

Enhanced Listening Comprehension through Computer Assisted Language Learning

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Abstract

Listening is an important skill in the process of creating linguistic proficiency. Using Multimedia in a Computer Assisted Language Learning(CALL) context is very motivational and encouraging in the process of creating affective linguistic proficiency. The present paper deals about the rol of Multimedia and CALL in the process of enhancing Listening Comprehension skills in L2 learners.

KEYWORDS- CALL, SLA, Multimedia, Chunking, Schema

In today's technologically-driven society, where an enormous variety of multimedia gadgets are within easy reach of just about any budget, the use of technology-driven L2 learning materials should seem quite obvious. According to Pérez Basant , academically, it has been widely endorsed that the use of different media, especially video to enhance L2 listening training, "can and does enhance language teaching by bringing the outside world into the classroom, and in short making the task of learning a more meaningful and exciting one." (2000:187).

Listening comprehension is now being considered as an active process whereby individuals tend to change words into thought with the aim of creating a meaning from the passage. Listening comprehension tends to have a long history, from the readings of analog, phonograph, through the era of the audio tape, and into the realm of digital (Wagner, 2007). With new technologies appearance, including their influences on people's life aspects and education, language learning and teaching seems to have entered a new area. CALL and listening comprehension L2 skill training stand considered bound together for good (Vandergrift, 2007). Listening comprehension could be viewed as a crucial language skill which learners of language need to develop. Moreover, all other language skills' development becomes interwoven with listening skills. This stands said to be within language learning in both first and second instances (Vandergrift, 1999). Language learning tends to rely on listening. It also tends to play a fundamental role in the acquisition of language, making it possible for an oral interaction between the learners (Smidt & Hegelheimer, 2004). It tends to provide the foundation for all language acquisition/learning facets and plays a long-life role in the communication process.

The past four decades have brought to language teaching and learning a wide range of audio-visual technologies. From among these, no single tool for teaching and learning has had greater impact than the personal computer. Today, individual learners can, in addition to interacting with computer-generated text and graphics, control combinations of analog and digital sound and images. Arranging these combined media into intelligent, pedagogically-driven material is a challenge to materials developers. Effectively

integrating the technology into language learning contexts represents a challenge for language teaching professionals. A critical step in accomplishing these goals is careful examination of the technology's features in light of the needs, goals, and processes of language learning.

In face to face interaction, listening entails complex interpretive processes. An intricate web of situational variables interacts to determine what meanings are derived in conversation. Processing requirements such as reciprocity of interlocutors' perspectives, the etcetera principle (filling in the gaps of what one hears with knowledge of the language and the world), and combined retrospective and prospective meanings all come into play. This multi-faceted processing spells a heavy demand when the medium of communication is a foreign or second language. Theoretical models that attempt to capture the intricate nature of the listening process cannot hope to account for the myriad of cognitive and external environmental factors that influence reception, interpretation, and response construction. In short, rendering a complex activity like listening into a single construct has proved difficult (Dunkel, 1986).

Models that have been attempted, however, share one underlying assumption: Listening is not simply a receptive act-multiple physiological and cognitive processes are engaged simultaneously. Until recently, listening comprehension activity in foreign or second language classrooms was limited to testing listening comprehension. The underlying rationale was that if students are successfully learning the target language, they should automatically be able to decode the aural version of structures and vocabulary they learn in their textbooks. Success at this decoding was typically measured by correct responses to WH (information) questions. Responses to such questions tagged successful retrieval of information from an aural text. Knowledge of target language syntax and lexis was deemed sufficient to enable this retrieval. Listening is now treated as a much more complex activity and one that is the cornerstone of language acquisition (Krashen, 1994). Recognition of listening as complex activity and of its critical role in the language acquisition process has greatly influenced contemporary language teaching practice. The view that listening as an active and interactive process has, for example, cast the learner in a role other than the passive receiver of aural input (Rost, 1993). Classroom emphasis is now on aural intake through active negotiation of meaning with others. This mutual negotiation of meaning between speakers activates the cognitive and sociocognitive processes necessary for language acquisition to occur (Breen & Candlin, 1980; Pica & Doughty, 1985). In short, listening has been recast as an activity central to the L2 acquisition process (Dunkel, 1991; Krashen, 1985; Rost, 1993), and a skill integral to overall communicative competence (Brown, 1994; Savignon, 1991).

