AUDIO - VISUAL PRESENTATION ON SPEECH READING: A SCRIPT

Reg.No.M92l4

AN INDEPENDENT PROJECT WORK SUBMITTED IN PART FULFILMENT FOR FIRST YEAR M.Sc. (SPEECH AND HEARING) TO THE UNIVERSITY OF MYSORE

ALL INDIA INSTITUTE OF SPEECH AND HEARING: MYSORE-570 006

MAY 1993

DEDICATED TO

BAPA MA

NONA BOU

KAKA & KHUDI

for building the foundation of my life.

CERTIFICATE

This is to certify that the independent Project entitled: AUDIOVISUAL PRESENTATION ON SPEECHREADING: A SCRIPT is the bonafide work done in part fulfilment for First Year M.Sc. (Speech and Hearing) of the student with Register No.M9214.

MYSORE
May 1993

Director
All.India Institute of Speech and Hearing, Mysore-6

CERTIFICATE

This is to certify that this Independent Project entitled: AUDIO VISUAL PRESENTATION ON SPEECHREADING: A SCRIPT has been prepared under *my* supervision and guidance.

Mysore

May 1993

GUIDE

DECLARATION

I hereby declare that this Independent Projectentitled: AUDIOVISUAL PRESENTATION ON SPEECHREADING: A SCRIPT is the result of my own study undertaken under the guidance of Dr. (Miss) s.Nikam, Prof, and Head of the Department of Audiology, and Director, All India Institute of Speech and Hearing, Mysore and has not been submitted earlier at any University for any other Diploma or Degree.

Mysore

May 1993 Reg.No.M92l4

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Lastly, needless to say, I am thankful to Akka Mrs.Rajalakshmi for her neat typing and the amount of visuo-motor exercise she has done in the shortest period of time.

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INTRODUCTION

The open secret of human exchange is to give the other man behaviour that is more valuable to him than it is costly to you and to get from him behaviour that is more valuable to you than it is costly to him.

- Homans, 1961,

Speech-reading is a type of non-auditory communication where the visual shape and movement of a speaker's articulators (ie, tongue, lip and teeth) become important communicative elements. In normal oral communication the articulators serve as modulators of the air-stream. This modulation results in various speech sounds which the ear of a listener receives and passes it to higher brain centres for interpretation. In the process of speech-reading eye is the primary receptor, and the ear is only assisting. So an augmenting sensory pathway can be used for aurally handicapped.

Speechreading is a process in which visual observation of the movements of a speaker's lips, face, (eyes, jaw, mouth, cheeks, expressions), gestures and body movements are incorporated by a listener to determine what has been said. It is used to enhance communication.

Speechreading training is employed by audiologists in their attempts to improve or develop communication skills of hearing-impaired listeners. Speechreading is also extremely useful for normal hearing individuals in situations where environmental noise is unwantedly present during a conversation. Research shows that when the difference between speech and noise level decreases (noise at a higher level) the importance of visual cues to listener intelligibility increases. Normally hearing individuals might rely upon visual cues to a greater extent when attempting to communicate with a foreign speaker or a language disordered speaker.

Speechreading takes place within the context of available auditory, tactual, gustatory of factory and environmental cues. Visual cues in isolation are insufficient and ambiguous. So it may be thought of as an aid to total perception. Training is required to use these cues in everyday communication.

Let us discuss about what comprises speechreading. According to Alpiner (1978) there are five components.

1. Listening training
2. Recognition of gestural cues
3. Awareness of facial expressions
4. Observation of environmental cues and
5. Vision sound training

THE SPEECHREADER

The person at *the* receiving end of communication in the process is known as the speechreader. He has a major role during therapeutic intervention.

Factors affecting an individual's ability to speechread:

There are several factors that influence an individual' s ability to speechread.

These factors,includes:

1) Visual acuity
2) Attention, attitude, motivation and personal adjustment (psychological factors)
3) Intelligence
4) Educational background
5) Hearing loss
6) Other cmmunicative skills, and
7) Non verbal visual perception.

