

Are They Listening Better? Supporting EFL College Students' DVD Video Comprehension With Advance Organizers In A Multimedia English Course

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ABSTRACT

As technology continues to evolve, authentic multimedia-based teaching materials are widely used in the English as a Foreign Language (EFL) classrooms. However, they may lie beyond most language learners' proficiency level. The purpose of this study was to investigate the use of advance organizers in conjunction with the cognitive theory of multimedia learning in EFL students' comprehension of English-language DVD soundtrack material. Two types of advance organizers were developed: 1) a 5-minute film preview with captions followed by brainstorming and 2) 20 episodic photos important to the main idea of the film, each accompanied by a caption in the form of a line from the film, and a control condition was used for a comparative purpose. A total of 128 intermediate university-level EFL students were placed in a 3-week teaching experiment based on a Latin Square research design and were also asked to complete a post-test questionnaire. The findings showed the participants in the condition of the 5-minute film preview followed by brainstorming performed at a significantly higher level than in the condition of 20 episodic photos, which, in turn, outperformed the control condition on the multiple-choice listening test. It was assumed that the first type of advance organizer was more meaningful and involved a higher level of cognitive processing, and thus it should have had more impact on the comprehension and retention of the aural input. Limitations of the study and suggestions for further research on the facilitative effect of advance organizers on target-language DVD video comprehension are discussed.

Keywords: Advance Organizer; Multimedia-Based Teaching Materials; Cognitive Theory of Multimedia Learning; EFL Listening Comprehension

INTRODUCTION

A quote from an unknown source goes, "God gave us two ears but only one mouth... Some people say that's because He wanted us to spend twice as much time listening as talking. Others claim it's because He knew listening was twice as hard as talking." Whatever the reason, comprehension plays a crucial role in the process of second language (L2) acquisition. Krashen's *Input Hypothesis* (1985) makes the claim that humans acquire language by understanding messages which come in the form of comprehensible input. Although Krashen's claims have often been challenged, there seems to be a general consensus among L2 researchers that such input is a central factor in language learning. As technology continues to evolve, authentic DVD materials are widely used in EFL classrooms. In comparison with an audio tape, language input in a multimedia presentation not only provides a rich authentic language context, but the video text that complements the aural input has been found in a number of studies to make such input more comprehensible and to lead to an increase in comprehension performance (Baltova, 1994; Ginther, 2002; Parry & Meredith, 1984; Shin, 1998; Sueyoshi & Hardison, 2005; Wagner, 2010).

Mayer's (2001) cognitive theory of multimedia learning, as illustrated in Figure 1, indicates that information presented to a learner's eyes and ears is stored temporarily in the working memory as two coherent mental representations, and prior/background knowledge, which includes linguistic knowledge and content knowledge, is then integrated with the two sensory modalities to arrive at a full interpretation of the information supplied by a multimedia presentation. Recognizing the importance of background knowledge, Ausubel (1960) first advocated the introduction of relevant concepts used as advance organizers to enhance comprehension and retention of language materials. Ausubel defined the advance organizers as "introductory materials at a higher level of abstraction, generality and inclusiveness than the learning material itself" (p.268). The claim that the use of advance organizers helps learners activate background knowledge, which facilitates comprehension and retention of L2 texts, has been well-documented in L2 research on listening comprehension (Berne, 1995; Chung, 1999, 2002; Chung & Huang, 1998; Herron, 1994; Herron, Hanley, & Cole, 1995; Herron, York, Cole, & Linden, 1998; Li, 2009; Teichert, 1996; Wilberschied & Berman, 2004).