Listening and CALL

A prominent artifact of older beliefs concerning the role of listening in language learning is the language laboratory. The rationale for language laboratories is tied to the notion that individual listening practice with audiotape helps build a learner's ability to understand and speak the target language. Technology continues to be perceived as an enhancement to the process of language acquisition. The large-scale infusion of computers in language instruction programs in the past decades attests to this belief. The rationale behind what is now growing support for Computer Assisted Language Learning

(CALL) is not unlike earlier enthusiasm for audiotape based technologies. That is, both media provide individualized access to target language material that the learner can control and use in a self-study format. However, expectations for CALL in general and multimedia in particular are much higher. The fast and powerful computational capacity, in conjunction with the orchestrated video, text, and graphics of today's multimedia and CALL learning systems would predict more sophisticated paradigms within which students can interact with the target language and, consequently, more effective learning. Arguments of this kind supporting CALL have rung loud and clear in education over the past decade. Praise for the medium is, however, based largely on intuition.

Learning a language via individualized instruction with the computer—especially when audio and video are involved—is an extremely appealing proposition, one that has sold to many an administrator in search of instructional panaceas. Thus far, however, the extent of multimedia impact on the language acquisition process remains an open issue. The following is an evidence to suggest that listening skills development can be enhanced through this medium of CALL.

CALL Enhanced Listening Skills

A wide range of listening strategies, such as predicting, guessing, recognizing discourse markers, using context clues, making use of nonverbal clues, recognizing how stress and intonation affect meaning (Buck, 2001). They include meta cognitive strategies as advised by Vandergrift (2006).

Instructions as to how to be informed or find the information necessary to form schemato comprehend fragments—This includes all sorts of valuable information regarding a) the fragment itself, such as its source, genre, year of release, names of presenters or actors who appear in it, cultural components; and b) the language used in the fragment, such as keywords. The importance of previous knowledge to L2 aural text comprehension (especially cultural references) is thus brought to light.

The ability to summarize information—This may be enhanced by asking learners to provide the gist of a fragment, for example by asking them to give a brief oral account of what they have heard; or asking them to outline the main ideas in the fragment; and teaching the differences between main (ideas) and secondary information (explanations, examples, anecdotes, lists of things). Focus on form. Students may be asked to direct their attention to acoustically and graphically presented new or relevant L2 items that need to be tackled, such as keywords, idioms, phrases, grammatical features; making sure learners repeat these items several times to enhance L2 phonological memory and thus L2 acquisition and automatization.

In addition, the technology know-how of L2 learners should not be overlooked. The popular belief is that most people, especially young L2 learners, are conversant with all kinds of devices for their L2 learning endeavors: DVDs, TV satellite reception, Internet sites and so on. However, a deeper look will reveal that L2 learners are hardly profiting from the enormous availability of technological aids, as can be deduced from the sociological profiles of L2 learners obtained by Blasco-Mayor (2005, 2007), where in a group of fifty L2 learners only three made use of technology on a habitual basis to

improve their language skills. From this it can be inferred that L2 learners need clear instructions regarding the use of technology to enhance their language learning and listening comprehension skills, and how to integrate technology-driven L2 listening practice into their everyday routines.

Multimodal CALL Processing

Multimodal CALL processing refers to the engagement of more than one perceptual modality at a time. The opportunity for multimedia users to process combined media (text, sound, and video) simultaneously. Proponents of instructional multimedia have vigorously argued that the increase of sensorial input available via the technology coupled with the potential for active engagement in, and interaction with this input predicts that content (in this case the target language) will be more readily integrated into a learner's developmental system and, in turn, recalled more thoroughly (Stevens, 1989; Underwood, 1990). There has been some speculation that dual processing—that is, processing that involves both aural and visual modalities at once, such as with television or film-can derail comprehension of a single aural stream (Donaldson, 1976; Fisher, 1984; Singer, 1980; Williams & Snipper, 1990).

