centered, audience centered and media centered point of views and investigate the chronological development and related theories of the effect research.

2.2.1 Stimulus-Centered Effect Research

The main models of the Stimulus Centered Effect Models include Hovland's Persuasive Communication Model, Festinger's Cognitive Dissonance Theory and Klapper's "Synthesized" approach (Gökçe, 2003, p. 196).

2.2.1.1 Persuasive Communication Model

The action of Persuasion is a part of human life. Olson and Zanna (1993) define persuasion as the "attitude change resulting from exposure to information from others". Hovland (1949; cited in Severin and Tankard (1997, pp. 180 - 182)) defines the communication as the process of sending a message by an individual either in verbal form or with sign in order to affect the behaviors of others. Hovland and his associates (1949), at the same time, see the effects subject as the main problem and search which conditions the communication is more effective. The studies of Hovland (1949) are based on controlled experiments in which variables are manipulated in order to observe their reaction to media in other words media effects. The model which is also defined as the persuasion or attitude change is in fact expressed as a learning theory or strengthen model (Severin & Tankard, 1997, pp. 180 - 182).

According to the analysis of data obtained from the experiments, the effectiveness of communication depends on the characteristics and the content of the stimulus sent (in

other words the attribute of the media and the situation of the receiver at that time defined as the environment of the communication), the structural characteristic of the receiver (it is constituted from the factors such as the present attitude and opinions related with the subject and intelligence and motivation of the receiver) and the phases of the perception process (it includes the processes of showing interest, comprehension and decision about what is accepted and what is not) (Gökçe, 2003, pp. 190 - 191).

According to Gökçe (2003, p. 193), this model consists of reason and result relations and the unobserved factors within the model stays at the superficial level. At the same time there is a one way relationship between sender and receiver which relies on sender.

2.2.1.2 Festinger Cognitive Dissonance Theory

Cognitive Dissonance theory is defined as the possibility of whether new information, choices and as a result the decision that has to be taken is creating an inconsistency or not for the individual. This theory claims that the lack of harmony in question gives physiological discomfort to the individual and as a result directs the individual to search for the information that supports the given decision (McQuail & Windahl, 1993, p. 41). In other words, an individual, in order to get rid of the inconsistencies within itself tries to provide consistency among his/her own information, feelings and attitudes. This inconsistency (conflict) is characterized as contradiction. Therefore, there are three types of relationships among the cognitive components. These are contradictory, compatible and lack of interest (İnceoğlulu, 2002, pp. 35 - 36).

It is possible to explain these relationships with the following example. If an individual knows that driving fast is harmful but still driving fast it is certain that there is a contradiction between two knowing. If an individual knows that driving fast is harmful and gives up this, then a harmonious relationship comes out. On the other hand, if an individual knows that driving fast is harmful and listening music is relaxing, there is an indifferent relationship between these two knowing.

According to İnceoğlu (2002) Cognitive Dissonance Theory has three main supporting points;

1) Individual will try to reduce contradiction and direct towards providing harmony about the information and facts which are creating physiological tension.
2) As the importance or the value of vitality of the facts increases the greatness of the contradiction increases.
3) The power of pressure in decreasing contradiction is the result of the greatness of contradiction (p. 36).

Although, this model of Festinger, during the effect processes of the mass media tools, give more importance to the individuals compared with the model that was developed by Hovland's and his associates (1949), the results that were reached in both models obtained under laboratory conditions (Gökçe, 2003, p. 195). Detailed explanations and comparisons about the subject will be presented in the next sections.

2.2.1.3 The Synthesizing Approach of Klapper

In his book called 'The Effects of Mass Communication' which was published in 1960, Klapper investigated the research which was realized until that date and derived five general outcomes from these research. These are;

1) Mass communication generally does not work as the reason of necessary and sufficient effects on audience rather it works by passing through the links of interfering effects and factors and among these links.
2) During the process of supporting the existing condition, the interfering effects show the mass communication not only the single reason but as a supporting agent. In other words, mass communication tools functioning as a supportive agent rather than changing agent.
3) The mass communication in the case of acting as a changing agent the existence of a single condition out of two is in question. These are;
    a- either the interfering effects does not work,
    b- or the interfering effects which are normally in the favor of supporting should act as promoting the change.
4) In some cases mass communication can be seen as serving certain psychological missions or producing effects.
5) The ability of the mass communication which both contribute to the effect and act as a direct effect agent, affected by the media tools and communications or through the several aspects of the states of communication (cited by Erdoğan, Alemdar, (2002, s. 143)).

Klapper (1960) categorizes the effect of mass communication tools towards the existing opinions and attitudes of the individuals into three groups. These are reinforcement, minor change and conversion. Within this context, Klapper collect the

strength effect creating reasons of the mass communication tools under five headings.

1) The attitude of the audience and following alternatives, perception and remembering: individuals give importance to those communications that are appropriate to them and to their present point of views, and escape from those communication that they don't like.
2) The group and the group norms that the presenter involves: in the societies individuals are bound to the attitudes of the groups that they belong to and show resistance to the change. When they face with such a case they interpret them according to their norms (selective perception). They remember those content that are appropriate to their thoughts (selective remembering).
3) The spreading of communication content through interpersonal communication: the distribution of thoughts among the people who has same attitudes and opinions are faster. This spreading mostly exposes a supportive and a strengthened case.
4) Opinion Leaders: the role of the opinion leaders in producing change is important. These are the people who have supportive and strengthened effects on norms.
5) The nature of the commercial mass communication tools: the economical character of the mass communication tools and the society in shows the availability of these instruments that are mostly functioning as supportive agents in terms of society (Cited in Erdoğan & Alemdar (2002, pp. 144 - 145).

These factors point out that the effects of mass communication tools are towards supporting the existence attitudes and opinions of the audiences and strengthen whereas their changing power is limited (Erdoğan & Alemdar, Öteki Kuram, 2002).

2.2.2 Audience-Centered Effects Research

Transition from stimulus-reaction model to stimulus-individual model also exposes the idea that the audience is important in mass communication (Gökçe, 2003, p. 198). At the beginning, the audience was considered as a passive target mass who consumes the products of mass communication. However later, it comes out that the real audience consisted of the real social groups and the audience is described through the interpersonal communication networks where the effects are transmitted (McQuail & Windahl, 1993, p. 153). According to McQuail and Windahl (1993) many opinions have been accumulated about the audience that they follow the mass media messages with the selective watching/listening/reading method. The tendency here is that, the audience makes selection which is appropriate to their information requirement and preferences (p. 153).

2.2.2.1. Two-Step Flow of Information

In the previous sections, it was mentioned that the subject of attitude change is not directly because of the mass communication tools but the opinion leaders play important roles. During the 1950's, Katz and Lazarsfeld conducted a survey in Illinois in the United States of America. The analysis of data obtained from this research shows that there is little evidence of direct influence of mass media on the audience. On the contrary, it was found that the opinion leaders of the social groups use media more than ordinary audience. These people then share the information that they obtain from the media with the group members. Thus group leaders affect their own group opinions (Robinson & Levy, 1986, pp. 39 - 40).

According to the analysis of data that Robinson and Levy (1986) obtain from their study, the direct effects of the mass communication tools on individuals are at the minimum level, on the contrary, the effects that come out from the interpersonal communication are at higher level.

The two-step flow of information model claimed that the group leaders can control the attitude of their groups and therefore they can also control the flow of information from the media to their group members. In other words, leaders can take the charge of gate keeper during the process of flow of information from the media to group members. In such a case, the assumption that the direct effect of media is limited on normal audience is valid (Gökçe, 2003, p. 192).

These people who are defined as opinion leaders by the Lazarsfeld and his team take the duty of guidance in the field of social communication. The guidance is generally towards the effect of mass communication tools on the audiences (Gökçe, 2003, p. 200).

2.2.2.2 Uses and Gratification Theory

The Uses and Gratification Theory was first put forward in 1959 by Berelson while he is replying the claims that the domain of the communication research dies.

The theory of Uses and Gratification came out as a result of shifting the studies by the researchers, starting from the 1940's, from media to media audiences. These researchers claim that individuals use media to gratify their needs. These studies are related towards how and why individuals use the media (Vivien, 2001, p. 363). This approach brings the opinion that the media users select the media tools and contents according to their requirements and search their own effects. In short, it brings the

approach of the active audience. According to the opinion of active audience, the centre of the communication process is among the activities of the audiences or the groups that tries to understand any condition (Erdoğan & Alemdar, 2002, p. 188). Thus, the decision of whether the mass communication tools are effective or not are only given by the active audience who are in the position of receiver. Moreover, in order mass communication tools to be effective, they must be appropriate to the expectations, requirements and aims of the audience who follow these tools. It is supposed that the mass communication tools are only effective in such a situation (Gökçe, 2003, p. 205). Blumler and McQuail (1969) state that "they consistently found correlations between the uses of the media that audience members reported and the type of the learning that took place" cited in Robinson and Levy (1986, p. 46).

Katz, Blumler, and Gurevitch (1974) state that this approach is concerned with:

> (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting (6) need gratification and (7) other consequences, perhaps mostly unintended ones.

According to McQuail, Blumler and Brown (1972) the audience turn towards the mass communication tools according to the requirements that are mentioned below.

1) Strengthen the personality, gaining prestige and trust.
2) Escape from daily problems.
3) Obtain information and ideas

4) Set up friendships and other similar relations (cited by Severin and Tankard (1997, p. 332)).

In more recent studies, Rubin (1993), for example, mentions that audience should be treated as a variable rather conceptualizing them as active or passive. This means that: Sometimes media users are selective and rational in their processing of media messages, but at other times they are using the media for relaxation or escapism. These differences in type and level of audience activity might also have consequences for media effect (Rubin, 1993).

According to Rubin (1993), the redefined uses and gratification theory assumes the following:

1) Communication behavior such as media use is typically goal-directed or motivated. Such behavior is functional for people; it has consequences for people and societies.
2) People select and use communication sources and messages to satisfy felt needs or desires. Media use is a means to satisfy wants or interests such as seeking information to reduce uncertainty or to solve personal dilemmas.
3) Social and psychological factors mediate communication behavior. Behavior is a response to media only as filtered through one's social and psychological circumstances such as the potential for interpersonal interaction, social categories, and personality.
4) Media compete with other forms of communication for selection, attention and use. There are definite relationships between media and interpersonal communication for satisfying needs or wants.

5) People are usually more influential than media in media-person relationships.
6) In recent decades, intensive use of the Internet as a mass communication tool, gains importance and a new dimension is added to the research of uses and gratification. As Ruggiero (2000) mentions, the aspects of hypertextuality and interactivity which are the properties of the use of the Internet should be also added to the research that will be done in this field

One of the most important outcomes of the audience studies as Swanson (1992) mentions is to put forward the relationship between those who follow the media and the media itself. Swanson point out that “audiences are not important in the face of all powerful media but rather are active, endeavoring to use media content to serve their own purposes and interests”.

2.2.3 Media-Centered Effects Research

It is realized by the researchers that mass communication tools not only change the attitude and behavior of the audience in the short term but also in the long period. Within this context, the long period effect research gains importance ((Yüksel, 2001, p. 18) and (Gökçe, 2003, p. 203)).

2.2.3.1 The Agenda Setting Theory

The first opinion that the mass communication tools functioning as the agenda setters of the public was first put forward in the work of Cohen (1963) and in the later years this theory was developed by McCombs and Shaw ((Erdoğan & Alemdar, 2002, p. 211); (Gökçe, 2003, p. 210)).

This opinion states that the mass communication tools in both political and current subjects do not tell the public what to think about but direct them to think about a

certain subject (Cohen 1963, cited by Gökçe (2003, p. 210)). The audience does not only learn about the public and other subjects from the mass communication tools but at the same time, they understand how much importance will be given to that subject from the importance already given to that subject by these instruments. This model primarily deals with learning and keeps attitude and opinion changes out of subject. According to the model, the main idea that is put forward is the teaching function of the mass media instrument (McQuail & Windahl, 1993, p. 222).

Yüksel (2001) points out that, media puts the messages that is sent to the society in order according to their importance and by filtering them at certain level maintains its presentation and learning. In other words, mass media instruments determine which information is useful for the society and what and which subjects carry news value. For example, by taking the news to the front page of the newspaper, enlarging its photographs or presenting it with large fonts can be dictated to the society. In short, by constituting the agenda of the public, they undertake the role of gate keeping of the society (p. 25). According to İnceoğlu (2002), those subjects which are taken to the agenda by the media also become the agenda of the public and media is creating a kind of “climate” in the way that it is desire (p. 158).

According to Erdoğan and Alemdar (2002), in the foundation of the mass communication, there is an assumption that the opinion of the public about the political subjects are meaningfully influenced by those given to them by these instruments. Moreover, the agenda setting is a learning process in the course of time (p. 212). Apart from this, according to these authors, since the people are in a position that they can learn what they are thinking and talking from the messages

from media, it is inevitable that the agenda to come into existence will affect the political agenda as well (pp. 216 - 218). This case is also described as the power of the media on the politics (Graber, 1980, p. Cited in Yüksel, (2001, p. 28). This situation in question shows that the agenda setting research are kinds of power research.

McQuail (1990, p. 276) defines the agenda setting as a process and enumerates the elements of this process which constitute the agenda as follow;

1) The agenda that is owned by political and other interest groups,
2) The media agenda according to the importance of news and influenced and structured by the perceived audience performance,
3) The public agenda which is accepted to be influenced by the media agenda.

2.2.3.2 Knowledge Gap Hypothesis

The Knowledge Gap Hypothesis was first suggested by Tichenor, Donohue and Olien in 1970. It is a model which takes the news diffusion as the basis. Knowledge Gap Hypothesis states that when the flow of information in a social system is increased those who has higher education and higher socio-economic status will be able to process the information more efficiently than those with less education and a lower social status. As a result, an increased amount of information results in widening the information gap between these groups rather than narrowing it. Tichenor, Donohue and Olien (1970) also include less-educated or poorer do not become informed at all. Knowledge grows in a linear or curvilinear trend, and that the media coverage has not saturated the subject area (Tichenor, Donohue, & Olien, 1970).

The knowledge gap hypothesis has been refined somewhat since its inspection. Donohue, Tichenor, & Olien (1975) summarize these modifications:

1) When there is perceived conflict over a local issue, it is likely to decline.
2) Widening knowledge gap is more likely to occur in pluralistic communities, with numerous sources of information, than in homogenous communities, with informal but common communication channels.
3) When an issue has immediate and strong local impact, the knowledge gap is likely to decline (Donohue, Tichenor, & Olien, 1975).

Tichenor, Donohue and Olien (1970) give five reasons for the existence of a knowledge gap: (1) a difference in communication skills between those high and low socioeconomic status; (2) a difference in the amount of information that is stored or background knowledge that is previously acquired; (3) more relevant social contact for people of higher socioeconomic status; (4) the possible presence of selective exposure, acceptance, and retention; and (5) the nature of the mass media system, in that it is geared toward persons of higher socioeconomic status (p. 162).

The study concludes that “the mass media seem to have a function similar to other social institutions: that of reinforcing or increasing existing inequities” (p. 170). The authors go on to state that might not be a bad thing, as “accelerated acquisition of mediated knowledge may be socially functional,” even if it does lead to social tensions (p. 170).

Later in 1997, Gaziano points out that, socioeconomic status has been measured by knowledge gap researchers by education, income and occupation, or at least with one of them. Similarly according to Gaziano (1997) knowledge has been measured as: (1) awareness of a topic versus depth, or more complex knowledge; (2) open-ended and closed-ended researcher-determined content; and (3) limited content (capable of reaching finite, or ceiling, effects) versus unlimited content. She concludes that measurement of the gap could be done either through a "one-shot" examination between the most and least educated respondents, and/or over time to capture changes in the gap.

Tichenor, Donohue and Olien (1970) propose that education greatly influences the rate of knowledge gained because it is linked with better retention, comprehension and communication skills. Gaziano (1983) supports this idea and observing that a consistent relationship between education level and general knowledge of a variety of topics does exist. She further states that other contributing factors are most likely involved in the knowledge gap as could include exposure to the mass media and an individual's motivation to acquire information. Gaziano (1983) mentioned that:

Perhaps the mass media have greater influence on reduction of knowledge gaps than previously believed. In situations in which evidence for positive relationships between education and knowledge is substantial, some scholars may wish to consider how such social disparities should be addressed with regard to decisions about research topics, allocation of resources and formulation of society policy (p. 476).

Gaziano (1995) states that, the best test of the knowledge gap hypothesis occur when media publicity of issues fluctuates.

2.2.3.3 Cultivation Theory

Cultivation theory was first put forwarded by the Gerbner and his group who was working at the Annenberg School of Communication at the Pennsylvania University. These researchers investigated relation of the reality that is constituted through television and the real world. In this context they investigate the effect of violence on individual and on society (Işık, 2002, s. 85).

With the widespread use of the television, particularly after the 1950's, as a mass communication tool, the effects of the mass communication tools came into consideration in the 1970's once again and more intensively than compared with the previous period. Apart from this, this period is known as the transition period from the short term effect research to long term effect research. The main theme of this transition is to show what sort of structural model or features that the representative reality constituted by the mass communication tools have and the role that these instruments play in defining the social reality (Gökçe, 2003, p. 215). In this context, the long period effect of television, the role that it plays in the training of the adults and how it socialized the individuals are investigated by Gerbner and his friends (Işık, 2002, p. 85).

In the research that is empirically realized at two steps, Gerbner and his friends primarily did the content analysis of the recorded television programs and assume these as the lessons given by the television world to its audiences. In the field research they investigate the difference of this assumption between those who watch television heavily and lightly (Gerbner, Gross, Morgan, & Signorielli, 1982).

According to Gökçe (2003), outcomes of the results derived by Gerbner and his friends can be summarized under three main themes.

1) The cultural products presented by the mass communication tools function as an agent that ties the individuals in a contemporary society and creates a common conscious.
2) By the continuous repetition of the widespread formats television presents a particular point of view. Television is not managed by the public but tied to the management of the powerful organizations. The aspect that provides such a management is the advertisement. With a different notion television is a part of an industrial order. Television, in order to change the existence belief and attitudes, serves in the direction of keeping them, supporting them and providing stability.
3) Television does not reflect either all or a part of the society in real sense. For example, 67% of the Americans are either labors or work in the service sector but the reflection of them in the television world is only around 10%. On the other hand, men are represented three times more than compared with women in the television.

Although the research about the Cultivation Theory managed to attract lots of attention; it is faced by much academic criticism. For example, this model pretend that watching television is either little or non-inspected activity by the researcher. Therefore, to anticipate the internal variables or abstraction and attribute specific connections to watching television and attitude are very difficult because of the above mentioned reasons (Mutlu, 1998, p. 373).

2.2.3.4 Spiral of Silence Theory

The spiral of silence theory which states that when the individuals are in minority they avoid expressing their ideas was developed by the German sociologist Noelle-Neumann.

This model assumes that naturally individuals are afraid of being alone and for this reason individuals are continuously observing their environments in order to learn how they behave in the public and in their environment and what to tell by not being afraid (Noelle-Neuman, 1977).

The Spiral of Silence model is constructed on the assumptions that are mentioned below:

1) If individuals know that what they think is shared by others they do not escape from talking these with others. However, if they think that they leave alone in some of their thoughts and ideas they escape of sharing these ideas with others.
2) The individual in order to understand whether his/her opinions are valid mostly use the mass communication tools. If the opinions are not mentioned by the mass media tools, the individual think that the opinions and thoughts that he/she have do not gain acceptance.
3) The approach of the media tools which almost show a monopolistic approach by presenting same opinions and thoughts leave the society with wrong ideas and opinions. In such a case, those who have different ideas and thoughts than the media has because of being afraid of abstraction from the society do not defend their ideas and

thought. Those members of the society that have different ideas and thoughts from the generally accepted opinions will be less willing to express their ideas in time. As a result the opinions of the mass media tools perceived as the surpass and correct opinions (Mutlu, 1998, pp. 321 - 322).

2.2.4 Measurable Effects

Before moving the effects of the media on the individuals there is a necessity to shortly investigate what are the measurable effects. The measurable media effects generally classified in four different ways by Harris (2004).

1) Behavioral Effects: It is the effect type that explains the behavior change of the individual apart from his/her normal behavior by affecting from the events that he/she sees, reads or watches from the media, from the news or from the people that take place in the media. Although behavioral changes conceptually accepted as the most obvious effect type, there is no definite proof to attribute this responsibility to the media. It is the effect type which measure is very difficult.

2) Attitudinal Effect: It is the effect of the media on attitude change. It is defined as the effect of the media on attitude change. It is also defined as the changing or directing of the preferences rights of the individuals by the media. For example, to encourage an individual with advertisement effect to buy a certain product or direct the individual in certain direction in elections. The other component of the attitudinal change which can also be attributed as the belief change is the emotional effect. For example, after broadcasting

related with a disease, a positive attitude form towards those who has caught the disease. It is easier to measure this type of effect than compared with the behavioral effect. Apart from this, it is more important when the behavior effect because many attitudinal changes affected from the changes in manner. It is also defined as the change of opinion of the individual on a particular subject.

3) Cognitive Effects: It is the effect type that changes what an individual knows and thinks. In other words, it is related with the information gained from the media. As it is known, different media instruments have different presentational formats (text-audio-video). Cognitive process while they present information search for the most effective media instrument in terms of learning, remembering and comprehension. Another sub-group of the cognitive effect is the agenda setting. Cognitive effect is tested by measuring the information collected at the individual. Its measuring is easier than compared with other effects.

4) Caveat: The Third Person Effect: The third person effect is the only effect type that includes the other three effect types which was mentioned above in its own structure. The best model which explains this effect type is the Gunther and Storey's (2003) Influence of Presumed Influence Model. According to this model, some people think that media messages affect these people and they form a reaction against this effect. These perceived reactions can either be positive or negative. In other words, individuals thought that they are not directly affected from the media but they believe that some other

people are affected from the media. As a result, these people are affected from those that are affected from the media (Harris, 2004).