Each of the above said factors are described in detail:

Visual acuity: Visual acuity and speechreading are related as a blind person will be unable to speechread. Studies by Myklebust (1960), Maly (1969), Suchman (1967) show that

incidence of visual defects is more so in hearing-impaired compared to normal hearing children. Schow et al (1978) report of *many older* patients presenting concomittant hearing loss with vision loss.

According to Berger (1972), 20/40 vision is sufficient for speechreading in most conventional settings.

Psychological factors: For any type of communication, cognitive factors such as attention, attitude, motivation etc. are important. As speechreading is a learning task, and for any learning good motivation and effort are necessary. Self-concept, reaction to frustration, and failure do effect learning. The speechreaders ought to have good concentration to be successful.

Studies by Handelman (1955) show good speechreaders possess more positive self-attitude. There also lies a relationship between speech reading skill and extent of depression as given by Myklebust (1960).

Intelligence: Berger (1972) studied the ertent of relationship between intelligence and speechreading skill. He suggests that a certain minimum level of intelligence is needed for success in speechreading, and after that minimum level is exceed, intelligence as measured by non-verbal scales is not a significant factor for speechreading proficiency.

Educational background : A number of studies right from Pintner (1929) till date have been coming tap suggesting relationship between educational achievement and speech-reading skill. Speechreading proficiency improves as the individual's language skills improve (Berger, 1972).

Hearing loss: Contradictory results have been obtained establishing any relationship between the degree and duration of hearing loss. It may be expected that children acquiring hearing loss at a later age would have better skills owing to language development compared to those at an early age.

Some research studies show children having a better hearing have a better skill as compared to those with more severe loss. Some other investigators have failed to demonstrate any significant relationship.

Other communication skills : Speechearing skill is related to other communicative skills. Deaf children being superior in one aspect of language (speaking, speechreading, writing, reading) tend to be superior in all other aspects (Myklebust, 1960).

Farrimond (1919) indicates children with high vocabulary scores present higher speechreading scores. There are

other reports showing positive correlation between speech-reading and educational background, reading, flexibility, memory, spatial depth perception. One study by Heider and Heider (1934) shows poor speechreaders getting high scores on Stanford Achievement Test and excellent speechreaders in some eases obtaining low scores.

Non-verbal visual perception: Success of speechreading also depends upon how fast a person perceives the quickly changing visual movements. Again, contradictory results have been obtained from different researchers. Evans (1965) and Simmon (1959) report positive correlation between speech-reading scores and visual recognition and memory,

Costello (1957), O'Neill and Davidson (1956), Simmons (1959) and Goetzinger (1967) report of no relationship between specific visual perceptive skills and speechreading.

Wong and Teaffe (1958), Byers and Lieberman (1959) report no association between speed of visual perception and speechreading ability.

Goetzinger (1964) finds no relationship between depth perception and speechreading skills.

Other factor related to speech reading skills: Several other factors have also been studied which may be potentially important. Incorrect pitch and rhythm perception seldom hampers communication stress patterns and pitch contours are also recognised better defying chance factor.

Sex of the speechreader may be important as females are found to have higher scores than males.

There may also be relationship between linguistic-synthesis ability to speechreading success.

THE SPEAKER

It needs a good cooperation from the speaker's point to facilitate the hearing-impaired speechreader than a normal hearing listener.The hard of hearing individual way not expect every speaker to modify his/her speech behaviour to meet the needs of the listener. But the teachers, friends, family members and others with whom speechreader may deal more may be requested to employ certain speech techniques.

Speaker variables affecting speechreader's success:

1. Visibility of the speaker
2. Rate of speech
3. Loudness of speech
4. Articulatory precision and amount of lip movement
5. Familiarity of the speaker and
6. sex of the speaker.

Each factor is described in detail in the following:

Visibility of the speaker- Haspiel (l964) recommends the speechreading training commence using a front view (the O aximuth position). The amount of the speaker's visibility to the speechreader and the angle of viewing are suggested as important.