These multiple codes, it is argued, place too many demands on the processing capacity of the viewer, especially when the material is in a foreign or second language. MacWilliam (1986), for example, suggests that with multi-modal processing there is a potential loss of information when it is presented via the aural channel accompanied by visual information of a non-linguistic nature. In other words, students could potentially find the visual portion a distraction from the information delivered via the soundtrack. While multiple forms of input may hypothetically cause interference or cognitive/perceptual overload, studies involving second and foreign language students and subtitled video (a medium that combines visual, aural, and textual elements) provide strong counterevidence. These combined media, on the contrary, appear to enrich both processing and recall of the target language. The addition of text does not interfere with comprehension (Borras, 1993; Chiquito, 1994; Jung, 1990; Vanderplank, 1990), but appears to stimulate deeper comprehension (Neuman et al., 1990), enhanced recall (Svensson & Borgarskila, 1985) and, consequently, more learners output (Garza, 1991). Moreover, increased experience with multi modal viewing appears to improve the learner's ability to comprehend as strategies for optimizing processing input combinations are worked out over time (Salomon, 1979; Vanderplank, 1990).

The following summarizes multimedia and CALL features and how these-alone and in combination-support aural processing and, by extension, second language listening skills development.

The Role of Visuals

Learning theorists have long held that images enhance comprehension, storage, and recall of information (Pavio, 1965). In the language classroom, use of visual material of all kinds has been a predominant tool for instruction for quite some time. Pictures, slides, drawings, and the like serve many roles in language learning activities. In listening skills development, activities that focus learner attention simultaneously on visuals and

accompanying aural input are common. Visuals support comprehension and form-meaning correspondence, both of which contribute to higher levels of learner motivation.

While combining input modalities in the classroom is based largely on intuition, a handful of empirical investigations on the effects of combining perceptual modalities support the use of text and visuals as aids to aural skills development. Support for this sort of multi modal processing is comprised of evidence suggesting positive effects of visual accompaniments to the listening process. Evidence suggests that processing aural texts in the target language is facilitated by co-occurring still pictures (Mueller, 1980; Omaggio, 1979), video (Snyder & Colon, 1988) as well as combinations of visual, aural, and textual forms of input (Brownfield, 1990; Chiquito, 1994; Garza, 1991; Koskinen & Gambrell, 1993).

Including visuals for listening skills development also finds support when rates of spoken language and the human ability to process incoming aural information are considered. We process what we hear much more quickly than the time it takes for the message to be spoken. While we listen, we have time to infer and elaborate. When the language is our own first language, there is sufficient time and opportunity to mentally act upon the incoming stream by creating connections, making transformations, interpretations, and mental images. When aural input is in a language for which we have a limited ability, additional effort must be expended: A portion of the mental energy otherwise assigned to interpretation and elaboration gets channeled into challenging, unfamiliar, and mechanical linguistic issues. There is evidence that, due to these unique L2 processing and channeling demands, memory span is shorter than when dealing with native language input (Call, 1985). Because listening entails the construction of mental representations and interpretations, it makes sense to supply the L2 learner with stimuli that support and even extend this process. Visuals can provide just such support. The information contained in pictures can mean that less cognitive energy gets expended on linguistic decoding, energy that can be channeled to other critical processes-predication and elaboration, for example-of the input. In sum, aural processing can be viewed as supported and facilitated by visuals. Visual support provides the learner hooks on which to hang meaning and make sense of the aural stream.

The Role of Text

There is increasing evidence that verbatim, co-occurring text with video can aid second language comprehension (Garza, 1991; Markham, 1989; Price, 1983). Video subtitles can serve as advance organizers that support and scaffold meaning as it occurs through the aural channel (Lambert, 1986). In this way the presence of text can “diminish the decoding load placed upon the learner by the unrefined audio signal of authentic speech and materials” (Jung, 1990). The nature of verbatim subtitle text, moreover, is directly aligned with the goals and processes of Communicative Language Teaching; that is, subtitle text is performance text, not constructed, reflective text. What individuals sayis what gets subtitled. Because subtitle text is what is spoken on the video screen, it more closely resembles oral communication, not writing. It represents, therefore, a rare opportunity for language learners to experience approximations of oral language in both aural and written form.