2.2.5 Short Term Effects of Mass Communication on Individuals

As it was mentioned before, considerable amount of the mass communication research is related to the effect question and concept. According to McQuail and Windahl (1993), this subject becomes the center of attraction for those groups who want to reach the others with a message, for this reason for those who want to obtain the best channel which creates the highest effect on individuals and for those who worry about the negative effects of mass communication (p. 73).

The increasing importance of mass communication tools for the individuals in terms of political and social issues also increases the importance of news distributed with these instruments. The news that is send to the masses with these instruments forms a different type of communication (McQuail & Windahl, 1993, p. 101).

McQuail and Windahl (1993) put the general features in order of these as follows.

1) News is the type of communication that is rarely directed toward an aim.
2) Public interest is always dependent on need.
3) Most of the times the interest is not clear, it is directed either by a large fan of motive or directed only with a general environmental administration.
4) Most of the information that is provided is transient and always changing day by day.

According to this approach, it is revealed that there is very little increment in the information learned from the news. (p. 101). McQuail and Windahl (1993) also claim that the aspects of understanding and remembering from the news receive attention from 1980 onwards (p. 274).

According to McQuail and Windahl (1993), the effectiveness degree of the news is limited to two aspects. These are;

1) Attracting attention
2) Comprehension by the audience.

According to these authors, there are three measurements applied to the research to find the effect of the news:

1) The extent to which it reaches the audience,
2) Remembering of the news content by the audience,
3) The comprehension of the certain points of the news by the audience.

On the other hand, it is obvious that this process has two stages. The first stage is sender and the second stage is the receiver. While on the sender side, the aspects such as the instrument used to send the message and presentational format are important, on the receiver side the important aspects are interest, comprehension, processing of the message and remembering. McQuail and Windahl (1993) define the situation as the transmittal model on the sender side and processing (interpretation) model on the receiver side (p. 102).

2.2.6 Transmittal Model in Teaching the News

One of the favorite measures of audience research has been recall. Recall is explained by Jensen (2002) as the "respondent's ability to reproduce items of information within a relatively short time span after exposure" (p. 144). The aim in learning the news is the remembering and comprehension of the news by the audiences as the source and sender intend. In this process the factors and the conditions are the aspects that the researchers are interested.

The transmittals model that McQuail and Windahl adapted from Comstock, Katzman, Chaffee, McCombs & Roberts (1978) is presented below with a flow diagram (p. 103).

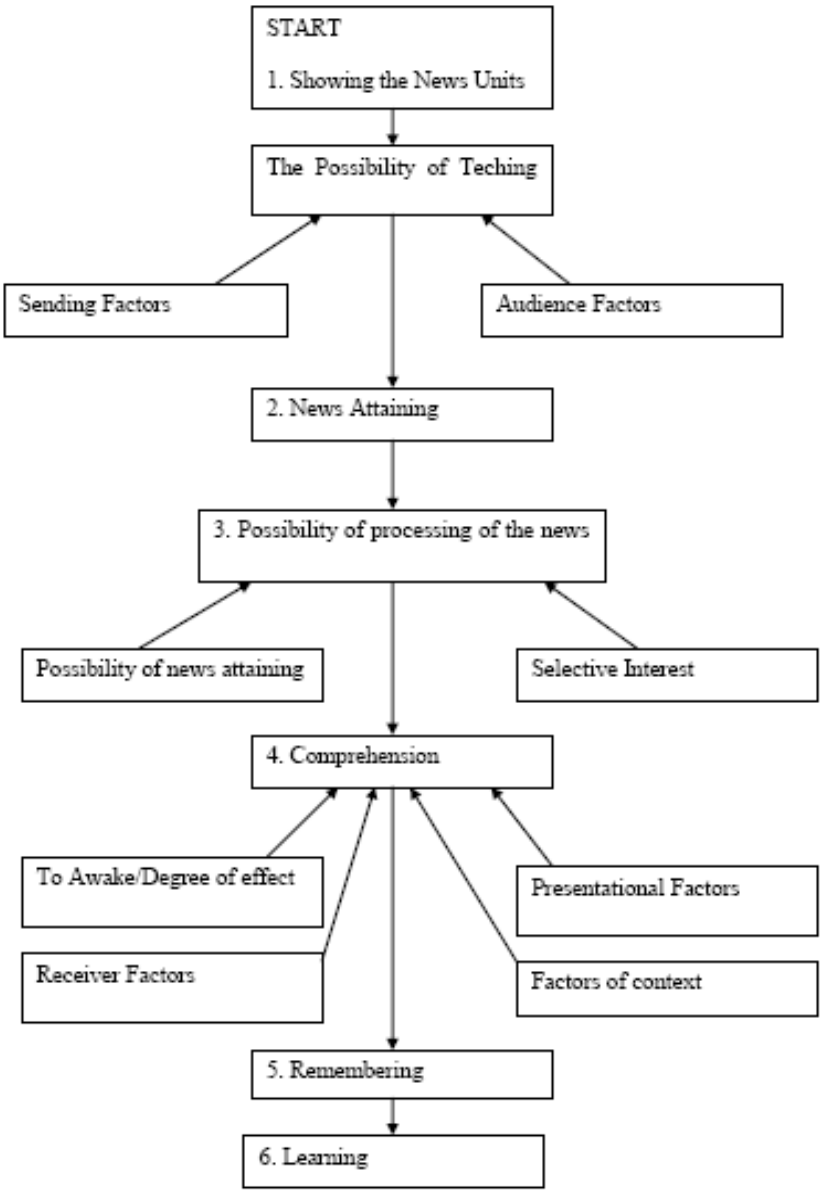

Figure 1: Transmittals Model that McQuail and Windahl Adapted from Comstock.

While explaining this model, the emphasis will be primarily on comprehension and remembering and the factors related with it.

2.2.6.1 Perception

Perception is defined by İnceoğlu (2002) as the sensory information taken by the individuals related to the abstract/concrete objects from the outside world (p. 44-45). The sensory organs (ear, tongue, eyes, nose, skin/hands which are used to hear, taste, see, smell and touch) are defined as the informed sensorial provide information from the outside world. Perception is a complex process. According to Severin and Tankard (1997) perception can be influenced by a number of psychological factors such as assumption, cultural expectations, motivation, mood and attitude. They also point out that perception can also be classified functionally as selective perception, selective exposure, selective attention and selective retention, particularly when mass media is in question (p. 80). According to these writers;

a) Selective Perception is defined as the "tendency for people's perception to be influenced by wants, needs, attitudes and other psychological factors". In other words, different audiences can react to the same message in different ways.
b) Selective Exposure "is the tendency for individuals to expose themselves to those communications that are in agreement with their existing attitudes and to avoid those communications that are not".
c) Selective Attention "is the tendency for individuals to pay attention to those parts of a message that are consonant with strongly held attitudes, beliefs or

behaviors and to avoid those parts of a message that go against strongly held attitudes, beliefs or behaviors".

d) Selective Retention "is the tendency for the recall of information to be influenced by wants, needs, attitudes and other psychological factors.

2.2.6.2 Information Processing

While talking about the concept of process of perception, it is not possible to think of it separate from the information processing.

According to Kihlstorm (1987) the classical information-processing conception of human cognition, modeled after the modern high-speed computer, includes a set of structures for storing information, as well as a set of processes by which information is transferred from one structure to another. In this model, information from the environment, transduced into pattern neural impulses by the sensory receptors, is briefly held in the sensory registers, one for each modality. Information in the sensory registers is then analyzed by the processes known as feature detection and pattern recognition. By means of attention, information that has been identified as meaningful and relevant to current goals is then transferred to a structure known as primary or short term-memory where it is subject to further analysis. At this stage perceptual information is combined with information retrieved from secondary or long-term memory. Primary memory, which has been extremely limited to process information, is considered the staging area of the cognitive system, where processes such as judgment, inference, and problem solving-take place. Information resides in primary memory only so long as it is rehearsed. On the basis of an analysis of the meaning of the stimulus input, some response is generated: and finally, a trace of the event is permanently encoded in secondary memory (Kihlstorm, 1987, p. 1445).

To sum up, as Miller (1956) points out, processing is the work of gathering and representing information which sometimes it is called encoding. Holding relevant information is called retention and using stored information is called retrieval. There are several models of information processing. Schema Theory is one of them and most appropriate for the purpose of this study.

2.2.6.3 Schema Theory

Graber (1988) defines that, "a schema is a cognitive structure consisting of organized knowledge about situations and individuals that has been abstracted from prior experiences. It is used for processing new information and retrieving stored information" (p. 28). This definition of Graber targets particularly for news processing. That is to say, she tries to describe how individuals process a news story. Moreover, she points out that individuals attempt to match the information obtained from the newspapers or broadcast news to the previously existing schema by using different matching methods. If the existing and the new information are matched then the new information is stored as a modified schema (pp. 28 - 29).

Graber (1984) tries to explain the approach of processing the news by the audiences with the model given in Figure 2. In this flowchart, Graber (1984) offers the following paths to make the model more understandable.

Path I, which includes the nodes 1, 2, 3, 9, and 11, is a well-known and successful way of news learning. This path points out that an information unit is immediately perceived to suit to the existing frame. It needs little processing effort and results in increase in the learning.

Path II, which includes nodes 1, 2, 3, 4, 8, 9 and 11, is a successful strategy that needs more effort and depends little on motivation. New information does not fit the existing frame and an alternative frame is searched. The following figure appeared (Graber D. , 1984).

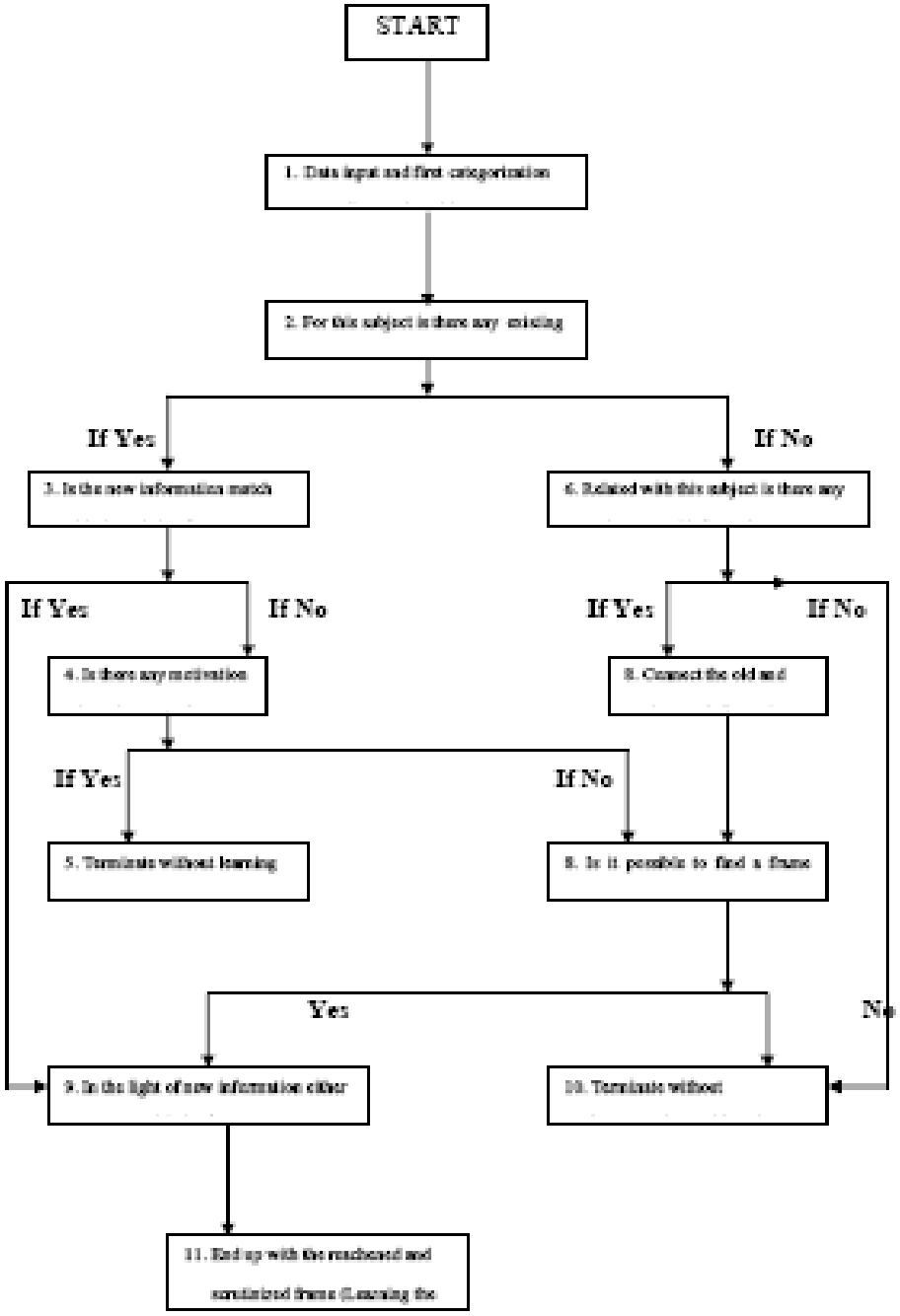

Figure 2: The News Processing Model of a Schema Theory (Graber D. , 1984)

2.2.7 Research on Cognitive Impact of Media

Gunter (2000) maintains that besides the behavioral-level reactions of audiences, media effects can also be at cognitive level. He said that at the cognitive level media effects include research on how people learn factual information from the media. At the same time, it is interested in how public or society opinion is shaped through such learning (pp. 190 - 191).

Cognitive impact measurements include agenda setting, cultivation and factual learning theories. Since the first two have been defined earlier for the sake of this research, factual learning from media will be investigated in the next section.

2.2.7.1 Factual Learning from Media

As McQuail (1990) mentions the question of how much people understand and remember from the news begun to receive much more attention from 1980 onwards (p. 274).

The fundamental aspect of the factual learning is remembering. Recall is one of the favorite measures of audience research. According to the results of the studies realized in this area, besides the appropriateness of the sent information for its receiver, at the same time, it is positively correlated with the present information and therefore the social status of the receiver. Moreover, the studies related to the recall provide opportunities to investigate the instrument used to send the message or to investigate the properties and the effectiveness of this instrument (Jensen, 2002, p. 145). According to McGuire (1973, cited in Jensen (p. 145), the model has six stages as perception, attention, comprehension, yielding, retention, and overt behavior. Jensen (2002) points out that these are the stages of stimulus and response model.

The studies related to the factual learning from media are generally connected with the sociology and psychology. Most of the studies realized in this area are either field survey or experimental study. As stimulus material, news is intensively used in order to measure comprehension and remembering. The early research realized about learning from the media was the survey studies towards testing the knowledge of the masses. In these studies, researchers try to test the knowledge level of the individuals by using a particular subject or news with the above mentioned method. In such studies which are also named as 'Self report', participants are generally asked questions related with the politics and also they are asked the mostly used media instrument or instruments (in other words, which media instrument in having the information is most frequently used is asked to the participants). The data obtained from these research generally analyzed by the statistical correlation method. In these research it is investigated whether it is possible to observe that the measurements realized in two different methods as short and long term measurements (Gunter, 2000, pp. 215-217).

For example Atkins and Gantz (1978) apply the two sets of questionnaire with one year interval that they prepare in order to test the political information of the children and to learn from which media instrument(s) that they obtain this news. After the analysis of the data obtained from the research, it is observed that the political information of those children that watch television were high compared with the other media instruments.

Another research method that is used to measure the level of learning is related with particular media content. This research method aims towards measuring what the

participants remember just after they are exposed to certain media content. In these research, two different methods are used. The first type which is also defined as field research is realized by asking questions to the participants either by face to face (at the places of participants) or by telephone interview. In this method, participants are asked questions about the news that is presented by the mass media instruments within the last 24 hours. The second method is known as the theatre test. By this method participants are invited at certain center and they can be exposed two different media content. These are either the materials presented by the live transmission or the materials that are prepared in advance (Gunter, 2000, pp. 218-219).

As Gunter (2000) points out, the studies that are mentioned up to this point and the approaches used do not put any cause and result relation about why a certain content is remembered and the other not. He asked “in particular, what evidence exists that the take-up of information from factual media is affected by the way that information is presented?” Gunter states that in order to answer this question, there is a necessity to control the way in which different mass media instruments presented information. Hence, it is necessary to isolate presentation features whose effects upon learning and remembering can be measured (p. 220).

By this means and in this direction numerous research have been realized until today. In these studies where generally controlled laboratory methods are used, it is observed that certain fundamental points come to the front. These are defined as packaging effects, narrative construction, visual format, and modality effect. In the following section, primarily the definition of these aspects will be given and then

some important research related with remembering and learning will be given in chronological order.

2.2.7.2 Packaging Effects

Before explaining the packaging effects of the news, there is a necessity to talk about the nature of the news. Galtung and Ruge (1965) theoretically explain the nature of the news with 12 factors. These are:

1) Frequency means that the event occurs within an appropriate time period. Generally speaking, very slowly occurring events tend to be ignored; the media tend to be quick and dramatic.
2) Threshold means either that the event is large enough in magnitude to receive attention or that its size increases sufficiently to call attention to it.
3) Unambiguity refers to events that are clearly meaningful or interpretable.
4) Cultural proximity or relevance concerns events that occur in a similar culture to that of an audience or that are otherwise relevant to it.
5) Consonance means that the event was expected or desired.
6) Unexpectedness means that the event was unexpected or scarce.
7) Continuity occurs to the extent that the event has been defined previously as news.
8) Composition refers to whether the overall news environment is favorable for an event.
9) To the extent that an event concerns elite nations, it tends to be selected as news.
10) To the extent that an event concerns elite people, it tents to become news.
11) If the event can be personified, it tends to become news.
12) Negativity. Bad news is good news.

Packaging effect includes the studies related with the remembering of the presenting order of the news by its audiences that are presented in bunch. At the same time these studies includes the measurement of the effects of grouping together stories about similar topics within a set of presented news.

According to Thorndyke (1977), if elements in a news story, such as theme, setting, plot and resolution are ordered, then, it can be easily remembered. Gunter supports this idea and add that isolated factual propositions in a news story can be processed and remembered better than integrated whole. Moreover, he points out that the

grammatical structure of the news story represents an aspect of that story which is learned in addition to its factual elements (p. 221).

Tokgöz (2003) holds that, in the construction of the news no element which gained absurdity to the news is included. The arrangement of the news is bind to some fundamental rules. According to the Inverted Pyramid rule, writing news can be constructed in three different types. The first among these types is the "Chronological Order". The Chronological Order rule states that after writing the introduction part of the news the rest of the news can be arranged in order by taking the time component into consideration. For example, related with this subject, Lang (1989), in an experimental study realized on 111 university students, prepared television news in two different formats and presented them to the participants. While one of these presentations includes chronologically arranged television news the other one contains television news prepared in normal television news format (broadcasting format). In the experimental study, at the end of each presentation participants were asked what they remember from the news and the level of remembering measured. According to the results of the experiment, more accurate memory for news stories written in chronological order was obtained when compared with those written in broadcast format.

The second type is the "Block Paragraphing Arrangement". This rule states that it is possible to change a place of a paragraph within news if and only if the importance of the news does not change. In other words, for those cases that thought to increase the remembering, this rule can be applied.

The last type in the Inverted Pyramid approach is the “Chain Rule”. The Chain Rule is a method that explains the arrangement of the paragraphs that comes after the first paragraph in connection with each other in meaningful order (Tokgöz, 2003).

Tokgöz (2003) states that it is not possible to apply the inverted pyramid method in every case, for example, if all the information related with the news has equal importance instead of applying inverted pyramid method it is more appropriate to use “Square Method”. According to this method, the introduction part is the main component of the news. The body of the news consisted of explanatory and equal importance paragraphs. Another rule that is defined in the construction of the news is the “Normal Pyramid Method”. The normal pyramid method is just the opposite of the inverted pyramid method. In other words, while the inverted pyramid rule gives the result at the beginning in the normal pyramid rule the result of the news is given at the end of the news. The last rule that Tokgöz (2003) defines composed from the combination of the inverted pyramid rule and the square rule. In this rule, not only the news but given the cases that constitute the details of the news are also given (pp. 259-289).

2.2.7.3 Visual Format

Visual format is a method that is particularly used for the construction of the television news. The effect research in this direction are towards measuring whether the photographs, graphics or moving images used in the television news besides the spoken text increase remembering or not. Furthermore, if they cause any increment in remembering, what are the contributions of each of these factors? On one side, while the relationship related to remembering between the spoken text and visual format is searched, on the other hand, some other studies explored the degree to

which visual material is coordinated with the spoken text. Research conducted in this direction will be explained in detail in the next section (Gunter, 2000, pp. 222-223).

2.2.7.4 Modality Effects

It includes the effect research towards measuring the presentational features of the mass media instruments. This research includes the studies to find out in which format the news is presented by the text, audio, and audio-video (newspaper, radio and television) communication instruments therefore remembered more by its audience both in natural and experimental environments. In these studies, besides news, materials related with the education are also used. Particularly, with the intensive use of the Internet in the daily life, these discussions continue logarithmically (Gunter, 2000, pp. 224-225).

2.3 Chronological Order of Related Research

The research related to comprehension and remembering from traditional media instruments, as it has been mentioned before yields contradictory outcomes. Taking only the outcomes of these studies into consideration can be misleading. These studies vary in terms of their research format such as the age and education level of participants, the stimulus material used, the research method employed and the differences in measurements. For example, some of the studies that were realized using the university students as participants reveal that print was superior to television in terms of comprehension and remembering (Robinson and Levy, 1986; Gunter, 1987; Robinson and Davis, 1990).

On the other hand, some of the researchers claim that the important thing is not the medium but the message (Norris & Sanders, 2003). This idea was first put forwarded by Marshall McLuhan (1964).

The next section will summarize research chronologically by decade.

