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影片字幕對臺灣國中生英文字彙學習之效益研究

The Effects of Captioning on the Incidental Vocabulary Acquisition of EFL Junior High School Students

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中文摘要

近年來，由於多媒體科技日新月異，以英語影片作為教學工具，以提升學生的英語能力，逐漸成了一種趨勢。此研究旨在探討字幕的有無對不同英語能力的國中生之字彙學習影響。本研究採準研究設計，研究對象為臺北市一所國中的八年級學生，共一百一十八位。將受試者分成有字幕組(實驗組)：六十人、無字幕組(控制組)：五十八人。此外，依照受試者英語成就測驗表現，將實驗組及控制組的學生平均分成三組英語能力組別：高成就、中等成就、低成就。本研究為期三個月，在實驗前一個月，所有受試者均接受單字前測，確認所有受試者均未習得本研究影片教材中所要檢測的單字字義，並在實驗第一週完成一份學習前問卷。接著，所有受試者均接受十週的教學實驗，並在整個教學實驗結束後一週完成一份學習後問卷。實驗期間，實驗組和控制組均在未接受相關字彙教學的情況下，進行一週一次的英語影片學習，共使用十部難易度適中的英語發音卡通影片做為實驗教材。每次實驗中，所有受試者均重複觀看影片兩次，看完第一次影片，研究者立即發下閱讀測驗試卷，並接著撥放第二次影片，受試者需於第二次影片撥放的期間完成閱讀測驗，此目的是希望藉由閱讀測驗，引導受試者將注意力放在影片內容理解上。第二次影片撥放結束，所有受試者均立即接受兩種單字測驗，依序為：單字字音辨識測驗、單字字義測驗，以檢測標的字彙(target words)的學習情形。研究結果顯示：有字幕組，在單字字音辨識測驗和單字字義測驗的表現，皆優於無字幕組；此外，透過影片學習單字與學生的英語能力有顯著相關，意即英語能力較佳的學生能夠透過觀賞影片，習得較多的英文單字。最後，根據研究發現，本文亦提出結論及教學建議，提供教師和日後研究作為參考。

關鍵詞：英語影片、字幕、字彙學習

ABSTRACT

This study aims to explore the effects of captioning on (a) aural form recognition and (b) form-meaning mapping of EFL junior high school students at different linguistic levels without formal vocabulary instruction. A quasi-experiment design was adopted, and a total of 118 EFL 8th graders at a junior high school participated in the study. Sixty students were assigned to the captioned condition and the others were assigned to the non-captioned condition (control). The students under the two caption conditions were evenly assigned into three linguistic groups (i.e., high-level, intermediate-level, and low-level) based on their achievements in English. A three-month experiment was conducted; the learning materials involved ten difficulty-appropriate videos from a cartoon series, *Olivia*, and each was viewed twice under both conditions. A reading comprehension test was given after the first viewing as a tool to focus the students' attention on the meaning of the message; two vocabulary posttests (i.e., form recognition and vocabulary acquisition tests) were administered immediately after the second viewing. All participants took a vocabulary pretest one month prior to the experiment to evaluate their prior knowledge of the target words and completed pre and post learning questions before and after the learning sessions. The results of the study indicated that the availability of captioning significantly improved the participants' overall form recognition and vocabulary acquisition. In addition, in both form recognition and vocabulary acquisition, the participants of high linguistic competence acquired substantially more word gains from video viewing than others. These results prove the positive caption effects on EFL middle school students' incidental vocabulary learning and suggest that learners' linguistic competence appears to be a crucial factor affecting the efficacy of using authentic captioned video material in language classroom. Pedagogical implications for employing captioned video material to enhance EFL middle school students' language gains are included.

Keywords: captioning, linguistic competence, incidental vocabulary acquisition

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CHAPTER ONE

INTRODUCTION

Motivation and Background

For the past few decades, video material has been increasingly used in foreign language classroom with an expectation that it can highly motivate students and makes their learning experiences more like those that occur in real world. After surveying research evidence in the last ten years, Vanderplank (2010) summarizes in his review that video, an audiovisual medium, is a valuable teaching resource for cultural knowledge development as well as language learning when the material is well-selected. With respect to foreign language learning, Secules, Herron, and Tomasello (1992) further clarify that video permits learners, especially those who have little exposure to the target language outside the classroom, to witness the natural conversation and interaction happening in authentic settings and observe the use of different accents, registers, gestures and facial expressions in communication, which in the long run will lead to improved learning outcome.

In general, there are three main reasons why video can serve as a promising instructional tool for second language learning (e.g., Lin, 2010; Neuman & Koskinen, 1992; Tschirner, 2001). First of all, from a cognitive input encoding perspective, the potential usefulness of video can be explained by Paivio's dual coding theory. According to Paivio (1986), human cognition involves the activities of two distinct subsystems—verbal (linguistic) and nonverbal (imagery) systems. The two systems are in charge of representing and processing stimuli of different modalities. The verbal system is specialized for dealing with language information while the nonverbal system is specialized for dealing with nonlinguistic events. The two "modality-specific" systems exist independently but at the same time they are functionally interconnected, so the activity in one system can activate activity in the other. The interaction of verbal (e.g., auditory words and visual words) and non-verbal (e.g., visual images and sounds) stimuli processed through separate cognitive systems can integrate and result in improved information processing.

Paivio's dual coding theory predicts that learners will have better performance of information processing and knowledge acquisition if they encode the material both

visually and verbally. Results of Mayer and Anderson's (1991) study provided empirical evidence for the theory. To test the dual coding hypothesis, forty-eight college students were randomly assigned to one of the four treatment groups—auditory words only, animation only (without words), auditory words plus animation, and control groups. As predicted by the researchers, the participants in words plus animation group substantially outperformed the other three groups on the subsequent problem-solving test. The findings not only support the assertion that concurrent presentation of verbal and imagery modalities results in better learning but also confirm the great potential of video material as effective instructional tool.

Second, from a developmental perspective, with careful selection, video can provide language learners with the exposure to rich "comprehensible input," which, in Krashen's (1982) view, is a necessary condition for second language acquisition. Comprehensible input, by Krashen's definition, is the understandable messages with structures a bit beyond learners' current level. To be more specific, second language acquisition and literacy development occur when learners focus on the meaning of the message, not on the form of the language through being exposed to language a little beyond their linguistic competence. Given the cognitive subconscious process of language acquisition, once the difficulty of video material is taken care of, video could be expected to be a powerful instructional tool for providing learners with large amount of authentic and comprehensible language input.

Third, from an affective perspective, qualitative results of existing studies suggest that when viewing videos, learners usually show great confidence in comprehending the entertaining information in authentic contexts. This finding reveals that video could potentially minimize the fear of failure in learning and thus foster positive self-efficacy (Borrás & Lafayette, 1994; Danan, 1992). The strong correlation between self-efficacy and positive learning outcome can be confirmed by Krashen's (1982) Affective Filter Hypothesis. In Krashen's view, for L2 acquisition, certain emotions such as anxiety, self-doubt, or boredom will interfere with the efficient processing of language input. He claims that learners with high motivation, self-confidence, and a low level of anxiety are better equipped for success in second language acquisition. To be more specific, positive affect not only plays a facilitative role in second language acquisition but is necessary for acquisition to take place. Owing to the motivational and affective impacts on viewers, video has been commonly employed as a pedagogical tool for encouraging

and improving second language acquisition.

However, the potential value that video possesses mentioned above does not guarantee improved second language learning. For increasing the effectiveness of video on language learning, one of the effective help options that instructors of second or foreign language frequently turn to is *captioning*, the on-screen text (Grgurović & Hegelheimer, 2007; Pujolà, 2002). Bird and Williams' (2002) and Danan's (2004) studies try to explain the potential benefit of captioning on second language acquisition. Both studies indicate that by visualizing what video viewers hear and indicating the word boundaries, the addition of captioning could be a powerful aid in language learning of second language learners whose linguistic proficiency level is not as good as native speakers.

In fact, many researchers have dedicated their research effort to explore the effects of captioning on second or foreign language acquisition in the past few decades. Specific benefits of captioning revealed by existing studies include increased motivation and attention among students (Danan, 2004; Vanderplank, 1988), improved chunking ability (Bird & Williams, 2002; Danan, 2004), increased oral communicative performance (Borrás & Lafayette, 1994), enhanced comprehension of the video materials (Baltova, 1999; Garza, 1991; Hayati & Mohmedi, 2011; Huang & Eskey, 1999; Winke, Gass, & Sydorenko, 2010), and better acquisition of both written (Montero, Peters, Clarebout, & Desmet, 2014; Neuman & Koskinen, 1992; Sydorenko, 2010) and aural (Bird & Williams, 2002; Huang & Eskey, 1999; Markham, 1999) word forms as well as word meaning (Baltova, 1999; Neuman & Koskinen, 1992; Sydorenko, 2010).

Some researchers, however, have concerns about the distracting role that captioning may play in different aspects of language learning or for learners at different levels of linguistic competence and the possible impediment to language development due to learners' overreliance on the visually-presented text (Grgurović & Hegelheimer, 2007; Hayati & Mohmedi, 2011; Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005; Webb & Rodgers, 2009b; Yang & Chang, 2014). In fact, existing caption-based studies have revealed some inconclusive results, and one of them is about spoken vocabulary acquisition. While results of Markham's (1999) study indicate that university-level ESL learners in captioned group could substantially recognize more novel words aurally than those in non-captioned group, Sydorenko's (2010) study

demonstrates the opposite outcomes. In contrast to Markham's study, results of Sydorenko's study indicate that for university-level beginning learners of Russian, captioned videos tend to benefit their written vocabulary acquisition only. To aural form recognition, however, the presence of captioning tends to be a hindrance. In addition, it is worth noting that all the aforementioned studies which focused on spoken vocabulary acquisition (Bird & Williams, 2002; Huang & Eskey, 1999; Markham, 1999; Sydorenko, 2010) recruited young adults (i.e., university-level students) as participants. Hence, the effect of captioning on younger learners' (e.g., middle school students) spoken vocabulary acquisition still requires empirical validation. In addition, while most teachers regard the addition of captioning as a beneficial support for EFL learners especially those at lower linguistic level, some previous studies demonstrate that captioning tends to benefit students with high linguistic competence to a significant extent (Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005).

The opposite findings of Sydorenko's and Markham's studies and the results of previous studies which are in opposite to most EFL teachers' assumption call for more empirical evidence to shed light on the relationship between captioned video and foreign language acquisition. The rationale and the purpose of this current study are detailed in the following section.

Rationale and Purpose of the Study

For decades, investigation of second and foreign language acquisition through watching video material has attracted great attention centering on the relationship between captioning and students' gains of the target language. However, literature on language acquisition from watching captioned videos indicates that several issues still require further exploration. First, compared to *written* vocabulary acquisition, relatively little empirical research has been conducted to investigate the effects of captioned video material specifically on *spoken* vocabulary acquisition, and if any, the results are mixed (Markham, 1999; Sydorenko, 2010). In fact, although the majority of caption-based studies with an aim on word gains focus on written vocabulary knowledge and appear to reach a consensus that captioning is beneficial to written vocabulary acquisition, this positive effect, to a certain extent, is not surprising since the captioned group receives the visually-presented textual input while the non-captioned group doesn't. On the other hand, whether the visually-presented textual

input can serve as a facilitative tool to improve spoken word gains still remains unclear. Moreover, the reason for selecting spoken vocabulary acquisition as the target focus of this study is that in addition to written word knowledge, knowing a word involves several different aspects. According to Nation (2001), with respect to receptive knowledge, knowing a word involves knowing what it sounds like (i.e., the spoken form), what it looks like (i.e., the written form) and the meaning (i.e., form and meaning associations). Given the essential characteristic of aural vocabulary knowledge and the existing empirical gap, more research on the effect of captioning on spoken vocabulary acquisition is still in demand.

Second, most existing research on captioning selects adult or young adult learners such as college students as participants while the effect of captioning on younger students has not been adequately tested empirically (Taylor, 2005). However, with the prevalence of audiovisual material in all levels of EFL teaching, it is surprising that little empirical evidence has been gathered to support the effectiveness of captioning on young language learners such as middle school students. Therefore, more research is warranted to shed light on the effect of captioned video on the language acquisition of young learners such as middle school students.

Third, some studies have revealed limitations of captioning and suggested that in spite of the beneficial aspects described above, captioned video may not be suitable for learners at all levels of linguistic competence (Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005). While captioning, from EFL teachers' perspective, is usually regarded as a powerful listening support for low-level students, previous research findings indicate that compared with learners of higher linguistic competence, learners of lower linguistic competence may gain relatively less from viewing videos. Nevertheless, this claim is essentially based on studies conducted on young adult foreign language learners (Taylor, 2005) or ESL middle school students (Neuman & Koskinen, 1992), and whether this finding is still relevant to younger learners in EFL context still requires empirical validation. Although Lwo and Lin (2012) recruited EFL middle school students as participants, the result yielded from their study still requires replication with other method design. Specifically, two methodological issues should be cautious of when interpreting their research findings. First, the small number of participants ($N = 32$) may be an issue and should be taken into consideration. Second, their study adopted the method of pausing scene by scene to obtain students' oral

responses, which as a result may interfere with getting the whole picture of video content.