Erber (1974) conducted a study and found regardless of illumination conditions, deaf children achieve their best visual word-recognition performance when they can observe the speaker from within the horizontal range of 0^{o} to 45^{o}. When the horizontal angle of observation is increased to 90•, lipreading scores typically decrease about 14 to 22%. With mouth level of illumination of the speaker, minor variations in the vertical viewing angle (from -30^{o} to $+30^{o}$) have little effect on lipreading.

Rate of speech -Studies by Euing (1967), Ritchie (1930), Berger (1972) suggest than stover than normal rate of speech does not hamper the speechreader and provide benefit. However, Keith (1943) and Berger (1972) criticize using a slow rate during training as a child taught with slow exaggerated speech might have difficult time understanding speech at normal rates of non-exaggerated lip movements.

Articulatory precision,exaggeration of lip movement and *loudness of speech - Hardy (*1970) says that articulatory imprecision, exaggerated speech and an expressionless face hinders speechreading.

Franks (1978) reexamined the use of exaggerated articulatory movement and suggests that exaggeration may facilitate sentence recognition but not spondee recognition.

Lynch and Bode (1967) found speechreading improved with vocal intensity. The reason might be due to slight exaggeration ia articulatory movements and increased phonation time seen with greater intensity levels.

Familiarity of the speaker- This is another important factor. Close relatives and friends are reported to be easier to speechread than others with whom the speechreader is not familiar.

Sex of the speaker- Role of sex is not significant in speechreading. If there is some effect, it could be because of presence of beard and moustaches in men making them difficult to speechread.

THE ENVIRONMENT

Environment is another important variable which can influence, both positively and negatively to message reception and interpretation. The factors are -

1) Distance from the speaker
2) Illumination, and
3) Visual distractions

Each factor can be described ia detail as:

Distance from the speaker - As distance increases, from the source of sound, the energy reduces. Erber (1974) found, smaller the distance between the speaker and speech-reader, greater will be visual intelligibility. Reports reveal distances upto 24 feet do not have a significant effect on speechreading success. Berger (1972) recommends 5-10 feet as the most realistic and logical distance for speechreading training as this is the most typical distance the client will be exposed to.

Illumination - As a matter of fact, nobody can speechread in darkness, various reports say that typical classroom lighting is suffieient for normal speechreading process. Again as per Erber (1974) at mouth level illumination of the speaker, minor variations in the vertical viewing angle

(from -30° to +30°) have little effect on speechreading performance. Given a 0-45° horizontal observation angle, illumination conditions which shadow the interior of the mouth (eg. overhead lighting) can lower speechreading performance about 3 to 12% below that which is obtained for 0° to +45° angle of incidence. With frontal illumination provided, a wide variation in facial luminance has only a small effect on visual intelligibility. When low facial luminance is accompanied by high background luminance, communication through speechreading is axtremely difficult, This finding was given by Erber in the year 1974.

Visual and auditory distractions - Visual speech perception may be interfered by auditory and visual distractions. Visual distractions may be anything like hand movements in the area of the face, exaggerated lip movements, pictorial backgrounds and flashing lights. Keil (1963) considers these visual distractions as having not so distracting effect compared to auditory distractions. Leonard (1962) demonstrates the deterioration in performance in noise conditions. Type of auditory noise is not very significant as was assessed by Berger and Lewis (1972) and Leonard (1962).

THE SIGNAL

Since variability has certain effects on the visual communication of speech. The following may be the factors affecting.

1) The degree of visibility of articalatory movements
2) The rapidity of articalatory movements.
3) The similarity of the aspects of articulatory movements of various speech sounds.
4) Variations in the visible aspects of articulatory movements from speaker to speaker.

Host of the speech sounds are invisible at the lip level (one half of rowels and dipthongs and three fifth of the consonants). As the contact point for articulation moves front to back is the oral cavity, visibility of the phoneme is reduced.

Homophenous groups are comprised of the phonemes that took alike but are produced differently. Hence, it becomes difficult for the speechreaders if they rely only on the visual information. For example, /p/,*/b/ and /m/ form one* such homopheaous group.

The constriction or closure. Point far articulation of consonants is not same at different rates of speech and

in different phonemic environments. These variations in the visible aspects of articulatory movements lead to additional difficulties for the speechreader.