2.3.1 1950's

William, Paul and Ogilive (1957) in their two phased study named "The Mass Media Learning and Retention", by dividing more than 100 undergraduate students into four groups, exposed to the presentational materials prepared from lecture notes by using television, radio, text and live classroom presentation. Each group was exposed to a different stimulus instrument. In the first stage of the study, in order to measure learning and retention, a test was applied to the participants about the presentational material just after the exposure. In the second phase of the study the same test was applied to the participants after eight months from the completion of the experiments. The analysis of the data that was obtained from two different experiments shows that learning and retention was highest in the group where television was used as a presentational instrument. This was followed by radio, text and live presentation in a classroom environment respectively (Williams, Paul, & Ogilvie, 1957).

2.3.2 1970's

Wilson (1974), in his study called "The Effect of Medium on Loss of Information", in order to test the level of loss of information in television, radio and print, initially created two news stories in the form of inverted pyramid. Afterwards, Wilson prepares the short, medium-length and long versions of each news story. A panel of judges categorizes the information contained in each news story as "essential" and "contributory". Additionally, Wilson prepares the audio-visual, merely audio and merely text versions of each news story. Each of the stimulus materials are then presented to a group of 23 undergraduate students. Immediately after the presentation processes participants are given a free recall test and asked to write what they remember from the news stories that they are exposed to. The answers are then coded

according to the “essential” and “contributory” categorization. The analysis of the data indicated the superiority of print over television and radio in terms of comprehension and remembering. In other words, information loss is least in merely text presentation then, audio-video and most in merely audio presentation. The findings of the study also indicate that information loss is less from short stories than from medium-length or long stories (Wilson, 1974).

2.3.3 1980’s

Furnham and Gunter (1985), in the study called “Sex, Presentation Mode and Memory for Violent and Non-Violent News”, which is one of their series of studies about the remembering of news, tests recall of news stories that are presented by the radio, newspaper, and television presentational instrument on 68 undergraduate students. The news stories that are used in the experiment selected from the original television news stories and their text and audio versions used in the radio and print presentations. The analysis of the data obtained from the experiment shows that recall of news stories from print is best of all followed by audio and television.

Robinson and Levy (1986), in their study called “Interpersonal Communication and News Comprehension”, investigate the effects of mass media and interpersonal channels on understanding the main news stories and to inform the public about these news stories. In the research that is realized by two different participant groups, the awareness of the participants from the news presented in a period of week is measured and the results are related with the variables such as demographics, news channel use and interpersonal channels. In the study, primarily by using random dialing telephone survey, 407 participants and later by the same method 544 participants are questioned. The content of the questions include the national and

international news presented by the media channels in a previously determined period of week. According to the results of the study, the consequences of both experiments are similar to each other and the level of comprehension of those participants indicated that they discuss the presented news with the others is high. This result put forward the importance of the interpersonal communication in understanding the presented news stories. On the other hand, researchers mentioned that the results obtained from the study form a bridge between the dominant (American) approach and critical (European) perspectives. They mention that "our findings strongly suggest that interpersonal communication plays a crucial role in the reception, retransmission, and interpretation of mass media messages. This conclusion argues in support of the dominant theory and its continuing emphasis on the importance of social networks for the mass media process". Another important consequence that Robinson and Levy (1986) reach in this study; is when multiple modalities provide information which is not consistent with the primary modality learning and impact declined and finally the length of the story and the repetition of information affect the strength of visual and verbal messages.

2.3.4 1990's

Price and Zeller (1993), different from the studies realized in the experimental or natural environments measures the effects of comprehension or remembering related with news stories by a survey method in the study called "Who Gets The News: Alternative measures of news reception and their implications for research". Researchers' claim that the measures about the remembering of news stories realized in either the experimental or natural environments do not yield correct solution. In the study where 16 news stories that take place in the media are used. The participants are 855 adults. In the study where the telephone survey method is used,

the researchers as indicators of news reception, measures the participants news media use, interpersonal communication, socio demographic measures (particularly education), and prior levels of general political knowledge. The data obtained is analyzed with the bivariate and multivariate statistical analysis methods. Results of the study show that “respondents’ background level of political knowledge is the strongest and most consistent predictor of current news story recall”. Furthermore, it is mentioned that “the tendency of individuals to acquire news and information on a domain – or topic – specific basis fails to undermine the value of political knowledge as a general measure of propensity for news recall” (p. 133). On the other hand, the researchers mention that “someone who is generally well informed about politics will tend to be well informed about whatever the news media also cover” (p. 157) by pointing out the knowledge gap hypothesis.

Crigler, Just, and Neuman, (1994) design an experimental study named as “Interpreting Visual versus Audio Messages in Television News” to examine power of visual, audio and audio-visual messages on people’s learning. The study examines television messages with or without picture. In the study where 90 undergraduate students attended, participants are assigned to each presentational stimulus by the random assignment method. Presentational stimuli are composed of eight news stories selected two from each of four different television channels. Among these, four news stories without any alteration, the recorded audio content of the four television news stories and the visual content of the selected news material without audio are used. “Subjects were asked to view or listens two stimulus stories for each of four issues in three conditions” (p. 135). Crigler, Just, and Neuman, (1994) mention that, “It is not visuals alone, but the combination of audio and visual

channels that packs the unique emotional punch of television" (p. 136). They further state that "The results suggest that the power of television as a medium that grasps attention and is emotionally involving derives not simply from the visuals but from the combination of audio and visual stimuli (p. 138). They also maintain that "The information conveyed in the audio track of the story dominates the audience's understanding of an audiovisual presentation" (p. 136). Finally, they point out that "Results indicated that audio alone is just as effective as a combined audio and visual presentation for conveying information".

Lang, Newhagen. Reeves (1996) by using Lang's (1995) Limited Capacity Information Theory try to find the effects of negative video (usually defined as violent and horrible images) attention, capacity, encoding and retrieval processes and arousal and valence in the television news stories in the study called "Negative Video as Structure: Emotion, Attention, Capacity and Memory". The researchers in this study do not take into consideration whether negative video have any effect on information processing or not but they try to put forward how negative video affects the information processing. According to the Limited Capacity Information Processing approach of Lang (1995);

"1- Viewers are information processors who perceive, allocate capacity to, decode, process, encode and store television messages; and,

2- Viewers have a limited capacity of processing".

Also according to the Limited Capacity Approach, memory is the outcome of how a message is processed. In this study, the researchers prepare two sets of presentational materials where each of them is composed of eight news stories. Out of eight news stories four of them were include negative video whereas the other four do not.

According to the results of the study where 135 individuals are participated “the presence of negative video in news stories increases attention, increases the amount of capacity required to process the message, increases the ability to retrieve the story, facilitates recognition of information presented during the negative video and inhibits recognition for information presented before negative video”. Results also show that the use of negative video in news increases its emotional impact and making it more arousing.

Sundar, Narayan, Obregon, & Uppal, (1998) measure the levels of comprehension and remembering in the print and web environments by using a news article and an advertisement related with this news as a presentational materials in the study called “Does Web Design Work? Memory for Print vs. Online Media”. According to the results of this research which was conducted as an experimental study, while there is no significant difference between the instruments in terms of remembering news stories, in the advertisement print was more effective when compared to online in terms of remembering.

Gibson and Zillmann (1998) in order to test the effects of photograph used in news presentation on comprehension and remembering conducted a study called “Effects of Photography in News Reports on Issue Perception” with 167 university students. In the study, the researchers used four different presentational materials. In the first version, the presentational material is merely text and no photograph is used; in the second version, a photograph which supports the case is used, in the third version a photograph which supports the opposite side of the case and in the fourth version photographs that represents and supports both sides of the case is used. In the first

phase of the two-phase study participants are given the text without picture (1st version) and comprehension and remembering levels is measured just after the exposure. In the second phase, which is realized after ten days from the first experiment the same news is supported with photographs. The 1st, 2nd, and 3rd versions are given to the participants and measurements are repeated. Gibson and Zillmann (1998) mention that "photographic images can exert influence on readers' perception of issues, and more specifically, imbalanced illustration can be effective over time in swaying readers' opinion to one side of an issue. Moreover, these effects apparently occur without any realization by the reader that only one side of the issue is represented through pictures". They concluded by saying that "The findings urge the balanced use of photographs for multi-faceted issue reports.

Defleur and Defleur (1998), in their study called "Developing an Integrated Theory of News Stories" by considering the previous research mentioned that the common point among the studies that are realized on the aspect of comprehension and remembering and thus learning; people remember relatively little after exposure to news story. They state that "a comprehensive theory is needed that addresses the basis of such recall by integrating as much as possible of what is known on all phases of the experience of a member of an audience who pays attention to a news story and then commits it to memory for later recall". Moreover, Defleur and Defleur point out that this integration can be done at four phases. These are pre-perception, perceptual, encoding and relation and recall phases. Finally after a detailed survey of the convenient literature about these phases, they end up with a theory: a theory of spot news recall, which is formulated as follow:

“Stage One: Anticipatory Sets Prior to Perception

1. A reader, listener or viewer brings to any story, including a news report, a number of personal anticipatory sets learned from prior experience, including a number of culturally-defined scripts or narration schemata that provide the expected structure of such an account.

2. Those personal sets and culturally-defined expectations influence both the level of attention given to a story and its anticipated structure, which includes identification of a setting in which one or more actors experience a set of events that bring about a set of consequences.

Stage Two: The Process of Perceptual Organization

3. Perception is a process of organizing a unique Gestalt of meanings for a situation, such as a news story, that has the attention of the individual -- a comprehensible pattern of interpretations consistent with personal sets and cultural expectations.

4. The process of perceptual organization of a news story is highly selective, focusing on those details to include in the Gestalt that seem logically needed for consistency, personally salient, or otherwise central, colorful or dramatic; others that appear unimportant will be winnowed out.

Stage Three: Patterns of Storage and Recall

5. The resulting Gestalt of the story will be prepared for storage in memory as a personally organized schema of linked images, concepts, relationships and other

elements of meaning that the person has constructed during the process of perceptual organization.

6. The stored schema will be encoded into working memory to include a number of linked details perceived to be central to the story's setting, principal actors, major events and consequences, others that appear to be dramatic or colorful.

7. Therefore: When called upon to recall the story, it will be restated in what the person believes is a logical configuration of central and salient, (possibly plus some dramatic) details providing a leveled, sharpened and assimilated version of its content.

If its first six postulated assumptions are taken "as if" true, and if its logic (calculus) is consistent, then recall patterns of news stories should show the characteristics predicted in the derived seventh ("therefore") proposition. To determine if that prediction has merit, relevant empirical data must be examined" (DeFleur & DeFleur, 1998).

After stating the above mentioned points, as the second objective, the authors design an empirical study to check the relevance of the theory. In the study where 480 undergraduate students participated, three presentational materials are presented with four different presentational instruments. After participants are asked what they remember from the presented materials and the analysis of the data obtained, the result shows that the highest remembering level is at the print than computer, television and radio respectively. About the theory that they develop, the researchers state that "the theory seemed to predict with some accuracy the ways in which these

intelligent and motivated subjects attended to, learned and recalled the spot news stories under study".

According to Tewskburry (1999), in information processing for learning for the individuals when they are exposed to news stories consumption goals (or gratification sought) are very important. Desire for consuming different messages effects the level of learning and perception of the individuals in the news stories. Tewskburry (1999) mentions that "rather than treating depth of processing and information use as constants, it may be more useful to think of them as variables with relatively predictable antecedents". For this reason Tewskburry (1999) conducts an experimental study called "Differences in How We Watch the News" which manipulates audience goals. In the study where television is used as a presentational instrument processing goals and political expertise are selected as independent variables. In the study where 202 undergraduate students participate, two-minute artificial television news story related with a congress candidate in the USA used as a presentational material. In this study, as Tewskburry mentions, "Participants were randomly assigned to watch a television news profile of a political candidate with the goal of either forming an evaluation or merely passing a few minutes. They then completed measures of their evaluations of the candidate, their recall of information, and their political knowledge. The result provides evidence that processing goals and political expertise can be powerful determinants of how carefully people process political information. Experts and participants with evaluation goals were more likely than were their counterparts to process the story and forms evaluations systematically" (Tewskburry, 1999)

According to Sundar (1999), the communication researchers consider the content of news different from other types of content presented by the media. Therefore this type of content must be known of how they are perceived by their receivers.

Related with the understanding, remembering, and learning of the news that are presented by different presentational tools have different effects on different users. For example, it is obvious that, a person who is interested in the political news definitely remember, percept or learn the political information more than the information presented related to a murdering.

For this reason Sundar (1999) conducts two-phase study called "Exploring Receivers' Criteria for Perception of Print and Online News". In the study, it is aimed to learn the perceptional format of the news by its receiver, news is presented to the participants in two different presentational formats as print and online. After the presentation process, participants are asked to answer a questionnaire consisted of 21 questions prepared in 10-point Likert scale. In the first phase of the study, 118 undergraduates are given one of the 16 news stories that are prepared in the print format and asked to answer the questionnaire. In the second phase, in order to increase the external validity of the data obtained in the first phase of the study, six news stories that are prepared in the web environment are presented to 48 graduate and undergraduate students and they are asked to answer the questions with the same instrument as in the first phase. According to the results of this study, credibility where Sundar defines it as which shows the objectivity of the news story, liking which shows the feeling towards or-evoked by the overall content of the news story, quality which shows the degree or level of overall excellence of a news story and

representativeness which is a summary judgment of the extent to which the story is representative of the category of news, are the four criteria used by the receivers in perception of printed and online news story.

Darley (1999), particularly by attributing to the cognitive personality research of Childers, Houston, & Heckler (1985), mentions that individuals have different style of information processing and searched this difference in the relation between the media instruments that sent the information and the audience who are exposed to this information in the study called “The Moderating Influence of Style of Information Processing on Media Perception and Information Exposure”. In a parallel line, Darley (1999), by attributing to the definition of Holbrook (1986), which states that “visualizers and verbalizers differ in evaluative models by which they judge aesthetic objects”, claims that different receivers react differently to different media stimuli. According to Darley (1999) “The perceptions people have affect their intentions and, thus, their subsequent actions”. Darley in order to search the truthfulness of this claim applied a questionnaire to a 252 adult participants in a large shopping hall. In order to measure the “style of processing” Daley used 22-item scale measurement which is developed by Childers, Houston, & Heckler (1985). On the other hand, in order to measure the “media perception” participants are asked the format of use of the media instruments with a 7-point scale measurement. Besides in order to measure the information exposure, three questions are added to the questionnaire. For example question like “how many hours you watch television during the week-end?”. According to the results obtained from the evaluation of the survey questionnaire “First the result indicated that visually oriented individuals are significantly more favorably predisposed to the television medium and reported

greater exposure to television. Second, verbally oriented individuals responded significantly greater use of print media. Third, the exploratory interaction hypothesis between information processing style and gender is not supported.

2.3.5 2000's

In their studies called "Children's Memory for News: A comparison of three presentation media", Gunter, Furnham, & Griffiths search the effects of news on learning in the television, audio-only and text presentation formats on 166 children between the ages 10-11. In this study, five news stories are used for each of the presentational instrument. The news that is used in the print format is the text copy of the television news and similarly the news that used for the audio-only version are the audio copy of the television news. In order to test the remembering total of 39 questions are used from all the news stories. Twenty of these questions are prepared from only the text part whereas the other 19 questions are from both visual and audio parts. Apart from these, the participants divided into two parts as less proficient readers and more proficient readers. According to the result of this study children remember television news stories more than compared to print and audio-only news. But in the recall of news there is no significant advantage of television for verbal only information compared the information that is conveyed both verbal and visual information. In other words when semantically redundant pictures are used the findings of the study indicate the superiority of television. Apart from these, according to the results of the study, there is no significant difference between print and audio and between more and less proficient readers (in terms of television news). The result that verbal and visual information conveyed by the television remembered better than the information conveyed by print or in audio-only format, supports the Dual Coding hypothesis of Paivio (1971) and (1986). Finally in the comparison that

is made independent from the medium, it is observed that the proficient readers learn news stories more than the less proficient readers.

Walma Van Der Moolen & Van Der Voort (2000) search the effects of news stories in terms of remembering that are presented in television, audio, and print format on children in the study named as “The Impact of Television, Print and Audio on Children’s Recall of the News”. In the study which is conducted in the experimental environment and 192 children between the ages 10-12 are participated, five different news stories are used as a presentational material. Presentational materials are presented to the participants in four different formats as audio-visual, merely text, text supported with pictures and audio only. A test composed of 56 open ended questions is applied to the participants in order to measure the comprehension and remembering after each experiment. On the other hand, in order to measure the reading proficiency of the participants, a multiple choice test which is composed of 25 questions is applied to the participants. Both tests are applied to the participants just after the presentation of the presentational materials. In this study where the Paivio’s (1971, 1986) Dual Coding Hypothesis is tested television is found to be the most effective presentational instrument for children in terms of comprehension and remembering. But contrary to this hypothesis, no significant difference is observed between the merely text and text supported with pictures. According to these researchers, although the participants of the experiments are children it may be misleading to discuss the superiority of television over print because of the audio-visual presentational property of the television. The researchers indicated that the outcome of the experiments which stated no significant difference between the audio and print is the aspect that supports this claim. Another important result of the study

is that the television news stories remembered better both by the less and more proficient readers.

According to Ferguson and Perse (2000), the studies that are conducted are related with the uses and gratification theory which is named as “The World Wide Web as a Functional Alternative to Television” indicate that while different reasons or drives can be related to media use at different levels, it is also related to the interest and sympathy or with the perception of the importance of the media instrument at the changing levels. In this study, for the same purpose, Ferguson and Perse (2000) investigate whether WWW could be an alternative to television or not. The participants of this study are 250 undergraduate students from two different universities who have the Internet access opportunities. In the first stage of the two phases study participants are asked to answer an online questionnaire on the WWW environment. For the second phase of the study, participants are asked to write down the media instrument(s) (television, radio, newspaper, www) used within the following there days after completion the questionnaire, day by day. Among the 250 participants selected for this study, 236 of them attended to the first phase and 201 of them are attended to the second phase. The most significant and basic aims of the study is to find out the similarities between television and web use and to put out the different web usage related with the television. The result of the study shows that WWW can be an alternative to the television and the most significant aspect in the WWW use, as in the television, is the entertainment. Ferguson and Perse (2000) point out that this result is compatible with the play theory of Stephenson (1988) which states that “all communication entered into voluntarily is motivated by entertainment and continues only as long as it is pleasurable”. On the other hand, the

result of the study shows that WWW usage is functionally different than watching the television.

Grabe (2000) mentioned that the presentational format of the news stories presented by the television containing differences in perception, in attracting attention, remembering and evaluation. In the study, “Packaging Television News: The Effects of Tabloid on Information Processing” realized by Grabe (2000) in order to prove this argument 8 television news stories are prepared in two different formats. The content of the news that were prepared in standard news format and tabloid news format (in flamboyant and arousal format) left exactly the same. The news that is prepared in tabloid news format, different from the standard news format, music, sound effects, slow motion, the use of flash frames as transactions between shots and the obtrusiveness of reporter voice tone are added. Grabe (2000), in a study, related to the presented news formats aims to find out the evaluative measures, recognition measures, delayed recall, attention and arousal. In this study where 20 university students and 20 workers are participated in two different groups in order to obtain the data heart rate and skin conductance instruments are used and at the end of the experiments a recognition test is applied to the participants in order to measure the remembering level. After 48 hours from the completion of the experiment a second recall of news test is applied to the participants via telephone. In the experimental study where participants are divided into two groups four tabloid and 4 standard news stories are prepared and presented to each group. According to the result of the study realized by Graber (2000) when “compared standard version of news stories, tabloid production features do not seem to help or hinder the successful transfer of compelling in formation. However, tabloid packaging of television news does not

promote unfavorable views of information and credible qualities of news stories". Graber (2000) also mentioned that "the flamboyant tabloid packaging style increased arousal and attention but do not have a significant impact on recognition memory or delayed free recall of information. Moreover, viewers found standard versions to be more believable and informative than the tabloid versions of news stories".

Eveland & Dunwoody (2000) investigate how the information presented on WWW environment is processed by the individuals in terms of comprehension and remembering. Eveland & Dunwoody (2000) start the study called "Examining Information Processing on the World Wide Web" by evaluating the results obtained from the previous studies in this field. According to the investigation of the authors some researchers state that "www can facilitate useful information processing activities that lead to learning". On the other hand, they also find out that "some factors such as disorientation can hinder effective information processing of web content". Eveland & Dunwoody (2000), in this study, not only evaluate the web content but also evaluate the web structure as well. Moreover, the researchers in this study, different from the classical studies such as experimental and self report-report studies used "think aloud methodology". The researchers investigate the information processing in four basic categories according to them. These are; 1- Maintenance, which is defined as "the repetition of information in short term memory": 2- Orientation; which is defined as "particular concern for those interested in the use of hypermedia systems": 3- Elaboration; which is defined by Hamilton (1997) as "the process through which connections are made between new and existing bits of information". Eveland & Dunwoody (2000), on the other hand define it as; "elaboration serves to connect new information into existing schema as well as to

create interconnectedness within schema": 4- Evaluation, which is defined as "assessing the value or worth of a given object or piece of information". The participants of this study that are inhabited in a certain region, selected according to pre-interview method with telephone call. As a result of a short interview and a questionnaire in order to have preliminary information, total of 16 participants where 4 males from high-web use, 4 females from high web use, 4 males from low web use and 4 females from low web use are invited for the think aloud experiment. The experiment is conducted separately for each participant. The participants are allowed to freely surf on the net after entering to a certain web page and later the web uses and the one to one interviews are recorded. Eveland & Dunwoody (2000) state the results of the study as; "a majority of processing while using the web is focused on maintaining orientation to the structure and content of the site, thus reducing other forms of information processing that have been demonstrated to produce meaningful learning". They also mention that "users spend a substantial proportion of the cognitive effort orienting to the content and structure of web, and this effort comes to expense of elaborative and evaluative processing".

