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ABSTRACT

Instructional models for foreign language reading and listening comprehension are outlined and synthesized, and an instructional procedure based on immediate recall, a standardized method for assessing first-language comprehension, is proposed. First, the interrelated processes of reading and listening comprehension, as currently defined in the research literature, are discussed. Differences in the processing of oral and written texts and the role of individual language comprehension strategies are examined. Second, the instructional procedure itself is described and examples of student responses to the protocols for reading and listening are provided. Implications of differential student responses for lesson planning are discussed. Finally, issues in comprehension testing and scoring are addressed. (MSE)

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The Teaching and Testing of Comprehension in Foreign Language Learning

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The term *comprehension* and variants on it such as *comprehensible* (as in *comprehensible input*) have become as much a part of contemporary professional language teaching jargon as *monitor, acquisition, communication*, and *proficiency*. Like the other new vocabulary entries, the construct of *comprehension* has been slow to be operationalized in the research literature. Needless to say, the operationalization of *comprehension* in the clinical or pedagogical literature has been even slower.

The intent of this paper is to outline and to synthesize instructional models for reading and listening comprehension. The instructional procedure outlined is based on immediate recall, a standardized methodology for assessing comprehension in first language (Johnston, 18). The first part of the paper discusses the interrelated processes of reading and listening comprehension as currently defined in the research literature. The second part outlines the instructional procedure itself and offers examples in reading and listening. The third part addresses the issue of testing and scoring comprehension.

What Is Comprehension?

Anderson and Pearson (1)—as well as Rumelhart (28), Graesser (14), Schank (29), Lotman (20), Perkins (24), and Bloome and Green (8) —consider the process of comprehension to be an active constructive

one. These scholars utilize, in general, the definition that *comprehension is the process of relating new or incoming information to information already stored in memory.* In other words, comprehension is an active process of matching or of associating. The consensus in the research literature is that understanding or comprehension is not a process of breaking complex units of language into simpler ones, but rather a process of taking multiple units and building them into representations.

An appropriate metaphor for the comprehension process might be the act of putting a jigsaw puzzle together. Trying to match pieces and sometimes forcing mismatched pieces together reflect the nature of the process. At first, one tries to get a sense for the image the puzzle might hold. This process is very slow at first until some glimmer of the whole begins to emerge. At that point, the process speeds up because the sense of the whole guides the use of the parts. However, when an initial "sense of the whole" is faulty, the process can slow down considerably or break down totally—especially when the puzzle constructer is convinced that some of the pieces are either *missing* or were even cut wrong.

Building a sense of the whole or a conceptual representation in comprehension is known as constructing a "model of the discourse." According to Brown and Yule (9, p. 200) "references [during comprehension] are made to the mental representation rather than to the original verbal representation in the text." In other words, much like the person who is convinced that the jigsaw puzzle will reveal a particular picture and therefore chooses pieces based on what he/she thinks the puzzle portrays, the comprehender does not refer to explicit components in a text, but rather to inferences and generalizations about a text's meaning.

The natural process in comprehension of building a conceptual representation and basing decisions on the constructed meaning can lead to a critical consequence. Johnston (18, p. 31) points out that a reader may "build a completely inappropriate model of the text meaning without becoming aware of the problem." He explains that as the reader builds the discourse model, he/she infers within the model and may generate "inappropriate inferences by virtue of the content of the growing model itself" (p. 31).

In summary, the constructive nature of comprehension involves associating concepts. Associations are often guided by what the comprehender decides a text is about. Inferences, then, are based on the comprehender's decisions. These inferences are not necessarily based on the raw material of the text itself.

What Is Second Language Comprehension?

Bernhardt has recently synthesized the knowledge base on second-language reading comprehension (6, 7). While indicating that the knowledge base is meager at best since it is based only on eighty-one data collections, she argues that some generalizations about reading comprehension can be made. These generalizations are (1) that comprehension is topic-dependent, (2) that it involves making appropriate decisions from the beginning of a text, (3) that it involves the selection of critical features for processing, (4) that it involves the rapid processing of text, and (5) that it involves metacognitive awareness of the comprehension process.