The Role of Video

While learner response to video as an instructional tool has been positive across disciplines, it has been particularly strong for language instruction. This is partially due to the positive attitudes toward the medium with which learners are predisposed. Regarding language learning, strong receptivity may also be linked to the ease of aural processing that visual accompaniment implies. Video can fill in gaps in aural comprehension which at once lowers affect and empowers the language learner. Video is widely considered more powerful, more salient, and more comprehensible than other media for second and foreign language students (Brinton & Gaskill, 1978; MacWilliam, 1986; Tudor, 1987; Vanderplank, 1990). In rare empirical studies, video-based instruction is consistently preferred over other language learning activities (Secules, Herron, & Tomasello, 1992) as well as over audio-only instruction (Pederson, 1988). Multimedia and CALL systems with video under learner control are also preferred other instructional activities (Brooks et al., 1990; Brownfield, 1990). In short, multiplying input modalities to include full motion video apparently motivates learners and engages their attention to aural input.

Apart from providing context, digital video as a teaching resource can offer the following advantages: 1) authenticity; 2) motivation, interest and confidence; 3) the sociolinguistic and pragmatic level of language; 4) nonverbal features, such as gestures and body language; 5) active involvement and participation; 6) real vocabulary acquisition (Pérez Basanta, 2000).

The co-occurrence of video with text, audio, and graphics in the multimedia environment does raise the issue of the amount of processing these combined input modalities entail and whether these cognitive demands limit or lengthen task persistence. First, our response to any medium is heavily mitigated by the extent of our experience with it. In the case of video, the role the medium has come to play in the lives of contemporary peoples is extensive. Language students come to the learning process well versed in film, television, and their conventions. They come literate and psychologically prepared to attend to, and react to video using skills and strategies for understanding that they have developed over their lifetime.

As a consequence of extensive prior experience, users are motivated by the medium as well as accustomed to decoding its messages for extended periods of time. Second, the cognitive requirements of multi-modal processing may also imply increased understanding and, therefore, increased task persistence.

There is a lag between the pace of aural input and the time required to process it. When one's first language is the medium of communication, mental elaborations take up this lag time; when the medium is a second language, demands for simple decoding are strong and happen at the expense of elaboration. However, if other forms of support for the aural stream are available, attending to overall meaning derivable from multiple representations of input may take precedence over a preoccupation with form, for example, comprehending individual words and sentences. Multimodal CALL materials, then, potentially support comprehension of the message as opposed to drawing attention to its constituent parts.

CALL and Mental Schema

One aspect of language processing widely held as supporting and enhancing comprehension is that of mental schema. Research in reading in both the first and second language supports the notion that activating knowledge of the world and applying this knowledge to new input greatly facilitates processing and understanding. Good readers, for example, call on their past experiences and knowledge of the world when making sense of text. Likewise, when we process aural and visual input, our existing knowledge structures interact with incoming information (Luke, 1985; Salomon & Leight, 1984). Listening, like reading, is an active process that entails construction of meaning beyond simple decoding. Activation of what is known about the world clearly assists processing new input, and for a language learning activity to be authentic it must include having learners make use of the complex contexts within which the aural text resides.

Effective learning means making use of these contexts through a process of matching new input with meaning based on their previous experiences (Diller, 1981). Learning to trigger and utilize such mental schemata is an important strategy for all language students. In addition to drawing on direct experience and existing knowledge about the world, with multimedia learners can also be guided to capitalize on schema related to their media literacy; they can be prompted to effectively utilize their highly developed familiarity with visual conventions (camera angles, special effects, for example) to understand the wider context and, in turn, the aural text. Video in particular can set up a “context of expectations” that, like knowledge of text convention, can support comprehension (Salomon & Leight, 1984). Multimedia is an excellent medium for exploiting this feature of aural processing.

Clearly, contemporary learners come to instructional experiences possessing skills and strategies for decoding and comprehending film and video. They may not, however, consciously realize that these conventions can be cues to meaning associated with the aural text. In a multimedia environment, learners can be easily prompted to make use of such visual conventions to aid their aural processing. Facilitating the activation of prior knowledge and the linking of old and new information can be achieved through any one, or any combination of processing channels: Text, audio, or visual. Drawing learners to a context of expectations through combined media has been shown to assist comprehension and retention of aural input (Chiquito, 1994; Gay, 1986; Meskill, 1991; Borras, 1993). One study of second language comprehension with reversed subtitling demonstrates the scaffolding effects of mental schema in aural processing. Lambert had subjects listen to input in their native language while reading the same text in the target language. The information that was supplied through the native language through one modality appeared to support the comprehension of the target language text.