Althaus & Tewksbury (2000) investigate the difference among the Web, television and newspapers in terms of news exposure, particularly on computer anxiety, desire for control and political knowledge. Althaus & Tewksbury (2000) point out that "uses and gratifications theory suggests that a desire to actively control one's information consumption should be a determinant of media choice. Specifically, people who seek to manage their external environment should be more likely to use media that afford greater levels of control in terms of gratifications; the desirability of control should be positively associated with a general surveillance orientation

toward the media". The authors define computer anxiety as; "one's level of apprehension at the prospect of using a computer. This anxiety reflects both negative affect and low levels of confidence regarding computer use". About the political knowledge Althaus & Tewksbury (2000) first attributed to Neuman, Just, & Crigler (1992), Price & Zeller (1993) and Zaller (1992) by saying that "persons with higher level of political knowledge typically follow news of public affairs much more closely than those with lower level of political knowledge". They also by attributing Neuman, Just, & Crigler (1992) mention that; "people with high level of political knowledge seem to be drawn toward relatively more information-rich news sources like newspapers and away from relatively information-poor sources like television". As a result of these comments they said that "higher level of political knowledge may be associated with a need for information best satisfied by news outlet". The data of the research called "Patterns of Internet and Traditional News Media Use in a Network Community" is obtained from a survey study applied to 520 undergraduate students. The participants that are applied self administered questionnaire questions related beliefs about the characteristics of various media, general attitudes toward computer technology, frequency and patterns of using the World Wide Web, and estimates of time spent using various media are asked. The analysis of the data obtained from the survey research indicates that "use of the web as a news source is positively related with reading newspapers but has no relationship with viewing television news". Web is mostly used as a tool of entertainment. Also, "even when computer skills and Internet access become more widespread in the general population, use of the www as a news source seems unlikely to diminish substantially use of traditional news media" Althaus & Tewksbury (2000).

Walma Van Der Moolen & Van Der Voort (2000) in their studies named as "Children's and Adults Recall of Television and Print News in Children's and Adult News Format", by evaluating the results of the past research on the subject of recall of news put forward that adults perceive and remember more of what is presented by print than compared with television whereas children perceive and remember more of what is presented by television than compared with print (p. 133). The researchers define this outcome as the age and reading proficiency difference (p. 134). Moreover, the researchers mention that in the news stories presented by the television the relation between the visuals and the subject of the news stories have an effect on comprehension and remembering and therefore the audio-visual redundancy increase the comprehension and remembering. In other words, when the verbal and visual information do not correspond the result is the decrease in understanding and remembering (p. 135). Walma Van Der Moolen & Van Der Voort (2000) in this study, in order to test the differences between the age groups and the semantic overlap hypothesis used 166 participants where the number of adults and children are equal and two different types of stimulus materials as children and adult news stories were used (p. 137). Apart from this in the presentational material used for the children news stories, the audio-visual redundancy was high. The result of the study shows that children perceive and remember the information presented by the television better compared to the information presented in the print format whereas the adults perceive and remember the news stories presented by print compared to television. Moreover, the result of the study also indicated that in the news stories where audio-visual redundancy is high both the children and adults perceive and remember the news stories presented by the television. According to these results Walma Van Der Moolen & Van Der Voort (2000) concluded that "the

correspondence between verbal and visual content of television stories is decisive for the relative effectiveness of television and print" (pp. 246-254).

In her study called "Assessing text-picture correspondence in television news. The development of a new coding schema" Walma Van Der Moolen, (2001), tries to develop a valid and reliable method to asses the level of text picture correspondence in television news items. For this reason Walma Van Der Moolen tests the materials that are composed of 20 children news stories and 20 adult news stories and all are randomly selected. Walma Van Der Moolen in this study takes the Paivo's (1986) dual coding hypothesis and Mayer and Moreno's (1998) dual processing experiment, that investigate the influence of different levels of audiovisual correspondence in multimedia learning as the main basis of her study. The findings of the study indicated that the text picture relation used in the children news stories are more appropriate than compared with the adult news stories but the visual materials presented in the same news stories vary in time duration. On the other hand, while more time is allocated to the talking heads in adult news stories, it is the opposite of children's news stories. In other words, more time is allocated for the direct text picture correspondence in children news stories. Finally the results of this study is put forward that either in adult or in children news stories more importance is given to the factual information. In general, the procedure of this study put forward a systematic method to find out the text-picture correspondence in order to increase the learning.

Eveland (2001) in the study, "The Cognitive Mediation Model of Learning from the News", test the cognitive mediation model in the frame of definition that he puts

forward in his earlier studies Eveland (1998), Eveland (2000) where the model is defined as; “cognitive mediation model in its simplest form contains six key linkages: gratification to news attention, gratification to elaboration, attention to elaboration, gratifications to knowledge, attention to knowledge and elaboration to knowledge”. In the study that is conducted in the above given context in order to test the cognitive mediation model, three sets of data that is obtained from three different research are used. While the first two data sets are obtained from the previous two different survey studies realized in 1985 and 1986 (n=512, n=567), in the third and the main study that realized in 1999, data is obtained from 299 participants. “A surveillance gratification seeking was measured using seven statements in 1985, six in 1986 and three in 1996 study... News media attention was measured using two items in each of the two 1980s studies and four items in 1986 study ... Elaborative processing was measured using two items in 1985 and three items 1986 and 1996”. The result of the research shows that “surveillance motivation is related to news attention, surveillance gratification seeking predicts elaborative processing of the news content, and attention is predicting news elaboration”. It is also mentioned that “there is a significant and positive relationship between news elaboration and knowledge, and surveillance gratification seeking is positively related to knowledge content”. On the other hand, “the relationship between surveillance gratifications seeking and knowledge would be mediated through the information processing variables of attention and elaboration supported at the varying levels in each data set”. Similarly “news attention would be significantly related to knowledge is supported in two of three data sets” Eveland (2001). The overall results show that there is a “considerable support for the cognitive mediation model”.

Eveland and Dunwoody (2001) use four different versions of a particular magazine article as stimulus materials in order to test the recognition and the cued recall on the web and print environment in the research named as “User Control and Structural Isomorphism or Disorientation and Cognitive Load? Learning from Web versus Print”. In the study, the researchers, in order to test the learning, compare the presentation in the print environment with three different presentations in the web environment. The presentations in the web environment are;

1) Linear presentation: a presentation format similar to the presentation on the print environment.
2) Nonlinear presentation: completely different than print or linear format, a presentational format that necessitate from the user to surf within the site in order to reach the news.
3) Advisement version: a combined version of the linear and nonlinear presentations, in other words it was a presentational format that provides reading of the materials presented for both methods.

According to the results of this experimental study there is a significant difference in terms of the learning effects between the presentational environments (web and print). The results show that print is more effective in terms of learning than the presentations in the web environment (valid for all three presentation versions for the web). No significant difference is found in the cued recall. Thus, as the researchers indicated “learning from print as measured by recognition is better than learning from linear and nonlinear designs” (Eveland & Dunwoody, 2001).

Tremayne & Dunwoody (2001) in a study called examine the role of interactivity in the presentation of science news on the World Wide Web. Tremayne & Dunwoody by citing Shoemaker, Schooler, & Danieison (1989) and mentioned that “there is some evidence of cognitive differences in the way visual information is processed when compared with print that requires a different experimental measure of knowledge acquisition”. Tremayne & Dunwoody (2001) mention that there are different ways to quantify knowledge acquisition and the most common of these are;

1) Test of free recall, where participants are asked to remember anything they can from a media use-session,
2) Cued recall, where used to activate certain areas of knowledge and gives participants a place to begin,
3) Recognition, where close-ended questions and has been suggested as the most appropriate measure for knowledge gain from broadcast media (Shoemaker, Schooler, & Danieison, 1989),
4) Comprehension, where involves more than the knowledge of independent facts: rather it requires an ability to integrate those facts into a meaningful system.

In this study, Tremayne & Dunwoody (2001) select think-aloud protocol as a measure of glimpsing information processing strategies of individuals. The methodology involves expression of the thoughts verbally by the participants, as they are having while navigating through a web site. According to the researchers, “The Think – Aloud method provides a verbal record of cognitive activity that can subsequently be coded for maintenance, elaboration and orientation behaviors.

Twenty participants are used for this experimental study. Participants spend time on one of two science web site (high interactive and low interactive) and their activities are recorded. The analysis of data obtained shows that “users of the more complex site engaged in more interactive behavior and demonstrated greater levels of cognitive elaboration and subsequent recall of content.

Evelend, Seo, & Marton (2002) in their study, related to comprehension and remembering or shortly learning use television, newspaper and online news as the stimulus materials. The stimulus materials are composed from the election news. This is done in order to create a certain knowledge structure in the presentation of the news. In the comparison of these three media instrument, in order to find the most effective instrument in terms of learning primarily attention and elaboration are measured which are the two different forms of the information processing and later free recall test is applied related to the presentational materials in order to measure the learning of news. The participants of this experiment are 59 undergraduate students. Therefore the population of this study only represents young adults. According to the results of the study, in remembering more detailed news items, print and television are superior to the web whereas web is found superior to television and print related with the structuring of the election news. Evelend, Seo, & Marton (2002) define knowledge structure as; “If memory is organized into conceptually related groupings –such as schema- once a single concept is recalled, the process of spreading activation will make other, related concepts that are part of the memory structure easier to recall” (p. 357). The other important finding of the study is that there is no significant difference between the measuring of remembering and

elaboration but compared to print and online attention has a significant relation particularly with the television news stories.

Eveland & Dunwoody (2002), while comparing web and the print in terms of learning, accept the superiority of print to the web and searched the reasons for this difference. The researchers, in order to find out this difference, used the user control and structural isomorphism theories and tested the elaboration and selective scanning in the study called "An Investigation of Elaboration and Selective Scanning as Mediators of Learning from the Web versus Print". Jonassen (1988) defines the user control as; "since an individual's knowledge structure is unique, based upon his or her own set of experiences and abilities, the ways that individuals prefer to access, interact with, and interrelate information is also distinct" Collins and Loftus (1975) define structural isomorphism as "a concept can be represented as a node in a network, with properties of the concept represented as labeled relational links from the node to other concept nodes" (p. 410). A single news story which was prepared suitable for both instruments presentational format is given to the participants. A total of 62 participants joined the study. The researchers tested the selective scanning within the frame of user control theory and elaboration within the frame of user control theory for both presentational environments. The findings of this study put forward that in the web environment compared to the print environment as the elaboration increases learning also increases, but when the selective scanning increases learning decreases. These findings support the theory of structural isomorphism. On the other hand, the decrease in learning by the increase in selective scanning contradicts with the user control theory (Eveland & Dunwoody, 2002). In general results obtained for learning show that the print is superior to web.

Knobloch, Zillman, Gibson, & Karrh (2002) in their study “Effects of Salient News Items on Information Acquisition and Issue Perception” claimed that in the case of the news stories presented if it is interested the user (personal interest) and it is important for them (personal importance) can be stored and remembered better. For this reason the researchers, conducted a study on 240 undergraduate students reside in a certain area. In the study, researchers compare two news stories that one of them is directly related with the area in question (therefore directly related the participants) and the other one is related with another region on the aspect of information acquisition, news evaluation and issue perception. As the presentational material the same news that is adapted to different regions in the text formats is presented to the participants. Knobloch, Zillman, Gibson, & Karrh (2002) in order to measure the information acquisition of the participants, apply a multiple choice questionnaire which includes eight quantitative (factual) and seven quantitative questions. To measure the news evaluation, two questions and for issue perception three questions are asked to the participants by using the 11 point scale measuring instrument. The results of the experiment show that; “the degree of serenity of information presented in news reports increases with the perceived relevance of addressed issues. Information processing appears to be more thorough, resulting in superior information acquisition a dependent effect on issue perception”. Moreover, according the results of the experiment; under conditions of high salience no significant difference is observed among the factual and comprehension information in terms of remembering.

Grabe, Lang, & Zhao (2003) in their experimental study, “News content and Form, Implications for Memory and Audience Evaluation”, compared the arousal and calm

news stories in standard and tabloid newspapers. In the study 45 participants having ages 25 or above participated. The researchers searched the effects of different contents and forms compounds. According to the results of the study, while the calm news content used in the tabloid newspapers, increases remembering, it does not increase attention. On the other hand, the arousal news content in the tabloid newspapers increases attention and arousal. But the arousal news in the tabloid newspapers create overloads information processing and therefore decreases remembering. In other words, "tabloid packaging styles enhance the storage of facts associated with calm content but have negative consequences for storage of facts when applied to news that is already arousing". On the other hand, when participants are asked general questions in order to measure the delayed recall after a period of time from exposure, the analysis of the data indicates that the packaging style do not affect remembering but the arousal news content remembered better by the participants when compared with the calm news content. Finally according to the results of the study, participants find tabloid newspapers less objective and believable. This result is contradictory with the findings of the study related with the remembering.

Klijn (2003) compares 250 American and Dutch television news stories on the aspect of violence in terms of attention getting and comprehension raising attributes by the content analysis method in the study called "Attention - Getting and Comprehension-Raising Attributes". Klijn (2003) in this study investigates the other studies that are conducted on the mentioned aspects. As a result Klijn (2003) indicates that, "while attention to a news story is a precondition for its comprehension, many visual tactics to keep the viewer's attention for television news, especially if densely present, can

detract from its comprehensibility". Moreover Klijn (2003) mentions that the result of the study gives an opportunity to predict whether news content could increase recall or not. In this study where the content analysis method is employed, the analysis of the data is done by coding procedure. The results of the study show that in the news presentation both American and Dutch public and private televisions exerted similarities in the use of visual violence. Most of the news stories taking into account for this study are of this type. On the other hand, the findings of the study show that "public broadcasters use more comprehension attributes in the visual depiction of violence than private broadcasters when comparing the American broadcasters with the Dutch public".

In this study called "Making News Memorable: Applying Theory to the Production of Local Television News", Lang, Potter, & Grabe (2003) within the frame of the number of rules that is basically developed for better perception and remembering of the news stories compare the news broadcasted from television and their revised versions. The rules that are developed by Potter and Lang (2001) collect around seven different aspects. Lang, Potter, & Grabe (2003) by attributing the Potter and Lang (2001) define these rules as follow;

1) Let the emotion talk: "Emotion compels attention and elicits arousal",
2) Slow it down: "when stories are complex, the pace should be slow to moderate with a minimal use of attention eliciting features.",

3) Dare to be quit: “when the video is complex or compelling, audio should be simple; be quiet for one or two seconds to allow the viewers to process the video followed by the audio narration”,
4) Match the audio and video: “When the audio and video information match, comprehension and memory are better.”,
5) Know how to deal with negative messages: in order to increase comprehension and remembering “the recommendation is to introduce important facts following the negative video scenes and not to present important information right before negatively compelling scenes”,
6) Take a Literal Approach: “use concrete words and images ... verbal imagery will help viewers to recall the substance of stories, while placing a still graphic that relates to the news story topic behind the anchor will improve memory for the story”,
7) Use strong chronological narratives: “Stories told in a narrative style with a chronological beginning, middle, and end are easier to process and are better remembered than stories that have a weak narrative structure ...”.

In this study Lang, Potter, & Grabe (2003), use 45 participants whose ages vary between 25 and 65.In this study, four news stories are used and their revised versions are prepared according to the context of rules mentioned above. Researchers, in order to measure the attention use the method of heart rate, and to measure the arousal used the method of skin conductance. In this study memory measurements are done by the cued recall and delayed cued recall methods. In the cued recall measurement, just after the completion of the experiments participants are asked to write what they

remember about each news stories on separate papers and later these answers are coded and analyzed. In measuring the delayed recall participants are telephoned and asked what they remember from each news stories after 48 hours from the completion of the experiment. Similar to the case in cued recall measuring the answers are coded and analyzed. The results of the experiments show that the revised version of the news arranged according to the rules "were remembered better and evaluated without sacrificing viewer attention or arousal".

Eveland's (2000) cognitive mediation model "purposes that learning from the news is determined through a causal process in which self-imposed learning motivations drive the processing of news information to which individuals are exposed and that this processing to a great extent determines the amount of learning that will occur" Eveland, Shah, & Kwak (2003). Eveland, in this study "Assessing the Causality in the Cognitive Mediation Model", in order to test the cognitive mediation model concentrates on three main theories. These are;

1) Motivation for media use drives media information processing behaviors during and after exposure to news media content.
2) Media information behaviors are direct determinants of learning from media.
3) The effects of motivations for media use are wholly mediated by media information processing behaviors.

Eveland, Shah, & Kwak (2003) also states that "particularly relevant to our study is the uses and gratification perspective which has generally been concerned with structural, cultural, cognitive, and motivational characteristics the audience brings to the reception situation that affects the impact of the message with its focus on

individual level motivations for media use". Eveland, Shah, & Kwak (2003) in this research apply two-phase survey study in order to obtain the data. In the first phase of the study two survey studies are realized. Primarily questionnaire is sent to 5000 predetermined individuals and 3,388 of them reply. In the second survey study of the first phase questionnaire is send to 2737 participants via e-mail and 1902 of them reply. In the second phase of the study 1850 questionnaire is sent by mail (letter) and 1315 individuals reply. Eveland while measured news attention, news elaboration, and knowledge in the first and second phase of the study, surveillance motivation is only measured in the first phase of the study. According to the results of the study which supports the cognitive mediation model surveillance motivation influence information processing, information processing influences knowledge and motivation influence knowledge only indirectly through information processing. Also, it is mentioned that most of these relationships are mutually causal.

Bucy (2003), in his study "Media Credibility Reconsidered: Synergy Effects Between On Air and Online News", accepts the convergence as the main concept and compares perception of TV and Net news credibility after exposure to online news, broadcast news and a combined condition. Bucy (2003) defines media credibility "As perception of a news channel's believability, as distinct from individual sources, media organizations, or the content of the news itself". The combined condition which is also defined as synergy by Bucy explained as "The possibility of two contiguous media behaviors – on air and online news consumption – having a greater impact on perception of media credibility than exposure to either medium itself" (p. 249). Bucy, on the other hand, mentions that in the United States of America in the number of individuals having news from television is decrease and

the number of individuals having news from online sources increases. Moreover Bucy indicates that the number of the Internet access computers at homes in USA increases and the individuals while watching television they also surf on the Web (p. 248). Bucy (2003) in this study uses 4X2 between subjects and factorial experiment analysis methods. While the television news stories, news stories presented on the Internet, both the Internet and the television news stories and no exposure (control group) determined as the four levels of the first factor, the university students (n=84 age=18-25) and adults (n=83 age=26-80) were determined as the two levels of the second factor (p. 252). The participants in each group were assigned to the four media channel condition with a random assignment method and each group is composed of 20 participants. For the group where television is used as a presentational instrument four news stories are presented as presentational materials, and for the group where Internet is used as the presentational instrument participants are asked to visit 2 news site and read the news stories for five minutes. For the group who are exposed to the synergy presentational stimulus participants both watched the television news stories and asked to visit the web sites in question. At the end of the experiment, in order to test the credibility, a test is applied to all groups (p. 251). The results of the experiment show that "There are significant main effects for media channels on evaluations of TV news credibility and for age groups on evaluations of both TV and Net news credibility". Moreover, "Perception of network use credibility are affected by media channel used. Perception of credibility are enhanced when the channel used is consistent with the news source being evaluated, suggesting a channel congruence effect" (p. 252). Finally it is mentioned that "Evidence is offered for the existence of synergy effect between on air and online news" (p. 252).

Walma Van Der Moolen & Klijn (2004), in order to test the semantic overlap hypothesis, conduct an experimental research on the 100 undergraduate students called “Recall of television versus print: retesting the semantic overlap hypothesis”. According to this hypothesis, if in the television news presentation at least 40% of news is supported with the semantically related pictures, the news comprehension and remembering increases. In order to test the validity of this hypothesis, for each of the presentational instrument stimulus materials are composed of six different news stories are prepared. In this study, where print and television is tested, the news that include 40% is directly related visuals characterized as good semantic overlap where the news that use indirectly related to visuals and talking head characterized as poor semantic overlap. In order to test comprehension and remembering 50 open ended questions are asked to the participants. The results show that in the news stories that is attributed as poor semantic overlap print is more effective than television, on the contrary in the news stories that is attributed as good semantic overlap television is more effective than print. In this study, questions related to the visual materials presented with the news are asked to the participants. The result, of the study also shows that there is no positive effect of talking heads on comprehension and remembering of the television news stories on the other hand, print news used in this study is the text versions of the television news stories. In other words, the inverted pyramid structure which is one of the important aspects of the print news stories is not used. One of the important aspects of this experimental study is that there is no time limit for the participants in reading of the news that was presented in text format.

2.4 Convergence

According to Finn (1999) convergence is taking place at several levels. Finn says that related to the media, these are the convergence of content and the industrial convergence. Industrial convergence refers the convergence of technologies. This author defines the technological convergence as a convergence of delivery channels of information and communication and of mass and personal communication channels. Similarly, Studer (2001) points out that convergence of media is of two forms as content production and service delivery through various channels.

Bohlin (2000) states that, convergence as a conceptual idea and as a technological term is not new. He mentions that this term is coined as integrated communication in the 1950s and as telematics in the 1970s (p. 13). In 1983, Pool mentions that the developments in the digital technologies will take away the differences among the classical media industries such as print and radio and television broadcastings and their networks (Pool, 1983, p. 24). Pavlik (1996) defines convergence as every kind of mediated communication, in electronic and digital form, that comes together at the computer environment (Pavlik, 1996, p. 132). Moreover, Vallath (2000) mentions that, the technological convergence pioneer the digital network system which carries the information in the form of text, audio and video.

Bohlin (2000) emphasizes that the prerequisite of convergence is the digitalization. With digitalization media instruments become translatable into each other and traditional means of transmission changes (p. 4). Low (1999) states that, one of the phenomena of the new communication technologies is the convergence of the communication instruments (p. 8).

In other words, the so called today's converged communication technologies, in fact, appear by the developments in the digital technologies and their intensive use in communication technologies. The reflection of this revolution in technology and its results on the communication technologies defined as the third big revolution by Toffler (1991, p. 126) whereas Poster (1994, p. 3) defines this in the dimension of mass communication and media as the second media age. Hence, while on one hand, common properties of these technologies use digital techniques in collecting, storing, processing and transmitting of the information, on the other hand they cause important changes in the field of economy, politics and societal (Timisi, 2003, s. 83). According to the Abramson, Arterton, & Orren (1988), these differences are as follows:

1) The increase in the amount of information obtained. For example, computer mediated communication in reaching library or state owned information. On the other hand the increases in the number of communication channels also increase the demand to the information and cause the generation of the new information. Moreover, these new channels and the computer mediated communication increases the amount of local, national and international news.
2) Speed up in communication: The new communication technologies take away the time and place barriers in terms of reaching the information. It speeds up the process of communication both for those who collect, store and distribute information and for those who use the information. For example, internet based communication and satellite transmission cause to obtain news at any time and any place on earth.