In sum, previous literature shows that whether captioning is an aid to vocabulary acquisition has not been thoroughly investigated. In addition, due to the inconsistency in the determination of the learners' linguistic profiles and some methodological issues in the limited previous studies, more empirical evidence is warranted to shed more light on the caption effect on learners at varying linguistic levels. This current study attempts to address these gaps by employing the video materials which contains ample comprehensible input to examine the effects of captioning on spoken vocabulary acquisition of EFL middle school students at different levels of linguistic competence.

The purpose of this current study is twofold. The main purpose is to investigate the effects of captioning on EFL middle school students' spoken vocabulary acquisition when learners' focus is on the meaning of the message. Specifically, this study aims to explore students' spoken word gains through incidental learning in two different aspects, namely, aural form recognition and form-meaning mapping, under two video viewing conditions—with captioning and without captioning. The secondary purpose is to look into the relationship between EFL middle school students' linguistic competence in English and their vocabulary gains through watching videos with or without captioning. In other words, the current study attempts to examine whether the word gains obtained by EFL middle school students are influenced by their linguistic abilities.

Significance of the Study

Although videos are prevalent in our everyday lives and commonly used in Taiwanese English language classrooms, as a junior high school teacher in Taiwan, I perceive that for most junior high school English teachers, they are quite vague about the effect of the presence or absence of captioning on students' foreign language learning, and often in a dilemma over whether to use it or not. Therefore, this current study will be conducted with a hope to offer better understanding about the relationship between captioned video material and EFL middle school students' foreign language learning.

Hopefully, this study may make the following contributions. First, the results of the current study may verify whether captioning can be an aid to EFL young learners'

spoken vocabulary acquisition. Second, drawing on level-appropriate video materials, this study aims to determine the optimal video/ caption viewing condition for two different aspects of spoken vocabulary acquisition, aural form recognition and form-meaning mapping. Finally, the current study intends to verify whether EFL young learners' vocabulary acquisition through captioned video is under the influence of their linguistic competence or not. It is hoped that the above insights may collectively provide some pedagogical implications for EFL teachers, particularly the junior high school instructors and educators in Taiwan, to take into account when teaching learners at different levels.

Organization of the Thesis

The outline of the thesis is briefly delineated as follows. Chapter One provides background information about the relationship between captioned video and foreign language learning as well as the rationale for this study. Chapter Two will first present some background information about incidental vocabulary acquisition from context followed by relevant methodological principles. Then literature on the relationship between captioning and language acquisition will be reviewed in the following categories: 1) comprehension of the video material, 2) vocabulary acquisition, and 3) the relationship between captioned video and learners' linguistic competence; research questions will be proposed at the end of the chapter. Chapter Three will describe the research methodology employed in the current study. The results will be presented in Chapter Four based on the research questions. At last, Chapter Five will discuss the results yielded from this study, summarize the major findings, and finally offer some pedagogical implications and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews relevant literature on exploring the effects of captioning on incidental vocabulary acquisition. There are four main sections. Section one provides some background information on incidental vocabulary acquisition from context followed by several methodological principles concerning incidental vocabulary acquisition. In section two, the inconclusive argument—whether captioning is an aid or a hindrance in language learning is discussed, together with some empirical evidence. Section three reviews a body of existing studies of effects of captioned video on language acquisition in second or foreign language context. Existing caption-based research will be presented in the following categories: 1) comprehension of the video material, 2) vocabulary acquisition, and 3) the relationship between captioned video and learners' linguistic competence. The final section will briefly summarize the major findings and limitations in the previous studies. Research questions will be proposed at the end of the section.

Incidental Vocabulary Acquisition

This section aims to provide some background information for an understanding of incidental vocabulary learning from context by introducing definitions of intentional and incidental learning first and then offering some theoretical background of incidental vocabulary acquisition from context. Relevant methodological principles regarding incidental vocabulary acquisition are also presented in this section.

Definition of Intentional and Incidental Learning

According to Hulstijn (2001), with respect to second language learning, the term "intentional" learning is defined as the learning involving deliberate committing to memory to a large quantity of words including their sound, spelling, and meaning and many grammar rules. The other complementary view on L2 learning is "incidental" learning which involves the "picking up" of vocabulary and grammatical structures by simply engaging in a variety of message-focused tasks. When students acquire language knowledge incidentally, the main focus of their attention is on the meaning and function of language rather than on its form.

Vocabulary Acquisition from Context

It is widely believed that most vocabulary, both in L1 and in L2, is acquired through incidental learning while few words are gained in an intentional fashion such as memorizing a bilingual word list (Coady, 1997; Ellis, 1994; Nation, 2001). That is, learners gain large amount of vocabulary by being exposed to massive quantities of language input through meaning-focused activities without explicit direction to lexical features. To put it simply, most words are acquired like a "by-product" that is attained when learner's primary objective is to do something else such as comprehension of the material.

A well-known proponent of this view is Krashen, who considers language acquisition including vocabulary knowledge as a subconscious process taking place when learners are paying focal attention on messages and using the language for communication (Krashen, 1989). Krashen claims that there are two conditions necessary for language acquisition to occur—one is comprehensible input containing *i + 1*, and the other is low affective filter. With regard to comprehensible input, he further argues that students have acquired most of their language knowledge through ample exposure to comprehensible input containing structure a little beyond their current competence (*i + 1*), and this is done with the assistance of context, world knowledge and extra-linguistic information.

The other requisite lays the success in second language acquisition to attitudinal factors. The Affective Filter Hypothesis put forward by Krashen states that there are a variety of affective variables showing strong relationship with second language acquisition. Learners with high motivation, good self-efficacy, and low anxiety are more open to the input and generally can do better in second language acquisition. From Krashen's viewpoint, he values the quality of input beyond all things since incomprehensible input would be only noise to language learners but not help; simultaneously affective variables act as an impediment or facilitator to language acquisition.

Krashen further suggests six requirements for optimal input that could be regarded as criteria of material selection—comprehensible, interesting/relevant, not grammatically sequenced (i.e., natural input), quantity (i.e., substantial quantity), filter strength (i.e., low anxiety), and tools for conversational management (i.e.,

communicative competence). By taking the principles of optimal input and the characteristics of video material together, it suggests that video material seems to be able to fulfill all the requirements. That is to say, when video material is well-selected, it may serve as a powerful pedagogical resource by providing learners with considerable amount of input of quality, which will encourage second language acquisition to occur.

Relevant Methodological Principles Regarding Incidental Vocabulary Learning

To examine incidental vocabulary learning from context, there are several methodological principles needing to be deliberately taken into account in experimental design. Firstly, in operational terms, incidental and intentional learning can be simply distinguished by forewarning or not forewarning participants the subsequent tests on their knowledge. Hulstijn (2001) indicates that there are two experimental methods employed in the studies of incidental and intentional learning, and the Type II design is adopted in most later research. In the Type II design, all participants are directed to learn some of the stimuli while additional stimuli which learners are not instructed to learn are also presented to them at the same time. After the learning session, participants are unexpectedly tested on their retention of the additional stimuli.

According to Hulstijn's explanation, the key to provoking processes of incidental learning of certain knowledge will lie in the pre-learning instruction. Take research aiming at incidental vocabulary learning for example. The pre-learning instruction given by the researchers could be "try to understand the story, and afterwards you (i.e., students) will be given a comprehension test based on the material." Owing to the instruction, during the learning sessions, students will undergo intentional learning when reading the text in order to get prepared for the subsequent comprehension test. But learners will simultaneously have incidental learning in which they are exposed to unfamiliar words embedded in the text without expecting to take tests to measure their acquisition of those novel words afterwards.

Second, incidental vocabulary learning entails appropriate lexical coverage of the learning material. Lexical Coverage refers to the percentage of known words in text, which is a valuable predictor of reasonable comprehension of the material as well as incidental vocabulary learning in the text (Webb & Rodgers, 2009a). If a text contains too many unknown words, little learning or successful guessing (i.e., the key to

incidental vocabulary acquisition) will take place (Huckin & Coady, 1999; Paribakht & Wesche, 1999; Waring & Nation, 2004; Webb, 2008; Webb & Rodgers, 2009a). Owing to the decisive role of lexical coverage in language learning in a text, several previous studies (Hirsh & Nation, 1992; Hu & Nation, 2000; Laufer, 1986) aim to explore the lexical threshold, a percentage at which few learners below gain any significant comprehension or incidental learning.

Hu and Nation (2000) attempts to investigate (1) the relationship between unknown word density and reading comprehension and (2) whether there is a lexical threshold for adequate comprehension by testing 66 advanced learners' comprehension in four versions of the text coverage levels—80%, 90%, 95%, and 100%. The results indicate that there is a strong correlation between text coverage and comprehension. In addition, they estimate that if there is a lexical threshold, it is likely to be between 80% and 90% since all the readers reading at the 80% level have difficulty comprehending the text while some reading the 90% version gain adequate comprehension. Therefore, according to the results of Hu and Nation's (2000) study, for incidental vocabulary learning to take place in a text, the lexical coverage level should be at least 90 %. In other words, to stimulate word gains from context through incidental learning, at least 90 % of the running words need to be familiar to the learners; otherwise, little learning will occur. Therefore, when selecting materials for incidental vocabulary learning, researchers have to bear this in mind and search for level-appropriate materials for the target participants.

Thirdly, learning vocabulary from context is a cumulative process during which learners gradually acquire and develop their vocabulary knowledge instead of gaining large amounts of word knowledge by initial meetings (Nation, 2001). In other words, rather than being measured by an all-or-nothing dichotomy, the acquisition of vocabulary knowledge should be examined on a continuum. Accordingly, two important principles in method design need to be taken into account when examining incidental vocabulary learning.

One of the critical factors in incidental vocabulary learning is word repetition. As mentioned above, learning vocabulary from context is an incremental process in which word knowledge is acquired and strengthened by repeated encounters with the words in a variety of contexts. Limited vocabulary learning could be expected from single meetings with a word (Nation, 2001; Waring & Nation, 2004; Webb, 2008). According

to Nation, the ideal number of encounters will be six times to the target words. Although the present study may not ensure to provide the learners with six repetitions of every target word in every video segment due to the time limit, repeated viewing is guaranteed. The other methodological design of importance is that since it is generally assumed that vocabulary learning is an incremental process with noticing as the initial step (Hulstijn, 2001), more than single one assessment should be developed to measure vocabulary acquisition more accurately.

Last but not least, when conducting research on vocabulary learning, the control of participants' prior knowledge of the target words is of vital importance. Among the ways to measure students' pre-knowledge of the target words, one common method is to ask participants *after* the experiment to indicate whether they knew the words prior to the treatment. Then the researcher will exclude the pre-known words indicated by the participants from analysis. This method, however, may cause poor reliability due to students' self-reported data. Hulstijn (2001) suggests designing a vocabulary test administered *prior to* the experiment to tackle the problem of reliability. As Hulstijn suggests, to measure the participants' prior knowledge of the target words, they can be pre-tested by being asked to indicate the words they know and do not know on a word list comprising target words, non-target words, and pseudo-words in random order. The yes-responses to pseudo-words will be subtracted from the number totaled from their yes-responses to the real words. In this way, the concern about participants' inclination to overestimate their lexical knowledge could be dealt with to some extent and leads to better control of students' prior vocabulary knowledge.

In sum, when well-selected, audiovisual resource composed of multiple input modalities, such as video material, is believed to serve as a potential instructional tool that provides a variety of contextual clues useful for incidental learning. This present study aims to determine whether EFL junior high school students would acquire unknown words embedded in captioned videos phonologically and semantically without being directed to do so. Experimental design of this current study is based on the aforementioned methodological principles of importance in incidental vocabulary learning.

Captioning, an Aid or a Hindrance to Language Learning?

While language teachers have attempted to provide learners with ample exposure

to the target language happening in a natural context, video materials display promising potential as an effective instructional tool that enables learners to be exposed to a large amount of authentic comprehensible input. Besides, with the emergence of multimedia learning environments and the accessibility of videos such as DVDs and video clips on YouTube, language learning today has found new effective pedagogical platforms. In fact, teaching and learning language in a multimedia environment is an unstoppable trend.

Now it is commonplace to say that video, the audiovisual material, is a beneficial pedagogical tool that possesses characteristics to successfully motivate learners, build up their confidence in understanding the information and lower their anxiety when they process the language of the material and will consequently help facilitate learners' language learning. In addition to producing positive attitudinal influence on L2 learners, the effectiveness of video material is also supported by a cognitive information processing theory proposed by Mayer.

Drawing on Paivio's dual coding theory, Mayer (1997) puts forward a cognitive theory of multimedia learning based on three basic assumptions about how the human mind works—dual channels, limited capacity, and active processing. First, the dual-channel assumption indicates that the human information-processing system contains two channels—the auditory channel and the visual channel. When learners encounter certain stimuli, information presented to the ears will be processed in the auditory channel (e.g., narration and background sounds) while information presented to the eyes will be processed in the visual channel (e.g., animations and on-screen text). Based on the empirical evidence yielded from Mayer and Anderson's (1991) study, Mayer further claims that in multimedia learning in which learners receive more than one input modality, students can build connections between information processed in both channels, and this leads to better performance in understanding an explanation.

Second, the limited capacity assumption is that humans are limited in the amount of information that can be processed in each channel at one time. Due to the constraints on the processing capacity of each channel, learners have to make decisions about which piece of incoming information to pay attention to. According to this assumption, in multimedia learning when the visual on-screen text is added to the animation, the existing visual depiction, cognitive overload may occur because the processing demands in the visual channel may exceed the available processing capacity.