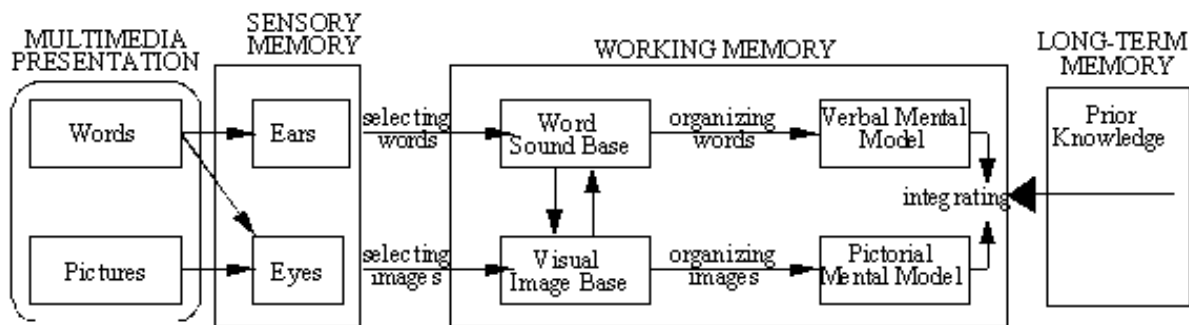


Figure 1: Cognitive Theory of Multimedia Learning (Mayer 2001, p.44)

DVD technology offers both multilingual captions and multilingual soundtracks that accompany the video material. The multilingual on-screen texts have been used in the L2 setting to enhance language learners' comprehension of DVD material. Previous research has established the positive value of this 'pedagogical tool' (Chang, 2009; Garza, 1991; Guillory, 1998; Huang & Eskey, 2000; Markham, 1999, 2001, 2003; Markham, Peter & McCarthy, 2001; Terrell, 1993; Winke, Gass & Sydorenko, 2010). However, in accordance with the 'redundancy principle/effect' in Mayer's cognitive theory of multimedia learning, when pictures and words (including spoken words and printed words) are presented simultaneously to language learners, it is likely to induce a sensory overload of the visual channel in their cognitive structure, which minimizes the learning outcome afforded by multimedia technology. Mayer thus contends that the most efficient way to present verbal material is through the verbal channel as spoken text only rather than as on-screen text because "in this way it does not compete with pictures for [limited] cognitive resources in the visual channel" (p.153). Language learners, without the aid of on-screen text (or captions), would likely demonstrate real comprehension of DVD material through listening rather than through reading the captions. For intermediate university-level EFL students, it is, however, a daunting task to comprehend authentic English-language DVD soundtrack material without captions. It was hypothesized in the study that the use of cognitive theory of multimedia learning as a design principle of multimedia presentation to reduce the learners' sensory overload, along with the use of advance organizers to provide them with relevant prior/background knowledge to the material, should effectively improve their comprehension of no-captioning English-language DVD soundtrack material. On the contrary, language learners viewing a no-captioning English DVD episode in the absence of advance organizers have no access to a previewing introductory stage to provide 'known' information about the DVD material. Thus, they have to rely completely on their imperfect linguistic knowledge which, in turn, often leads to a decrease in comprehension, a sense of frustration and a higher level of language learning anxiety.

Therefore, the catalyst for the current study was the need to gain a better understanding of the advantages associated with the use of advance organizers in conjunction with the cognitive theory of multimedia learning in EFL students' comprehension of no-captioning English-language DVD soundtrack material. The three following research questions were addressed in this study:

1. How does the availability of advance organizers affect intermediate EFL students' comprehension of no-captioning English-language DVD soundtrack material?
2. Which type of advance organizer is considered more effective and helpful in enhancing the intermediate EFL students' comprehension of the English-language DVD soundtrack material?
3. What are the students' attitudes toward the use of advance organizers in their listening comprehension of the English-language DVD soundtrack material?

LITERATURE REVIEW

Effectiveness of Advance Organizers in L2 Listening Comprehension

Providing background knowledge or information in the form of an advance organizer has been well-documented in L2 research on listening comprehension. In order to investigate what kind of advance organizer condition is most effective in making aural input more comprehensible to the language learner, Herron, Hanley and Cole (1995), as well as Wilberschied and Berman (2004), compared the effect of two advance organizer conditions on students' retention of information in French videos and authentic Chinese TV broadcasts, respectively. The findings of both studies suggest that students' comprehension and retention of information was significantly more enhanced in the advance organizer condition in which more contextually relevant background knowledge about the video was activated prior to their listening task.