3) Receiver control: Democratization of information: New communication technologies provide opportunities to the user to select the information channels and the information presented. As a result the control of the audiences on the communication process increases. Consumers become the producers of the messages. Hence the gap between sender and the receiver decreases.
4) From mass broadcasting or publishing to narrow broadcasting or publishing: different than traditional television broadcasting or newspaper publishing, messages can be produced for narrow target groups. Thus the message is not for the masses but it must be according to the specifications and needs of particular groups.
5) Ownership and control problem: the traditional mass media both in terms of the media ownership and the content has a centralized structure. Within the national boundaries media tools are owned by a few companies or persons and internationally particular countries are monopoly in television broadcasting. The development of the new communication technologies has a capacity to destroy this hegemony. Instead multi centralization takes the place of centralization.
6) Increasing capacity of interactivity: the mutual interactivity capacity increases by the use of new communication technologies. This is the most distinguishable difference between the new communication technologies and the traditional communication technologies (pp. 32-65).

According to Riefler (2002) the content convergence within the frame of opportunities provided by the Internet is the first constitution that comes into the agenda. It means that, the media content (e.g news production) is produced for different media instruments at different location and time by using different technologies are produced at a center with a certain structure and format applicable for all instruments. Many different media organizations, besides publishing daily newspapers also own radio and television stations. Traditionally, these organizations, for each of the media instrument within their structure set up different units for content production. The production of content for different media instruments at the same center defined as the content convergence for the media. The result of these efforts, which gathers content production under the same roof, is also known as media houses (Riefler, 2002). In this centralization process, different media instruments are connected to each other with the networks. According to Riefler (2002), the aim of the content convergence in media is not only to use the content that is produced at a center just for print newspapers but to use it at different areas as possible. Riefler defines the function of the content convergence as; the media organizations, that owns more than one media instrument where the fresh news flows for 24 hours a day to the news center, blending these news with the entertainment components and then send them to different media instruments in the form of text, audio, picture and video. Apart from this, he also mentions that, the ready content can be presented to be used at any time and in any format according to the desire of the consumers, with the instruments such as newspaper, radio, television, magazine and mobile phone.

Chapter 3

RESEARCH METHODOLOGY

The information included in this chapter consists of five sections as quantitative methodology, research designs, data collection methods, and contexts and research procedures.

3.1 Quantitative Methodology

Quantitative research indicates the methodologies theoretically framed by the positivist, empirical social scientific approach to measurement (Babbie, 2004, p. 220). Neuman (2003) points out that the almost all researchers that are doing quantitative research rely on the positivist approach, where they use technocratic perspective, follow a linear path and apply reconstructed logic (p. 139). According to this author; “quantitative researchers emphasize precisely measuring variables and testing hypothesis that are linked to general causal explanations” (p. 152). Furthermore, Neuman (2006) mentions that, in quantitative methodology; researchers emphasize objectivity and mechanical approach. Quantitative research depends on precise statements, standard techniques, numerical measures, statistics and replication by addressing the issue of integrity. This methodology uses the principles of replication, adhere to standardized methodological procedures, measures with numbers, and then analyze the data with statistical procedures which is an area of applied mathematics (p. 153).

Therefore, in order to understand the social behavior and for exploring the causes of behavior, one can benefit from the techniques that quantitative methodologies provide and focus upon what can be observed (Gunter, 2000, p. 4). He says that positivism does not believe in absolute determinism.

3.2 Research Designs

The present study consists of two consecutive studies. The two studies complete each other; however, research design and data collection techniques show differences from each other. While the first stage is based on the principles of experimental research and the two experiments conducted are post - test only studies with more than one group, the second study is a descriptive survey study.

3.2.1 Experimental Research

Science means empirical and the word empiricism is derived from the Greek word “experience”. Empirical level includes the hypothesis, methods and data of the scientific research (Rudestam & Newton, 1992). As Perry (2001) defines, empirical research has three types as experimental, corrolational and descriptive (p. 45). He defines the correlation studies as the examination of the covariation between the variables. Correlation is the relationship among the two variables, in such a way that;

a) a variation that occur in one of the variables is related with the variation that occurs in the other variable.
b) a clear facts of one variable is related with the clear facts of the other variable. For example for the correlation between the education and the income level, it can be said that higher educational level is related with the higher income level.

Correlation alone does not create a causal relationship among the two variables but is accepted as criteria for the causality (Reinard, 2001).

On the other hand, according to Perry (2001), descriptive study describes the degree which something is present, where there is no necessity to link independent variables with the dependent variables.

Babbie (2004) defines the 'experiment' as a mode of observation that enables researchers to probe causal relationships. He further points out that "Many experiments in social research are conducted under the controlled conditions of a laboratory, but experiments can also take the advantage of natural occurrences to study the effects of events in the social world" (p. 220). Experiments not only applied to the research in sciences (physics, chemistry, engineering) but also to the natural sciences (education, communication, physiology) experiments can either be realized at the artificial (laboratory) environment or in its natural environment. According to Neuman (2003), experimental method in social sciences started to be used from the beginning of the 20th century onwards in order to study human mental and social life in an objective, unbiased and scientific way (p. 239).

Experimental research method is a form of quantitative research among many other forms. Baker (1999) states that "when choice of an experiment as the method to use for your research will depend on whether the study's primary goal is to examine a specific reaction or effect". The experimental research in media studies have been used since from the second half of the 20th century (Gunter, 2000, p. 29). Gunter points out that, experimental research methodologies are mostly affected from

behavioral psychology. According to Perry (2001); “experimentation involves staging one or more events and observing the consequences” (p. 46). Gunter (2000) describes the experimental research as follow:

1-Starts with a hypothesis about a likely outcome following an event or set of events about a relationships or set of relationships between two or more quantifiable variable,

2- An experiment usually involves modifying something in a particular situation,

3- And concludes by comparing outcomes in situation with and without the modification (p. 29).

According to Neuman (2003), there are several reasons for using experimental method in research in mass communication. These are:

1- Evidence of causality: Experiments helps to establish cause and result. It is one of the best methods in establishing causality in the research in social sciences. It lets the researcher to control the other possible causes of the variable under consideration.

2- Control: In the experimental research, the researchers have a possibility to control the conditions of the environment, variables and the subject. It’s up to the researcher to structure the experimental environment. While laboratory studies provide opportunities to the researcher to control the selected dependent and independent variables, it also enables the researcher to control the ways of processing of these variables. Moreover, controlling the variables increases the internal validity. Experimental approaches provide control to the researcher in selecting the participants,

in assigning control or experimental groups and in subjecting to the experimental processes.

3- Cost: Comparing with the other research methods the cost of the experimental research is considerably low.

4- Repetition: In experimental studies researchers have opportunities to repeat the experiment(s).

Experimental research is used in the media studies in the last half of the century. Although it is particularly used in the research related to the television, it is also used in the research related to the radio and newspaper. Experiments, as a quantitative research design are used in the measurement of the causal relationships. Experiments, in order to prove the causality at certain conditions and having a purpose of removing other measurable potential causes realized at artificial laboratory conditions for letting the researcher control the amount of exposure to different media instruments and media contents of the audiences. Experiments start with a hypothesis and end up with the comparison of the results obtained. Thus, the control of the researcher on the environmental condition and on participants is provided. The steps that need to be followed in an experiment are as follows:

1) To determine an open hypothesis suitable for the experimental research,
2) To decide on the experimental design in order to test the hypothesis within practical limitations,
3) To determine how to present the process or to create a condition to cause the independent,
4) To develop reliable and valid measurement for the dependent variable,

5) To determine the suitable sample,
6) To constitute the experimental installations and the application of the pilot test for the measurement of the independent variable and other processes,
7) To assign the participants to the groups randomly (if random assigning method is selected) and giving them necessary directives,
8) To collect data from all the groups related with the pretest measurements of the independent variable (if pretest will be used),
9) To apply the process to the experimental group (if there are more than one experimental groups, the process should be applied to all) and to observe all the other groups,
10) To collecting data related with the post-test measures of the independent variable,
11) To re-inform test subjects about the real aim and reasons of the experiment and take their opinions,
12) To analyze the collected data and made comparisons among the groups, and to determine whether the hypothesis is supported or not to use statistical calculations (Merrigan & Huston, 2004).

Experimental research can also be defined as; doing operation at least on one independent variable, where other variables can be controlled and where one or more dependent variable can be observed. In a typical experimental study, generally there are eight steps that need to be followed:

1) To select the experimental environment,
2) To decide on the experimental design,

3) To functionalize the variables,
4) To determine the type of process on independent variable,
5) To select of test subjects and appointment to the experiment conditions,
6) To do a pilot study,
7) To realize the experiment,
8) To analyze and interpretation of the data obtained (Wimmer & Dominic, 1991).

In a research, an experimental group is defined as a test subject group which is kept under the effect of the independent variables (experimental stimulators) (Babbie, 2004).

The concept of control in an experimental study is a method where the researchers eliminate the “problematic, intervened” variables or to hold their effects constant. The efforts of increasing the control in research are to enhance the ability of the researcher to make definitions about the subject of observed effects resulted from the experimental effects. The researchers, except from a new variable added to the experiment, in order to keep the other variables under control, use different approaches. These are;

1) Elimination and Removal: The removal of the “problematic, intervening” variable from the experimental design by the researcher.
2) Holding Constant: In some cases, to keep the interval of the problematic intervening variable constant in order to control the other variables and keep them equal during the research process.

3) Matching: The double matching of the equal amount of test subjects on a variable and later assigning one to experimental group and the other to the control group.
4) Blocking: The assigning of the problematic intervening variable to the experimental design as an independent variable. Blocking provide opportunity to derive result from the effect of each independent variable.
5) Randomization: The condition where the probability of appointment of the test subjects to the experiment and control groups are equal. In other words, to equalize the test subjects in groups with the rule of chance.
6) Statistical Control: If "problematic intervening" variable will be measured then it can be controlled by the statistical methods. The most common methods used are the Analysis of Covariance and Partial Correlation (Reinard, 2001).

The researchers, while trying to interpret the experimental research, face difficulties. While interpreting an experimental research there are three main principles that need to be kept in mind. These are;

1) Deriving Long Term Effect Result From The Short Term Experiments:

   Most of the experimental studies are short term. However, the researchers, although gathering the data/information in the short term, they tend to disperse the results to long term. At this point the researchers must be careful because the short term and the long term results show important differences.
2) Searching for Non-linear Relationships:

It compares only two levels of the many experimental variables (generally as "high" or "low") and derives an exact result. On the other hand, most of the relationships among the dependent and independent variables are not linear. For example, in such cases, an average variable can generate a high effect. Therefore, the researcher must point out that it is not worked on curvilinear relationships. Secondly, the researcher, by using other methods, must include more than two levels of the independent variables to the experiment.

3) Using More Than One Independent Variable:

   Experimental variables rarely produce effect on one dependent variable. Experienced researchers develop the interpretation of the results by using more than one appropriate dependent measure (Reinard, 2001).

Experimental Variable: in an intervening study, a variable is worked on (systematically changed) by the researcher (Merrigan & Huston, 2004).

After explaining the experimental research design there is a necessity to define the terms such as pretest, internal validity and internal invalidity.

Pre-test: It is defined as the measurement of the effect of dependent variables without the effect of independent variables in an experimental research before completing the experimental process (Merrigan & Huston, 2004).

Internal Validity: Wimmer and Dominick (1991) define the internal validity as the property of a research study. The aim is to obtain results that are based on expected conditions rather than on extraneous variables.

Internal Invalidity: The condition where the results obtaining from the experimental studies do not reflect clearly of what it is during the experiment. The sources of the internal invalidity are;

1) History: The number of occurrences that are happened between the pre test and post test and are not controlled by the researcher during the experiment.
2) Selection: The biased sample came out during the assigning or selection of the test subjects to the experiment or control groups.
3) Instrumentation: The differences occurred due to the use of the measuring instruments between the pre-test and post-test. At the same time, the differences occurred while the researcher evaluating the data.
4) Maturation: Including the situation that leaves the test subjects alone, the variations that happens naturally in time.
5) Testing: The differences that are occurred between the first test and the second test after the application of the second test to the test subjects.
6) Statistical Regression: The distortion due to the selection of those tests subjects that obtain either very high or very low scores.
7) Experimental Mortality: Without any coincidental form, quit of the test subject from the experiment with any reason. In other word partiality occurrence in the experiment (Wimmer & Dominic, 1991).

Interaction of Elements: Together with the partial selection interaction the maturity at different levels and the effect created by the past or from the other variation sources (Baker, 1999).

3.2.1.1 Controlled Experimental Studies

As Gunter (2000) mentions, experimental studies that test comprehension from particular media outputs are divided into two groups. First of these is the field studies where after exposure respondents are contacted either by face to face or with telephone survey. The second one is the controlled experimental study where subjects are brought to the laboratory and shown pre-prepared media outputs whose effects upon learning and memory can then be measured (either in the form of text, audio or audio-visual). After the exposure, participants' retention and comprehension is tested. Testing the participants are done in different ways; as either subjects write recall accounts in their own words or they respond to multiple choice questions. Controlled laboratory procedures have comprised with pre-tests and post-test or post-tests only experiments (pp. 219-220). The way two experiments are executed for the first step of the study will be further explained in 3.6 Research Procedures section.

3.2.2 Survey Study

The second part of the study, as it has been mentioned before, is the survey study. Survey is either used to define or to explain an aspect. On the other hand, survey study is defined as a quantitative social research method where the researcher systematically ask the same question to many people and record and analyze the obtained data.

Basically, there are two different types of survey. These are descriptive and analytical survey. Descriptive survey attempts to picture or document current conditions and attitudes in order to describe what exists at the moment. On the other hand, analytical surveys attempt to describe and explain why certain situations exist. Hence, in order to test research hypothesis two or more variables are examined.

Thus, for drawing explanatory inferences, researchers examine the interrelationships among variables (Wimmer & Dominic, 1991, p. 107). For the present study, a survey was administered. This survey was an analytical survey. According to Wimmer and Dominick (1991), apart from it's use to investigate problems in realistic settings, particularly when cost of the research is in concern, there are four types of surveys. These are mail, telephone, personal interview and group administration surveys (p. 107-108). Within the last decade e-mail survey also added to this list. Moreover Wimmer and Dominick (1991) point out that, survey procedure allows the researcher to examine many variables and analyze the collected data with statistical techniques. Finally, already existing data can be used to conduct an entire survey study even without developing a questionnaire. For the present study, an in-house questionnaire was developed and personal interview was preferred in collecting the data.

3.3 Contexts

For the first phase of the study, participants are selected from the Eastern Mediterranean University (EMU) which is located in Gazimağusa in North Cyprus. EMU is an international university where the language of the medium is English.

For the second phase of the study participants are selected from the university students who reside in Cyprus. Equal numbers of students are selected from North and South Cyprus.

3.4 Population and Sampling Strategies

For the first phase of the study, the population consisted of 10.705 students who were enrolled at EMU in the year 2003 excluding those in the English Preparatory School and postgraduate education. A random sampling strategy was used for selecting the participants. First part of the study consisted of three experiments.

For the first experiment, 240 students were selected from students who had gained between 2.00 and 2.50 out of a 4.00 cumulative grade average in fall 2002-2003. The reason for this was to avoid any effect that the academic success level of the participants might have on the results.

In the second experiment of the first phase, 112 participants were selected in two groups, according to their CGPA (average) scores from the semester mentioned above. The first group (n=56) had CGPA scores, equal to or below 1.99, while the second group (n=56) had CGPA scores of 3.00 or above to search for the effect of academic success level on comprehension and remembering.

As the pilot study of the survey, 80 students from the junior year taking a visual design course were selected. After informed consent was obtained and it was ascertained that participants had no audio or visual disabilities, and then the students were invited to the study. The gender distributions for all experiments are presented in Table I. Of the 572 students who participated in the research, 127 (22%) were from the freshmen year, 139 (24%) from the sophomore year, 213 (%37) in their junior year and 93 (%16) in their senior year.

For the second research of the study, data have been collected through a questionnaire administered to 480 undergraduate students. Participants were selected from two different societies (Greek and Turkish Cypriots) in Cyprus. 240 university students from each society has answered the questionnaire. Although the participants live in two different societies, they have some common characteristics, such as the geographical area, economical level and the culture owned by these societies. The mother tongue of the participants from North Cyprus is Turkish whereas the mother

tongue of the participants from South Cyprus is Greek. However, as a second language, all participants speak English language. Participants continuing their education in 9 different universities: as 5 from North Cyprus, 2 from South Cyprus, and 2 from Greece. Those who answered the questionnaire were selected not from a particular university in any of the area but from any university in that area by the random sampling method. The demographic information of the participants is presented in Table 1. The only limitation that was applied during the survey study was that none of the participants were chosen among the students studying communication and media studies.

3.5 Data Collection Methods

A controlled experimental method was used for the pretest and in the first stage of this study. In order to measure learning and remembering different sets of questions related with different news stories were prepared. The questions used to measure learning and remembering are selected from a pool which is formed from the questions prepared by eight colleagues at the FCMS.

For the survey study which was conducted between October 2004 and January 2005 consisted of a self administered questionnaire in three sections. In the first part of the questionnaire used in the survey study, demographic questions sought to provide information about the gender, age, and nationality of the participants. The second part of the questionnaire included questions about the daily use of mass media instruments and the attitude questions to investigate the use and the trust felt to the national and international news given by these media instruments. Finally, one multiple choice question was asked to explore students' evaluation when they are exposed to merely to the text as the stimulus, audio-video or audio-video-text stimuli

in different ratio and forms. For this question 14 different alternatives were presented to the participants.

These alternatives included merely text, merely audio-visual and 12 other presentations where the given figures were horizontally and vertically divided into two parts with different ratios for text and audio-visual stimuli. Ratios were either half to half or one-third to two-third. For the attitude scale questions, the value scale extended between one (strongly disagree) and five (strongly agree). Disproportional stratified sampling procedure was favored for the present study. Nationality is taken as the strata of the tertiary students. Among them 1% of the smallest sample is taken. In order to ensure a fair comparison, equal number of students from each of the two populations is included.

3.6 Research Procedures

The population of the pre-test study is 10.705 students who are enrolled in different programs and disciplines at the Eastern Mediterranean University, excluding the students which are in English Preparatory School, those who are having their postgraduate education and Faculty of Communication and Media Studies. The selection method took into consideration a random selection and uniformity between the selected students. In order to provide this uniformity and with the consideration of the laboratory capacities 80 out of 2.701 students are selected randomly whom grades are between 2.00 and 2.50 out of 4.00 cumulative grade average. Thus, it was sought to maintain the uniformity among the participants is maintained in terms of cognition and understanding and the incompetence in perception at the target is prevented. Seventy of the students are from Turkey and 10 of them are from North

Cyprus. Whereas 46 participants are mail and 34 are female. Participant ages are between 19 and 25.

Radio and television present news *en bloc* and in sequence, but in print and online, the amount and order of reading news is under the control of the user. In an experiment, if news is presented to the participants in complex packages, some of the news may attract attention and some may not. Moreover, some may already have information about this news. Eveland, Seo and Marton (2002) note that when compared with television news presentation, news presented in the newspapers is distinguished by its inverted pyramid structure. They also point out in their comparison that if the text version of the television news also appears in print, its ecological validity will be reduced. They further claim that there is more factual information in print newspapers than in the evening news on television and draw the attention to the limitations of the semantic overlap hypothesis of Walma Van Der Moolen & Van Der Voort (2000). By referring to the studies of Brosius, Donsbach, & Birk (1996) (1996), Graber (2001) and Grimes (1990), who point out that the visual information in most television news is not compatible with the audio information with a resultant decrease in external validity. Therefore, to increase external and ecological validity and to minimize the problems encountered in other studies, the stimulus materials for both of the present experiments were prepared according to the inverted pyramid structure and the audio-visual materials prepared in accordance with Walma Van Der Moolen & Van Der Voort's (2000) semantic overlap hypothesis, in which 45% of the total presentation time is supported with relevant visual materials. The stimulus material for the first experiment lasted for 102 seconds and for the second experiment 136 seconds. The use of the extreme topics

such as violence, war and disaster that were suspected to increase comprehension and attention was avoided (Philo, (2002); Nathanson, Eveland, Park, & Paul, (2002); Lang, Newhagen, & Reeves, (1996); and Newhagen & Reeves, 1992), (1992). Therefore, unbiased subject items were selected as presentational materials by considering the age, education, social environment and common culture of the participants. Moreover, when using more than one news item in presentations, there is the possibility that some may attract the participants' attention more than others. Thus, there is the possibility that information may be better retained. To prevent such a biased outcome, in contrast with earlier studies, a single news item was selected as the presentational material in this study. Attention was also paid in the preparation of the presentational materials not to use the presentational attribute formats of one media instrument more than the others.

For the pretest study the test was a carefully selected news story talking about the invention of a new injection and its use which was unbiased and took into consideration to be ordinary news and required no background information from the participants, for this study is not interested in participants' background and habits in terms of news and media. The news story for the first experiment was the benefits of breast-feeding to the mother. For the second experiment, the subject of the news story concerned the benefits of celery. All texts included factual items such as names particular to the topic and dates. All the news stories are presented in Appendix C.

For both experiments, equal amount of time was given to the participants for each presentational format. In the final stage of the research, except the pretest study, participants were asked which presentational format they preferred in terms of the

effectiveness of their stimuli components. For each of the news stories, the questions used to measure comprehension and remembering were selected from a pool prepared by eight colleagues at the Faculty of Communication and Media Studies of the Eastern Mediterranean University.