The study concludes that the provision of information through a readily accessible channel (aural native language) serves to activate sufficient contextual information (mental/conceptual schema) for learners to more readily decode and comprehend second language input (Lambert, 1986). Support for enacting narrative schemata from studies in reading (Collins, 1981) and media (Baggett, 1979) also contribute to the notion that drawing learner attention to schema strategies they might employ while working with multiple forms of input may be beneficial.

Mental Schema and Scripts

Another aspect of mental schema of particular interest to second language acquisition in relation to CALL is that of scripts. Scripts are conversational templates or specific verbal routines that exist in all languages to accomplish certain communicative goals. This “script competence” is a critical feature of successful second language learning, especially for successful comprehension of aural input (Dunkel, 1986; McCarthy, 1991). Developing familiarity with target language scripts-understanding how things get accomplished with the language via formulaic routines-is realizable in a multimedia environment. Students can be encouraged to uncover underlying conversational structures using tools provided for accessing and manipulating text and/or images that represent the scripts they hear.

The Process of Chunking

The focus of foreign and second language instruction was once on discrete units of language. Unrelated words and expressions were typically studied in isolation from a meaningful context. The focus of instruction now is on lengthier stretches of discourse or discourse chunks. This approach takes into account the fact that it is the context in which words and structures get uttered that determines meaning. One cannot, for example, fully understand the intended meaning behind the present perfect tense, or the meaning of the word “plug” in isolation. It is the context in which words get used and for what ends that render them substantive communication.

CALL represents a unique environment in this respect. Learners can access, view, and repeat aural texts that not only represent extended discourse, but that are richly contextualized by virtue of accompanying visual and textual information.

When aural texts are appropriately chunked, processing time can be determined by the individual learner during breaks between chunks of speech. Learners can control the aural stream by stopping, repeating, and starting up chunks that begin and end at logical points. Aural texts are optimally chunked by syntactic breaks. These are the “breathing points” in utterances and are chiefly governed by the syntax of the language. When an aural text is thus chunked in this way, learners are cued to use not only structural clues to meaning, but also the equally rule-governed cadence of the chunks as well, for example, patterns of stress and intonation. In a study of second language learners’ aural comprehension, O’Malley et al. (1989) found that, unlike weaker listeners, effective listeners actively used intonation contours and syntactic breaks to chunk and process the aural text. As in reading, good listeners make good use of chunks to understand what they hear (Hawkins et al., 1991). In a study with CALL materials for French that were syntactically chunked, for example, Chevillard’s (1993) subjects reported that chunking relieved the time constraints they typically experienced when attempting to process real time speech in the target language.

There is evidence that the combination of aural, visual, and textual modalities complement the language learning process. Moreover, given CALL’s capacity to provoke and encourage learner use of schema, and the opportunity for learners to work with richly

contextualized, yet controllable extended discourse chunks, it appears to be a medium well suited to providing learners with effective forms of listening practice.

Advantages of Multi modal Processing in CALL context

The following examines specific instances of multi-modal CALL processing as it assists the development of listening competency. Richards (1985) describes listening competency as being comprised of a set of “microskills.” These are the skills effective listeners employ when trying to make sense of aural input. A composite of Richard’s microskills required for conversational listening are presented below along with illustrative scenarios¹ that demonstrate how multimedia technology can be called into service to support the development of each.

a) Retention of language chunks in short term memory

Most current CALL applications allow the student some control over the rate of language presentation. That is, users can start, stop, and review chunks of language to better understand and remember the aural text. The addition of video provides a clear, logical flow of events so that linking (remembering) new information to old is facilitated.

b) Discriminate the sounds of the target language.