Speech is a dynamic acoustic signal consisting of rapid spectral changes over time. The visibility of some phonemes are available only for a short-time. In terms of resolution over time or temporal resolution *our* visual system is not as effective as the auditory system.

Hence, because of all the above difficulties in the speechreading process as a result of signal, speaker and environmental variables require the speechreaders utilize all available sensory information, linguistic context and knowledge of the language, and situational or environmental cues for message resolution. Linguistic cues for speech-reading may be found at the phonologic, morphologic, semantic and syntactic levels of language. A native speaker knows that in his language only certain phonemes follow other phonemes and that words may be linked in certain predster-mined ways. Words are normally produced ia the context of a sentence and this semantic context provides linguistic cues to aid the speechreader in decoding the visual signal.

Familiarity with the conversation and/or the vocabulary in use benefits the speechreader. Auditory and linguistic cues aid the speechreader in the process of homophone discrimination. Although homophenes look alike, they are often discriminated on the basis of auditory cues and the linguistic context provided by the surrounding phonemes and words.

Visual	Audio
1) A group of young people carrying *out* an interesting conversation.	: People generally share their thoughts and ideas or communicate through speech.
-2) A baby lying on the bed and crying	: Babies also cmmunicate by expression through varieties of cries.
-3) A girl writing a letter to her friend.	: writing is another mode of communication.
• A small child pointing his mother to a bird in a picture on the wall.	: Pointing by fingers or gesturing is sometimes used to communicate.
Communication - SPEECH . WRITING - GESTURES - SIGNS	: Communication is the process of sharing thoughts and ideas by any of these modes. All of these are used sometime or the other by all of us.

: Speech is the most widely used mode of communication. Certain conditions make a person handicapped and debar him from using speech. Persons with profound hearing loss do not get adequate benefit from hearing aid alone. A condition of the middle ear called otosclerosis hampers a person from using auditory mode alone for communication. People in noisy areas also do not get much of the information from listening alone. All these conditions need a supplementary process for information to be conveyed, that is how, we come across a term called "SPEECHREADING".

SPEECHREADING : Speechreading is a process in which visual observation of the movements of a speaker's lips, face (eyes, jaw, mouth, cheeks, expressions), gestures and body movements are, used by a listener to determine what has been said. SpeeChreader.

: obtain more information through the usage and integration of all sensory inputs, situational or environmental cues, and their past experiences and knowledge of the world and language. Speechreading is also known as a visual aid to receptive communication, Hence, it only contributes to an individual's total perceptions.

COMPONENTS OF SPEECHREADING:

1. Visual cues

A. Revealing aspects of phonemes (verbal origin)

B.Gestures (non-verbal origin)
(1) Facial expressions
(2) Hands, arms, head, torso,etc.

2.Auditory cues

3.Olfactory cues

4. Gustatory cues

5. Tactual cues

6. Kinesthetic cues (awareness of articulatory position for phonemic and emotional aspects of speech

7. Situational (environmental) cues

8. Contextual (linguistic) cues and knowledge of language.

9. World experience and knoledge.

WHO NEEDS TO SPEECHREAD

Now, a question arises that who needs to speechread?

HEARING - IMPAIRED INDIVIDUALS USE SPEECHREADING IN ALMOST ALL COMMUNICATIVE SITUATIONS

NORMAL HEARING PERSONS INCORPORATE SPEECHREADING.

IN DIFFICULT LISTENING SITUATIONS.

WHEN COMMUNICATTNG WITH DIFFICULT-TO-UNDERSTAND SPEAKERS.

: Well, speechreading is a process that is of potential benefit to all communication participants, Hearing-impaired individuals utilize speeehreading to varying degrees is almost all commica-
: tive situations. Normal hearing persons incorporate speechreading in difficult listening situations and when communicating with difficult-to-understand speakers due to characteristics of the speakers and the language they use.

: How much they depend relies upon some factors like

TYPE AND SEVERITY OF HEARING LOSS.

Type and severity of hearing loss

PERSONALITY 0F THE HEARING-IMPAIRED *INDIVIDUAL.*

Personality of the hearing-impaired individual.