For the second phase of the study the survey was administered to the students outside the universities at the large shopping malls. All participants' informed consent was obtained and it was ascertained that participants had no audio or visual disabilities before the questionnaire was applied. Survey was applied during the daytime and it took each participant approximately 8 – 10 minutes to complete the questionnaire. Researchers personally conducted the survey. The questionnaire that was used in the study consisted from three sections and it is presented in Appendix B.

Chapter 4

FINDINGS AND DISCUSSION

This chapter provides the findings of two stages of the study. The first three parts constitutes the research conducted for the first stage of the study. In the first part the results of the pilot study conducted in order to test the measuring instruments is presented. As it has been mentioned in Chapters 1 and 3, in the main body of the study, two experimental research were realized. In the following sections, findings of these two experimental studies are laid down. In the last part, the results of the survey conducted in North and South Cyprus is presented.

4.1 Pilot Study for the Experiments

The pilot study of the research was conducted in August 2003. The goal of this preliminary study was to test the experimental conditions and the measuring instruments. In the pilot study, four groups, each with 20 participants were formed. The topic of the news used for the pilot study was ‘new injection’. Each group was exposed to one of the stimulus or stimuli components as print, audio, audio–visual and audio–visual–text. After every presentation; questions that test comprehension and remembering were asked to the participants. For the experimental environment, Television Studios of the FCMS of the EMU were selected. Stimulus materials were prepared in the form of single, dual and triple presentational components and presented to the participants. Before the presentations, students were informed about the type of experiment. After the completion of each presentation, a set of open

ended questions, about the subject of the stimulus materials were posed to the participants in order to measure the level of comprehension and remembering.

In the pilot study, participants were asked to answer three open-ended questions about the general understanding of the stimulus material and six questions about the remembering of factual information. Each question in the factual answer type questions were evaluated as correct or wrong, while in the general answer type questions, which were evaluated by the various academicians as no answer, poor, fair, good, and very good, an average value was calculated and the results were compared between the different four tests. In the pre-test experiment, 57.5% (46) of the participants are male and 42.5% (34) of the participants are female.

Table 1: General- answer type questions and the number of respondents.

Test	**No answer**		**Poor**		**Fair**		**Good**		**Very good**	
	Quest	Tot	Quest	Tot	Quest	Tot	Quest	Tot	Quest	Tot
Audio	Q1	0	Q1	2	Q1	6	Q1	10	Q1	2
	Q2	1	Q2	4	Q2	5	Q2	9	Q2	1
	Q3	3	Q3	1	Q3	11	Q3	3	Q3	2
	Total	**4**	**Total**	**7**	**Total**	**22**	**Total**	**22**	**Total**	**5**
Print	Q1	2	Q1	0	Q1	3	Q1	12	Q1	3
	Q2	1	Q2	0	Q2	9	Q2	9	Q2	1
	Q3	2	Q3	3	Q3	7	Q3	6	Q3	2
	Total	**5**	**Total**	**3**	**Total**	**19**	**Total**	**27**	**Total**	**6**
Audio-Visual	Q1	0	Q1	1	Q1	4	Q1	10	Q1	5
	Q2	0	Q2	0	Q2	3	Q2	14	Q2	3
	Q3	0	Q3	5	Q3	6	Q3	4	Q3	5
	Total	**0**	**Total**	**6**	**Total**	**13**	**Total**	**28**	**Total**	**13**
All	Q1	1	Q1	0	Q1	2	Q1	7	Q1	10
	Q2	0	Q2	0	Q2	1	Q2	11	Q2	8
	Q3	0	Q3	1	Q3	7	Q3	5	Q3	7
	Total	**1**	**Total**	**1**	**Total**	**10**	**Total**	**23**	**Total**	**25**

Table 2: Factual-answer type questions and the number of respondents.

Test	Wrong		Correct	
	Question	Total	Question	Total
Audio	Q4	9	Q4	11
	Q5	17	Q5	3
	Q6	19	Q6	1
	Q7	11	Q7	9
	Q8	11	Q8	9
	Total	67	Total	33
Print	Q4	10	Q4	10
	Q5	11	Q5	9
	Q6	16	Q6	4
	Q7	11	Q7	9
	Q8	13	Q8	7
	Total	61	Total	39
Audio-Visual	Q4	5	Q4	15
	Q5	10	Q5	10
	Q6	19	Q6	1
	Q7	2	Q7	18
	Q8	12	Q8	8
	Total	48	Total	52
All	Q4	5	Q4	15
	Q5	4	Q5	16
	Q6	9	Q6	11
	Q7	4	Q7	16
	Q8	6	Q8	14
	Total	28	Total	72

As it is shown in Table 1 on page 115, in general answered type question, which is related to understanding, the degree level of understanding is lowest in audio test, followed by print, then audio-visual. The results obtained from the audio-visual stimuli are the highest in the combination of all. Similarly it is noticed from the Table 2 that the same sequence was realized for the factual answer type questions revealing that the best news convey media for the best remembering and understanding is the combination of print, audio, and visual.

4.2 The First Experiment

The first experiment was realized in November 2003. For the first experiment, the same experimental method that was utilized in the pilot study was used. In order to test comprehension, participants were asked to answer three general comprehension

questions and nine questions about the factual information in order to test remembering. Before each presentation, respondents were asked to complete a questionnaire consisting of two different sections. The first section was composed of the demographic questions and the second section involved the 5-point attitude scale questions about the television, radio, newspaper, and Internet use. After the completion of each presentation, a set of open ended questions, about the subject of the stimulus material, in order to measure the level of comprehension and remembering were asked to the participants. Last, but not least, one multiple choice question was asked to explore students' evaluation of their behaviors when they were exposed to the double and triple component presentational stimuli.

In all presentations, time use is kept constant with the reading duration of the text materials. For the coding procedure, for the questions used for measuring comprehension, "1" is given for the full correct answers, "0.5" is given to the partly correct answers and "0" is given for the wrong answers. Similarly, for remembering questions "1" is given for correct answers and "0" is given for the wrong answers. In order to provide consistency, all the coding process is done by the researcher and a colleague in order to ensure inter-rater reliability. Preliminarily, in the first experiment, for each presentational stimulus, 80 participants were invited, but some of the invited did not turn up. Therefore, each group was consisted of 60 participants. For each presentational material, each group was divided into three and the experiments were completed in successive sessions. Participants that were invited from different departments and faculties were invited to the FCMS in consecutive five days in groups of 60 and in each day one of the presentational stimulus component test was realized.

The preliminary analysis for both experiments indicated that there was no significant difference among the gender, age and the income level of the families of the participants.

As it has been mentioned above, open-ended questions were divided into two sections. These were the questions aimed at measuring comprehension and remembering related to the stimulus materials for all experiments. For the attitude scale questions, in order to create a variable where the value varies between one (the least important) and five (the most important), the coded answers for each question was summed up and divided by the number of answers. The lower values indicate the lack of interest for the instrument in question and the higher values show interest. The reliability of the attitude scale for the first experiment is: alpha=0.811 and mean=3.40.

113 (47%) of the participants were male and 127 (53%) were female. 162 (67.5%) of the participants were Turkish Republic and 78 (32.5%) of the participants were Turkish Republic of Northern Cyprus citizens. 11% of the participants were between 17 and 18, 48% of the participants were between 19 and 20 and 29% of the participants were between 21 1nd 22 years of age. 10% were above 25 years of age. 14% of participants were freshmen, 35% of participants were sophomore, 35% of participants were junior and 15% of participants were senior year students. 41% of the students have basic income or lower, the rest 59% have higher income levels.

At the first stage, preliminary analysis for both experiments indicated that there was no significant difference among the gender, age and income level of the families of the participants.

The data obtained from the correct answers given to the factual and open-ended questions are analyzed in the first experiment, the calculated mean and standard deviations for different stimuli presentations are given in the table below.

Table 3: Calculated mean and standard deviations for different stimuli presentations

	Mean	Standard Deviation
Triple Stimuli	44.92	9.85
Double Stimuli Audio-Video	30.67	7.33
Double Stimuli Audio-text	33.42	7.33
Single Stimulus Text	26.12	9.77
Single Stimulus Audio	11.58	8.46

As the Table 4.1 indicates, according to the correct answers in the first experiment for the triple-stimuli compound M=44.92, SD=9.85, for the audio-video dual stimuli M=30.67, SD=7.33 and for the audio-text dual stimuli M=33.42, SD=7.33. For the single stimulus presentation, M=26.12, SD=9.77 for text and for audio M=11.58, SD=8.47. In this experiment, in order to find whether there is a significant difference among the presentational stimuli, one way analysis of variance (ANOVA) test is applied. According to the between group factor analysis ($F(4,59)=16.758$, $p<0.05$), there is a significant difference among the presentational stimuli in terms of comprehension and remembering. In this study, where a variable is generated by summing the correct answer for each question, the result of the Tukey HSD multiple comparison test (scores = dependent variable) according to between group factor the triple components stimuli compared with the audio stimulus (MD=28.33, $p<0.001$), textual stimulus (MD=18.75, $p<0.001$), audio-visual stimuli (MD=14.25, $p=0.002$) and audio-text stimuli (MD=11.50, $p=0.018$) has more effect in terms of comprehension and remembering. Between audio-text and audio-video double

stimuli presentations (MD=2.75, p=0.938) audio-text and text presentations (MD=7.25, p=0.265) and audio-video and text presentations (MD=4.50, p=0.717) at the level of alpha=0.05 there is no statistically significant difference in terms of comprehension and understanding. At the same time, audio-video (MD=14.78, p=0.002) and audio-text (MD=16.83, p<0.001) double presentations compared to single audio presentation are more efficient in terms of comprehension and remembering. Finally, according to the results of the first experiment, no significant difference is observed between the text and audio presentations (MD=9.58, p=0.07) in terms of comprehension and remembering.

Furthermore, in relation to the data collected from the first experiment, a relationship was sought between the frequency of use of the media instruments, instrument(s) used to obtain news and the trust to the media instrument(s) used to obtain news and the answers given to the questions of comprehension and remembering in the experiment by the participants. To explore whether this relationship exists, the answers given to the comprehension and remembering questions and the answers given to the attitude scale questions were analyzed by the one-way analysis of variance (ANOVA) test. The result obtained from this test shows that according to the between groups factor (F(4,19)=0.117), MS=0.115, p=0.974) there is no significant difference between comprehension and remembering and the frequency of use of the media instruments. Similarly, there is no significant difference between comprehension and remembering and the instrument(s) used to obtain news (F(4,19)=0.114, MS=0.450, p=0.976) and between the comprehension and remembering and the trust to the media instrument(s) used to obtain news (F(4,19)=0.266, MS=0.226, p=0.895).

In the last section of the data collected from the first experiment, students were asked to evaluate their behaviors when they were exposed to the triple components and double components presentational stimuli. The items of the question of 'W*hat do you focus on when you are exposed to the presentational stimuli?'* are: merely reading, merely listening, reading and watching, listening and reading, watching and listening and watching, listening and reading. Respondents were asked to select one of these items according to the stimuli components that they are exposed. The relationship among the correct answer to the comprehension and remembering questions given by the participants to double-stimuli presentation and triple-stimuli presentation and the responses given to their behaviors during the treatment is explored. For the audio-video alternative, for the double-stimuli presentations, the behavior of the respondents taken only audio (Mean=9 SD=3.27) and audio-video (Mean=16.66, SD=9.27) and for the relationship among them one-way analysis of variance test was used. Within groups factor ($F(1,16)=5.468$, MS=48.375, $p=0.033$) yield a statistically no significant difference between the preferences shown toward single and double-stimuli presentation. Therefore, in this double-stimuli presentation, instead of only listening, participants prefer both listening and watching. Similarly, the preferences for the audio-text double-stimuli and text (Mean=7.55, SD=3.60), audio (Mean=1.77, SD=0.97) and audio-text (Mean=12.88, SD=5.96) alternatives were tested via one-way analysis of variance test. Within group factor obtained as a result of the one-way ANOVA test yield a conclusion that the participants, exposed to double stimuli presentation, instead of merely listening or reading prefer both reading and listening at the same time (for audio-text and text MD=5.33 and $p=0.027$ and for audio-text and audio MD=11.11 and $p<0.001$). The results of these two tests show that when the participants are exposed to double-stimuli presentation, instead of following only

one stimulus, participants prefer to follow double-stimuli at the same time. In the triple-stimuli presentation, participants, instead of following single stimulus [text (Mean=0.77, SD=1.30) and audio (Mean=0.44, SD=0.72)], or double-stimulus [audio-video (Mean=4.0 SD=3.24)], or triple-stimulus [text-audio-video (Mean=0.77, SD=0.97)], they prefer to follow double-stimulus as audio-text (Mean=5.22, SD=2.94) and text-video (Mean=5.22, SD=4.17) alternatives. In other words, while a statistically significant difference is sought among the reaction of the participants to different stimulus or stimulus components, it was observed that among text (p=0.008), audio (p=0.003), text-audio-video (p=0.008) and text-video and audio-text, there is no significant difference among video-audio, text-video and audio-text. According to these results, those respondents who were exposed to double or triple-stimuli presentation instead of following single or triple-stimuli forms, they prefer to follow double-stimuli form at the same time. According to the results of the first experiment, the audio stimulus presentation yields the lower effect when compared with the others in terms of comprehension and remembering. On the other hand, audio stimulus is the common denominator of the double stimuli presentations. Therefore, audio stimulus alone is not considered in the second experiment.

Table 4: Descriptive Statistics for Participants Behavior

	Stimulus	Mean	Std. Dev.
AV	A	9.0	3.27
	AV	16.66	9.27
AT	T	7.55	3.6
	A	1.77	0.97
	AT	12.88	5.96
AVT	T	0.77	1.30
	A	0.44	0.72
	AV	4.0	3.24
	AT	5.22	2.94
	TV	5.22	4.17
	AVT	0.77	0.97

A – Audio, V – Video, T – Text, AV – Audio Visual, AT – Audio Text AVT – Audio Video Text

n=240

4.3 The Second Experiment

In order to test the internal validity of the results obtained from the first experiment and for observing the behaviors of the different groups in terms of comprehension and remembering, the second experiment was administered under the same conditions.

For the second experiment, the invited students were divided into two sets according to their CGPA scores. Each set is then divided into four groups (n=14). In this experiment, one group from each set is exposed to one of the audio-video-text, audio-video, audio-text or merely text stimuli presentation.

28 students participated in each session of the second experiment. At the beginning of each session, participants were asked to answer questions that would provide information about their identity and the use of the media. After the exposure to the presentational stimuli, participants are asked to answer the questions of

comprehension and remembering and their behaviors during exposure process. After having the answers of the questions, participants are not allowed to leave the experimental environment. For the second time, participants are exposed to the stimuli materials and once again are asked to answer the same questions.

Table 5: Statistics for experiment two

		SEX	NATIONALITY	AGE	CLASS	INCOME
N	Valid	112	112	112	112	112
	Missing	0	0	0	0	0
Mean		1.50	1.41	2.40	2.40	2.79
Std. Deviation		.502	.494	1.000	.991	1.008

56 (50%) are male and 56 (50%) of the participants are female. 66 (58.9%) of the participants are Turkish Republic and 46 (41.1%) of the participants are Turkish Republic of Northern Cyprus citizens. 22 (19.6%) of the participants are between 17 and 18, 40 (35.7%) of the participants are between 19 and 20, 36(32.1%) of the participants are between 21 1nd 22 and 11(9.8%) are between 23 and 24 years of age. 3(2.7%) are above 25 years age. 21.4% of participants are freshmen, 32.1% of participants are sophomore, 31.3% of participants are junior and 15.2% of participants are senior year students. 37.5% of the students have basic income or lower, the rest 62.5% have higher income levels.

General Linear Model is employed in the analysis of data obtained from the experiment. With this method, it is possible to use variance and multiple regression analysis at the same time. The scores that participants obtained from the comprehension and remembering questions and for the first and the second test according to their CGPA's and stimuli materials exposed are given in the table below.

Table 6: Descriptive statistics for the Second Experiment.

Second Experiment	Stimulus	CGPA	Mean	Std Deviation
First Score	A-V-T	Below 2.00	7.86	0.86
		Over 3.00	10.71	1.33
	A-V	Below 2.00	7.36	1.01
		Over 3.00	9.50	0.76
	A-T	Below 2.00	7.57	1.09
		Over 3.00	9.29	1.07
	T	Below 2.00	6.07	1.00
		Over 3.00	7.07	0.83
Repeated Scores	A-V-T	Below 2.00	11.00	0.78
		Over 3.00	12.93	0.62
	A-V	Below 2.00	9.50	0.76
		Over 3.00	11.36	0.74
	A-T	Below 2.00	9.43	1.02
		Over 3.00	11.29	0.99
	T	Below 2.00	7.64	0.50
		Over 3.00	8.86	0.66

n=112

In order to execute multiple comparison test, 2 CGPA were compared with 4 presentation types. A 2(CGPA below 2.00 vs. CGPA over 3.00) x 4(audio-visual-text vs. audio-visual vs. audio-text vs. text) factorial analysis of variance test is used for the first scores and the repeated scores. For the first scores test of between-subject effects shows that there is a significant interaction between the CGPA and stimuli factors ($F(3,104)=4.181$, $MS=1.014$, $p=0.008$) at the 0.05 level. On the other hand, no significant interaction is observed for the repeated scores between the CGPA and stimuli factors ($F(3,104)=1.30$, $MS=0.604$, $p=0.278$) at the 0.05 level.

According to the results of the first test, pair-wise comparison of the four stimuli presentation shows that the participants exposed to the triple-stimuli presentation ($F=56.37$, $MS=57.14$, $p<0.001$ result obtained from the test of significance for the first scores using unique sums of squares) compared to double stimuli (for audio-visual $F=31.71$, $MS=32.14$, $p<0.001$ and for audio-text $F=20.29$, $MS=20.57$, $p<0.001$) and singe stimulus ($F=6.91$, $MS=7.00$, $p=0.01$) presentations, the level of comprehension and remembering is higher. Those who are exposed to double-stimuli

presentations show the same performance whereas those who are exposed to single stimulus show weaker performance (see also Figure 3).

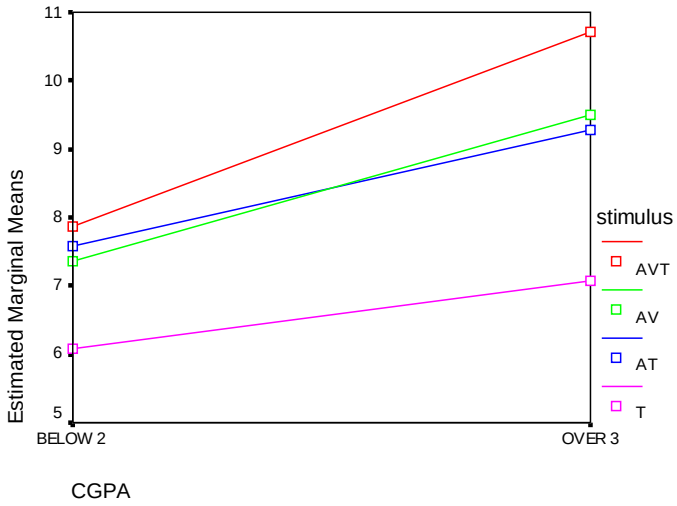

Figure 3: Estimated Marginal Means of First Score

Similarly pair-wise comparison of the 2 CGPA levels show that those participants who has CGPA three and over have higher performance in terms of comprehension and remembering than those who has CGPA below two ($F(1,104)=102.732$, $MS=1.014$, $p<0.001$) (see also Figure 4).

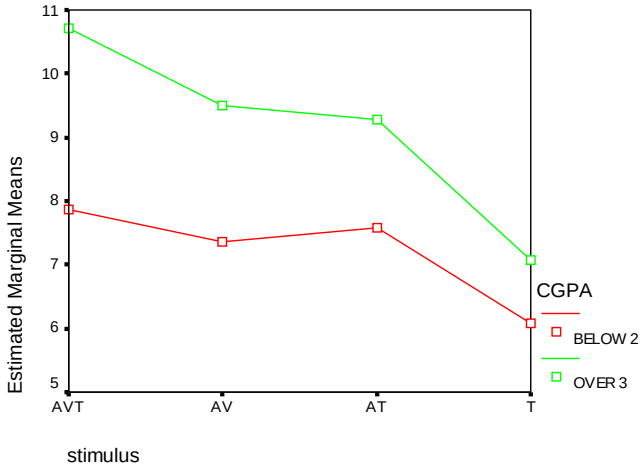

Figure 4: Estimated Marginal Means of First Score

According to the results of the repeated test, pair-wise comparison of the four stimuli presentation shows that, the participants who are exposed to the triple stimuli presentation (F=43.08, MS=26.04, p<0.001 result obtained from the test of significance for the repeated scores using unique sums of squares), the level of comprehension and remembering is higher compared to double-stimuli (F=39.95, MS=24.14, p<0.001 for both audio-visual and audio-text) and singe stimulus (F=17.08, MS=10.32, p<0.001) presentations. Those who are exposed to double stimuli presentations show the same performance whereas those who are exposed to single stimulus show weaker performance (see also Figure 5).

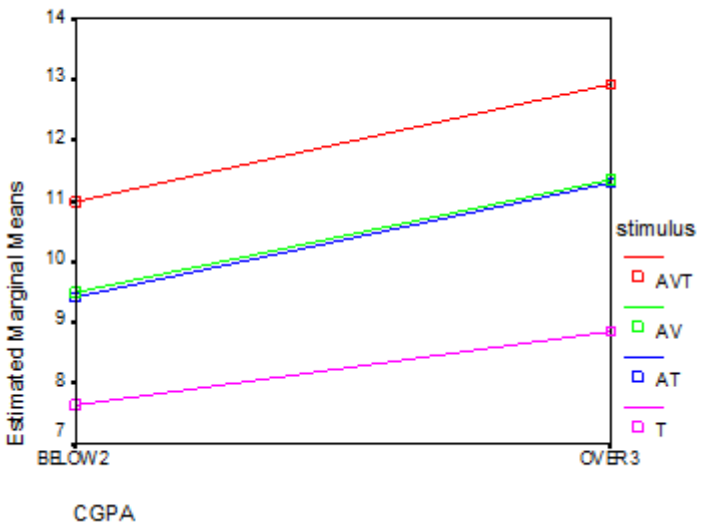

Figure 5: Estimated Marginal Means of Repeated Scores

Similarly, pair-wise comparison of the 2 CGPA levels for the repeated scores show that those participants who have CGPA three and over have higher performance in terms of comprehension and remembering than those who have CGPA below two (F=136.14, MS=0.604, p<0.001) (see also Figure 6).