To encourage students to ponder what might be included in the upcoming video, Herron, York, Cole and Linden (1998) designed a study to compare comprehension and retention of video in two experimental conditions and one control condition. As advance organizers, short descriptions of upcoming scenes in the video were presented in either a declarative mode or an interrogative mode. Data from 10 video viewings were collected from a total of 67 students enrolled in a 15-week second-semester French course. The results showed that the mean scores of the two advance organizer groups were significantly higher than the scores of the control group. These results again suggest that it is significantly better to incorporate advance organizers into lessons plans so that students will not attack a listening activity unprepared. The study confirmed that student comprehension is facilitated by a framework of clues about what is to come in a video.

The interest in advance organizers and their facilitative role in listening comprehension have been further explored by other researchers. A study conducted by Chung (1999) showed that an advance organizer, plus captioning or the use of multiple advance organizers, are more useful in enhancing listening comprehension than either treatment alone or lack of advance organizers. In the later study (2002), she investigated the effects of two advance organizers - question previewing and vocabulary pre-teaching - on English video comprehension of 188 EFL learners. The results showed that learners taught with a combined treatment of the two advance organizers outperformed those who received vocabulary pre-teaching treatment or neither treatment on the multiple-choice and open-ended test items. Berne (1995) and Elkhafaifi (2005) also noted that the top-down processing involved in a question preview activity encourages listeners to pay close attention to the overall message or content of the listening passage rather than to the individual words or structures. In addition, supplying the listeners with questions enables them to make use of previous knowledge specific to the listening passage when they process the listening passage content.

The use of cultural background cues prior to a listening task has been suggested among the list of effective advance organizers for listening comprehension (Chung, 1999; Herron, 1994). Li (2009) used a sequential mixed-methods study to examine the effect of cultural background cues in comparison with question preview and summary of major scenes with accompanying shots taken from a video on a listening comprehension task performed by 124 EFL college students. The results showed that students performed best when they had question preview as an advance organizer prior to viewing the target video, moderately well when they had summary of major scenes with accompanying pictures, and poorest when they had cultural background cues. Findings from the focus group discussion showed that the cultural background information was inevitably related only indirectly to the video's content and students had trouble making an association between the video content and this type of advance organizer treatment. The researcher concluded that the content of the advance organizer has to be closely related to the aural

material and an advance organizer that contains too much indirect relevance to listening stimuli distracts students' attention and is likely to offset the facilitative effect of advance organizers on comprehension.

In all of the studies in the section, one common thread is that the facilitative role of the right advance organizer approach to any listening task is unquestionable. With the advance of technology, further research on the development of effective advance organizers to activate language learners' background knowledge is absolutely necessary in order to make the media-based language teaching materials comprehensible to them.

Cognitive Theory of Multimedia Learning

Mayer's (1997, 2001) cognitive theory of multimedia learning, as previously shown in Figure 1, is related to the cognitive memory models that are used to describe how information processing takes place in the learner's mind. According to this model, the stimulus presented can be either verbal (such as spoken words or on-screen text) or nonverbal (such as pictures or background sounds or music). Pictures and words coming in from the outside world as a multimedia presentation are processed by two separate channels - one for verbal material and the other for pictorial material and nonverbal sounds. Although information enters the information process system via one channel, cross-channel representation of the same stimulus is also attainable in a cognitive model of multimedia learning.

The cognitive processes that are necessary for active/meaningful learning to occur include four basic steps. A learner first selects relevant verbal and visual information in each memory store, organizes the information in each store into coherent verbal and visual mental representations, and then makes referential connections between corresponding representations in each store. Finally, prior knowledge stored in the learner's long-term memory is integrated with the two coherent mental representations to arrive at a comprehensive interpretation of the authentic input presented in a multimedia environment.