Third, according to Mayer and Moreno (2003), “meaningful learning requires a substantial amount of cognitive processing to take place in the verbal and visual channels”. In multimedia learning, learners engage in three important cognitive processes—1) paying attention to the presented material, 2) organizing the information into coherent representations, and 3) integrating the presented material in both channels with existing prior knowledge. In fact, the cognitive theory of multimedia learning not only explains the potential benefits of multimedia material such as videos but at the same time indicates the possible impediment that may be generated from the presence of captioning. Relevant discussion and more empirical evidence will be presented in the following section.

Captioning as a Hindrance to Language Learning

With the development of technology, video not only provides students with motivational visual and auditory input, but also enables video viewers to have a wide selection of the presence of on-screen text. However, the result of video viewing is still inconclusive when captioning is used in second language acquisition. While several existing studies have indicated the benefits captioning may have on L2 and FL acquisition, there are some doubts about the presence of captioning.

The major concern is that for second or foreign language learners, captioning may be a distractor and viewers may rely on the visual words without paying attention to the oral input when reading the on-screen text (Borrás & Lafayette, 1994). The reliance on captioning, in the long run, would be likely to breed learners’ laziness in video viewing and slow down the development of learners’ listening abilities; hence, the addition of captioning may be a hindrance to learners’ language acquisition.

The proposed explanation of why learners might ignore auditory input when watching captioned video is the limited processing capacity. The redundancy effect obtained by Sweller and Chandler’s (1991) study explains the relationship of material elements and learning effect. They suggest that if single element (e.g., visual images) can make learners fully understand the material, adding other elements such as text (i.e., redundant elements) will impose cognitive load and may lead to negative learning effects. Therefore, Sweller and Chandler (1994) assumed that acquisition may be harder when the learning material contains a large amount of information compared with material containing less information.

Accordingly, those who have concern about captioned video may regard it as a material containing too much information since learners receive three types of stimulus simultaneously—visual images, audio, and text, and attempting to attend to all the three modalities may result in cognitive overload. The fact is that we are limited in the amount of information that can be processed at one time and this limitation will force us to make decisions about which information to pay attention to when perceiving multiple modalities in multimedia learning environment. So, the question: "Will learners focus on the captioning and forget to listen when they are reading the visual words?" still requires further investigation.

Captioning as an Aid to Language Learning

Researchers and educators who believe in the beneficial effects of captioning, on the contrary, often perceive captions as listening support. According to Schmitt (2000), when learners are exposed to oral input, segmenting the flow of speech stream into individual words is the initial step in understanding. He further indicates that the parsing skill is a crucial task for both native and non-native speakers. Therefore, for second language learners whose linguistic proficiency level is not as good as native speakers, the addition of captioning could be a powerful aid in language learning by visualizing what they hear and indicating the word boundaries (Danan, 2004). Bird and Williams (2002) also indicate that with the assistance of captioning in phonological visualization of the auditory input, language learners tend to be more confident in comprehending the material.

Results of Vanderplank's (1988) study provide empirical evidence of the effectiveness of captioning. Two groups of students—1) fifteen European ESL students, ranging from high-intermediate to post-proficiency and 2) eight Arabic ESL students from low-intermediate to advanced, participated in the nine-week experiment. The students were asked to watch captioned programs covering a variety of genres one hour a week, provide reflects, and undertake some activities related to the learning session such as pair work and role-play. The researcher's observation was also recorded during the experiments. Although results of Vanderplank's study were mainly obtained from qualitative data without comparison of a control group, improved performance and linguistic skills were evidently observed. He suggested that students did make progress by repeated exposure to captioned video over period of time. For example, findings of

this study indicated that over the nine-week viewing session, learners seemed to develop their chunking ability gradually and were able to process longer strings of sound and text. Moreover, the participants' feedback also reported the presence of captioning helped the video materials easier to follow, and thus lowered their anxiety and boosted their confidence in viewing videos containing unfamiliar language.

Therefore, the researcher claimed that far from being a distractor, captioning might have great potential to enhance second language acquisition. The rationale was on the basis of class observation. He explained that both the improved chunking ability and confidence in video viewing derived from captioning may lead to spare capacity for conscious language learning. In other words, with the addition of captioning, learners tended to acquire more linguistic knowledge.

In short, from the brief discussion over the viewpoints of those who favor and disfavor captioning, it is obvious that the argument of whether captioning is an aid or a hindrance to language learning is still inconclusive. In the following section, more empirical evidence of the effects of captioning on language acquisition will be presented.

Existing Studies on Effects of Captioned Video on Language Acquisition

The effectiveness of audiovisual material has attracted researchers' attention during the past few decades. Among a bulk of studies, many of them have focused their attention on exploring the effects of caption availability. This section will review empirical evidence from existing studies dealing with the relationship between captioning and second/ foreign language acquisition through viewing video material. Definition of the two terms, captions and subtitles, will first be provided followed by literature review on effects of captioning on language acquisition in L2 and FL context. Existing caption-based studies will be reviewed in the following categories—effects on comprehension, effects on vocabulary acquisition, and the relationship with learners' linguistic proficiency.

Definition of Captions and Subtitles

Generally speaking, there are two main options of on-screen text for video viewers to choose from, and they are captions and subtitles. To avoid misunderstanding, it will be necessary to clarify the two terms prior to moving on to literature review. According

to Markham's (1999) definitions, a commonly used distinction between the two types of on-screen text is as follows: Captions refer to on-screen text in the same target language as the video soundtrack and subtitles refer to on-screen text in L1 combined with soundtrack in the target language. Because captioning enables EFL learners to have maximal exposure to the target language while subtitles might cause lexical interference (Guichon & McLornan, 2008), this current study aims to examine the effects of captioning only and so is the focus of the literature review.

Caption-based Studies on Comprehension

There are perceived advantages in the integration of video material in language instruction. The combination of different modalities of input displays great potential to expose learners to comprehensible input, encourage learners to notice language, and may lead to increased language learning. Several existing caption-based studies have indicated that L2 learners can substantially improve their listening or reading comprehension with the addition of captioning (Borrás & Lafayette, 1994; Danan, 2004; Garza, 1991; Hayati & Mohmedi, 2011; Markham & Peter, 2003; Vanderplank, 1988; Winke et al., 2010).

Garza's (1991) study is a case in point. To investigate the effects of captioned video on advanced learners' comprehension and retention of the viewed/ heard content, he recruited forty college students of Russian as foreign language and seventy ESL college students to participate in the study. The learners of Russian and English as target language were randomly divided into two groups respectively (with or without captioning) watching five video segments representing five different genres. Each segment was between two and four minutes in length and was viewed twice.

Following the initial viewing, the participants were given the comprehension check questions in advance of the second viewing. After reading through the questions, the students viewed the segment again and then finished answering the questions. After the administration of comprehension checks, five students were chosen randomly from each group to participate in an oral recall interview in which they were asked to recall information of the video segments and keep the language as close as possible to the original content.

The data generated from the comprehension checks in both target languages indicated that the presence of captioning significantly improved second and foreign

language learners' global comprehension of the language in the captioned videos. Besides, results of the segment recall interviews revealed that students who viewed videos with captioning consistently demonstrated a great tendency to remember and use the specific original words or phrases from the video segment.

Results of Garza's study indicated that in addition to increasing comprehension of the linguistic content of the videos, the addition of captioning to already visually and acoustically rich video materials may also promote the use of novel words acquired from the videos. Moreover, captioning may help bridge the gap between language learners' listening and reading competence by allowing the learner to employ his or her already-developed reading comprehension skills to help strengthen and gradually build skills in listening comprehension.

Results of Winke et al.'s (2010) study also demonstrated the beneficial effects of captioning on listening comprehension as well as novel word recognition in the foreign language learning context. One hundred and fifty university-level foreign language learners of Spanish, Russian, Arabic, and Chinese participated in the study and almost all of them were native speakers of English. During the treatment phase, researchers made the students watch three video segments twice, once with captioning and once without, in random order while the Spanish learners had two additional groups: one watched the videos twice with captioning and the other watched them twice without captioning.

Results of their study showed that the effect of captioning order was not significant for the comprehension test. However, the Spanish learners who viewed the videos with captioning both times gained significantly higher scores on comprehension tests and novel word recognition tests than the learners viewing the videos without captioning both times. Accordingly, the researchers attributed the better performance to the availability of captioning. Moreover, the qualitative data also indicated that many participants reported positive attitudes towards captioning which served the function to draw their attention to the language in the video.

Caption-based Studies on Vocabulary Acquisition

In addition to substantially improving second and foreign language learners' listening or reading comprehension of the video material, captioning has also been demonstrated to benefit language learners in vocabulary acquisition (Markham, 1999;

Montero et al., 2014; Neuman & Koskinen, 1992; Sydorenko, 2010; Vanderplank, 1988; Winke et al., 2010). Among these studies, most of them focus on examining two aspects of vocabulary knowledge— word form recognition (written and aural) and the mapping of form and meaning. In this part, previous caption-based studies on different vocabulary aspects will all be reviewed.

With respect to written vocabulary learning, Neuman and Koskinen's (1992) study demonstrated the beneficial effects of captioning on incidental vocabulary acquisition by using a series of vocabulary measures. One hundred and twenty-nine bilingual seventh and eighth graders of varying English proficiency levels participated in the 9-week study and were assigned to 4 groups: (1) captioned TV, (2) traditional TV without captions, (3) reading along and listening to text without video stimulus, and (4) textbook only (as control group). Three science units were developed and selected from *3-2-1 Contact* series as materials and each unit was taught over a 3-week period. At the end of each week, the students in the first three conditions were given a written form recognition test and a test on information recall. At the end of the study, a 90-item multiple choice test was administered to measure the knowledge of all target word meanings by presenting the words in isolation.

Results of the study indicated that the participants who viewed captioned-video segments consistently outperformed others in written form recognition, word meaning, as well as recall of information. Accordingly, they suggested that providing multiple input modalities to bilingual language learners simultaneously appeared to improve incidental vocabulary acquisition rather than overwhelming their attentional capacity.

Another noteworthy result of Neuman and Koskinen's study demonstrated the importance of learners' proficiency levels. By analyzing the relationship between vocabulary acquisition and participants' proficiency levels, they suggested that bilingual middle school students who were more proficient in English tended to make more vocabulary gains than others of limited English proficiency. Therefore, they concluded that captioning might have beneficial effects on learners' incidental vocabulary acquisition; however, the learning outcome depended on L2 learners' linguistic proficiency; more proficient L2 learners seemed to benefit more from the captioning. In their terms, learning vocabulary incidentally by watching captioned video followed the law of Matthew Effect—"the rich get richer."

Montero et al., (2014) conducted a one-shot experiment and suggested positive

results in line with Neuman and Koskinen's findings by examining different types of captioning. One hundred and thirty-three undergraduate students of French as second language were randomly assigned to four groups viewing three French video clips (each between three and five minutes in length) twice with—1) full captioning, 2) keyword captioning, 3) full captioning with highlighted keywords, and 4) no captioning (as control group). To ensure incidental vocabulary acquisition, the participants were informed of the comprehension tests beforehand, but were not forewarned of the subsequent vocabulary test.

Results of the study indicated that students in the first three groups (with captioning) scored equally well on written form recognition test and significantly outperformed the control group (without captioning). In other words, it was the presence of captioning, rather than the salient input such as keyword captioning, benefited L2 learners' incidental vocabulary acquisition. Overall, several existing studies have demonstrated beneficial effects of captioning on written form acquisition. However, researchers also point out that this positive effect is quite predictable because to some extent, the written format of the vocabulary posttests tends to favor learners who are exposed to the visual text.

While the aforementioned caption-based studies focus on written form recognition, Markham's (1999) study extends the value of captioned video to spoken vocabulary acquisition. One hundred and eighteen advanced, university-level ESL learners represented fifteen L1 backgrounds participated in his study. The multimedia materials were two video segments, about twelve minutes each, concerning different topics—whales and civil rights movement. The participants viewed the two videos with or without captioning in alternating order. After they watched each of the video segments, a 50-item listening-only multiple choice test was administered to examine listening word recognition.

Results of the study demonstrated that the university-level ESL students derived substantial listening benefits in terms of aural form recognition from viewing captioned video material. In contrast, the students who viewed the videos without captioning could recognize substantially fewer novel words in the listening-only test. That is to say, the improved performance on listening word recognition suggested that ESL learners did not ignore the auditory input while captioning is available; in fact, students seemed to be able to transfer the textual input (captioning) to subsequent listening tasks. In brief,

these findings responded to those skeptics who are concerned about the hindering role that captioning may play in language learning and indicated that captioning serves as an aid to L2 learners.

Taken together, existing research reviewed above has demonstrated that captioned video could be beneficial for either written or spoken vocabulary acquisition in second and foreign language acquisition. It is worthy of note that the presence of captioning does not invariably work in all cases. For instance, Sydorenko's (2010) study which focused on exploring written and spoken vocabulary acquisition simultaneously yielded different results. The study examined the effect of different types of input modalities (video, audio, and captions) on both written and spoken vocabulary acquisition. Twenty-six university students who were beginning learners of Russian participated in this study and were assigned to three treatment conditions: 1) video with audio and captions, 2) video with audio (without captions), and 3) video with captions (without auditory input).