The first two generalizations about reading comprehension are indeed parallel to the findings generated by the first-language research findings mentioned above. *What the comprehender already knows*—that is, the information he/she has at hand—*is critical* to the entire process of comprehension. Research from ESL (Carrell, 11, 12; Hudson, 15; Johnson, 16, 17; Steffenson et al. 30; Mohammed and Swales, 22) as well as from foreign language (Bernhardt, 5) indicates that knowledge of a topic or personal experience with a topic increases comprehension. Linguistic competence predicts only infrequently the ability to comprehend a foreign language passage. In like manner, recent research indicates that *initial decisions about the content of a passage play an enormous role* in the constructed understanding of a reader. Bernhardt (5, 6) offers examples of a Wolfgang Borchert text about post–World War II Germany being interpreted as a fable when undergraduate readers saw that the title included the word *Ratten* (rats); and in a text about acid rain, *Waldkrankheit* (forest sickness) was interpreted as *Weltkrankheit* (world sickness).

The third generalization based on reading comprehension research

in a second language is that *proficient reading comprehension is dependent upon the identification of critical features* necessary for comprehension. Critical features differ from language to language. Micro elements such as the identification and meaningful processing of inflected endings, for example, have an impact on the ability to comprehend. In like manner, the ability to identify important or higher-level features in text as opposed to less important discourse elements that vary according to language are also critical in proficient text processing.

The *ability to process written texts quickly* seems to be the fourth hallmark of the reading comprehension process in a second language. Slow processing speeds tend to indicate limited comprehension abilities.

Finally, *metacognition or the ability to think about what is being understood* separates good from poor comprehenders. Foreign language learners who are aware of how they are constructing or perceiving an entire text seem also to comprehend at a high level. Such learners tend to comment on how they are understanding by providing data such as question marks and dashes or quizzical looks while they are performing a comprehension task.

These principles were synthesized from data generated by foreign language readers. Few data have been generated by foreign language listeners. While for the present paper the assumption is that the two processes are, in essence, the same, certain variables are indeed different.

Differences between Oral and Written Texts

There are several obvious differences between reading and listening. A printed text must be seen. A spoken text must be heard. A printed text often has additional visual cues, such as type in various sizes, illustrations, tables, and charts. A spoken text has additional audial cues, although these are quite different in nature, such as variations in voice quality, the presence of background noises, variances in pauses, and the like. There are, however, additional differences between reading and listening that are not so obvious.

Rubin (27) presents a theoretical taxonomy of the differences between oral and written language. The taxonomy encompasses seven "medium-related dimensions." Briefly sketched, they are (1) *modality*—there is a fundamental difference between the modality of speech and the modality of writing/printing; (2) *interaction*—the degree of perceived contact between a listener and a speaker and between a reader and a writer are different, in that the contact between a listener and a speaker is immediate and intense, whereas that between a reader and a writer can be reduced, or even suspended at will by the reader; (3) *involvement*—the extent to which the communication directed toward the reader/listener by means of such conventions as "you know" or "you are probably thinking that . . ." etc. varies between the two modalities; (4) *spatial commonality*—the degree to which the participants can actually see each other or at least seem to be able to see each other is perceived differently in the two modalities; (5) *temporal commonality*—the extent to which the participants share the same time frame is radically different in listening and reading; (6) *concreteness of referents*—the objects and events referred to are visually (or audially) present or absent in different ways in listening and reading; and (7) *separability of characters*—the distinction between different people's statements and the degree to which points of view are clearly indicated varies between the two modalities.

Richards (25, 26) has also outlined several major differences between the spoken and written language critical to understanding the differences in processing listening and reading texts. The written language is based primarily upon the sentence, whereas spoken language operates upon the level of the clause. In most written material grammatical conventions are usually carefully observed, whereas at least in spontaneous spoken language there may be many ungrammatical forms, reduced forms, slurrings, elliptical utterances, and repetitions. The written language observes a logical sequence and exhibits planning, whereas in the spoken language pauses, hesitations, false starts, corrections, fillers, and pauses dominate the structure of texts. Written texts are read as if produced by one person (the writer) with considerable internal coherence, but spoken texts often do not appear planned, and the topic of conversation may be negotiated and cooperatively constructed between the listener and the speaker.

Most discussions of listening as contrasted with reading tend to stress listening as part of speaking, that is, when a person is engaged in a conversation or observing a live conversation taking place. However, most of the factors just discussed apply equally well to listening to recorded texts, where there is little opportunity for listeners to participate as speakers in the development of the stream of speech. Taking Byrnes's (10) "four basic modes of speech," based on Beile (2), listening and reading become more like each other as a given text develops from (1) spontaneous free speech, which is highly interactive, through (2) deliberate free speech, with prearranged discourse gambits, such as those found in interviews and panel discussions, through (3) oral presentation of written texts (news broadcasts, lectures, etc.), to, finally, (4) oral presentation of fixed, rehearsed scripts (stage plays, film scripts, etc.).