Using the cognitive theory of multimedia learning, Guillory (1998) examined the effects of different captioning methods on students' comprehension of a digital video. In addition to the audio narration, students were provided with redundant verbal information in the form of either keyword captions or full-text captions. The students' comprehension was as good as when the video was presented aurally with keyword captions or when it was presented with full-text captions. The finding implies that the visual image in the video, together with the small amount of text in the visual channel, is sufficient to achieve full comprehension of the information coming through the auditory channel.

Jones and Plass (2002) investigated the effectiveness of pictorial annotations and written annotations for listening comprehension in a multimedia environment. The results indicated that the students recalled the passage better when both annotations were available for them to use. In addition, the study found a larger effect size for pictorial annotations than for written annotations, especially for delayed tests; that is, pictures are easier to remember and retain in the memory than words are.

The two studies present findings on the benefits of 'dual coding of information' in the L2 classroom. However, the critical role played by the learner's prior knowledge in a multimedia environment is not acknowledged in the final process of information integration. Even though the working memory does the central work of multimedia learning, the outcome of active cognitive processing is maximized only when the learner is able to integrate the mental representation with prior knowledge stored in the long-term memory to make full sense of multimedia presentations. As noted earlier, the use of advance organizers has been found helpful in the comprehension and retention of authentic input because advance organizers can activate the learner's prior knowledge. With the use of advance organizers in a multimedia presentation to activate prior knowledge, the prior knowledge stored in long-term memory can thus be brought into working memory and integrated into coherent mental representations which, in turn, could lead to increased comprehension of DVD material, even in the absence of captions - an aim of this research paper.

METHOD

Participants

The freshmen in a national university of science and technology were sampled in the current study with a total of 624 prospective participants. A course entitled English Listening and Speaking (I) is required in the first-year curriculum of this university. An intermediate-level English listening comprehension component taken from a standardized English language proficiency test is used by the institute as a placement test. Students in Level 3 are recognized as having higher listening proficiency than those in Level 2. Students in Level 1 are considered as less proficient than those in Level 2. Each level is composed of students from different academic departments. Based on the results of this placement test, the students were grouped into three ability levels - Level 3 with three classes, Level 2 with six classes, and Level 1 with four classes. One intact class was randomly chosen from each proficiency level, with a total of 128 students, to participate in the current study. This sampling procedure ensured that the selected classes, coded as Class A, Class B, and Class C, were representative of the population. In the demographic background section of the research materials, the students self-reported being native Chinese speakers and having studied English for approximately eight years, on average. None of them reported studying or traveling in an English-speaking country.

Experimental Design and Manipulation

In the study, the independent variable was advance organizer with three levels, including 1) a 5-minute film preview with English captions followed by brainstorming, 2) 20 episodic photos important to the main idea of the film, each accompanied by an English caption in the form of a line from the film, and 3) a control condition (without advance organizer). The dependent variable was three 10-item multiple-choice listening comprehension tests that were developed based on each DVD episode. Since the language usage in each DVD episode that had been selected varied in difficulty level, to some degree, and the three intact classes differed in their listening proficiency, a Latin Square experimental research design was employed to eliminate the differences that had been found in the DVD material and among the selected classes. In this design, each intact class went through three types of advance organizer treatment condition while watching three DVD episodes. The specific research design is displayed in Table 1.

Table 1: A Latin Square Experimental Research Design

Advance Organizer Conditions	Class A (n=38)	Class B (n=43)	Class C (n=47)
Week 1: A 5-minute film preview with captions followed by brainstorming	Episode (1)	Episode (2)	Episode (3)
Week 2: 20 episodic photos each accompanied by a caption in the form of a line from the film	Episode (2)	Episode (3)	Episode (1)
Week 3: control condition (without advance organizer)	Episode (3)	Episode (1)	Episode (2)

Instruments

Three DVD Episodes

Three authentic DVD episodes of *Everybody Loves Raymond* - one of the most popular situation comedies in the U.S. - were used in the study. Each episode in the series lasts about 20 minutes and depicts a funny anecdote in a typical American middle-class family. Authentic materials, unlike those that are specifically designed for the language classroom setting to suit the proficiency level or needs of L2 learners, are not altered in speech delivery speed or syntactic complexity. They reflect unadapted, natural interaction among native speakers. While adhering to authenticity, the author also took into account the participants' particular difficulties. Based on his teaching experience, he purposely selected three DVD episodes in which the cultural practices were not quite different from

the perspectives of the participants' own culture in the hope of avoiding an increase in the difficulty level of the DVD content.