During the learning session, the participants were asked to watch three authentic video segments from a Russian comedy series; each of the video segments was two to three minutes in length. Before the first-viewing, the participants were instructed to focus on meaning while prior to the second-viewing, they were directed to pay attention to the language. After viewing each of the three video clips, they took the tests consisting of written and aural recognition, written and aural translation (from L2 to L1), and word knowledge test to indicate their prior knowledge of those target words. At the end of the study, they completed a final questionnaire.

Results indicated that for beginning university-level learners with better reading skills than listening ones, captioned video tended to aid their written form recognition and the mapping of form and meaning while non-captioned video tended to facilitate phonological vocabulary recognition. The different effects of captioning on written and aural recognition indicated that the presence of captioning could enhance written vocabulary acquisition only; to aural vocabulary recognition, however, the on-screen text appeared to be a hindrance. The conflicting results of Sydorenko's (2010) and Markham's (1999) studies call for more empirical evidence to shed light on the relationship between the presence of captioning and students' spoken vocabulary acquisition.

The Relationship between Captioning and Learners' Linguistic Competence

In general, existing caption-based research has demonstrated its positive influence on second language acquisition. However, some studies indicate that captioning may not be useful in enhancing language learning of all learners. Empirical evidence of some previous studies suggests that captioned video only benefits learners of *higher* linguistic competence of the target language while learners of lower linguistic competence may gain relatively little language knowledge through watching captioned video material (Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005).

As mentioned before, Neuman and Koskinen's (1992) study also explored the relationship between captioning and learners' proficiency levels. To be more specific, they defined the participants' proficiency levels by oral English proficiency scores and examined the relationship between bilingual English middle school students' proficiency level and incidental vocabulary acquisition through watching captioned video. The results indicated that the bilingual learners of *high* proficiency acquired more vocabulary gains than the students of lower proficiency in English.

The importance of learners' linguistic level of the target language in captioned-video viewing is also pointed out by Taylor (2005). Different from Neuman and Koskinen's study, Taylor determined the participants' linguistic levels by the length of previous study and aimed to examine the effects on foreign language beginning learners. He divided 85 beginning students of Spanish at university-level into two groups based on their length of previous study of the target language: students of 3-4 years of study and students of 1 year of study. The participants were randomly assigned to watch a 10-minute video material with or without captioning. After viewing the video, they were given three tasks—two comprehension tests and one strategy self-report.

The statistic results reported that the students with more study outscored those in their first year in the captioning session, but not in the no-captioning session. In fact, for first-year learners of Spanish, those in the captioned group scored lower than those in the non-captioned group. It seemed that the addition of captioning did not facilitate first-year beginner-level college students' comprehension; on the contrary, the presence of captioning seemed to be detrimental to their understanding of the video. Therefore, Taylor concluded that it was not the presence or absence of captioning affected beginning learners' comprehension of video material; instead, learners' comprehension

depended on their length of study of the target language since students with more classes in L2 would have more opportunities to be exposed to the target language.

Taylor's study appears to confirm that captioning may not be as beneficial for enhancing beginning learners' comprehension as it is for more experienced learners. Moreover, the results from the strategy measure also indicated that more first-year students than third-year students found the captioning distracting and had difficulty attending to all the three modalities (sound, image, and captions) at the same time.

Although both quantitative and qualitative results suggested the negative effects that captioning might have on learners of less study, the report on strategy use from Taylor's study showed that almost all the participants overwhelmingly perceived captioning as a useful tool for comprehension and the learners indicated that the presence of captioning positively built their confidence in processing the content in foreign language. Accordingly, the researcher recommended continued systematic exposure to captioned video for practice in dealing with multiple input modalities simultaneously.

Moreover, Lwo and Lin (2012) also indicate that captioning seems not as useful as what the results have shown in the previous studies; instead, effects of captioning depend on learners' L2 linguistic competence. Thirty-two EFL eighth graders in Taiwan participated in Lwo and Lin's study. They defined the participants' linguistic competence by the scores of achievement tests in grade seven and divided them into two groups: sixteen with high English competence (with average marks above 80) and sixteen with low English competence (with average marks of approximately 60). Students with high and low English competence were equally assigned to four treatment groups: 1) no captions, 2) Chinese captions, 3) English captions, and 4) Chinese plus English captions, viewing two animations once. As a result, each treatment group consisted of four students of high linguistic competence and four of low linguistic competence.

During the video-viewing session, the researchers used the oral repeating method to collect the information about the students' processing of the content when watching and listening to the video material. Therefore, once the learning session began, the screen was paused scene by scene or sentence by sentence so that the students could answer the researcher's questions orally. Once they completed answering the question, the next scene in the learning system was played. After viewing the first lesson, three

tests—vocabulary recognition, vocabulary application, and sentence comprehension were administered. After viewing both lessons, an interview was conducted for further exploration in students' understanding and attitudes toward the learning sessions.

Although the procedure of data collection was quite disturbing and unnatural compared with viewing videos in everyday life, Lwo and Lin's study generated the results consistent with the studies mentioned above and they reported three main findings of the study. First, the acquisition of vocabulary and reading comprehension via videos has little to do with the availability of captioning; instead, it depended on students' linguistic competence in the foreign language. Second, students liked captioning, either in native or foreign language, despite the slight difference in effects of different captioning on the learning outcome. Moreover, teenage learners mainly relied on visual images and auditory input as important tools for understanding the video content but not the textual input, captioning.

Given the empirical evidence from a body of research reviewed above, the presence of captioning seems to have potential effects on improved general listening comprehension and enhanced vocabulary acquisition of second and foreign language learners. However, some limitations and empirical gaps also emerge from previous related studies and require further investigation. Summary of the previous studies on caption effects reviewed above is presented in Table 1 below. Studies one to seven are those yielding positive caption effects on learners' language acquisition while studies eight to ten indicate different results of learning from viewing captioned video materials.

Table 1. Summary of literature on caption-based studies reviewed in Chapter Two

No.	Study	Research method	Sample	Measures	Main Findings
1	Borrás, Lafayette (1994)	Quantitative	44 college students of French	Two oral tasks—description and narration	The addition of captioning has potential value in better comprehension and improved communicative output.
2	Garza (1991)	Quantitative	40 advanced students of Russian at college-level and 70 ESL college students	Comprehension checks, oral recall interview	The presence of captioning significantly improved second and foreign language learners' global comprehension of the video materials and facilitated word gains.
3	Markham (1999)	Quantitative	118 advanced, university-level ESL learners	Listening-only form recognition tests	ESL students derived substantial listening benefits in terms of aural form recognition from viewing captioned video material.
4	Montero, Peters, Clarebout, Desmet (2014)	Quantitative	133 undergraduate students of French as second language	Comprehension test, written form recognition test	The captioned groups outperformed the non-captioned group in the written form recognition test.
5	Neuman, Koskinen (1992)	Quantitative	129 bilingual seventh and eighth graders	Written form recognition tests, information recall, word meaning tests	The participants who viewed captioned-video segments consistently outperformed others in the three subsequent tests. More proficient learners tended to make more word gains than others of limited English proficiency.
6	Vanderplank (1988)	Quantitative	15 European exchange students and 8 Arabic-speaking students of English	Video-based exercises, students' reports and feedback	By being repeatedly exposed to captioned videos can, learners seem to develop their chunking ability gradually and acquire improved language knowledge.

No	Study	Research method	Sample	Measures	Main Findings
7	Winke, Gass, Sydorenko (2010)	Quantitative	150 university-level foreign language learners of Spanish, Russian, Arabic, and Chinese	Two word translation tests—aural and written, comprehension tests	The presence of captioning could facilitate listening comprehension as well as novel word recognition in the foreign language learning context.
8	Lwo, Lin (2012)	Quantitative	32 EFL eighth graders	Vocabulary recognition, vocabulary application, and sentence comprehension; an interview	The acquisition of vocabulary and reading comprehension via videos has little to do with the availability of captioning; instead, it depended on students' linguistic competence in the foreign language.
9	Sydorenko (2010)	Quantitative	26 university-level beginning learners of Russian	Written/ aural recognition, written/ aural translation, and prior knowledge vocabulary test	The presence of captioning could enhance written vocabulary acquisition only; to aural vocabulary recognition, however, the on-screen text appeared to be a hindrance.
10	Taylor (2005)	Quantitative	85 beginning students of Spanish at university-level	Three tasks—two comprehension tests and one strategy self-report	The addition of captioning did not facilitate first-year beginner-level students' comprehension; on the contrary, captioning seemed to be detrimental to their understanding of the video.

Major Findings and Limitations in Existing Studies

The major findings and limitations in the studies reviewed above are summarized as follows.

1. With the availability of technology, video material consisting of multiple modalities (i.e., visual, auditory, and textual) has been increasingly used in language classroom and attracted educators' and researchers' attention to explore its pedagogical effects derived from captioning (the textual input).
2. While the majority of existing caption-based studies suggested that the presence of captioning could benefit language learners' listening comprehension and vocabulary acquisition, they failed to achieve a consistent result when students' word gains of the aural aspects were examined.
3. Most of the studies reviewed above recruited young adult learners such as university students as participants and were conducted in L2 context; relatively few studies focused on younger learners such as middle-school-level learners (e.g., 8th graders) of English as foreign language.
4. In contrast to most EFL teachers' assumption, some studies indicated that captioning could only benefit students of higher L2 competence while students with limited linguistic ability in L2 might gain little from the addition of captioning or even regarded the textual input as a distractor. However, due to the inconsistency in the determination of learners' linguistic profiles and some methodological issues in previous studies, whether this claim will be relevant to EFL middle school students still requires to be further empirically tested.
5. Caption-based literature indicated a demand for more empirical evidence generated from prolonged exposure to captioned video.

Research Questions

Based on the literature reviewed above, the present study aims to further investigate the effects of captioned video material on spoken vocabulary acquisition of EFL middle school students without explicit instruction. The research questions addressed by this study are proposed as follows.

1. Does caption availability enhance EFL middle school students' aural form recognition?
2. Does caption availability improve EFL middle school students' vocabulary acquisition?
3. Are the gains of aural form recognition and vocabulary acquisition modulated by the varying linguistic competence of EFL middle school students?

CHAPTER THREE

METHOD

In this chapter, the experimental design of the present study will be provided. Detailed information of the research method will be presented in the following sections: 1) the background information about the participants of this study, 2) the design of the study, 3) the materials, 4) the procedures of data collection, 5) the instruments, and 6) data analysis.

Participants

One hundred and eighteen students in a public junior high school in Taipei City participated in this study. They were all eighth graders recruited from four intact classes (Class A, B, C and D), twenty-nine students in Class A, thirty-one students in Class B, twenty-seven students in Class C, and thirty-one students in Class D. They had four regular English class periods plus one extra English class period per week, forty-five minutes each. Their English teacher was the researcher in the current study. Among the students, half of them were female, and the others were male. Each class had an equal distribution of boys and girls. All the participants had learned English for more than five years since they were third graders. In addition, all the students' first language is Chinese, and none of them had lived in English-speaking countries for more than a half year.

To investigate the relationship between EFL middle school students' linguistic competence and vocabulary acquisition through watching video materials, the participants were assigned into three linguistic groups—high-level, intermediate-level, and low-level of linguistic competence according to their scores on the achievement tests of the previous three semesters (Please see the Instrument Section for more detail). The criteria for the three linguistic groups are based on the scoring guidelines employed by the school, which are presented as follows: Students with average marks in the top-third of all the participants on the achievement tests of the previous three semesters were assigned to be high-level students, the middle-third were intermediate-level students, and the last-third were low-level students. Students from the three linguistic groups were randomly and evenly assigned to the captioned group and the non-captioned group (control). Based on the above design, in group with captioning,

there were 60 students in total, including 20 high-level students, 20 intermediate-level students, and 20 low-level students while in group without captioning, there were 58 students in total, including 19 high-level students, 20 intermediate-level students, and 19 low-level students.

There are certain reasons why the students were recruited as the participants in this study. First, the four classes were of similar English competence based on their average scores on the achievement tests of the previous three semesters, suggesting that they had comparable academic ability. Second, all the participants were the pupils of the researcher. Before the experiment, the researcher could familiarize the students with the presence and the absence of captioning when viewing videos in class. Therefore, it was expected that during the learning sessions of the experiment, the students might accept the caption modes (i.e., with or without captioning) and the researcher' video instruction more easily. Third, the participants were all eighth graders, who were assumed to have less difficulty understanding the cartoon videos than the seventh graders. Therefore, the selected videos should not cause too much trouble for the students to comprehend during the experiment.

Design of the Study

The aim of this study is to investigate spoken vocabulary acquisition through incidental learning from watching video materials with or without captioning. In order to provide a general picture of captioning effect and examine word gains from video viewing in a more reliable manner, the duration of the experiment is twelve weeks. In the first meeting, the participants were informed of the three-month video-viewing experiment without being notified of the aim of the study (i.e. captioning effect on word gains) and asked to complete several pre questions before the experiment to provide brief background information. The questions included two main sections—1) demographic data (e.g., age, gender, L1, length of study of English, and previous learning experience), and 2) the attitudes towards learning from video viewing including their perception of watching video in class and out-of-class exposure to English video material.

The experiment was conducted in the regular English class periods. During the learning sessions, ten videos were employed, and each was viewed twice. This current study adopted a two times of viewing design for both theoretical and practical reasons.