Because listening involves calling into play those factors inherent in processing all environmental sounds, including those used by the brain to sort out background sounds from human speech, a kind of "internal dialogue" develops between the listener and the speaker (whether physically present or absent), which is not normally present when reading. Using Stevick's (31) terminology, an "image" develops in the mind of the listeners/readers. An "image" is a set of items that "travel together in memory," and can consist of elements that are sensory (things heard, seen, smelled, felt, etc.), emotional (anger, anxiety, relief, joy, etc.), relational (left–right, greater–lesser, older–newer, near–far, etc.), purposive (greeting, avoiding commitment, exchanging information, etc.), and verbal (words, parts of words, combinations of words, etc.). In this connection, Stevick outlines a number of other differences between listening and reading: differences in adjustability of input, in the content of images, in the signals for organization, and in the accessibility.

Summary

Certainly, differences between the processing of oral texts and the processing of written texts serve to complexify the inherently complex process of comprehension. That comprehension is based on what the reader already knows underlines the complexity of the process, for it implies that every individual comes to the comprehension process with

something different since every individual has a different structure of experience. In addition, the examinations of written versus oral language imply that two different sorts of processing behaviors are necessitated by the differences in modality The list of confounding variables is daunting. The road to effective instruction in comprehension must lie in acknowledging individual differences in readers *and* in texts. The value of the immediate recall protocol procedure outlined in this paper resides in its ability to tap and to expose individual comprehension strategies and, thereby, to determine the extent to which adequate and accurate comprehension is occurring.

The Recall Protocol Procedure

Table 1 outlines the immediate recall protocol procedure for *both* reading *and* listening. Bernhardt (3, 6) previously discussed the procedure exclusively for reading.

Table 1
The Immediate Recall Protocol Procedure

Reading

1. Select an unglossed text of approximately 200 words.
2. Tell the students that they may read the text as often as necessary and that they will be asked to write down what they recall.
3. Students should be given time to read.
4. Students are asked to write down everything they remember.
5. Students' written protocols are collected.
6. The protocols are used either for an immediate follow-up exercise or for the writing of a future lesson plan that addresses a.) cultural features, b.) conceptual features, c.) grammatical/lexical features that have interfered with comprehension.

Listening

1. Select an unglossed text, with a running time of one to two minutes, at a speed of approximately 200 words per minute.
2. Tell the students that they will hear the text once, but they are not to take written notes.
3. Tell them that when they have finished you will ask them to write down everything they remember from the text.
4. After they have heard the text twice, ask the students to write down everything they remember.
5. Collect the protocols.
6. Use the protocols either for an immediate follow-up exercise or for a future lesson plan that addresses a.) cultural features, b.) conceptual features, c.) grammatical/lexical/phonological features that interfere with comprehension.

In essence, the immediate recall protocol procedure focuses on the manner in which students reconstruct the texts they read or hear. Its intent is to give teachers a sense of *what* foreign language learners are able to gain from additional information about their students' understandings.

Briefly, the procedure involves selecting a text for practice, giving students time to understand the text without interruption, and then giving time for writing a recall protocol that the teacher uses for future lesson plans. Recall protocols are written in English so that students' *productive* skills do not interfere with the analysis of their *comprehension* abilities.

Table 2
A Reading Passage for Comprehension

Industrie und Natur

Die Bundesrepublik Deutschland gehört zu den vier grössten Industrienationen der Erde. Chemie, Autos, und viele andere technische Produkte ernähren das Land. Oft bilden mehrere Industriestädte ein grosses Zentrum: das "Ruhrgebiet," zum Beispiel. Dennoch ist die Bundesrepublik auch ein Land mit viel Wald. Auf 7,2 Milliarden Hektar Fläche stehen 20 Milliarden Bäume. Das sind 1000 Bäume auf drei Menschen.

Industry and Nature (translation)

The Federal Republic of Germany belongs to the four great industrial nations of the world. Chemicals, cars, and many other technical products fortify the land. Often several industrial cities form a large center: the Ruhr area, for example. Nevertheless, the Federal Republic is also a country with a lot of forest. On the 7.2 billion hectares of land are 20 billion trees. That is 1000 trees for every 3 people.