Advance Organizers

The basic concept underlying the development of the advance organizers in the study was a combination of pictorial images and verbal text so as to arrive at the dual coding of information in the learners' cognitive structure. In light of the redundancy effect/principle, as shown in Mayer's cognitive theory of multimedia learning, presenting words in spoken and printed form is harmful to learning; but Mayer also implies that "the redundancy effect should not be taken as justification for never presenting printed and spoken text together" (p.159) as long as the rate of presentation is slow or, as Guillary (1998) asserted, the amount of printed text is small. Additionally, in a task-based learning setting, cognitive processes are affected by several factors, including the complexity of the task, the learner's prior knowledge, the time needed to search information, and so forth. Nevertheless, time-on-task is directly related to cognitive processing (Skehan, 2003). Based on Skehan's theory of cognitive processing load, the findings from previous studies, the limited class time and the consideration of the participants' concentration span, two 10-minute advance organizer treatment conditions were created and developed.

One of the two advance organizer conditions was a 5-minute film preview with captions (2-minute film presentation of the beginning part, another 2-minute presentation of the middle part, and a 1-minute presentation near the end). After the 5-minute film preview, the participants were divided into small groups. Each group was given five minutes to discuss what might be included in the video through brainstorming and to report the predictions to the class. The instructor did not tell them whether their predictions were correct because this activity gave them an opportunity to check their initial guesses when they viewed the full film later. The other advance organizer condition was three sets of 20 episodic photos that were important to the main idea of each episode. Each photo was accompanied below by a corresponding English caption in the form of a line from the film. One set of episodic photos and sentences, based on the DVD episode selected, was presented to a class in chronological order of the film plot using a PowerPoint slide show. The duration of each slide was set at an interval of 30 seconds and it took ten minutes to present one set of the episodic photos and lines. The third condition was a control condition without advance organizer treatment, which was used as a comparative purpose with the other two advance organizer conditions.

Listening Comprehension Tests

Three 10-item multiple-choice listening comprehension tests were used to assess the participants' listening performance on each of the three DVD episodes. As recommended by Buck (2001), multiple-choice items can be used to test a variety of listening sub-skills, "from understanding at the most explicit literal level through combining information from different parts of the text, making pragmatic inferences, understanding implicit meanings, to summarizing and synthesizing extensive sections of text" (p. 146). Cheng (2004) found that test takers prefer the multiple-choice format because the alternative responses facilitate comprehension of verbal stimuli. Additionally, a positive feature of using a multiple-choice test format is the ease and objectivity of scoring.

A pilot study was conducted with a small group of university-level EFL students ($n = 16$), whose proficiency level was approximate to the intended audience, to determine the suitability of the three DVD episodes and the three 10-item multiple-choice listening comprehension tests. The pilot-test participants viewed each episode without any advance organizers. The pilot-test findings showed that the three DVD episodes and the three multiple-choice listening tests were suitable for the target audience because it was found that they could select the correct multiple-choice alternatives based on each DVD episode at least 51% of the time at the lower end of the test performance range. An item analysis was conducted for each of the pilot-tested multiple-choice items to alter any items that were not performed at an acceptable level prior to the main experimental treatment.

Post-Test Questionnaire

A post-test questionnaire consisting of 6 Likert-type items was used to address the issue about the participants' attitudes toward the role of advance organizers in their listening comprehension process and to assist in the interpretation of the experimental findings so as to arrive at a more comprehensive analysis.