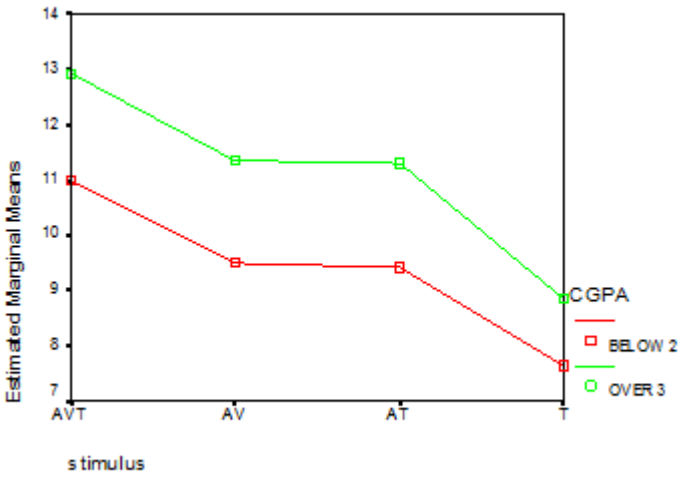

Figure 6: Estimated Marginal Means of Repeated Scores

On the other hand, according to the one way analysis of variance method between groups factor reveals a result that there is no significant difference among the frequency of use of the media instruments ($F(3,7)=6.48$, $p=0.51$), instrument(s) used to obtain news ($F(3, 7)=4.251$, $p=0.098$) and the trust to the media instrument(s) used to obtain news ($F(3,7)=5.254$, $p=0.071$) and the answers given to the questions of comprehension and remembering in the experiment by the participants.

Finally, participants were asked to evaluate their behaviors when exposed to the double and triple-component presentational stimuli, using a multiple choice question: '*What do you focus on when you are exposed to the presentational stimuli?*' Respondents were asked to select one of the stimulus-components to which they were exposed. The relationship between the responses given to this multiple-choice question and the number of correct answers given by the participants to the comprehension and remembering questions after double and triple-stimuli presentations were explored.

Statistically no significant difference has been observed between the results obtained from the double-stimuli presentations and the triple-stimuli presentations in terms of participants' forms of behavior ($F(3,111)=0.143$, $MS=0.561$, $p=0.934$). In the triple-stimuli presentation ($M=3.93$), participants showed preference towards audio-video and audio-text stimuli. As to the audio-visual double-stimuli, participants prefer to follow audio and visual stimuli together ($M=4.79$). Similarly, instead of following merely the text or merely the audio, participants prefer to follow audio-text stimuli together.

4.4 Survey Study

As it has been mentioned in Chapter 3, a survey consisted of 20 questions was conducted amongst 480 respondents.

4.4.1 Pilot Study for the Survey

In the pilot study of the main survey study in order to decide about the questions, 80 participants were asked to place text and audio-video stimuli materials on a television screen or on a web page. The results show that 57 participants divided the screen into two equal parts. Among these, 45 of them divided the screen vertically and placed the audio-visual materials on the left side of the screen and the text on the right side whereas12 of them divided the screen horizontally into two, and placed the audio-visual materials on the top and text materials at the bottom. 12 participants divided the screen into four equal portions and placed the audio-visual materials on the left upper quarter and the text on the remaining three quarters of the screen. The remaining 11 participants placed the audio-visual materials on the upper part (covering 70% of the screen) and the text at the bottom.

4.4.2 Survey Study

224 (46.7%) male and 256 (53.3%) female participants participated in the study. Half of the participants are from North Cyprus (240) and the other half of the participants are from South Cyprus (240). 92 (19.2%) of the participants are between 17 and 18, 134 (27.9%) of the participants are between 19 and 20, 130 (27.1%) of the participants are between 21 and 22 and 104 (921.7%) are between 23 and 24 years of age. 20 (24.2%) are above 25 years age.

Table 7: Descriptive Statistics for the Survey Study

	N	Minimum	Maximum	Mean	Std. Deviation
Sex	480	1	2	1.53	.499
Nationality	480	2	3	2.50	.501
Age	480	1	5	2.64	1.140
Valid N (listwise)	480				

At the first stage, preliminary analysis of the data obtained from the study indicates that there is no significant difference in the gender and age of the participants. The reliability of the five-point attitude-scale questions is: alpha=0.69 and Mean=3.34. In answering research question one; in section three of the questionnaire, 14 different alternatives were presented to the participants. Among these alternatives participants mostly preferred choice ’G’ (F=128), then ‘C’ (F=80) and thirdly they preferred choice ‘K’ (F=62).

In answering the research questions two and three, among the 480 participants only 3.8% of them selected either merely audio-visual presentation (f=14) or merely text presentation (F=4). On the other hand, 51.3% of the participants either strongly agree or agree that they have the national news from the television, 88.3% from

newspapers or 61.7% from the Internet. Similarly, 42.3% of the participants either strongly agree or agree that they obtain international news from the television, 76.7% from the newspaper or 52.5% from the Internet. Moreover, for the choice ‘G’ where 2/3 of the given media (upper part) is for audio-visual presentation and the rest is text presentation, for choice ‘C’ the upper half is for audio-visual and the lower half is for the text stimuli, finally for choice ‘K’ 2/3 of the horizontally divided media is for audio-video stimulus (left part) and the right is for text stimuli. Therefore, although the participants mostly prefer text (print) or audio-visual (television) stimuli alone in obtaining the news from the present media instruments, when opportunities are provided, they chose alternatives where all stimuli are presented at the same time.

The media instrument that the audience uses to obtain the news and thus the interest and attention to these instruments mostly depends on the culture, economical conditions and the social environment. The analysis of variance shows that the habits of media use in the two societies in question are significantly different. According to the multiple comparisons test in having national and international news, the television use of the two societies are significantly different (Between groups factor yield for national news $F(1,489)=30.142$, $MS=1.097$, $p<0.001$ and for international news $F(1,479)=25.595$, $MS=0.985$, $p<0.001$)). In the newspaper use for the national news there is no significant difference between Greek Cypriot and Turkish Cypriot participants ($p=0.118$). For the Internet use in having national news, there is a significant difference between the Turkish Cypriots and the Greek Cypriot participants ($p=0.003$). Finally for the radio use there is a significant difference between the Turkish Cypriot and the Greek Cypriot participants ($p<0.001$) at the level of alpha=0.05. For having the international news, there is a significant

difference between the societies in the Internet use (Between group factor yield f(1,479)=1.799, MS=1.799, p<0.181). For the newspaper usage there is a significant difference between the Greek Cypriot and the Turkish Cypriot participants (p=0.033) and finally a significant difference between the Greek Cypriot and the Turkish Cypriot participants (p<0.001) is observed for the radio use.

On the other hand, the multiple comparison tests show that among the societies there is no significant difference in selecting the multiple stimuli alternatives (F(1, 479)=1.643, MS=8.226, p=0.227). Thus, it is concluded that although the media preferences for having news are different for each society, they show preference towards the same presentation. Moreover, trust to the television in terms of news, there is a significant differences between the Turkish Cypriot and the Greek Cypriot participants (p<0.001). Similarly, significant differences exist for the radio use between the Greek Cypriot and the Turkish Cypriot (p<0.001) participants. In trusting to the newspapers and the Internet significant difference is observed between Turkish Cypriots and the Greek Cypriots (p=0.605 and p=0.907 respectively). It is also important to note that for this question 50.0% of the participants are undecided about trusting the newspapers and 40.0% of the participants are undecided about trusting the Internet. On the other hand, the analysis of variance test shows that there is no significant difference among the societies in terms of general television use (F(1, 479)=0.189, MS=0.707, p=0.664), newspaper use (F(1, 479)=0.077, MS=0.275, p=0.224) and the Internet use (F(1, 479)=0.077, MS=0.973, p=0.781) whereas for general radio use, there is a significant differences between the Greek Cypriot and the Turkish Cypriot (p<0.001) participants.

Chapter 5

CONCLUSION

This chapter presents the Summary of the Study, Conclusions Drawn from the Study and the Suggestion for Further Research.

5.1 Summary of the Study

The present study sets out to explore the effects of the presentational formats on comprehension and remembering of the news by the university students. As it has been mentioned in Chapter 2, Effects Research started in the USA before the 1920's with the newspapers on war propaganda. In the 1920's, the concentration was on exploring the influence of films. It is followed by the effects of radio on presentational elections and war propaganda in the 1940's. This is followed by the investigation of influence of television in the late 1950's. The following decades concentrated on the comparison of these 3 media. In the last decade of the 20th century, the Internet is included in the effects research.

The present study set out to compare and contrast four media (newspaper, radio, television, and the Internet) presentational formats with two consecutive experimental studies. The aim in this part of the study is to find out the effects of stimulus or stimuli-components that maximize the user's comprehension and remembering. In the second part of the study, the preferences of the users among the different presentational formats using the different combinations of text, audio, video

was sought out. Finally, the harmony between the preferences of the users and the stimulus component that maximizes the comprehension and remembering was explored.

5.2 Conclusions Drawn from the Study

In order to pull the threads of the study, research questions and hypotheses laid down in Chapter 1 will be re-visited and answers will be sought from the data obtained from the study.

RQ1: Which stimulus or stimuli-components maximize comprehension and remembering?

In response to the first research question, the results of the experiments indicate that performance of the participants is better in the triple-stimuli presentation when compared with the double-stimuli and single-stimulus presentations. Similarly, comprehension and remembering effects of the double-stimuli on the participants is better than that of the single-stimulus presentations.

These findings support the first hypothesis of the study: As the number of stimulus presented increases, comprehension and remembering also increases.

H1: The effects of dual stimuli are greater than the effects of a single stimulus, and that presentation including all the stimuli is the most efficient.

RQ2: What arrangement of stimuli components, in terms of the format employed maximizes user comprehension?

Responses obtained from both experiments show that, during the double and triple-stimuli presentations, participants tend to follow and pay attention to the double-

stimuli rather than single stimulus or triple-stimuli. Although these findings show that following double-stimuli increases comprehension and remembering more than the single stimulus, this contradicts with the outcome of the second experiment of the study: comprehension and remembering is higher in triple-stimuli presentations than in the single and double-stimuli presentations, but participants who are exposed to either triple or double-stimuli tend to follow double-stimuli at the same time during the presentation. While in the triple-stimuli presentation of the first experiment, participants tended to follow the audio-video, audio-text and text-video. In the triple presentation of the second experiment, participants tended to follow the text-video and text-audio double-stimuli. Indeed, these results indicate that comprehension and remembering are not based on the effect of the stimuli: the increase in the number of stimuli increases the number of alternatives for the participants; and when they are exposed to triple-stimuli, they prefer the double stimuli as the one that is the most appropriate and familiar to them.

H2: There is a positive relation between the frequency of use of the mass media instruments, and media sources from which news is obtained.

H2A: There is a positive relation between the frequency of use of the mass media instruments, and trust in the media instruments.

H2B: There is a positive relation between the frequency of use of the mass media instruments, and comprehension and remembering.

The findings mentioned above support Darley's (1999) hypothesis, which states that the style of information processing is related to the user's perception of the media. It should also be emphasized that since the participants are university students and their proficiency in reading skill is a significant factor that contributed to this outcome. On the other hand, the analysis of the data obtained from the experiments shows that

there is no relationship between frequency of use of the media instruments, and trust in the media instrument(s) used for obtaining the news by the participants and on their comprehension and remembering. In other words, these results do not support the second hypothesis of the study.

H3: In repeated exposures, for every stimulus or compound-stimuli presentation comprehension and remembering increases.

Results obtained from the first and second experiments show that the findings, in terms of comprehension and remembering, are directly related with each other. Also the study revealed that repeated exposure increase comprehension and remembering. This outcome supports the third hypothesis.

RQ3: Which one of the stimuli or compound stimuli presentation would be preferred by the audience?

In order to answer the third research question, the data obtained from the second stage of the study is analyzed. As it has been mentioned earlier, in this study, participants were asked to place audio-visual and text materials they would prefer in order to maximize comprehension and remembering, on presentational instrument. The participants indicated that they give the same importance to the text and audio-visual materials. The majority indicated their preference by dividing the screen into two equal portions; allocating the upper side to the audio-visual and lower side of the screen to the text stimulus.

RQ4 Is there a difference between the responses given to the variety of stimuli and academic success of the participants?

According to the findings of the second experiment, the academic success of the participants and their comprehension and remembering performances are directly proportional with each other. When the responses given to the comprehension and remembering questions are investigated without considering the medium, there is a significant difference between the participants with lower and higher levels of academic success. This indicates that the differences in comprehension and remembering depend not only on the instrument but also on the individuals.

RQ5: Is there a difference between the preference shown to the media tools for obtaining the news, trust felt towards these devices and the use of existing mass media tools between the university students who live in North and South Cyprus?

In order to create effective presentation of information, there is a need to exploit both current and developing communication technologies. The opportunities that these technologies provide should be evaluated considering the habits of individuals and societies. On the other hand, the increase in the number of instruments used to deliver the news, provide the individuals with a number of instruments to choose in order to obtain the news. On the other hand, this pluralism led to the convergence of media instruments and at some points tends to cause disorder and ineffectiveness. This study explored which presentational format might create maximum effect, both in terms of its technological properties and content, parallel to the developments in convergence. Considering the technical properties, content, and speed-dependent attributes, for sending equally represented multiple-stimuli as the presentational environment creates the maximum effect.

As it has been mentioned earlier, the second step of the study was a survey conducted on North and South Cyprus. Analysis of the data obtained from the survey indicates that different societies have different use of the media, different media sources for having news; and, they trust different instruments. Although these societies have some features in common, these differences are due to the variations in culture, economical conditions, and social environment. The individual differences in interest to the media and the news and the personal habits for using media instruments are the reasons of these differences. In the present study, all participants are university students who have attained certain educational level. Therefore, even the existence of the above mentioned differences, it is expected that media use for having news and the trust felt towards these media instruments would be the same within the limitation of the university students, a group which has a certain level of education. Thus, this contradiction is mostly because of the presence of the various media instruments where they present news in different presentational formats.

RQ6: Is there a difference between the participants' preference towards the media tool used to reach the news the trust felt towards these tools and presentational style?

The analysis of the data obtained from the survey shows that only 5.2% of the total respondents show preference towards the presentational formats appropriate to the present media instruments (as either merely text or merely audio-visual) in obtaining the news. Rather, in different presentational proportions, the participants emphasized the use of all stimuli at the same time. Therefore, the consistency in preferring multiple-stimuli presentational formats among the societies and the differences in the preferences of the media instruments in obtaining the news, trust in obtaining news and the daily use of these media prove that the users follow what is presented to

them. Hence, according to the results of the study which include two different societies, individuals have restricted access according to the presentational formats of the present media instruments. In other words, audience follows what is presented to them by these instruments. Therefore, attempting to measure the effects of the present media in terms of comprehension and remembering means to measure the effects of this trial. Moreover, such studies, as it was before, yield different results because the participants come from different societies.

H4: There is a positive relation between the preferences of the user and the stimulus or stimuli-components that maximizes the comprehension and remembering of the audiences.

The results of the both experiments at the first step of the study show that multiple-stimuli increase comprehension and remembering. The result of the survey conducted at the second step of the study also indicate that user prefer multiple-stimuli. These results lead us to accept the fourth Hypothesis.

5.3 Suggestions for Further Research

The effect power of the media or the concept of media effects in general, in the light of the contribution of the previous research to the literature is not ignored. But, when considering the effects of the media, there is a necessity to take into account of the developing, renewing, and converging communication technologies. Moreover, these technologies cause the disappearance of the many restrictions, provide more presentational formats and change the mass communication model from one to many to one to one. As it can be seen from the results of this study, the mass media effect replace itself with the motivation of learning and the presentational preferences of the individual. Moreover, with a broad statement, the question of which (converged) media instrument with which presentational format affected whom and at what level

comes into the agenda. Therefore, parallel to the outcome of this study, there is a necessity to further extend the similar studies among not only the different societies and cultures but also among different age and education levels within the same societies.

On the other hand, at the outset of the new millennium, convergence of the media instrument is expediting. Mobile phones for example has recently become radio, television, newspaper and the Internet in addition to its main function as the telephone. The concept of convergence is bringing the issue of visual design into focus. Quick developments in technology facilitated the visual aspect of the presentational formats. Technological developments are one side and art is the other side of the media. Therefore, further research should seek to investigate how visual aspect of the converging media can be improved in relation to the audience preference.

This present study merely focused on university students. It has been observed that younger generation deals better with technology. Furthermore, older generation is rather slower and dubious toward new technology. This fact necessitates a variety in the presentational format rather than solely one for all ages.

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APPENDICES

Appendix A: Data Collection Tools for the Experiments

Questions Used for the Pilot Study of the Experiments

1- Olayı ana hatlarıyla anlatırmısınız?

2- Bu yöntemin yararları nelerdir?

3- Kullanım yöntemini anlatınız?

4- Normal iğne yönteminde elde edilen etki ile yöntemden elde edilen etki arasında fark var mıdır? Eğer varsa nedir?

5- Yeni iğnenin adı nedir?

6- Dış tedavisi dışında kullanılan alanları yazınız?

7- Dr. Martin Meine hangi ülkenin vatandaşıdır?

8- Yeni yöntemi en çok kimler talep ediyor?

Questionnaire for Experiment 1

Cinsiyetiniz

A- Erkek B- Kadın

Uyruğunuz

A- TC B- KKTC C-Diğer(Lütfen belirtiniz

Yaşınız

A- 17-18 B- 19-20 C- 21-22 D- 23-24 E- 25 ve üzeri F- Diğer

Sınıfınız

A- 1. sınıf B- 2. sınıf C- 3. sınıf 4- 4. sınıf

Ailenizin aylık geliri

A- 500-1000$ B- 1000-2000$ C- 2000-3000$ D- 3000-4000$ E- 4000$ ve üzeri

1 Haberin ana teması nedir?

2 Emzirmenin anneye yararları nelerdir?

3 Sizce okuduğunuz haberin yapılma amacı nedir?

1 Emzirme haftası ne zamandır?

2 İlk üç ayda emzirmenin doğal koruyuculuğu yüzde kaçtır?

3 Emzirme ve süt üretimi günde kaç kalori harcanmasına neden olur?

4 Süt üretiminden sorumlu hormonun adı nedir?

5 Doğum uzmanı doktorun adı nedir?

6 Doktorun bağlı olduğu hastahanenin adı nedir?

7 Emzirmenin anne sağlığı açısından yararları nelerdir?

8 Gebelik olasılığı hangi durumda ortadan kalkar?

9 Emzirme sırasında harcanan kalori günde kaç saat bisiklet kullanılarak harcanabilir?

1- Televizyonu günlük ortalama izleme zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

2- Radyoyu günlük ortalama dinleme zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

3- Gazeteyi günlük ortalama okuma zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

4- Internet'i günlük ortalama kullanma zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Televizyonda ulusal haberleri izlerim.					
Televizyonda uluslararası haberleri izlerim.					
Televizyondan aldığım bilgiye güvenirim.					
Televizyonda film izlerim.					
Televizyonda dizi izlerim.					
Televizyonda eğlence programı izlerim.					
Televizyonda müzik programı izlerim.					
Televizyonda spor programı izlerim.					
Televizyonda belgesel programları izlerim.					
Radyoda ulusal haberleri dinlerim.					
Radyoda uluslararası haberleri dinlerim.					
Radyodandan aldığım bilgiye güvenirim.					
Radyoda müzik programlarını dinlerim.					
Radyoda spor haberlerini dinlerim.					
Radyoda belgesel programları dinlerim.					
Radyoda tartışma programları dinlerim.					
Radyoda eğlence programlarını dinlerim.					
Gazetede günlük ulusal siyasi haberleri okurum.					
Gazetede günlük uluslararası siyasi haberleri okurum.					
Gazeteden aldığım bilgiye güvenirim.					
Gazetede günlük toplumsal yaşam ile ilgili haberleri okurum.					
Gazetede köşe yazarlarını okurum.					
Gazetede magazin haberlerini okurum.					
Gazetede spor haberlerini okurum.					
Internet'i gazete okumak için kullanırım					
Internet'ten aldığım bilgiye güvenirim.					
Internet'i araştırma yapmak için kullanırım.					
Internet'i oyun oynamak için kullanırım.					
Internet'i chat yapmak için kullanırım.					
Internet'i e-posta amaçlı kullanırım.					
Internet'i alışveriş yapmak için kullanırım.					
Internet'i gezinti yapmak için kullanırım.					

1- Haberi izlerken en cok hangi uyaranı veya uyaranları takip ettiniz?
a- yazı b- görüntü c- ses d- yazı ve görüntü e- ses ve yazı
f- görüntü ve ses g- yazı- ses- görüntü

Questionnaire for Experiment 2

Cinsiyetiniz

A- Erkek B- Kadın

Uyruğunuz

A- TC B- KKTC C- Diğer (Lütfen belirtiniz)

Yaşınız

A- 17-18 B- 19-20C- 21-22D- 23-24 E- 25 ve üzeri F- Diğer

Sınıfınız

A- 1. sınıf B- 2. sınıf C- 3. sınıf 4- 4. sınıf

Ailenizin aylık geliri

A- 500-1000$ B- 1000-2000$ C- 2000-3000$ D- 3000-4000$ E- 4000$ ve üzeri

1 Haberin ana teması nedir?

2 Seleri'nin tüketim nedenleri nelerdir?

1 Seleri hangi hastalıklara iyi geliyor?

2 Düş kırıklığı yaşayan insanlar seleri yanında hangi sebzeyi yemeli?

3 Seleri insanları hangi halden uzak tutuyor?

4 Seleri'nin hangi tür yemekleri yapılıyor?

5 Seleri'nin kaç çeşidi vardır?

6 Seleri'nin içerdiği maddelerden ikisini yazınız?

7 Öğretim üyesinin adını yazınız?