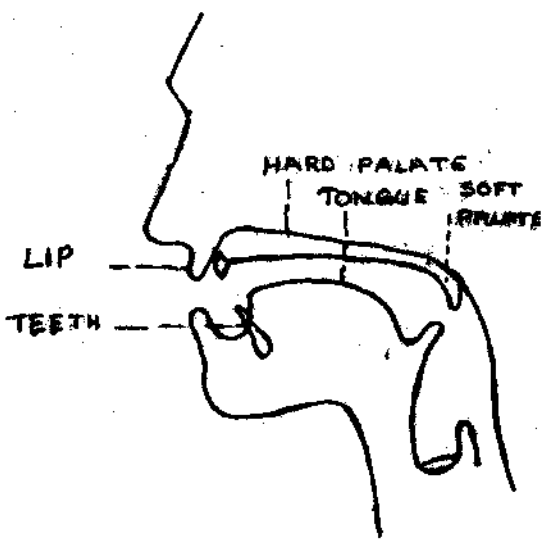
NATURE OF ENVIRONMENT LIKE PRESENCE OF NOISE. DISTRACTIONS. : Nature of environment like presence of noise, distractions.

ARTICULATORY MOVEMENTS : Articulatory movements

FAMILIARITY OF THE MESSAGE. : Familiarity of the message.

VISUAL CHARACTERISTICS OF ARTCULATORY MOVEMENTS OF DIFFERENT SPEECH SOUNDS : Before proceeding further, we will discuss something regarding the visual characteristics of articulatory movements of different speech sounds.

LATERAL VIEW SHOWING THE ARTICULATORS : Here, is a picture showing the different parts of the body active in speech production. They are the so called articulators which shape the sound into different forms.



Vowels are produced with little constriction la the vocal track. Based on the height of the tongue in the oral cavity, one can identify front and back vowels, high and low vowels - depending on the place and extent to which the tongue is raised.

VOWELS:

FR0NT HIGH /i/ as in each, free
MID-HIGH FRONT /ε/ AS IN end , then

MID-LOW FRONT /ae/ as in

ask , *men*

LOW /a/ as in

ask, Past:

BACK HIGH /U/ as in

good, foot.

MID-HIGH BACK /o/ as in

note, go

MID-LOW BACK />/ as in torn, awl

LOW /a/ as in

alms, father

: For example, the sounds /i/, /ε/ /ae/ and /a/ are front vowels where the tongue rises only la the front. The tongue Is raised to the maximum for /i/ and minimum for /a/. Similarly the back vowels are /u/ /o/ /a/ and /a/ where the back of the tongue is raised to a greater extent. The tongue height reaches a maximum for /u/.

Consonants are produced differently from vowels in that they have a constriction somewhere in the vocal tract. Depending on the place and manner of articulation, the consonants are classified as bilabials, dentals, alveolars, palatals and velars and glottal, AND Stops, fricatives, africates, glides , dipthohgs, trill.

A chart is shown:

FACTORS INFLUENCING

SPEECHREADING

Not only the type of sound produced, but there are several factors also which, directly or indirectly, influence speechearing

THE SPEECHREADER
THE SPEAKER
THE ENVIRONMENT
THE SIGNAL

: Well, in the process of speech-reading, much depends upon the behaviour of the speeechreader followed by the speaker, the nature of environment and the signal.

A chart is shown

THE SPEECHREADER
VISION

: We will start with the speech-reader. A speechreader is the person who visually receives the spoken words and interpretes.

A person is shown with his inability to see.

Vision is important in that a blind person cannot speechread. One needs to have at least normal visual acuity in order to speechread.

20/40 VISION IS SJFFICIENT FOR MOST CONVERSATIONAL SETTINGS.

: As the task involves detection of finer articulatory movements 20/40 vision is a sufficient condition for a person to speechread in most conversational settings.

PSYCHOLOGICAL FACTORS :

A child is shown who is restless and over-active. The picture is made still followed by caption.

Success in speechreading Is also determined by attention, attitude, motivation and expectancy.

CONCENTRATION : Speechreaders must exert great concentration so that they understand a speaker's message.