Experimental Procedures

The data collection process took place during the regularly scheduled class periods for a period of three weeks in the required course. The participants were informed in advance that their participation in this study was voluntary and were assured that their performance on the listening tests did not affect their course grades. In the first week, the three intact classes were randomly assigned to view one of the three selected DVD episodes in the advance organizer condition of a 5-minute film preview with target-language captions, as illustrated in Table 1. To reduce the redundancy effect to a lesser degree, they were exposed to a small amount of verbal text (printed text and spoken text) for 5 minutes only in addition to visual images. Then they were put into small groups to talk about what the film they had been assigned to watch might be about through brainstorming and to report their predictions to the whole class within five minutes. They were not informed whether their predictions were correct, leaving them to check their own initial guesses when they viewed the full film later. Then the class instructor played the selected DVD episode for them from the very beginning to the end without captions and a multiple-choice listening comprehension test was administered to them immediately after they had viewed the DVD episode. During the time that remained in each class, the instructor introduced to them some key vocabulary words and useful expressions found in the episode, as well as other questions that were worthy of further discussion.

In the second week, the three intact classes went through the same process as they did in the first week, except that they viewed another selected DVD episode in the advance organizer condition of 20 episodic photos important to the main idea of the episode, each accompanied by a target-language caption in the form of a line from the film. The class instructor read to their students each line (and explained difficult words if necessary) while they were listening and looking at the corresponding episodic photo presented with a PowerPoint slide show. Since the duration of each slide was set at an interval of 30 seconds, the rate of presentation should have been slow enough for them to make an association between pictorial images and verbal text (spoken text and printed text) without causing a cognitive overload in multimedia learning.

In the third week, they viewed the assigned DVD episode without the aid of any advance organizer, which served as a control condition in the current study. In addition to the listening comprehension test, they were asked to complete the post-test questionnaire about their attitudes toward the role of advance organizers in their comprehension of the DVD material.

Scoring and Data Analysis

Each multiple-choice question that was correctly answered was given a score of one point with a full score of ten for each of the listening comprehension tests. A repeated-measures analysis of variance (ANOVA) was used to compare the listening comprehension performance for the two experimental conditions and one control condition. Post hoc procedures were conducted to determine which conditions differed when the main effect was found significant. For the analysis of the post-test questionnaire, descriptive statistics were calculated.

RESULTS

Listening Comprehension Tests

The ANOVA measures were used to see if there was a significant difference across the three treatment conditions. Table 2 summarizes the means of the listening comprehension tests divided by advance organizer condition, whereby the participants had a 5-minute film preview followed by brainstorming, 20 episodic photos important to the main idea of the film, each accompanied by a target-language caption, and a control condition without advance organizer. The participants in the condition of a 5-minute film preview followed by brainstorming ($M = 7.31$, $SD = 1.18$) scored the highest, followed by the condition of 20 episodic photos ($M = 6.63$, $SD = 1.25$) and finally by the control condition ($M = 4.94$, $SD = 1.17$).

Examination of the repeated ANOVA measures indicated that the F -value for the three treatment conditions reached significance, $F(2, 254) = 133.02$, $p < .001$. The results are summarized in Table 3. The post hoc LSD test was conducted to determine which advance organizer conditions were different from other conditions.

Regarding the first and second research questions, the analysis revealed that the students in the control condition performed at a considerably lower level than in either advance organizer treatment condition on the multiple-choice listening test. In addition, the participants in the condition of a 5-minute film preview followed by brainstorming performed at a statistically higher level on the listening comprehension test than in the condition of 20 episodic photos. Clearly, the availability of advance organizers did contribute to the participants' increased DVD video comprehension.

Table 2: Means and Standard Deviations for the Multiple-Choice Listening Comprehension Test

Advance Organizer Treatment	<i>N</i>	<i>M</i>	<i>SD</i>
5-Minute Film Previewing	128	7.31	1.18
20 Episodic Photos	128	6.63	1.25
Control Condition	128	4.94	1.17

Table 3: Summary of One-Way Repeated ANOVA for the Multiple-Choice Listening Test

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between groups	185.081	127			
Within groups					
Advance Organizer	383.005	2	191.503	133.024	< .001
Error	365.661	254	1.440		
Total	929.747	383			