Reading Comprehension

Table 2 contains a passage for reading comprehension, and Table 3, recall protocols of two students.

Table 3
Unedited Recall Protocols of Two High School Readers of German

Student One

First Reading

Industry and Nature. The Bundesrepublic has four of them. Chemistry, cars, . . . and trees. The "Ruhrs_____" has.

There are many more trees. There is about three trees to every person.

Second Reading
Industry and Nature. The Bundesrepublic is one of the great cities for Industry. There are four of them chemistry, cars and a few other products. Dennoch is one of the central locations. The "Ruhr arbeit" for example. There are a great many forests. There are from 3,7 million acres. There are 1000 trees to every three people.

Student Two

First Reading
Science and Nature
Germany has many technical capabilities. Three major ones. Science, autos, and electronics. They have large industrial parks.

Second Reading
Science and Nature
West Germany i. a scientifically advanced country. Chemistry, Automobiles, and many other international sciences flourish. They have large industrial parks containing 2000 buildings and employing thousands.

The passage stems from a study in which all the texts considered ecology and ecology-related topics. In the study, the readers were asked to read the text as often as they liked in preparation for recall and then to complete a protocol after the text was taken from them. They were told they would have the opportunity to read the text and write a protocol twice.

The completed protocols in Table 3 indicate that the passage was not above the conceptual level of the readers. In other words, the readers were able to come to some understanding of the general theme of the text and that they dealt sensibly, albeit incorrectly at times, with the text.

Student One is the better comprehender. Student One's first protocol indicates an awareness of the basic contrastive structure of the passage and of some details. The second protocol provides greater detail. Notable is Student One's reconciliation of *dennoch* as a city. A credible explanation may be that Student One has learned the lexical entry of *Zentrum* as "city" as in "Stadtzentrum" (city center) and, therefore, used the capitalized word as the name of a city. The visual confusion of *Ruhrgebiet* as *Ruhrarbeit* may have contributed to this understanding.

Student Two also built a conceptual representation of the passage, but like many students, read from his general knowledge rather than from the text. Interestingly, he encodes the obvious cognate *Industrie* as "science" and then later used the word *Industrie* for "industrial parks." Perhaps the student linked the sense of trees and nature to parks; hence,

industrial parks, a concept not unknown to many urban and suburban dwellers in North America. In the second reading, Student Two merely fortifies his recall, choosing not to revamp but to supplement his previous conceptual representation. This result is consonant with the findings discussed in part one of this paper.

Perhaps the most important point to be made about these protocols is that they stem from students in the same class. The benefit of looking at recall protocols lies in identifying vocabulary problems, grammar problems, risk taking, and inference strategies in students, as well as their ability to use the structure of the text and titles to come to an understanding. A traditional question–answer format cannot provide this information, especially if it is maintained in the target language. Some examples might serve to illustrate.

Student One, who believed that *Dennoch* was a city, may never have been asked about a city because no city was mentioned in the passage. Obviously, a teacher would not ask the question, so the student could leave the classroom believing that a *city* was mentioned. In like manner, Student Two had the concept of industrial park in his head. Even though a teacher may have asked about numbers of trees per person, the student could have answered the question correctly while still believing that the real discussion was of industrial parks rather than a contrast between industry and nature. Often, conventional questioning does not yield the conceptualizations and beliefs that readers hold about texts.

Listening Comprehension

As with the immediate recall protocol used for reading, the procedures for listening are noticeably similar. Again, of course, there are a number of major differences. A taped text is unlike reading in that it is not realistic to allow students to listen to a taped text as often as they wish. Some students comprehend quite well with only one listening, some with two, some only with many listenings. Since the stream of speech is temporally linear, and not subject to the same kind of multiple holistic visualizations possible in a short time with reading, a convention had to be established, whereby the length of the text would be kept very short (no more than two minutes running time) but played only twice,

once to familiarize the stude. s with the text, and once to help them establish a mental st-ucture with which to retain aspects of the text needed for generating a protocol.