MOTIVATION AND EFFORT : It also requires motivation and effort.

POSITIVE ATTITUDE ABOUT SELF AND OTHERS : Speechreading is a task involving learning.Learning is affected by self-concept, reaction towards frustration and failure. Good speechreaders often have positive attitude about themselves and others.

INTELLIGENCE : Intelligence is not very significan but a mentally retarded child will find it difficult to learn speech-reading.

EDUCATION : With good language skills and achievement at school, the subject is more successful at speechreading.

HEARING LOSS : Children who acquire hearing loss at an early age are expected to be less proficient at speechreading than the children who acquire the loss at a later age. This is because the latter hare some amount of language.

An individual with severe hearing loss is a better speechreader compared to a profoundly deaf.

So, children with severe and profound hearing loss need better lipreading skills if they are to attend regular schools for normal hearing children and achieve success there.

THE SPEAKER

A person is shown to be: It needs the speaker's cooperation closely patching to to facilitate the hearing impaired the fast rate of individual than to a normal heaing

Speech of a speaker There is sign of frustration on his face as he does not follow anything.

: listener. The hearing -imparied individual may not get the coope-ration from every speaker, he faces but the parents, friends and clsoe relati ves can be instructed to modify their speech, This would facilitate and cater to the needs of the spee chreader.

Certain things can be done to help our hearing-impaired speech-reader.

SLOW, CLEAR AND DISTINCT SPEECH : "Speak slowly, clearly and distinctly".

No LOUD TONES NO EXAGGERATI0NS : Avoid using loud tones or exaggerated lip movements.

CLEARLY VISIBLE FACE : Position yourself so that your face is clearly visible to the hearing-impaired individual. Place yourself so that light hits your face.

REPHRASING AND NO REPETITION : Rephrase rather than repeat when the individual does not understand you.

ENC0URAGE *TO* ASK AGAIN : Encourage the hearing-impaired individual to ask you again what he/she did not understand. Help him to have the courage to admit that he/she has a hearing loss.

FACE THE PERSON ALWAYS : Encourage *the* individual to/face the person speaking even if it needs moving and turning.

NEARING SPEAKER

A speech reader is shown to be at a distance of about 15 feet from the speaker. Next, the speechreader moves towards the speaker (distance about 9 ft). A third scene is shown where the speechreader is at a distance of 5-6 ft.

: Hove nearer towards the individual when speaking and encourage others to do s*o.*

SMALL GROUP

A scene is created with a speaker instructing speech-reading to a group of 12 individuals. Next, the same speaker is shown instructing to a smaller group of 3 persons.

: If Possible, let the individual participate in small groups than large groups during training.

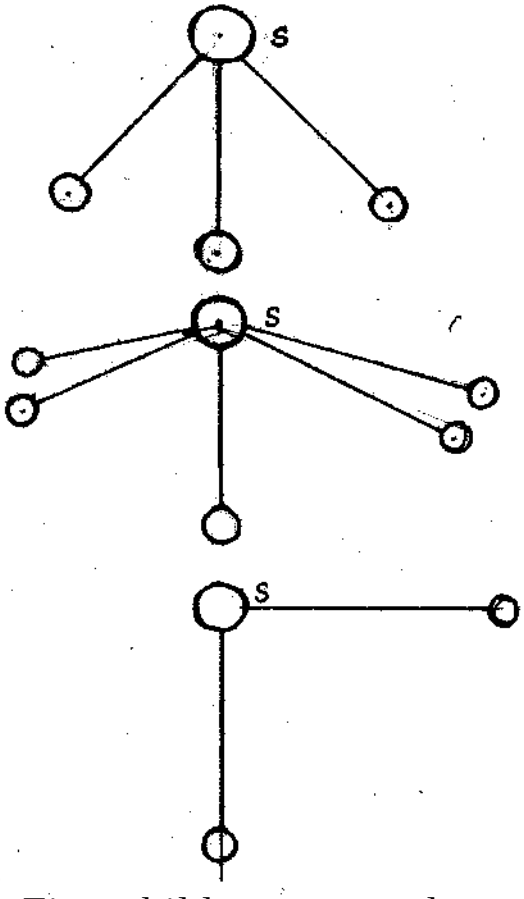
GOOD LIGHTING

This is a scene where there is a dim and insufficient light in the environment and that falling *on* the face of the speaker, Next, there is sufficient lighting conditions in the room with light falling on the face of the speaker so as to clearly visualise the precise movements of lips and jaw.