Participants' Attitudes toward the Role of Advance Organizers

The post-test questionnaire, consisting of 6 Likert-type items on a 5-point scale (5—*strongly agree*, 4—*agree*, 3—*no opinion*, 2—*disagree*, 1—*strongly disagree*), was used to measure the participants' attitudes toward the use of advance organizers on the listening comprehension test. Means above the center point of three are considered positive attitudes while those below three indicate negative attitudes. The six items are listed below:

1. It is difficult to comprehend a DVD episode without relevant prior/background knowledge.
2. I liked organizer-aided listening activities.
3. The use of advance organizers helped me build up and/or activate my background knowledge with which I could predict what the film might be about.
4. The use of advance organizers before I viewed the full film without captions made me feel confident/comfortable and understand better.
5. I thought my listening comprehension performance on the two DVD episodes, with the aid of advance organizers, was superior to my performance on the DVD episode without the advance organizer treatment.
6. The two advance organizer treatment conditions were considered equal in terms of their effectiveness in my comprehension of the DVD material.

Table 4: Results of the Post-Test Questionnaire about Participants' Attitudes towards the Use of Advance Organizers

Item	# of 'strongly agree' ratings	'agree'	'no opinion'	'disagree'	'strongly disagree'	<i>Mean</i>
1	0	110	17	1	0	3.85
2	10	114	2	2	0	4.03
3	2	72	42	11	1	3.49
4	3	102	15	8	0	3.78
5	8	74	39	5	2	3.63
6	0	16	39	66	7	2.50

The internal consistency reliability coefficient of this 6-item questionnaire was *Cronbach* $\alpha = .812$, indicating that the six items were reliably measuring the same construct. Overall, the facilitative role played by the

advance organizer in the listening comprehension process was confirmed by the participants' positive ratings. The means for four of the six items (items 1, 3, 4, 5) were similar with a range from 3.49 to 3.85 on the 5-point Likert-type scale, as displayed in Table 4. The mean for item 2 (*I liked organizer-aided listening activities*) was the highest at 4.03; further analysis of the ratings revealed that a total of 10 participants strongly agreed with the inclusion of advance organizers in their listening comprehension of DVD material. The mean for item 6 (*The two advance organizer treatment conditions were considered equal in terms of their effectiveness in my comprehension of the DVD material*) was the lowest at 2.50, which assisted in showing, but not in explaining, the significant difference between the two experimental treatment conditions.

DISCUSSION

Concerning the effect of advance organizers on the EFL students' DVD video comprehension, the statistical results indicated that the participants in the condition of a 5-minute film preview, followed by brainstorming, performed at a significantly higher level than in the condition of 20 episodic shots with accompanying captions, which, in turn, outperformed the control condition on the multiple-choice listening test. These findings showed that through the use of advance organizers in a multimedia setting, the intermediate EFL students' prior knowledge would be activated and integrated into their working memory in the process of the aural input and their listening comprehension would be substantially enhanced. This outcome supports and establishes the value of previous research (Berne, 1995; Chung, 1999, 2002; Elkhafaifi, 2005; Herron, 1994; Herron et al., 1995; Herron et al., 1998; Li, 2009; Wilberschied & Berman, 2004) on the use of advance organizers as an instructional technique in that advance organizers improve the measure of listening comprehension of target-language material by activating background knowledge and providing clues to upcoming aural input.

Even though the interpretation of a listening text depends on the background knowledge that is stored and activated in the listener's mind, the processes through which the listener tackles the aural input play a larger role in how it is comprehended. The participants who had access to the advance organizer condition of a 5-minute film preview followed by brainstorming were provided with an in-depth cognitive processing of the DVD material. In this introductory stage, they discussed their views about the film and then each group reported them to the class. The film plot was interpreted in different versions by different groups according to their own background knowledge and predilections. Later, they checked whether their initial guesses were right when viewing the full film. This type of advance organizer condition was more meaningful and involved a higher level of cognitive analysis. The deeper or the more meaningful the processing, the more impact it should have on the comprehension and retention of the aural input, in accordance with the depth-of-processing approach to memory (Craik & Lockhart, 1972). In this advance organizer condition that required the participants to check their initial guesses, they were motivated and knew clearly what to listen for without losing focus. As suggested in the previous literature (Herron et al., 1998; Li, 2009), it is significantly better to incorporate advance organizers into lesson plans so that language learners will not attack a listening activity unprepared or without a purpose in mind.