In addition, in the case of listening it may be necessary to give students those lexical items that might unduly slow down processing and retention. For example, proper names, including place names not readily recognized, are best written on the blackboard or in a worksheet, especially for students in beginning courses of instruction. With more advanced students this may not be necessary, of course, since they will know enough to realize that the specific spelling and pronunciation of a proper name is probably not relevant to overall comprehension. In the case of the sample text presented in Table 4, the students were told ahead of time the names of the two people involved ("Martin Schlichenmeyer and "Helga Kunold"), but not, of course, what their relationship to each other was. They were also told that they would hear the names of three German cities ("Berlin," "Göttingen," and "Stuttgart"), but, again, not what the cities had to do with the two people in the dialogue.

Table 4
A Listening Passage for Comprehension

Dialogue between Two Students in Berlin

Martin.	Servus, ich heiße Martin Schlichenmeyer.
Helga.	Morgen, mein Name ist Helga, Helga Kunold.
M.	Wo kommst du eigentlich her?
H.	Ich bin aus Göttingen. Und du?
M.	Ich komme aus der Gegend von Stuttgart. Bist du jetzt schon lange in Berlin?
H.	Nein, ich bin gerade jetzt angekommen. Ich kenne mich noch nicht so sehr gut aus. Die Stadt ist so groß. Kannst du mir vielleicht helfen?
M.	Ja, nach der Vorlesung, gerne.
H.	Gut, dann schauen wir etwas in der Stadt herum.
M.	OK!

From Claire Kramsch and Ellen Crocker. *Reden Mitreden Dazwischenreden.* Boston: Heinle and Heinle, 1985.

Translation

Martin.	Hello, my name is Martin Schlichenmeyer.
Helga.	Morning, my name is Helga, Helga Kunold.
M.	Where do you come from?
H.	I'm from Göttingen. And you?

M. I come from the area around Stuttgart. Have you been in Berlin long?
H. No, I just arrived. I don't know my way around yet. The city is so big. Can you help me maybe?
M. Yes, after the lecture, gladly.
H. Good, then let's look at something in the city.
M. OK!

Table 5
Unedited Recall Protocols of College Learners of German

Listener SN

1. My name is Martin. 2. My name is Helga. 3. Where are you from(?) 4. I am from Göttingen. And you? have you been here (Berlin) long. 5. I come from near Stuttgart. Have you been here long. 6. No, only a short time. The city is so big. Can you help show me around? 7. Yes, after the lecture. [25]

Listener PB

Martin S. meets Helga K. at the Uni in Berlin. Martin asks Helga where she is from. She answers Göttingen. She says she is new in Berlin and does not know her way around. He will show her around the city after the lecture. [22]

Listener NG

They said good morning to each other. She is from Göttingen and he is from (der nähe von) Stuttgart. They were going somewhere and they were going to talk after the Vorliesen. [12]

Listener AJ

Her name is Helga. She is new in Stuttgart. She asks Martin for help, and he offers to read something aloud to her. [9]

The four sample protocols in Table 5 indicate similarities in student recognition of the overall structure of the dialogue, but show many differences in the retention of specific details. All subjects realized, for example, that two people, a man and a woman, were having a conversation about something that the woman did not know well; in most cases, subjects realized that the "something" was a city, and that the man would show her around the city, although not right away. Listener SN chose to arrange the protocol as a series of numbered statements; most other listeners chose a prose style. Listener PB suggested that the two persons in the dialogue are students ("at the Uni in Berlin"); most of the others did not mention this fact, which, admittedly, is not explicit from the facts in the dialogue, but which is an accurate hypothesis from all the statements made by both persons. One student (Listener AJ), however, understood from the dialogue only that Martin would help Helga, but

by reading something to her, an obvious misunderstanding of the noun *Vorlesung* ("lecture"), which comes from the verb *vorlesen* ("to read aloud" or "to lecture"). Similarly, Listener NG recognized the word "Vorlesung" but rendered it as "Vorliesen," thus probably indicating that he/she did not know what the word meant.

Lesson Planning

Recall protocols give teachers a sense of what *real* learners do with *real* texts when they are given an opportunity to read or to listen on their own without interference and interruption. Protocols then provide valuable information to teachers by affording them the opportunity of customizing instruction to individual student needs and of avoiding unnecessary and time-consuming exercises on material students may already know.

The students who generated the reading recall protocols have some vocabulary problems; notably, however, they each have *different* ones. Their teacher should provide a lesson on the semantic domains of *Industrie* and *Zentrum*, for example. In addition, a discussion of "industrial parks" and their counterparts in West German culture should also be undertaken. Finally, instruction in the use of text structure as an aid in increasing comprehension should be given.