: Provide good lighting for all activities.

ELIMINATION OF BACKGROUND NOISE	
Show a taperecorder being played with loud rock music near the speech-reading situation.	: Eliminate background noise as much as possible. Do not play music in the background.
ELIMINATION OF VISUAL AND AUDITORY NOISE.	
Show waste people walking in the room with their foot-steps audible. Make the picture still. Next, show a quite room with no one moving around.	: Eliminate visual noise and auditory noise. Visit a place where people are not walking through the room,
CONTEXTUAL AND SITUATIONAL MESSAGE-RELATED CUES	
A group of speechreaders are first shown where the subjects depended solely in cues from the speaker's face and lip movements for speechreading. "A car is	: At group meetings, make as much use of written and pictorial forms as possible. Use contextual and situational cues.

is moving at a high speed". Next, a picture is shown to the subjects with a car moving at a high seed prior to speech reading the same sentence.



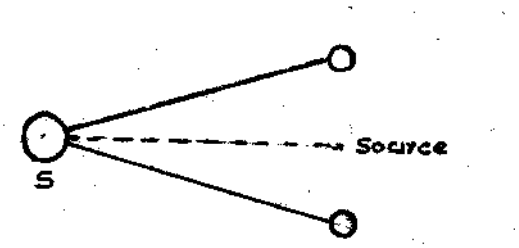
Five children are made to sit where one sits at the plane and four sit at an angle more than 45° with

: Best visual-word recognition is obtained When the speech-readers observe the speaker within a horizontal angle of 0° to 45°.

When the speechreader moves on to 90° position, the effectivenss is reduced and is reflected in the performance.

speaker's plane (as above) This picture is made still followed by another scene where the children move closer so than the children at extreme form not more than 45° with the speaker's plane.

Mouth-level illumination provided for the speaker



: With a mouth-level illumination +30° to -30° variation in the vertical angle does not affect speechreading.

ENVIRONMENT

A room is shown and the camera is moved picturising the light source, distractors, speaker and speech reader without focussing on anything.

: As in any communicative situations, the environment can facilitate or impede the interpretation of the message.

DISTANCE

The distance between the -speaker and speechreader

: Five to ten feet, is usually considered *m* the ideal and logistic

is shown from various angles ie. from back, from the side of speech-reader etc.

The distance is varied in different frames.

: distance for speechreading training. This distance is typically used is everyday conversation. The speechreader should also be exposed to a variety a distances and angles which he may conte across in his social contexts.

ILLUMINATION

A well lit room is shown with light coming through the windows.

: One cannot of course, speechread in darkness, lighting need not pose much of a problem When variations are made. Typical classroom lighting is sufficient for speech-reading success.

Extra lights or reduced light may be required for visually impaired persons.

DISTRACTIONS

Auditory and visual distractions may hinder speechreading due to physical and psychological interference.

1. Speaker moving his hand near face is shown, suddenly made "still".	: Distractors like hand movements in the area of the face, disturbs the message reception.
2. A speaker speaking with much effort (exaggerating) is shown; suddenly made "still".	: Exaggerating lip movements also hamper the normal speech reception,
3. Focussing is made from behind the speech-reader. Camera is moved to bright pictures at back and side of speaker.	: Bright pictorial background reduces the concentration of speechreader.
4. A flashing light near speaker's face is shown.	: Flasking lights also disturb the concentration.
5. A radio/tape-recorder is played and the music is audible.	: Auditory distractors like music or song also affect speechreading.
6. A few people are shouting/talking very loudly.	: Unwanted speech which is the noise in this case hinders proper communication.

The presenter is shown narrating. : You were watching our program on speechreading. We hope, you got some idles as to

* what is speechreading?
* What influences the process of speechreading? and,
* How is it facilitated?