On the other hand, they performed at a substantially lower level in the condition of 20 episodic photos, each accompanied by a caption. In this advance organizer condition, they were asked to look at each episodic photo accompanied below by a corresponding line and to listen, in a passive way, to their class instructor reading the line. They would not necessarily have memorized or visualized an overall context for the DVD material, which might have reduced the benefit of the 'reading' input afforded by this advance organizer treatment in enhancing their listening performance on the test. Additionally, item 6 on the post-test questionnaire indicated that the participants did not acknowledge the equal effectiveness of the two advance organizer conditions in facilitating their listening performance. This would seem to present evidence in support of the effectiveness of the 5-minute film previewing followed by brainstorming over the 20 episodic photos in enhancing the intermediate EFL students' comprehension of the target-language DVD material.

LIMITATIONS OF THE STUDY

There are a number of limitations to this study that must be taken in consideration. First, in order to minimize disruption of the three instructors' class schedules, the teaching experiment took place during the regularly scheduled class hours. Since the instructors of the three classes that were sampled were different, their individual

teaching style could have somewhat affected the implementation of a particular advance organizer treatment in the language classroom despite their attendance in a workshop with the author on how to carry out the experiment prior to the main data collection effort. The results could have been more reliable if the two experimental treatment conditions had been implemented to the classes by the author himself.

Another limitation to the study involves the design of the post-test questionnaire. Item 6 (*The two advance organizer treatment conditions were considered equal in terms of their effectiveness in my comprehension of the DVD material*) on the post-test questionnaire failed to provide a clear detailed explanation of how the two advance organizer treatment conditions were different in their effectiveness in enhancing the students' DVD video comprehension. It would have provided a fuller understanding of the effect of advance organizers on the EFL students' DVD video comprehension to use multiple forms of data collection to achieve triangulation in the study; e.g., the inclusion of an interview with a few participants.

SUGGESTIONS FOR FURTHER RESEARCH

The current study answered some questions concerning the effect of advance organizers on the intermediate EFL students' DVD video comprehension, but it also presented a number of areas that are worthy of further research. First, the study used only one dependent measure - the multiple-choice listening test - to check their overall comprehension of the DVD material. The inclusion of multiple assessment measures, say a written summary generated by students in which they have to remember the parts of the plot and to link them together meaningfully, might yield a more reliable basis for evaluation of their listening comprehension. Second, the less successful advance organizer condition of 20 episodic photos with accompanying target-language captions deserves further consideration. Future studies could investigate what might be an optimal number of episodic photos to use and how much information needs to be included in this type of advance organizer, or how this advance organizer condition can be modified to involve a higher level of cognitive processing. Finally, a study that compares the effects of a single advance organizer vs. multiple advance organizers on advanced EFL learners' DVD comprehension can be conducted to see whether a higher level of language proficiency will offset the facilitative effect of advance organizers on target-language DVD comprehension or whether students who have access to multiple advance organizers outperform their counterparts in a single advance organizer condition.

CONCLUSION

The advantages of using advance organizers in a multimedia presentation to enhance comprehension have been manifested in the study based on the superior performance in the condition of the 5-minute film preview and subsequent brainstorming, followed by the somewhat lower performance in the condition of 20 episodic photos with accompanying captions, and finally by the considerably lower performance in the control condition. With more and more multimedia-based language programs available in the L2 classroom, the L2 learners need to be supplied with effective advance organizers in the pre-listening stage to build up and/or activate background knowledge so as to bridge the gap between their imperfect linguistic knowledge and the upcoming listening material if their listening comprehension ability in the target language is to be desired.

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AUTHOR INFORMATION

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