In like manner, the students who generated the listening recall also have vocabulary problems. Their teacher, for example, should provide a lesson on the semantic domain of *Vorlesung* vs. *vorlesen*. While semantically there is *some* overlap, that overlap caused some comprehension difficulties for the students. In addition, student PB should be praised for his/her inference and a discussion should ensue about the appropriateness of the inference.

Brief analyses such as the ones above can provide considerable and useful information to teachers. Bernhardt (6, p. 112) cited further advantages of using the immediate recall protocol procedure for the instruction of comprehension:

> It cuts the amount of preparation time for teacher-generated materials for comprehension practice since the students provide the raw materials for a . . . lesson and also indicate which exercises are appropriate. . . . it provides concrete, student-generated data on comprehension difficulties . . . it focuses

student attention directly on meaning, rather than focusing it on individual units of text which the teacher picks out based on his or her background.

Yet the technique is not only appropriate for teaching, but also for testing. It is to testing that this paper now turns.

Scoring Recall Protocols

Texts have internal structures and can therefore be broken down into "idea units" (Bernhardt, 3; Meyer, 21). There are numerous methodologies for breaking texts into units so that they can be scored. Briefly, the text is divided into a hierarchy of ideas with certain ideas of more central importance to the text than others. Tables 6 and 7 illustrate the scoring instruments used for the recall protocol passages illustrated in this paper. Table 6 lists the idea units in the reading passage. Student One receives a score of 19 on the passage and Student Two a score of 10 on the second reading. The scoring procedure taps the fact that the readers were able to grasp the intent of the text to an extent but simultaneously does not reward Student Two for reading from his background rather than from the text.

Table 6
Scoring Instrument for the Reading Passage

Points	*Phrase*
(5) _____	industry and nature in BRD
(4) _____	great industrial nations
(3) _____	one of four
(2) _____	many products
(2) _____	chemicals
(2) _____	cars
(2) _____	others
(2) _____	industrial cities
(2) _____	great center
(1) _____	Ruhrgebiet
(4) _____	lots of forest
(3) _____	7.2 billion
(2) _____	20 billion trees
_____	1000 trees/3 persons

Table 7
Scoring Instrument for Listening Passage

(4) _____ two students talk
(3) _____ they introduce themselves
(2) _____ he is a young man
(1) _____ Martin
(1) _____ Schlichenmeyer
(2) _____ he comes from a city
(1) _____ he comes from Stuttgart
(1) _____ he comes from near Stuttgart
(2) _____ she is a young woman
(1) _____ Helga
(1) _____ Kunold
(2) _____ she comes from a city
(1) _____ Göttingen
(3) _____ he asks her how long she's been here
(2) _____ if she has been here long
(1) _____ in Berlin
(3) _____ she wants him to help her
(2) _____ she has not been here long
(2) _____ she does not know her way around
(1) _____ very well
(2) _____ the city is big
(1) _____ so (too) big
(2) _____ can he help her?
(1) _____ yes
(1) _____ after the lecture
(2) _____ let's look at something
(1) _____ in the city

Table 7 lists the scoring format for the listening passage. Each specific fact is weighted as "1." The larger topics are weighted as "3." Each specific question or change in topic is weighted as "2." Only the fact that the two people in the dialogue are supposed to be students would be weighted more ("4"), because this fact is implicit, calling for a global comprehension of the text. True, many people might conclude that the two people are students but understand very little about the text. The points scored, however, are cumulative across levels. For example, Listener PB earned 22 points, 4 for identifying the speakers as students, 3 for the fact that they were introducing themselves, 2 for each specific topic recalled, and 1 for each specific fact noted.

Conclusion

Needs-centered instruction has become practically axiomatic in

the research and clinical literature in second and foreign language. Corder (13, p. 77) underlines the point:

> Efficient language teaching must work with, rather than against, natural processes, facilitate and expedite rather than impede learning. Teachers and teaching materials must adapt to the learner rather than vice-versa. . . . What has been discovered so far suggests that the nearer we can approximate language teaching to the learning of second languages in an informal setting the more successful we shall be.

The intent of utilizing recall as a teaching device in second-language comprehension is to reflect naturally occurring processes in comprehension. In particular, the procedure in both its teaching and testing dimensions reflects what is known about the constructive nature of the comprehension process. The authors hope that the recall protocol procedure in reading and listening contributes substantially to an era that calls for a theoretically sound pedagogy developed from a theoretically sound data base.

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