First, from theoretical perspective, Zahar, Cobb, and Spada's study (2001) provided empirical evidence that incidental vocabulary acquisition could take place when the unfamiliar words were met two times in the level-appropriate text. One hundred and fourteen ESL seventh graders, whose vocabulary size was about 2000 words, participated in their study. All the participants were subdivided into five groups based on their scores in the vocabulary pretest, Nation's Vocabulary Levels Test. After reading the text, *The Golden Fleece*, in which 91 percent of the words were from the 2000 word frequency level, the participants took a vocabulary posttest consisting of 30 items in which the students were required to match the words to brief definitions. The frequency of the 30 target words in the text ranged from one to fifteen times. Results yielded from their study suggested that frequency played a more important role in acquisition for lower-level students as it was for higher-level students. Moreover, according to the results of the number of students in each group that learned words with different frequency in the text, the study also revealed that when the words were encountered two times in the level-appropriate text, incidental learning could occur across different vocabulary-level groups.

Second, students in this current study watched the selected video episode twice (about 10 minutes long each), instead of three or more times due to the practicality issue. To be more specific, since this study was conducted in regular class periods, of which the length of time of one class period was 45 minutes, the procedures for data collection in one learning session including the viewing session and posttest-taking session must be completed in 45 minutes. Accordingly, two times of viewing, which took about 20 minutes, would be the maximum time that could be used for the viewing session in one class period. Given the empirical support from Zahar et al's (2001) study and the time constraint of this current study, this study examined the foreign word gains by providing learners with two times of exposure to the level-appropriate video materials.

The participants were divided into two groups: one with captioning, one without. Within each group, the participants were further divided into high-level, intermediate-level, and low-level linguistic groups based on the achievement in English for examining whether the vocabulary gains were modulated by students' linguistic competence levels. Except for the availability of captioning, the two groups viewed the video materials with the same number and in the same sequence to ensure they received equal input. To put it more specifically, the only difference between the two groups was

that the captioned group, received three types of input simultaneously: images, audio, and text while the non-captioned group only received two types of input which were the imagery and auditory input.

To examine whether the availability of captioning could facilitate EFL young learners' spoken vocabulary acquisition while the main focus was on material comprehension, three types of tests were developed—one comprehension test, and two vocabulary tests. While the comprehension test in this study was adopted as a tool to direct the learners' focus on messages, the two vocabulary tests were used to assess the word gains at different levels. The first type of vocabulary test, the form recognition, was conducted to answer the unresolved question—whether the presence of captioning was beneficial to aural recognition. More specifically, the aural recognition test was used to examine whether the students in captioned group could recognize more target words aurally than those in non-captioned group. The second type of test, the vocabulary acquisition, was administered to investigate the vocabulary knowledge at a deeper level—the acquisition of word meaning, for examining whether the participants in captioned group could have a better performance in mapping the aural form to its meaning than those in non-captioned group. More details about the two types of tests will be expounded in the section of instruments. After the ten-week video viewing sessions, the participants were required to complete several follow-up questions in the last meeting based on their perception of the 10 weekly learning sessions (see the instrument section for detailed information).

Materials

Video Selection

To explore the effects of learning novel words aurally through viewing videos, the researcher selected 10 episodes from the *Olivia* series, a British-American children's animated television series based on Ian Falconer's books and produced by media company Chorion. This series was selected for three main reasons.

First, the storyline of *Olivia* series is clear-cut and easy to follow; hence, the students are expected to easily grasp the ideas conveyed in each video episode. Moreover, for the affective domain, the *Olivia* series is very likely to be target audience appropriate because the interesting and imaginative presentation of family and school life in the cartoon videos is relevant and assumed of interest to the average

middle school students in Taiwan. Second, based on Lin's (2010) suggestions about the criteria of material selection, the video materials have to be of similar length, number of words and speech rate. Since the *Olivia* cartoon series seems to take care of the above criteria, selecting ten video episodes consisting of roughly comparable features may not cause too much trouble. Third, the language of the cartoon series is generally of appropriate difficulty to the participants of this study. Since the aim of the current study is to examine vocabulary acquisition through incidental learning, it is important to provide the learners with appropriate lexical coverage of the material.

In fact, because the target audience of the cartoon series is native-speaking *children*, the difficulty-level of the videos is taken care of to some extent. This study further estimated the difficulty-level of the video materials to the target participants by pilot-testing another video on six 8th graders of varying competence at the same school a month prior to the experiment. By using another video (the 11th video) of *Olivia* series which was assumed at the difficulty-level comparable to the chosen 10 videos in terms of length of time, speech rate, and novel word density, the six students were asked to count the number of unknown words when watching the video. It turned out that in the video contains 806 words in total, the unknown words reported by the six students ranged from twenty-four to sixty-three. Namely, the percentage of known words of the 11th video was from 92 % to 97 %. Therefore, it was estimated that at least 90 percent of the words in the selected videos were familiar to the target participants, which met the threshold of text coverage proposed by Hu and Nation (2000).

In the end, ten video episodes, each represents a topic, were selected from the cartoon series. After the material selection was done, the captioning was added to each video material for captioned group by the researcher with the software, *Power Director 10*, since the original versions displayed no on-screen text. Complete information about the ten video materials is shown in Table 2 below.

Table 2. Information about the 10 video materials

	Episode Topic	Words	Time (s)	Speech Rate
1	The Might Five	815	510	1.60
2	Olivia Gets Fit	776	575	1.35
3	Olivia Plans a Tea Party	921	513	1.80
4	Olivia's Christmas Surprise	666	505	1.32
5	Olivia's Kite Party	635	505	1.26
6	Olivia's Road Race	786	509	1.54
7	Olivia's Meteor Mania	739	500	1.48
8	Olivia's Tip Top Tapper	727	509	1.43
9	Olivia's Dog Wash	886	505	1.75
10	Olivia's Hiking Adventure	788	511	1.54

Note. Words = number of words; Time = length of time
Speech rate = number of words divided by length of time

Target Word Selection

In each episode, the words that were most likely to be unfamiliar to the participants were first selected by the researcher and an experienced English teacher at the same school respectively, and then those selected by both judges became target words. Since the researcher was the participants' English teacher, the researcher was supposed to know, most of the time, whether the words may or may not be familiar to the participants.

During the target word selection process, parts of speech of the words were also taken into account. According to Harley (2006), there are two main categories of English words: function and content words. Content words, which include nouns, verbs, adjectives, and adverbs, carry the *messages* we want to deliver while function words such as conjunctions and determiners, serve to provide the structures that help facilitate better communication. Since the aim of this study is to investigate whether the students could recognize the aural word forms and infer their *meanings* from contextual clues when their attention is directed to the messages of the cartoons with a high correlation of audio and video, it is much more appropriate to measure the acquisition of *content words*. In the end, seven words were selected from each episode as target words (seventy in total), including 42 nouns, 14 verbs, and 14 adjectives. Information about the target words is shown in Table 3 below.

Table 3. Information about the target words

	Episode Topic	Target Words (part of speech)
1	The Might Five	rattle (n.), villain (n.), grab (v.), tug (v.), split (v.), castanet (n.), mastermind (n.)
2	Olivia Gets Fit	demonstrate (v.), toss (n.), dash (n.), athlete (n.), jumping jack (n.), headband (n.), canopy (n.)
3	Olivia Plans a Tea Party	pale (adj.), sniffle (n.), splendid (adj.), proper (adj.), dainty (adj.), bounce house (n.), delightful (adj.)
4	Olivia's Christmas Surprise	squeeze (v.), peek (v.), hamper (n.), spin-dry (v.), slobber (n.), paddle (n.), teepee (n.)
5	Olivia's Kite Party	blowy (adj.), blustery (adj.), rip (v.), streamer (n.), string (n.), yarn (n.), refreshing (adj.)
6	Olivia's Road Race	pit crew (n.), refreshment (n.), course (n.), lean (v.), hardboard (n.), ruin (v.), shovel (n.)
7	Olivia's Meteor Mania	meteor (n.), dazzling (adj.), jester (n.), bagpipe (n.), stardust (n.), tickle (v.), catchy (adj.)
8	Olivia's Tip Top Tapper	slip (v.), recital (n.), cast (n.), sprained (adj.), crutch (n.), rolling-walking (n.), invention (n.)
9	Olivia's Dog Wash	splashing (adj.), scrape (n.), puddle (n.), hose (n.), grooming (n.), guarantee (v.), rinse (v.)
10	Olivia's Hiking Adventure	badge (n.), baton (n.), compass (n.), squishy (adj.), muddle (n.), skunk (n.), halt (v.)

Note. There are 7 target words in each video material.

Procedures for Data Collection

This study was conducted in the second semester of the participants' second school year. One month before the learning sessions, the participants took the vocabulary pretest to measure their prior knowledge of the target words. The experiment lasted three months. The participants had one learning session per week. The first and the twelfth sessions were used to collect qualitative data by asking the participants to complete several pre-learning and post-learning questions respectively for further explanation. From the second to the eleventh meetings were the learning sessions. In each learning session, the participants in different caption groups watched

one video episode twice with different caption modes (with or without captioning). There was no explicit vocabulary instruction during the viewing sessions. Three immediate posttests were given to the two groups of students in exactly the same order. That is, after the first viewing, a reading comprehension test was given to the students, and two vocabulary posttests (form recognition test was conducted first followed by vocabulary acquisition test) were administered immediately after the second viewing. The whole data collection process took place in regular classrooms with an overhead projector and an interactive whiteboard on the left in front of the classroom. The procedure for data collection in the current study is illustrated in Figure 1 below.

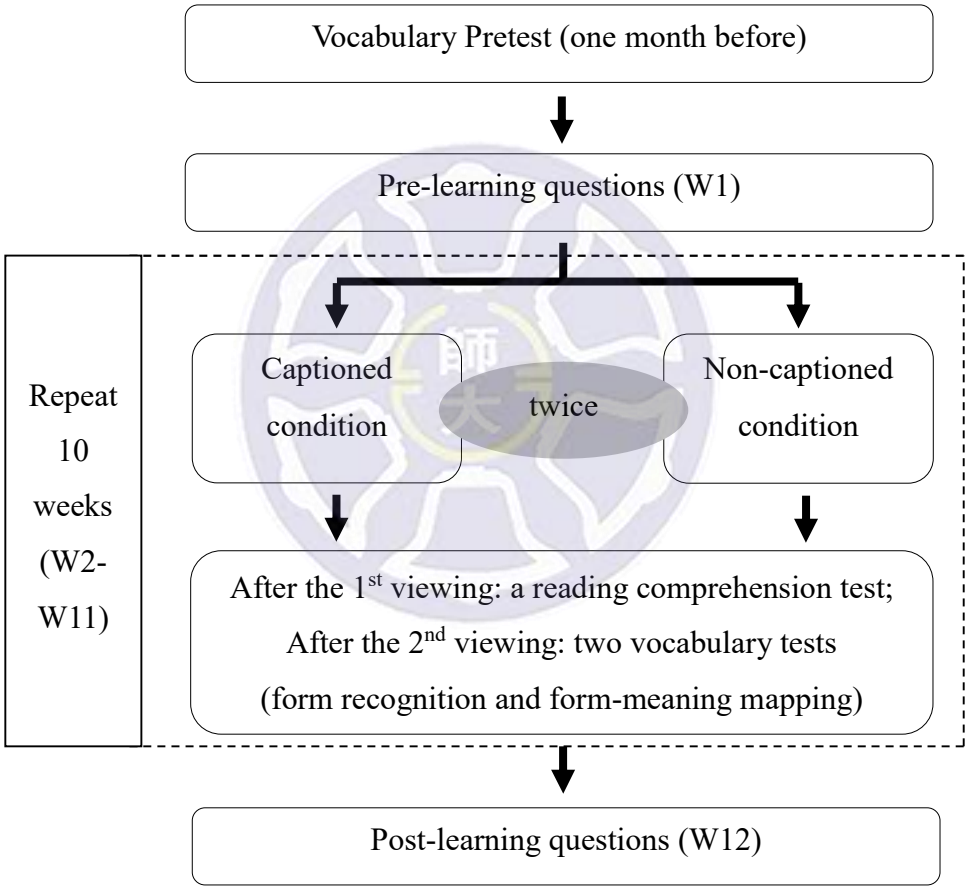

Figure 1. **Procedures for data collection**

Instruments

The Achievement Test

As mentioned earlier, to look into the relationship between captioned video and linguistic competence, the average achievement test scores of the previous three

semesters were used to determine the participants' linguistic competence level in this study. Specifically, based on the school's scoring guidelines, the students with average scores in the top-third of the participants were assigned to be the high-level students, the middle-third were the intermediate-level students, and the last-third were the low-level students. Detailed information about the achievement tests are provided as follows.

At the middle school, the English achievement tests, which cover multiple aspects of linguistic knowledge, are composed of three main sections. One of them is the listening section comprising 15 multiple-choice questions (5 for answering the questions according to the pictures, 5 for choosing the best response to each question or statement, and 5 for answering the questions after listening to a conversation). The maximum possible score for this section is 15. The other two sections are reading and writing, respectively. The reading section involves 30 multiple-choice questions on vocabulary, grammatical structures, cloze, and reading comprehension. The maximum score for this section is 70. The writing section includes vocabulary spelling and Chinese-to-English translation practices. The maximum score for this section is 15.