User control over language presented in more than one modality supports a student’s ability to determine where words begin and end. The synchronized display of text along with the aural text assists the learner in distinguishing phonetic groupings and boundaries. When learners can see the faces of those speaking in the video, moreover, they can additionally make use of facial movements to understand the sound-meaning correspondence in the target language.

c) Recognize patterns of stress, rhythm, and intonation and how they signal information and intent.

Stress, rhythm, and intonation are automatically highlighted when aural language is chunked into syntactic units. When we speak, the logical breaks in our discourse (the places where we pause ever so slightly) occur at syntactically predictable junctures. As such, when the aural text is chunked for the language learner-when the presentation is paused at these junctures-the learner begins to acquire a feel for patterns of sounds both rhythmic and syntactic. As far as how these patterns signal specific kinds of information and intent, the addition of video can carry this kind of information. When specific words are stressed and patterns of intonation used, learners can be cued to closely examine the visual and spoken reactions of interlocutors in the video presentation.

d) Understand reduced speech

CALL is particularly well suited to assist learners in their understanding of reduced forms of target language speech. Having the written version of fast, naturally-paced aural text on the computer screen allows the learner access to both the written and spoken forms simultaneously. That is, the learner may hear “wadjagonnado?” but will read “What are you going to do?” In this way, learners can come to understand the two

different forms of the target language-spoken and written-as well as learn to decode these reduced forms.

e) Recognize core vocabulary and the rules and patterns of words used to communication

Coordinated aural, visual, and textual information on the computer screen at the same time makes up an ideal laboratory for student problem-solving at the level of individual words and sentence structures. The learner has at his/her disposal rich visual and contextual clues that can assist in breaking the code of the written and aural text. The multi modal cues can be cross-referenced for word, sentence-level and broader understanding.

f) Understand communicative functions of utterances according to context

Video can be a very rich source of context for language processing. In a CALL format, learners are provided control over the rate and order of video presentation and can therefore take advantage of starting and stopping the action in order to study language in a well-represented context. Video also typically boasts tight correspondence between what is seen and what is heard. That is, in only very rare cases is the audio portion of video temporally disconnected to what is being viewed. By studying target language communication in a CALL format, learners can experience and come to understand the connections between utterances and how they function within a visually depicted context.

g) Process different speech styles, different rates, and performance errors

CALL software for language learning provides a slowed down version of the aural text. The learner can switch back and forth from a normal-paced text to a slower, sometimes simplified version of the target language audio. This is one approach. However, if a variety of video-based material is available in a multimedia format, a range of speech rate and styles is also likely, and less artificial. Rate and style of audio naturally vary according to the genre of the video selection. Multimedia that includes varied genres permits a broad experience of different voices with differing rates and speech styles. Student scan control the aural text so they have sufficient time for their individual processing needs

h) Recognize that meanings can be expressed in different grammatical forms

Redundancy in video presentations is common. That is, interlocutors and narrators frequently repeat the same information in different ways so that meaning and intention is made clear to the viewer. In a CALL format, phrases and sentences that carry the same or similar meaning can be highlighted for users and/or the learner can be prompted to highlight those phrases and sentences she feels express like meanings. Highlighting can take the form of colorizing text, visually juxtaposing two or three texts whose meaning is similar, or directing learners to click on portions of the text or video where they recognize redundancy.

i) Infer meaning and make predictions using personal knowledge, experiences, and strategies

Video is a medium to which language learners come well equipped. Students are accustomed to inferring meaning and making predictions from what they see and hear on the screen. In a CALL a format, these viewing/comprehension strategies can be cued and guided by, for example, posing pre-viewing questions on top of the stilled first frame of the sequence they are about to watch. Inference, predication and calling up prior knowledge and experience can thus be activated.

Few Considerations in CAL Listening

a) Congruence

If including visuals is to advantage the language learner's listening skills development, certain conditions need apply. For example, tight correspondence between visual and aural elements in video is more likely to increase comprehensibility than would incongruence. Direct, tangible correspondence between what is uttered and what the utterance refers to is a fundamental characteristic of aural input that is readily comprehensible. Environmental, kinesthetic, and non-verbal messages in the form of human gesture and movement can supply supporting cues for learners in decoding aural messages. Paralinguistic cues not only contribute to understanding the surface meaning of utterances, but also provide more subtle information such as cues to the speakers' intent (Garza, 1991; Kelly, 1985; Riley, 1979). It is important, therefore, that the visual and the aural cohere and be mutually supporting in representing meaning.