IF YOU HAVE HEARING LOSS : If you hare hearing loss, you can help yourself by following the various points presented earlier,

IF YOU HAVE NORMAL HEARING : Even if you axe a normal hearing person, you might have faced noisy situations where carrying out normal conversation is difficult. So you should face the speaker looking at his lip movements which would help you more. Make use of the knowledge you obtained from this presentation.

EXTEND YOUR HELPING HAND *:* Also, you may guide the majority of people who readily need to knew more about speechreading.

: Service is humanity, you should always help your hard of hearing friends, with the points you have in mind, on speechreading.

Thank you all for joining us.

BIBLIOGRAPHY

Borden, G.J., and Harris, K.S.(l980): Speech Science Primer. Baltimore, Williams and Wilkins.

Cherwak, G.D. (1981) : Handbook of audiological rehabilitation. Springfield, Illinois, Charles C Thomos.

Cherry, R., and Rubinstein, A. (1988): Speechreading instruction for adults: Issues and approaches, The Volt a Review, 90(5), 289-306.

denser, R.A. (1977)i Relative phoneme visibility and lipreading performance. The Volta Review, 79, 27-34.

Erber, N.P. (1974) : Effects of angle, distance, and Illumination on visual reception of speech by profoundly deaf children. Journal of Speech and Hearing Research, 17(1), 99-112.

Erber, N.P., and McMahan, D.A. (1976): Effects of sentence context on recognition of words through lipreading by deaf children. Journal of Speech and Hearing Research, 19(1), 112-119.

Erber, N.P. (1977): Developing materials for lipreading evaluation and instruction. The Volta Review, 79, 35-42.

Filippo, C.L.D. (1988): Tracking for speechreading training The Volta Review, 90(5), 215-239.

Giolas, T.G., Butterfield, E.C., and weaver, S.J. (1974) : Some motivational correlates of lipreading. Journal of Speech and Hearing Research, 17(1), 18-24.

Hardick, E.J., and Oyer, H.J. (1970): Lipreading performance as related to measurements of vision. Journal of Speech and Hearing Research, 13(1), 92-100.

Itano, C.Y. (1988): Speech reatding instruction for children. The Volta Review, 90(5), 241-259.

Kricos, P.B. , and Leaner, S.A. (l982): Differences in visual intelligibility across talkers. The Volts Review, 84(5), 219-225.

Lewis, D.N.(1972): Lipreading skills of hearing-impaired children in regular schools. The Volta Review, 74, 303-311.

McDearmon, J.R. (1967): A method of teaching lipreading using programmed learning principles. The Volta Review, 69, 316-318.

McDermott, E.F. (1971) : Story telling - A relaxed and natural path to lipreading, language and reading. The Volta Review, 73, 54-57.

McDermott, E.F. (197l)t Music and rhythms - from movement to lipreading and speech. The Volta Review, 73, 229-232.

McDermott, E.F, (1971): Lipreading : One tool for understanding. The Volta Review, 73, 279-281.

Montgomery, A.A,, and Demorest, M.E. (l988): Issues and developments in the evaluation of speechreading. The Volta Review, 90(5) 193-214.

O'Neill, J.J. , and Oyer, H.J.(1961): Visual communication for the hard-of-hearing. Englewood cliffs, N.J. Prentice-Hall.

Oyer, H.J. (l96l): Teaching lipreading by television. The Volta Review, 63, 131-332 and 141.

Richardson, J. (1968): A review of four methods of lipreading. The Volta Review, 70, 39-41.

Spradlin, K., Dancer, J., and Monfils, B. (1989): Effects of verbal encouragement on self-ratings of lipreading performance. The Volta Review, 91(4), 209-216.

Thomasia, Sr. M. (1967): Teaching lipreading in a school in South Africa. The Volta **Review,** 69, **45-49.**

Van Uden, A.M.J. (1988) : Inter-relating reception and expression in speechreading training. The Volta **Review,** 90(5), 261-272.

Zemlin, w.R. (1981): Speech and hearing science (Second edition). Engle**wood** cliffs, N.J. Prentice-Hall.