The achievement test scores were used in this study to determine learners' language competence due to certain reasons. First, JURKOVIČ (2010) indicates that learners' preexisting linguistic competence could be a positive predictor of achievement test scores. Undoubtedly, students' varying degrees of success in achievement tests depend on a number of factors; nevertheless, JURKOVIČ's study empirically proves that there is a high correlation between learners' linguistic competence and their academic performance.

Second, the achievement tests conducted in the middle school measure both listening and reading skills. Since the aim of the study is to investigate the effects of the audiovisual medium offering multisensory input, it is more appropriate if learners' abilities of reading and listening are taken into account simultaneously.

Finally, this current study determined students' linguistic profiles by achievements in English due to the practicality. For EFL teachers in Taiwan, students' performance on achievement tests at school is frequently instructors available. In other words, adopting students' performance on achievement tests is very likely to be the most convenient and economic way to determine learners' linguistic profiles for in-service teachers. Hopefully, the results yielded from this current study may provide some practical

implications for EFL teachers when dealing with middle school students of varying linguistic competence.

As mentioned in Chapter Two, although a few of the existing studies have investigated the relationship between learners' linguistic competence and language learning from captioned video (Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005), there are some issues in previous research needing to be addressed. To be specific, only one of the studies reviewed above determined learners' linguistic profiles by the performance on achievement tests in English (Lwo & Lin, 2012), and there were some methodological issues in the previous study. One of the problems was the small sample size in their study ($N = 32$).

In addition, to collect learners' oral responses scene by scene, their study adopted the interruptive "pause scene-by-scene" method. However, this could be considered as a weakness because the experimental procedure rendered the viewing experience far from the real-life one where general comprehension is usually the priority. Therefore, to address these issues, this study determined the 118 EFL middle school students' linguistic competence by their English achievement to further investigate the effects of captioned video material on foreign language acquisition of students with varying linguistic competence and hopefully to provide some practical pedagogical implications for middle school teachers in EFL context.

Vocabulary Pretest

The goal of the vocabulary pretest is to measure the participants' prior knowledge of the target words before the learning sessions. That is to check whether any of the participants have known or learned the target words prior to the experiment. The vocabulary pretest is a listening test consisting of one hundred and forty test items in total. Among these test items, there are seventy target words, thirty-five non-target words, and third-five pseudo words. Other than the seventy target words, the rest seventy test items serve as distractors.

To reduce student fatigue, the test was divided into two parts and administered on two separate days. Each part included seventy items comprised of thirty-five target words, eighteen non-target words, and seventeen pseudo words. During the test, the words were spoken out once in isolation one by one. After listening to the word presented aurally, the students were required to write down its meaning either in L1 or

L2 if they knew the word, or put a cross in the blank if they didn't know the word. The vocabulary pretests were conducted a month before the learning sessions. If some of the participants happened to know certain target word and wrote down its meaning correctly, it would be assumed that the word was known by some of the students prior to the study, and would be eliminated from the target word list. The results of the vocabulary pretests indicated that none of the target words were familiar to the participants prior to the experiment.

Reading Comprehension Test

In each learning session, three tests were administered including one reading comprehension test, one recognition test and one vocabulary acquisition test, all of which were in multiple-choice format. This study used multiple-choice format as measurements because it is a popular test format in language testing with the advantages of being objective, reliable, and easy to score (Buck, 2001; Lee & Winke, 2012).

To examine vocabulary acquisition through incidental learning, it is crucial to direct the students' focal attention on the meaning of the message rather than language forms. Since the relationship between listening/ reading comprehension and captioned videos has been well-documented in previous studies, comprehension is neither the focus of this current study nor will be included in the data analysis. Based on the researcher' teaching experience, however, including comprehension test in every learning session may be of great importance in encouraging incidental vocabulary learning to take place. According to the researcher's observation, most junior high school students in Taiwan at all levels are highly test-oriented. In other words, the students would be very likely to pay little attention to certain learning aspects if there were not any subsequent tests or tasks. Therefore, ten comprehension tests were developed, one for each video material, as a medium to effectively direct the participants' attention to the message of the video instead of focusing on the language only.

Each of the reading comprehension tests consisted of ten questions and was given to the students immediately after they viewed the video the first time. After the students obtained the comprehension test, the video was played again, and they were asked to finish the comprehension test during the second viewing in order to, once again, keep

making them focus on the messages.

Vocabulary Posttests

The goal of the vocabulary posttests is to examine whether the availability of captioning could facilitate the participants' performance in spoken vocabulary acquisition after viewing the video material. During the weekly learning sessions, two types of vocabulary posttests—1) aural form recognition and 2) vocabulary acquisition were administered immediately after the participants viewed the video twice. This current study used two types of vocabulary tests to measure incidental vocabulary acquisition based on Waring and Nation's (2004) suggestion. That is, in research on incidental learning, a cumulative process, it is necessary to conduct more than one test for a more accurate picture of vocabulary learning since each test reveals different information about language acquisition.

Vocabulary Posttest 1: Form Recognition Test

The first type of vocabulary test, the form recognition test, was to measure the students' ability to recognize the word form phonologically, which is usually regarded as the initial but important step in vocabulary learning. Form recognition tests were employed in this study to answer the unresolved question—whether captioning could facilitate aural form recognition in response to the conflicting findings in Markham's (1999) and Sydorenko's (2010) studies. For this type of test, questions could be answered when the participants recognized the aural word form alone, without any knowledge of the word meaning.

Adopted from Markham's (1999) study, the form recognition test was a listening-only test in multiple-choice format consisting of four options in each item. There were seven items in one test, and each item was composed of four options (one key and three distractors). In each item of the form recognition test, the students were required to listen to four phonologically-similar words presented aurally in isolation, and then choose the one that they had encountered earlier in the video material. One point was awarded to each correct answer.

Vocabulary Posttest 2: Vocabulary Acquisition Test

The second type of test was called vocabulary acquisition test where the

participants' ability to map the aural form and meaning was measured. For the second vocabulary test, it was assumed that greater knowledge was required to correctly associate the aural form to its meaning in isolation, thus was regarded as a test of word gains at a deeper level. According to the recommendations concerning listening construct suggested by Buck (2001), it is important for the test-developers to go beyond knowledge of the sound system, a narrow view of listening, and include the understanding of linguistic meanings from context, a slightly broader construct. In addition, Berne (1993) also indicates that items that required only recognition are less difficult than those requiring retrieval and production. Therefore, in addition to using form recognition tests to answer the unresolved question, this study developed vocabulary acquisition tests to further explore the caption effect on the spoken vocabulary acquisition of EFL middle school students.

Each vocabulary acquisition test had fifteen items consisted of the same seven target words as in the recognition test and eight non-target words which were also encountered in the video material and likely to be familiar to the students. During the vocabulary acquisition test, after listening to a word spoken out, the participants had to choose its corresponding Chinese translation from the four options visually presented on the answering sheet. All the options were in Chinese to avoid the influence of the English language knowledge which was not directly relevant to what was being tested. Besides, the distractors were the same parts of speech as the target words. Each correct answer was awarded 1 point. Only the target word test items were included in the data analysis.

All the items in the aforementioned posttests (i.e., the reading comprehension tests, form recognition tests, and form-meaning mapping tests) were consulted with an experienced professional EFL teacher to confirm the readability and level appropriateness to the target participants.

Follow-up Questions

In the last meeting of the experiment, the participants were required to complete several follow-up questions in which they had to answer some questions related to the use of (only for captioned group) or their attitudes towards (for both captioned and non-captioned groups) captioning while viewing the video materials and their perception of the selected video material as well as the vocabulary posttests. In addition,

the students were also encouraged to provide their feedback and comments on the learning sessions as specifically as possible. For example, the students were asked to describe their perception of potential captioning effect on comprehension of the material and vocabulary acquisition and their attitudes towards learning from viewing videos with or without captioning. The information collected from the follow-up question session was used to further elucidate the quantitative results and provide additional information beyond the quantitative data (see Appendixes J and K).

Data Analysis

Due to the objective multiple-choice test format, the scoring systems of both form recognition test and vocabulary acquisition test were as follows. One point was awarded for each correct answer to the target word test items. Since either form recognition test or vocabulary acquisition test has seven target words, the maximum score was seven. As there were two different treatment conditions (captioned and non-captioned) and three different levels of participants' linguistic competence (high, intermediate, and low), a two-way analysis of variance (ANOVA) was performed separately for both vocabulary tests, which were form recognition and vocabulary acquisition. In addition, to examine the effects of captioning within groups, the paired samples *t*-test was also employed. The alpha level for all tests was set at 0.05. Moreover, the researchers' classroom observation and the information collected from the follow-up question session were included to further explain the aspects which may not be revealed by the quantitative results.

CHAPTER FOUR

RESULTS

The aims of the current study are to: (1) determine if captioning, the visually-presented text, can facilitate EFL middle school students' vocabulary acquisition in the aural aspects, and (2) discover whether the gains of vocabulary acquisition are modulated by learners' linguistic competence. The independent variables are the two treatment conditions—captioned and non-captioned conditions, and three levels of linguistic competence—high, intermediate, and low levels[1]. The dependent variables are the participants' scores on the overall form recognition and the overall vocabulary acquisition (i.e. the form-meaning mapping). The analysis of the collected data in this current study will be presented in the following sections to answer the proposed research questions.

This chapter contains three major sections. A two-way analysis of variance (ANOVA) was employed in the first two sections to answer the research questions in this study. Section one will discuss the comparison of the participants' overall form recognition under captioned and non-captioned conditions; the relationship between the students' linguistic level (high, intermediate, and low) and performance on overall form recognition will also be reported. Likewise, section two will first explore the comparison of the participants' overall vocabulary acquisition under the two caption conditions. Then, the relationship between the students' linguistic level and overall vocabulary acquisition will also be presented in this section. Section three will determine the caption effect on spoken word gains within groups by performing the paired samples *t*-test.

Results of Overall Form Recognition

In this three-month experimental study, ten video materials selected from the cartoon series *Olivia* were employed during the learning sessions, one video for one regular class period each week. However, since several students were absent in the second and eighth learning sessions due to the school activities and competition, the

[1] This current study determined the students' linguistic competence by the average scores on the achievement tests of previous three semesters and divided them into three linguistic groups—(1) high-level (i.e. the top-third of the participants), (2) intermediate-level (i.e. the middle-third), and (3) low-level (i.e. the last-third).

data collected in the two sessions were excluded from the final data analysis. At last, the data collected from the other eight learning sessions were used for analysis. In addition, it is worth to note that the data collected from the eight weekly measurements were collapsed into one for analysis because of the various features of each video material. Although the chosen videos were assumed to possess appropriate difficulty-level (i.e., at least 90% lexical coverage for the participants), it was roughly estimated based on the information reported by six students in the pilot study. In fact, the video materials varied from one another in the length of time, the number of words, the novel word density, and the topic familiarity to the individual students. Thus, it seems inappropriate to make comparisons of the learning outcomes yielded from viewing the 8 videos which are not perfectly identical.

Therefore, instead of comparing the mean scores test by test, the current study averaged the scores in the eight vocabulary tests to examine the effects of captioning on overall spoken vocabulary acquisition. Then the scores were analyzed by a two-way ANOVA (with two independent variables— 1) caption condition and 2) level of linguistic competence) using SPSS Statistics. The results are presented in the following two subsections. First, the participants' overall form recognition under captioned and non-captioned conditions will be reported and discussed in the first subsection. Then, the performance of students at different linguistic competence levels on overall form recognition will be presented and explored in the second subsection.

The Participants' Overall Form Recognition under Captioned and Non-captioned Conditions

To have a clear picture of the results collected from form recognition tests, Figure 2 was presented below to illustrate students' performance in the eight form recognition tests under captioned and non-captioned conditions. In general, the means in the eight tests did not change dramatically; instead, they changed rather gradually. With regard to the captioned group, the mean scores remained quite similar from test one to test three and reached the highest in test four. Then it fell gradually until the last test, in which the mean score rose slightly again. Moreover, Figure 2 also displayed that the captioned group consistently scored higher than the non-captioned group on average in form recognition tests.

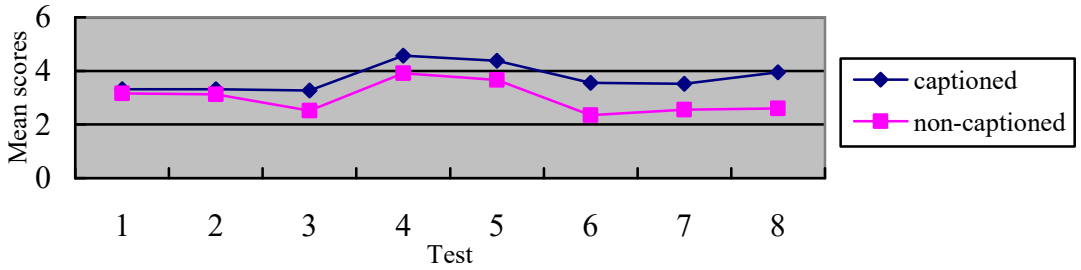

Figure 2. **Students' performance in the eight form recognition tests under both conditions**

As mentioned earlier, making direct comparisons of the results yielded from the 8 imperfectly identical videos could be problematic. In order to test and compare the participants' overall form recognition under different treatment conditions (i.e., the captioned condition and non-captioned condition), their mean scores and standard deviations on overall form recognition were calculated and presented in Table 4 below. As shown in Table 4, the mean scores of the phonologically recognized words under the two treatment conditions were 3.733 (the captioned condition) and 3.017 (the non-captioned condition). Obviously, participants in the captioned group scored higher than those in the non-captioned group on overall aural form recognition. But whether this difference is statistically significant, a further test is warranted.