8 Seleri hangi hastalıklara iyi geliyor?

9 Seleri hangi vitamini içeriyor?

10 Seleri'nin ana vatanı neresidir?

11 Seleri hangi ortamda yetişiyor?

1- Televizyonu günlük ortalama izleme zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

2- Radyoyu günlük ortalama dinleme zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

3- Gazeteyi günlük ortalama okuma zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

4- Internet'i günlük ortalama kullanma zamanım

a- Hiç kullanmam b- 0-2 saat c- 3-5 saat d- 6-8 saat e- 9 ve daha fazla saat

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Televizyonda ulusal haberleri izlerim.					
Televizyonda uluslararası haberleri izlerim.					
Televizyondan aldığım bilgiye güvenirim.					
Televizyonda film izlerim.					
Televizyonda dizi izlerim.					
Televizyonda eğlence programı izlerim.					
Televizyonda müzik programı izlerim.					
Televizyonda spor programı izlerim.					
Televizyonda belgesel programları izlerim.					
Radyoda ulusal haberleri dinlerim.					
Radyoda uluslararası haberleri dinlerim.					
Radyodandan aldığım bilgiye güvenirim.					
Radyoda müzik programlarını dinlerim.					
Radyoda spor haberlerini dinlerim.					
Radyoda belgesel programları dinlerim.					
Radyoda tartışma programları dinlerim.					
Radyoda eğlence programlarını dinlerim.					
Gazetede günlük ulusal siyasi haberleri okurum.					
Gazetede günlük uluslararası siyasi haberleri okurum.					
Gazeteden aldığım bilgiye güvenirim.					
Gazetede günlük toplumsal yaşam ile ilgili haberleri okurum.					
Gazetede köşe yazarlarını okurum.					
Gazetede magazin haberlerini okurum.					
Gazetede spor haberlerini okurum.					
Internet'i gazete okumak için kullanırım					
Internet'ten aldığım bilgiye güvenirim.					
Internet'i araştırma yapmak için kullanırım.					
Internet'i oyun oynamak için kullanırım.					
Internet'i chat yapmak için kullanırım.					
Internet'i e-posta amaçlı kullanırım.					
Internet'i alışveriş yapmak için kullanırım.					
Internet'i gezinti yapmak için kullanırım.					

2- Haberi izlerken en cok hangi uyaranı veya uyaranları takip ettiniz?
a-yazı b- görüntüc- ses d- yazı ve görüntü e- ses ve yazı
f- görüntü ve ses g- yazı- ses- görüntü

Appendix B: Data Collection Tools for the Survey Study

Questionnaire for the Survey Study

1 Cinsiyetiniz

A- Erkek B- Kadın

2 Yaşınız

A- 17-18 B- 19-20 C- 21-22 D- 23-24 E- 25 ve üzeri

1- Televizyonu günlük ortalama izleme zamanım

a- Hiç kullanmam b- 0-1 saat c- 1-2 saat d- 2-3 saat e- 3 ve daha fazla saat

2- Radyoyu günlük ortalama dinleme zamanım

a- Hiç kullanmam b- 0-1 saat c- 1-2 saat d- 2-3 saat e- 3 ve daha fazla saat

3- Gazeteyi günlük ortalama okuma zamanım

a- Hiç kullanmam b- 0-1 saat c- 1-2 saat d- 2-3 saat e- 3 ve daha fazla saat

4- Internet'i günlük ortalama kullanma zamanım

a- Hiç kullanmam b- 0-1 saat c- 1-2 saat d- 2-3 saat e- 3 ve daha fazla saat

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Keşinlikle Katılıyorum
Televizyonda ulusal haberleri izlerim.					
Televizyonda uluslararası haberleri izlerim.					
Televizyondan aldığım bilgiye güvenirim.					
Radyoda ulusal haberleri dinlerim.					
Radyoda uluslararası haberleri dinlerim.					
Radyodandan aldığım bilgiye güvenirim.					
Gazetede günlük ulusal haberleri okurum.					
Gazetede günlük uluslararası haberleri okurum.					
Gazeteden aldığım bilgiye güvenirim.					
Internet'i gazete okumak için kullanırım					
Internet'ten aldığım bilgiye güvenirim.					
Internet'i araştırma yapmak için kullanırım.					

English Version of the Questionnaire for the Survey

What is your gender?
A- Male B- Female
What is your age?
A-17-18 B- 19-20 C- 21-22 D- 23-24 E-25 and over

Daily Media Usage

Average duration of watching television
A- I Never Watch B- 0-1 hours C- 1-2 Hours D- 2-3 Hours E- 3 hrs or more

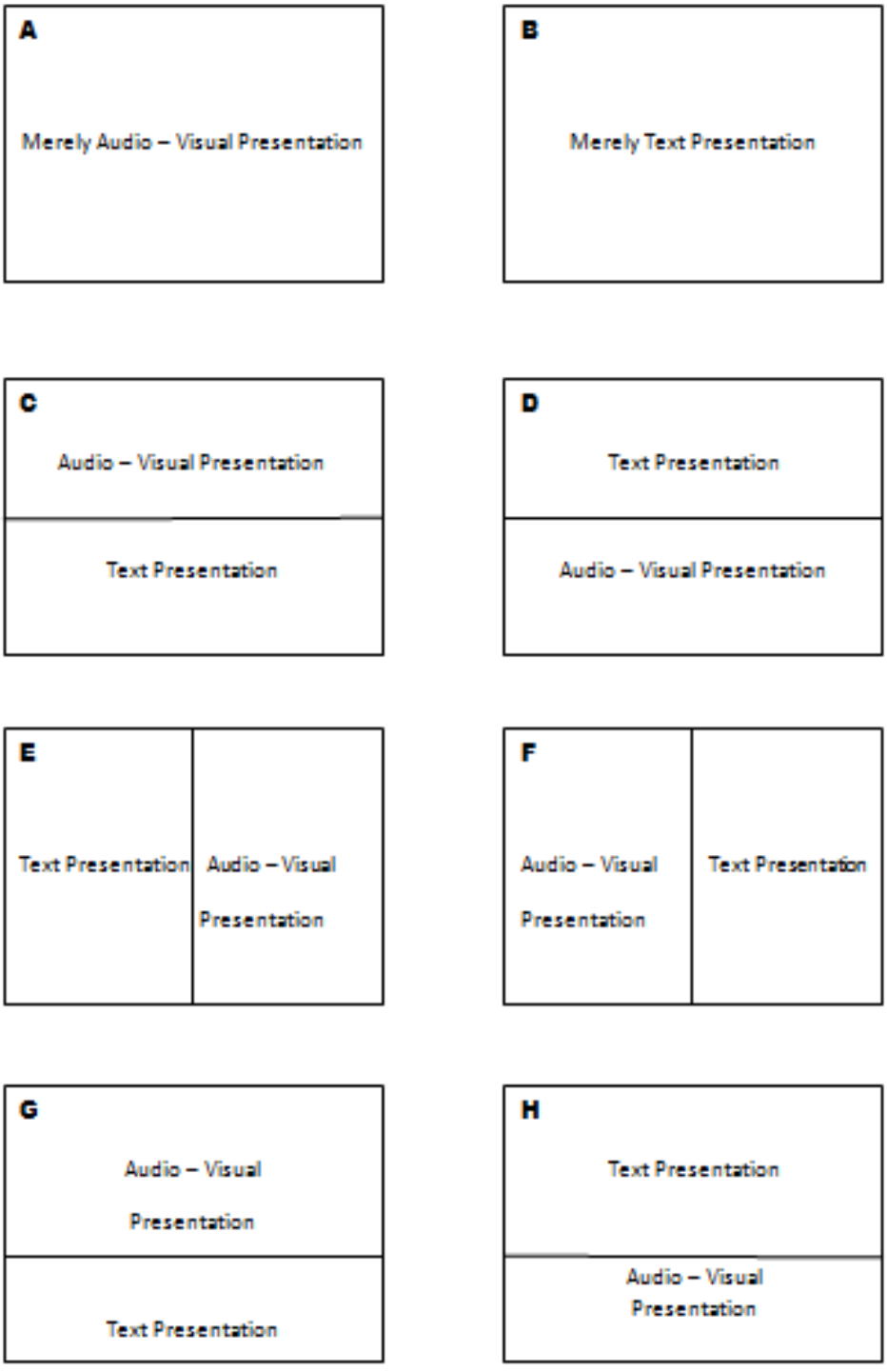
Average duration of listening to the radio
A- I Never Listen B- 0-1 hours C- 1-2 Hours D- 2-3 Hours E- 3 hrs or more

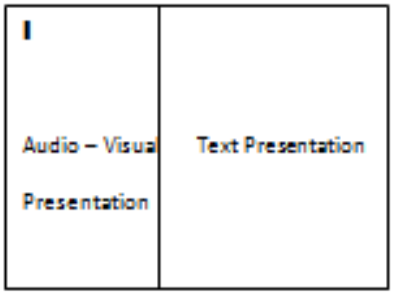
Average duration of time spent reading newspaper
A- I Never Read B- 0-1 hours C- 1-2 Hours D- 2-3 Hours E- 3 hrs or more

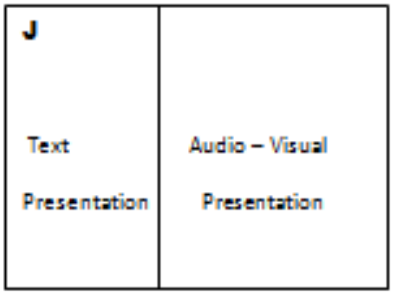
Average duration of time spent on the Internet
A- I Never Use B- 0-1 hours C- 1-2 Hours D- 2-3 Hours E- 3 hrs or more

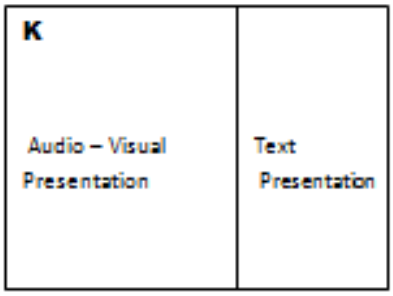
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I watch national news on the television.					
I watch international news on the television.					
I trust the information I obtained from TV					
I listen to the national news at the radio					
I listen to the international news at the radio					
I trust the information I obtained from radio					
I read national news on the newspaper.					
I read international news on the newspaper.					
I trust the information I obtained from the newspaper					
I read national news on the Internet.					
I read international news on the Internet.					
I trust the information I obtained from the Internet					

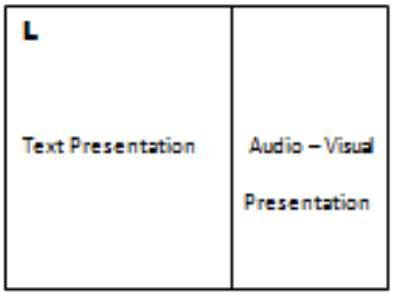
1- Assume you watch a news program on the TV or the Internet. The same news is sent to you in two different formats as audio-visual and text. Assume the screens presented below are computer or TV screens. In these screens, the news in the format of text or audio-video are presented to you in different ratios and formats When you read any news, **choose** the option that would help you to understand it better and help you to remember it.











If you have any suggestion different from those mentioned above, please indicate by drawing.

Appendix C: Stimulus Materials

News Story for the Pilot Study

Retrived from: http://webarsiv.hurriyet.com.tr/2001/11/06/47162/aspR

Retrived on: 01/07/2010

İğnesiz enjektör devrimi

İğne olmaktan korkanlara müjde. Ucunda iğne olmayan ve ilacı vücuda püskürterek zerk eden yeni bir enjektör yapıldı.

Çocukları ve hatta bazı yetişkinleri bile doktora gitmekten alıkoyan kabusu bitirecek iğnesiz enjeksiyon sistemine ‘‘injex’’ adı verildi. Yeni enjektör, ilacın iğnesiz, basınçlı püskürtme tekniği ile deri altına zerk edilmesini sağlıyor. Özellikle diş hekimleri tarafından kullanımına başlanan bu yeni sistemde, sıvı haldeki uyuşturucu, diş etine püskürtülüyor. Bu sayede hastalar hiçbir acı hissetmiyor.

Korkan yetişkinler

Alman Diş Hekimi Dr. Martin Meine, yeni yöntemde uyuşturucunun etkisinin normal iğneninkiyle aynı olduğunu belirterek ‘‘Bu yeni enjektörü özellikle çocuklarda uyguluyoruz ama iğneden korkan yetişkin erkekler de bu yöntemin uygulanmasını talep ediyor’’ diyor.

Deri altı için

Yöntem henüz yeni olduğu için, bazı kısıtlamaları da var. Diş hekimliğinde sadece ağzın rahat ulaşılabilen yerlerinde kullanılabiliyor. Azı dişlerine de uygulanabilmesi için yeni bir alet üzerinde çalışmalar yürütülüyor. Basınçlı jet enjeksiyon, diş

hekimliğinin yanısıra cilt altından yapılan enjeksiyonlarda da kullanılıyor. Hatta bazı aşılarda ve diyabette, ensülin terapisinde uygulanıyor.

Deri altına püskürtüyor

Yeni enjektör, normal bir enjektöre benziyor ancak ucunda iğne bulunmuyor. İçinde bulunan bir yay ve itenekle, sıvı haldeki ilaç, ufacık bir delikten deri altına püskürtülüyor.

Translations of the news material used in the pilot study

Injection without syringe reform

Good news for those who are afraid of having injection. An injection is made that has no syringe at the tip and injects the medicine to the body by spraying.

The name “injex” is given to this new injection system which has no syringe and prevent the nightmare that children and some adults have and stop them from visiting the doctor. The new injection provides the medicine is injected under the skin with a pressure spraying technique without syringe. This new system, which is particularly started to be used by the dentists, the drug in the form of liquid is sprayed to the tooth flesh. Thus, the patients do not feel any pain.

Adults who are afraid

German dentist Dr. Martin Maine, by pointing out that the effect of the drug in this new system is same as the normal injection and said that “this new injection is applied to the children but the grown up men who are afraid of injection also request the use of this new system”.

For under skin

Since the system is still new, it has also some restrictions. In dentistry it is only used in the mouth which can be reached very easily. In order to be applied to the molar teeth, studies are continuing on a new instrument. The pressurized jet injection besides the dentistry is also used in the injections done under the skin. Moreover, it is also used in some injections and in insulin therapy in diabetics.

Sprayed under the skin

This new injection is similar to the normal injection but no syringe at the tip. With a spring and a pushing system inside, the medicine in the form of a liquid is sprayed under the skin from a little nose.

News Story for the First Experiment

Retrived from: http://www.hekimce.com.tr/index.php?kiid=1841

Retrived on: 01/07/2010

Seleri Ye, Sakin Kal...

Akdeniz mutfağının önemli lezzetlerinden seleri, içerdiği maddeler sayesinde sinirliliği önlüyor. B vitamini, demir ve kireç yönünden zengin olan seleri, şeker, yüksek tansiyon ve romatizma hastalıklarına da iyi geliyor...

Öfke, yalnızlık sıkıntısı, karasevda, çekingenlik ve daha bir dizi ruhsal durumda nelerin yenmesi gerektiği sıralanmış. "Düş kırıklığı" çekenlerin ise, başlıca seleri ve havuç yemesi tavsiye ediliyor. Akdeniz mutfağının önemli yiyecekleri arasında yer alan selerinin, içerdiği maddeler sayesinde insanları sinirlilik halinden uzak tuttuğu bildirildi.

Salatası, çorbası, zeytinyağlı yemeği yapılarak tüketilebildiği gibi, yemeklere kendine özgü bir lezzet de katan seleri, içerdiği değerlerle alternatif tıpta birçok hastalığın tedavisinde de kullanılıyor. Uludağ Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümü Öğretim Üyesi Prof. Dr. Rahmi Türk, kış mevsiminin önemli sebzeleri arasında yer alan selerinin, besleyici özelliğinin yanı sıra sağlık açısından birçok yararı olduğunu söyledi.

Yaprak ve kök selerini olarak iki çeşidi bulunan ve anavatanı Güney Avrupa olan selerinin, deniz havası alan rutubetli yerlerde yetiştiğini ve soğuk havada kolayca don tuttuğunu anlatan Prof. Dr. Türk, lezzeti ve besin değerinde kayıp meydana gelmemesi için alırken don yememiş olmasına özen gösterilmesi gerektiğini belirtti.

Sinirlerinize Hakim Olmak İçin

Selerinin en çok içeriğindeki "sedanonik anhidrit", "sedanolin", "limonen", "palmitik asid" ve "gayakol" gibi maddeler sayesinde zihinsel yorgunluğun giderilmesine iyi geldiğini kaydeden Prof. Dr. Türk, B vitamini, demir ve kireç içeren selerinin, unutkanlığı ve sinir yorgunluğunu giderdiğini bildirdi.
Idrar söktürücü özelliğe de sahip bulunan seleri, böbrek taşı ve kumlarının düşürülmesine yardımcı olduğunu ifade eden Prof. Dr. Türk, selerinin şeker, yüksek tansiyon ve romatizma hastalıklarına da iyi geldiğini sözlerine ekledi.

Translations of the news material used in the first experiment

Eat Celery, Keep Cool

Celery, which is one of the important tastes of the Mediterranean kitchen, prevents nervousness because of the materials it contains. Celery, which is rich with vitamin B, iron and lime, is good for diabetics, blood pressure and rheumatism illnesses.
In the cases of anger, loneliness, high melancholy, shyness and in many other psychological conditions what need to be eaten is listed. For those who suffer from disappointment it is advised to eat mainly celery and carrot. Celery, which is among one of the important food of the Mediterranean kitchen, based on its ingredients it is maintained that it keeps people away from the state of nervousness.
While it is consumed by making its salad, soup, and food cooked in olive oil, it adds its special taste to the foods; and because of its ingredients it is used in the treatment of a number of illnesses in alternative medicine. Prof. Dr. Rahmi Turk who is a lecturer in the Uludağ University at the Faculty of Architecture in the Department of

Horticulture has said that the celery which is one of the important vegetables of the winter season besides its nutritious property has many benefits in terms of health.

Prof. Dr. Turk has explained that, celery whose mainland is Southern Europe, has two types as leaf and root celery grows at the places with the sea breeze and humidity and utmost attention should be paid that it should not be frozen in cold weathers in order not to loose anything from its tastes and at its nutritious value.

In order to hold your nerves

Prof. Dr. Turk mentions that, because of the materials like “sedanonik anhydride”, “sedanolin”, “limonene”, “palmitic acid” and “gayakol” that celery has, it is helpful in the removing of the mental tiredness, and said that the celery that contains vitamin B, iron and lime which prevent forgetfulness and nervous tiredness. Prof. Dr. Turk explains that the celery besides the property of urine tear down, also helpful in braking the kidney stones and sands and add that celery is helpful in diabetics, high blood pressure and rheumatism illnesses.

News Story for the Second Experiment

Retrived from: http://gebelik.org/dosyalar/emzirme/emzirme2.html

Retrived on: 01/07/2010

''Emzirme, doğal bir doğum doğum kontrol yöntemidir''

Vehbi Koç Vakfı (VKV) Amerikan Hastanesi kadın hastalıkları ve doğum uzmanı Dr. Alper Mumcu, "emzirmenin, doğal doğum kontrol yönteminden kilo verme ve kanserden korunmaya kadar pek çok yararı bulunduğunu" bildirdi.

Dr. Mumcu, "1-8 Ekim Emzirme Haftası" dolayısıyla yaptığı yazılı açıklamada, emzirmenin anne sağlığı açısından yararlarına işaret ederek, bunun ayrıca doğal bir doğum kontrol yöntemi olduğunu belirtti.

Süt üretiminden sorumlu prolaktin hormonunun, beyinde yumurtlamayı kontrol eden hormonların salgılanması üzerinde etkisi bulunduğuna dikkati çeken Dr. Mumcu, "Bu etki sonucu yüksek prolaktin düzeyi varlığında, yumurtalıkta yeni yumurta hücresi gelişimi olmaz. Yumurtlama olmadığı için gebelik olasılığı da ortadan kalkar. Emzirmenin ilk 3 ay için koruyuculuğu yüzde 90'ın üzerindedir" dedi.

Emzirmenin hamilelikte alınan kiloların verilmesini de kolaylaştırdığını vurgulayan Dr. Mumcu, şunları kaydetti: "Emzirme ve süt üretimi, günde yaklaşık 500-1000 kalori harcanmasına neden olur. Emzirmeyen annelerin, bu kaloriyi yakmaları için 1 saatten daha uzun bir süre bisiklet binmesi ya da yürümesi gerekir. Emzirme ayrıca kanserden korur."

Translations of the news material used in the second experiment

Breast Feeding is a Natural Birth Control Method

Dr. Alper Mumcu a gynecologist specialist at the American Hospital belonging to the Vehbi Koç Foundation stated that “breast feeding has a number of benefits from being natural birth control method to loosing weight and prevention of cancer.

Dr. Mumcu in the written announcement he had for the “1-8 October Breast Feeding Week” pointed out the benefits of breast feeding for the health of mother and stated that this is also a natural birth control method. Dr. Mumcu who has drawn our attention that proloktin hormone which is responsible for milk production has influence on the production of spawn in the brain and stated that “as a result of this stimulus high prolaktin level is achieved and new egg cells are not developed”. He pointed out that since there is no egg, the risk of pregnancy is not possible. Prevention of pregnancy as a result of breast feeding in the first three months is above 90%.

Dr. Mumcu has stressed that breast feeding facilitates the loosing of weight that is gained during the pregnancy and mentioned that “breast feeding and milk production cause to loose 500 – 1000 calories per day. Those mothers who do not breast feed in order to burn the same amount of calories should ride a bicycle more than an hour or walk. Apart from this, breast feeding prevents cancer.