It is a natural human reaction to work very hard at making sense of things that are oddly or unpredictably juxtaposed. However, when there is incongruence between the two channels, a language learner must expend energies on forcing an interpretation, rather than simply decoding the message. In the case of learning language where the focus is on the comprehension of an aural text, the visual can be an asset to learner comprehension under the condition that it be aligned with that text.

b) Familiarity

In addition to correspondence between visual and aural representation, the association of visual images with the meaning they represent is more likely when the visuals are salient to students' cultural experiences (Walker de Felix et al., 1990). In a study with U.S. students learning Spanish, for example, the television show Sesame Street was shown in the target language. Learners reported using scenes, characters, and themes that were already familiar to them to make sense of the program. Subjects recounted that elements of the program that were familiar to them directly assisted their comprehension (Pearson, 1978). Some consideration, therefore, should be given to cultural salience.

c) Integration

Integration of any technology into the larger context of learning requires correspondence of goals and content between the two realms (Meskill & Shea, 1994). If what gets learned and practiced using multimedia is closely aligned with and recognized by other learning activities that take place in other contexts, success is more likely. If there is recycling and follow-through on on-line content and experiences, success is also more likely. One example of valuing listening skills practice with media in other contexts

is the use of supporting, off-line materials. Availability of such materials has been found to be critical to technology-mediated language instruction. In a 1983 study of televised language programming, for example, Lo (1983) found that significant improvement in foreign language skills development can only be achieved when there is extensive support materials (e.g., print and audio) that are closely keyed to what happens on a television screen.

Scope of CALL in Multimodal Interactive Listening

In the era of communicative language teaching and learning, primary concern is given the development of a learner's ability to actively negotiate meaning in the target language. It is through processes involved in two-way communication that the rules and structures of the target language become incorporated into the learner's L2 system. The depth of instructional experiences, moreover, increases when involvement with another is part of the process (Pica & Doughty, 1985; Stevick, 1976).

The elements of face-to-face interaction that are missing in the machine learner conversation can be added through the pairing of learners at the computer. This approach may add the dimension of actively negotiated conversation to work with multimedia. For example, by pairing learners the fact that individuals interpret images differently can be capitalized on and interpretive skills and processes exploited (Jiang & Meskill, 1995; MacWilliam, 1986). As regards the interpretative value inherent in a medium such as video, pairing students to co-view makes sense (Walker de Felix et al., 1990). Differing perspectives on what happens on the computer screen can provoke interchange between students that may carry some pedagogical value, for example, practice in face-to-face communication in the target language. Active co-viewing and conversation with multimedia playing the role of catalyst seems an attractive pedagogical approach. Not only can students develop listening skills by directly controlling the technology, but they can also benefit from negotiated discourse processes with their partners.

Arguments in support of multi modal CALL processing suggest that CALL can serve as a powerful tool for an individual's listening skills development. The forms that visual and aural material takes and how these are keyed and supported within the instructional environment are, of course, critical. Individual interaction with aural, visual, and textual information can serve the learner's needs up to a point, but cannot provide opportunity for fully negotiated interaction. Pairing learners with the goal of their conversing, while carrying some intuitive appeal, does not insure that negotiated discourse and accompanying listening practice will result. The case for multimedia as a technology that supports listening skills development in another language is strong. Arguments supportive of multi modal processing as a means of listening skills development emphasize:

- The role of text and visuals as aids to language processing when appearing in conjunction with the aural text
- The motivational aspect of video as an advantage for language instruction
- The fact that combined media enrich target language processing, thereby rendering input more direct and salient for the language acquisition process

- It is an environment conducive to promoting schematization and the strategy of discourse chunking on the part of the learner.

As a medium for learning language, multimedia CALL represents a myriad of instructional possibilities. As a tool for listening skills development, there is a logical match of system characteristics (combining text, audio and video) and the goal of listening skills development in a second or foreign language. Careful consideration on the part of teachers and software developers of the range of possibilities for combining input modalities and tools that empower student manipulation of them is essential.

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