Table 4. Descriptive statistics of overall form recognition

Condition	*N*	*M*	*SD*
Captioned	60	3.733	1.163
Non-captioned	58	3.017	1.034
Total	118	3.381	1.154

Note. Maximum score = 7.

To further examine if there was a statistically significant difference between the participants' scores on form recognition under captioned and non-captioned conditions, and if there was an interaction effect between the two independent variables (i.e., the caption condition and level of linguistic competence), a two-way ANOVA was performed to analyze the data collected from form recognition tests. Levene's test of homogeneity of variances for form recognition was not significant, $p = .208$. Therefore,

the assumption of homogeneity of variances between the groups is not violated and they can be compared by using ANOVA (see Table 5).

Table 5. Test of homogeneity of variances for overall form recognition

	Levene Statistic	df1	df2	Significance
Form Recognition	1.463	5	112	.208

The results of ANOVA are summarized in Table 6 below. Table 6 indicated that there was a significant caption effect on form recognition, F (1, 112) = 20.091, p = .000, and the interaction effect between the caption condition and the level of linguistic competence did not attain statistical significance, F (2, 112) = .589, p = .557.

Table 6. Summary of two-way ANOVA on overall form recognition

Source	*Type III SS*	*df*	*MS*	*F*	*Post-hoc*
Caption	14.958	1	14.958	20.091***	C > N.C.
Level	56.504	2	28.252	37.948***	H > I, H > L I > L
Caption * Level	.877	2	.044	.589	
Residual	83.384	112	.745		
Total	1505.000	118			

Note. Caption = Caption Condition; Level = Level of Linguistic Competence.
C = Captioned; N.C. = Non-captioned; H = High; I = Intermediate; L = Low.
***p < .001.

The results in Tables 4 and 6 implied that when the participants in this study were exposed to the chosen video material twice with captioning, they were able to recognize substantially more words on the subsequent listening multiple-choice tests without explicit instruction. In addition, the insignificant interaction effect between caption condition and linguistic competence indicated that, for aural form recognition, the effect of captioning would not depend on learners' linguistic level. In other words, viewing video with the presence of captioning tended to yield a more facilitative effect on form recognition than without captioning, regardless of learners' linguistic level.

Differences among Learners at High, Intermediate, and Low Levels of Linguistic Competence on Overall Form Recognition

As mentioned earlier in Chapter Three, in this study, the participants' linguistic competence level was determined by the average scores of the achievement tests in English subject in the previous three semesters. Based on the average scores, the students who were in the top one third were classified as those of high linguistic competence, the middle one third as intermediate linguistic competence, and the last one third as low linguistic competence. The results in Table 6 above also revealed that the participants' linguistic competence had a statistically significant result on form recognition, F (2, 112) = 37.948, p = .000. To provide an overall picture on the relationship between form recognition and the level of linguistic competence, mean scores and standard deviations of the participants of different linguistic competence on overall form recognition are displayed in Table 7 below.

Table 7. Means and standard deviations for overall form recognition by level of linguistic competence

Level	*N*	*M*	*SD*
High	39	4.282	.972
Intermediate	40	3.275	.987
Low	39	2.590	.818
Total	118	3.381	1.154

Note. Level = Level of linguistic competence; The maximum score = 7.

As shown in Table 7, the mean scores of the phonologically recognized words obtained by participants at different linguistic levels were 4.282 (the high level), 3.275 (the intermediate level), and 2.590 (the low level). Taken together, the participants at the upper-level of linguistic competence scored significantly better than those at lower linguistic levels. In sum, although vocabulary gains on form recognition occurred at all levels, these data suggested that students of higher competence in English tended to make significantly more vocabulary gains through incidental learning than others from the same viewing experience.

Results of Overall Vocabulary Acquisition

In order to examine the participants' vocabulary acquisition under captioned and

non-captioned conditions at a deeper level, the other vocabulary test, form-meaning mapping, was administered immediately after the form recognition test in each learning session. Same as the data analysis procedures for overall form recognition, this study averaged participants' scores on the eight form-meaning mapping tests and performed a two-way ANOVA to (1) investigate the participants' overall vocabulary acquisition under captioned and non-captioned conditions, and (2) explore the performance of students at different linguistic competence levels on overall vocabulary acquisition.

The Participants' Overall Vocabulary Acquisition under Captioned and Non-captioned Conditions

To have a clear picture of the results collected from vocabulary acquisition tests, Figure 3 was first provided below to illustrate students' performance in the eight vocabulary acquisition tests under captioned and non-captioned conditions. In general, the ogive patterns of the captioned and non-captioned group were similar to those in Figure 2. Overall, although there were some ups and downs during the eight tests, the means in the eight tests changed gradually. For both captioned and non-captioned group, the mean scores were quite flat from test one to test three and reached the highest in test four. Then they fell gradually until the seventh and the eighth tests in which the mean scores rose slightly again. In addition, as shown in Figure 3, the captioned group, again, consistently scored higher than the non-captioned group on average in the eight vocabulary acquisition tests.

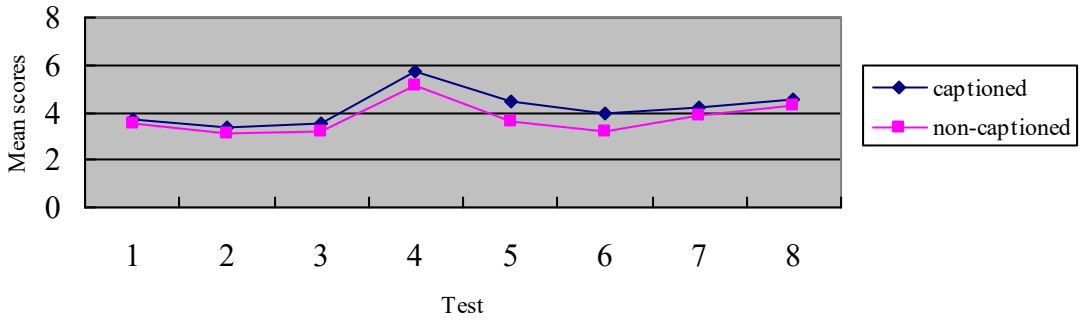

Figure 3. **Students' performance in the eight vocabulary acquisition tests under both conditions**

In order to test and compare the participants' overall vocabulary acquisition under

different treatment conditions (i.e., the captioned condition and non-captioned condition), their mean scores and standard deviations on form-meaning mapping tests were calculated and presented in Table 8 below. As shown in Table 8, the mean scores under the two treatment conditions were 4.233 (the captioned condition) and 3.707 (the non-captioned condition). These raw scores showed that for overall vocabulary acquisition, the participants in the captioned group, again, seemed to score higher than those in the non-captioned group.

Table 8. Descriptive statistics of overall vocabulary acquisition

Condition	*N*	*M*	*SD*
Captioned	60	4.233	1.140
Non-captioned	58	3.707	1.124
Total	118	3.975	1.158

Note. The maximum score = 7.

To further examine if there was a statistically significant difference between the participants' scores on overall vocabulary acquisition under captioned and non-captioned conditions, and if there was an interaction effect between the two independent variables (i.e., the caption condition and linguistic competence), a two-way ANOVA was performed to analyze the data collected from form-meaning mapping tests. Levene's test of homogeneity of variances for overall vocabulary acquisition was not significant, $p = .060$, and hence, it could be assumed that the groups were similar in variance and could be compared by using ANOVA (see Table 9).

Table 9. Test of homogeneity of variances for overall vocabulary acquisition

	Levene Statistic	df1	df2	Significance
Vocabulary Acquisition	3.617	5	112	.060

The results of ANOVA are summarized in Table 10 below. The analysis indicated a significant caption effect on vocabulary acquisition, $F(1, 112) = 10.312$, $p = .002$, and that the interaction effect between the caption condition and linguistic competence did not reach statistical significance, $F(2, 112) = 1.167$, $p = .315$.

Table 10. Summary of two-way ANOVA on overall vocabulary acquisition

Source	*Type III SS*	*df*	*MS*	*F*	*post-hoc*
Caption	8.058	1	8.058	10.312**	C > N.C.
Level	59.184	2	29.592	37.869***	H > I, H > L I > L
Caption * Level	1.824	2	.912	1.167	
Residual	87.521	112	.781		
Total	2021.000	118			

Note. Caption = Caption Condition; Level = Level of Linguistic Competence.
C = Captioned; N.C. = Non-captioned; H = High; I = Intermediate; L = Low.
***$p < .001$; **$p < .01$.

The results in Tables 8 and 10 revealed a similar trend in favor of captioning; that is, the captioned group scored significantly higher than the non-captioned group on overall vocabulary acquisition. This positive effect of captioning suggested that instead of just enhancing aural form recognition, the availability of captioning could also facilitate associations of word meaning and spoken representation. In addition, the insignificant interaction effect between caption condition and linguistic competence entailed that, for form-meaning mapping, the effect of captioning would not depend on learners' linguistic competence. In sum, these data demonstrated that with the availability of captioning, EFL middle school students appeared to make significant gains in word knowledge without explicit vocabulary instruction, and the visual representations of words on the screen could be a contributor to students' enhanced vocabulary acquisition.

Differences among Learners at High, Intermediate, and Low Levels of Linguistic Competence on Overall Vocabulary Acquisition

The results in Table 10 revealed that the participants' linguistic competence had a statistically significant effect on overall vocabulary acquisition, F (2, 112) = 37.869, p = .000. To offer an overall picture on the relationship between the vocabulary acquisition and learners' linguistic competence, the mean scores and standard deviations of participants at different linguistic levels are displayed in Table 11 below.

Table 11. Means and standard deviations for overall vocabulary acquisition by level of linguistic competence

Level	*N*	*M*	*SD*
High	39	4.872	1.080
Intermediate	40	3.925	.971
Low	39	3.128	.656
Total	118	3.975	1.158

Note. Level = Level of linguistic competence; The maximum score = 7.

As shown in Table 10, the mean scores obtained by participants at different linguistic levels were 4.872 (the high level), 3.925 (the intermediate level), and 3.128 (the low level). As mentioned earlier, the insignificant interaction effect between caption condition and linguistic competence showed that vocabulary gains did take place at all linguistic levels with the availability of captioning; however, the results of ANOVA along with Tables 7 and 11 suggested that, students of high linguistic competence tended to make significantly more vocabulary gains on both form recognition and vocabulary acquisition than others from the same viewing experience without formal instruction. In addition, it was noteworthy that the participants scored higher on overall vocabulary acquisition than overall form recognition. This result was unexpected because it was hypothesized that form-meaning mapping might be more challenging than form recognition for the participants. It turned out that the students performed better on the overall vocabulary acquisition than they did on the overall form recognition under both captioned condition (M = 4.233 for vocabulary acquisition; M = 3.733 for form recognition) and non-captioned condition (M = 3.707 for vocabulary acquisition; M = 3.017 for form recognition). Detailed explanation of this unexpected outcome will be presented in the discussion section in Chapter Five.

The Caption Effects on Spoken Word Gains within Groups

To determine whether or not captioned video materials had any impact on spoken word gains within the three linguistic groups, the paired samples *t*-test was performed on the two types of vocabulary tests (i.e., form recognition and vocabulary acquisition) respectively. In this current study, scores obtained in the first learning session were used as the baseline and were compared with the average scores obtained from session two to session eight to test the differences within linguistic groups after the participants

received the weekly treatment.

Impacts on Form Recognition

Table 12 below presented the results of paired samples *t*-test for the three linguistic groups' form recognition under both treatment conditions. By comparing the differences between the mean scores of the first test and the follow-up tests, the data in Table 12 demonstrated that under the captioned condition, the average score of high-level group's follow-up tests, $M = 4.550$, is obviously higher than the mean score in the first test, $M = 3.250$, while the mean scores of the first and the follow-up tests of intermediate-level ($M = 3.900$ and $M = 3.900$) and low-level groups (i.e., $M = 2.800$ and $M = 2.750$) remained almost the same. Moreover, the t-value further indicated that after receiving the follow-up seven-week learning sessions, the high-level students were able to aurally recognize substantially more words, $t\ (19) = 3.213$, $p = .005$, than they did in the first session. However, there was no statistically significant differences in the means of form recognition tests obtained by intermediate-level as well as low-level students between session one and the follow-up sessions.

On the other hand, under the non-captioned condition, Table 12 displayed that while there was a decrease in the mean scores from the first test to the follow-up tests for both high-level and intermediate-level groups, the low-level group made a slight improvement in the follow-up tests. However, all the three linguistic groups demonstrated no significant differences in form recognition between the first and the follow-up sessions. Taken together, Table 12 suggested that after the participants received the 7-week repeated learning sessions after the first one, captioned video materials tended to markedly and exclusively benefit students of high linguistic competence in aural form recognition.

Table 12. Summary of paired samples *t*-test for form recognition by students' linguistic levels under both conditions

		Test 1		Test 2-8			
Condition	Level	*M*	*SD*	*M*	*SD*	*df*	*t*
Captioned	H	3.250	1.743	4.550	1.050	19	-3.213**
	I	3.900	2.125	3.900	1.165	19	0.000
	L	2.800	2.262	2.750	0.716	19	0.100
Non-captioned	H	4.263	1.996	3.739	0.806	18	1.191
	I	3.100	1.410	2.750	0.716	19	1.234
	L	2.053	1.545	2.316	0.671	18	-0.620

Note. H = High; I = Intermediate; L = Low.

** $p < .01$

Impacts on Vocabulary Acquisition

Table 13 below provided the results of paired samples *t*-test for the three linguistic groups' vocabulary acquisition in the first and the follow-up sessions under both conditions. The data in Table 13 indicated that under the captioned condition, the mean scores of high-level group's vocabulary acquisition improved slightly from the first session ($M = 5.000$) to the follow-up sessions ($M = 5.200$), although not to a significant extent. This finding might be attributed to the ceiling effect since some participants in the high-level group gained full marks (i.e., 7 points) in the first vocabulary acquisition test. In contrast, the mean scores of intermediate-level and low-level groups dropped in the follow-up sessions.

With regard to the performance of students under the non-captioned condition, the low-level group, again, made a slight improvement in the average score of the follow-up tests, $M = 3.000$, compared with the mean of the first test, $M = 2.632$, while the high-level group dropped slightly in the average score of the follow-up tests and the intermediate-level group remained almost the same in terms of the mean scores.

Table 13. Summary of paired samples *t*-test for vocabulary acquisition by students' linguistic levels under both conditions

		Test 1		Test 2-8			
Condition	Level	*M*	*SD*	*M*	*SD*	*df*	*t*
Captioned	H	5.000	1.523	5.200	0.951	19	-0.639
	I	4.750	1.209	4.200	0.894	19	1.927
	L	3.950	1.504	3.150	0.671	19	2.179*
Non-captioned	H	4.895	1.792	4.579	1.170	18	0.809
	I	3.400	1.353	3.450	0.887	19	-0.175
	L	2.632	1.571	3.000	0.667	18	-1.022

Note. H = High; I = Intermediate; L = Low.

* $p < .05$

CHAPTER FIVE

DISCUSSION AND CONCLUSION

This chapter will first summarize the major findings vis-à-vis the research questions proposed in Chapter Two. Then, discussions on the results revealed in this study will be presented, followed by the pedagogical implications, the limitations of the study, and finally the suggestions for future research.

Summary of the Major Findings

This current study aimed to examine the effects of captioning on EFL middle school students' incidental vocabulary acquisition and investigate the relationship between the students' English language competence and vocabulary acquisition through video viewing. The major findings will be summarized as follows in accordance with the three research questions in this study.

RQ 1: Does caption availability enhance EFL middle school students' aural form recognition?

With respect to the first research question, the results indicated that the participants in the captioned group, on the whole, could recognize significantly more aural word forms than those in the non-captioned group. This finding suggested that the availability of captioning could facilitate EFL middle school students' aural form recognition from video viewing.

RQ2: Does caption availability improve EFL middle school students' vocabulary acquisition?

Concerning the second research question, results suggested that the participants in the captioned group scored significantly better than those in the non-captioned group on overall vocabulary acquisition (i.e. form-meaning mapping). This result proved the positive effects of captioning on incidental vocabulary acquisition of EFL middle school students at a deeper level.

RQ3: Are the gains of aural form recognition and vocabulary acquisition modulated by the varying linguistic competence of EFL middle school students?

To answer the third research question, the participants' average scores on the achievement tests from the previous three semesters were used to determine their English language competence. The results revealed that for both form recognition and vocabulary acquisition, scores obtained by the students at high level of linguistic competence differed significantly from the students at intermediate and low levels of linguistic competence. Such outcome suggested that the incidental learning of vocabulary knowledge through watching authentic cartoon videos was significantly influenced by students' linguistic competence. In addition, no interaction effect between the caption condition and students' linguistic competence was found on either overall form recognition or vocabulary acquisition.

In conclusion, the present study indicated that the availability of captioning did markedly increase EFL middle school students' spoken word gains in terms of form recognition and form-meaning mapping through watching video material. Moreover, the results also suggested that the students' linguistic competence appeared to be a significant predictor of the amount of vocabulary gains through incidental learning in multimedia context.

Discussion

In this section, discussion on the findings indicated in Chapter Four is first presented, followed by the qualitative results based on the teacher's classroom observation and the information collected from the follow-up questions.

Captioning and Aural Form Recognition

With regard to the first research question, this study provides strong evidence that the availability of captioning has beneficial effects on aural form recognition of EFL middle school students. To be more specific, the sixty Taiwanese middle school students who were exposed to the video material with captioning tended to recognize considerably more phonological word forms which were encountered previously in the video material. In contrast, the fifty-eight students in the non-captioned group tended to make substantially fewer word gains in terms of aural form recognition.

As mentioned earlier, the major concern about captioning is that for foreign language learners, the availability of captioning may be a distractor which may impede L2 development because viewers are likely to focus on reading the visual words

without paying attention to the oral input when captioning is available (Borrás & Lafayette, 1994). To further clarify the role of captioning on L2 learners' language acquisition, some studies (Markham, 1999; Sydorenko, 2010) examined its effects on phonological word recognition (i.e., knowing what the word sounds like) from viewing captioned video. However, the results were inconclusive and the issue remained unresolved. As previous studies revealed mixed outcomes, the findings in this present study are of importance to shed more light on the effects of captioning on phonological word recognition.

Furthermore, it should be noted that the present study used 118 EFL Taiwanese young learners (i.e., eighth graders) in middle school as participants and indicated a significantly positive effect of captioning on spoken vocabulary acquisition. Such positive finding is consistent with Markham's (1999) research, which indicates the marked effect of captioning on listening word recognition of advanced, university-level ESL students. Based on the results of the study, Markham suggests that rather than ignoring the auditory input when captioning was available, the advanced ESL young adult learners seemed to be able to transfer the visually-presented textual input to subsequent listening-only tasks. In other words, to the 118 ESL students, captioning may serve as an aid for gains of second language.

In accordance with the results of Markham's study, this current study extends the value of captioned video on spoken vocabulary acquisition to young learners in the EFL educational context. But simultaneously, this study also yielded clear evidence that although all the participants benefited from the presence of captioning, the amount of benefit varied with learner' linguistic competence levels. In other words, this study demonstrated that by adding the visual text to video material, the EFL young learners' recognition of spoken vocabulary tended to make significant improvement; those of high competence, however, seemed to be the largest beneficiary of dual input (auditory and visual) in terms of listening word gains of foreign language. In sum, based on previous caption-based research, this study established the validity of captioning on EFL learners' spoken vocabulary acquisition, but at the same time pointed out the significant influence of the learner's linguistic level on gains of foreign language from video viewing.

The second research question aims to investigate vocabulary acquisition at a deeper level; that is, whether the availability of captioning could enhance EFL middle school students' performance on form and meaning associations. The results suggested that the participants under the captioned condition scored significantly better than those under the non-captioned condition. In other words, the availability of captioning tended to facilitate connections of phonological word form and meaning to a significant extent.

In addition to the quantitative data, the positive effects of captioning on vocabulary acquisition were also revealed from the qualitative data. According to the participants' feedback collected from the follow-up question session, with the presence of captioning, most participants, both high and low achievers, reported that they felt relaxed during the viewing sessions and seemed to be able to have better comprehension or make better inferences from video context clues. Additionally, some of the high achievers further indicated that the visual text helped to make the authentic speech and some unclear articulation easier to follow. These comments suggest that by adding captioning to video material with high audio-visual correlation, language in the video tends to become more accessible to EFL young learners at different levels, which in turn, may reduce the burden on them to process the language input, and finally makes the mapping of aural form and meaning easier.

Moreover, it should also be noted that this favorable outcome was generated from a two-time repeated exposure to each of the chosen video episodes without explicit instruction. Such positive finding seems to reveal the advisable number of times of video viewing for improved gains of foreign language through incidental learning. Webb's (2008) study examines the context effect on L2 incidental vocabulary acquisition and suggests that L2 word knowledge can be acquired incidentally if learners meet the word in context enough times. The number of times required for word gains, however, depends on the contexts in which words are met. According to the results of Webb's research, there are two qualities of context crucial for incidental vocabulary learning—one is appropriate text coverage, and the other is rich contextual clues. In other words, it could be expected that the target words encountered repeatedly in the difficulty-appropriate text which provides the participants with sufficient information to infer the meaning of a word are going to be acquired better than those that are met in difficult and less informative text. This study provides evidence that when FL words are encountered in the informative context (i.e., video with high

audio-visual correlation) with appropriate difficulty (at least 90% of known words), *two times of exposure* to the video material is adequate for the occurrence of incidental vocabulary acquisition of EFL middle school students.

Taken together, the use of multiple input modalities (imagery, auditory, and textual) appears to not only improve recognition of the surface forms of language but also facilitate increased depth of processing in terms of vocabulary acquisition (i.e., form and meaning mapping). Nevertheless, as mentioned earlier, in spite of the consistent benefits derived from captioning on both vocabulary tests, the mean scores on overall form recognition and vocabulary acquisition are different in an unexpected manner. The underlying reasons are provided in the following subsection.

The Unexpected Differences between the Scores of the Two Types of Vocabulary Tests

At first, the participants were expected to score higher on form recognition tests than on form-meaning mapping tests since form recognition, the initial step of vocabulary learning, is often regarded as word knowledge at superficial level while the connection of word form and meaning requires relatively deeper cognitive processing. This study, however, yielded a contrary outcome under both treatment conditions. The results of mean scores indicated that the students tended to obtain lower scores on form recognition than form-meaning mapping under either captioned ($M = 3.733$ for form recognition; $M = 4.233$ for form-meaning mapping) or non-captioned conditions ($M = 3.017$ for form recognition; $M = 3.707$ for form-meaning mapping). These unexpected differences could be interpreted in light of the design of the two vocabulary tasks and students' perception of them.

In fact, the fabric of the two vocabulary tests was identical. First, both tests were in the multiple-choice test format with a total of seven items in a test. Additionally, each test item was composed of four options for the participants to choose from (i.e., one key and three distractors). However, to measure word gains at different levels, the design of the two types of tests was not exactly the same. The first vocabulary task, aural form recognition, was a *listening-only* multiple-choice test. In each test item, the participants had to aurally identify the target word that appeared in the video previously after hearing four phonologically-similar words. On the other hand, the second vocabulary task, form-meaning mapping, was *not* a listening-only test. In each test item, while the

participants had to listen to four words in the first test, in the second one, the participants only listened to one target word spoken and then tried to identify its meaning from the four visually-presented options in L1.

From a theoretical perspective, Buck (2001) indicates that listening tasks which require processing more information tend to be more difficult than those requiring processing less information. By comparing the number of words presented aurally in one item of form recognition test ($N = 4$) and vocabulary acquisition test ($N = 1$) in this current study, the information required processing aurally in form recognition tests was four times the information required processing aurally in vocabulary acquisition tests. In addition, results of Wu's (1998) study demonstrated that for Chinese EFL learners at university level, viewing the printed options in multiple-choice listening task enabled the learners to anticipate the incoming input and equipped them with the focus for listening. Moreover, his study also suggested that the visually-presented options might allow large amount of uninformed guessing, which sometimes even resulted in learners' selection of the correct answer for the wrong reason. Accordingly, the vocabulary acquisition test adopted in this current study, which allowed the participants to read the printed options on the test paper before the target word spoken out, was assumed to be less difficult than the form recognition test.

Qualitative data collected from the follow-up question session also indicated that the participants noticed the aforementioned difference and perceived that the two types of tests represented different difficulty-level. Specifically, for many students, the form recognition test was a little demanding for them. For example, some of them reported that they felt anxious when taking form recognition tests because they were not familiar with such listening-only test design. Additionally, some indicated that listening to four options made them nervous because it was not easy for them to memorize the pronunciation of all the four words in one item. Moreover, it seemed like a great challenge for some participants to distinguish the target word from the other phonologically-similar distractors. In contrast, the test of form-meaning mapping was relatively easy for them since in each item, they only had to listen carefully to one spoken target word and then try to select the correct answer from the four printed Chinese translations.

Based on the information demonstrated in previous studies and revealed from the researcher's observation and participants' feedback, it appears that the unanticipated

outcome of scores on the two vocabulary tests may be likely resulted from the different test design to some extent. Nevertheless, the results of this study indicated that the effects of captioning remained consistently significant on both vocabulary tests. Therefore, although the difficulty-level of the two vocabulary tests in this study was not perfectly balanced, this study still revealed that the presence of captioning could profoundly improve EFL learners' gains of both form recognition and vocabulary acquisition.

Linguistic Competence and Word Gains from Video Viewing

To determine the effects of captioned video materials on spoken word gains of learners at different levels of linguistic competence, this section is divided into (1) the caption effects between groups, and (2) the caption effects within groups.

Between–group Effects

Concerning the third research question, the discussion could be subdivided into two subsections—(1) whether the effect of captioning on spoken vocabulary acquisition was influenced by learners' linguistic competence level, and (2) whether the word gains of overall form recognition and vocabulary acquisition were modulated by the level of linguistic competence. First, the results indicated that the effects of captioning did not depend on EFL young learners' linguistic competence according to the insignificant interaction between caption condition and linguistic competence demonstrated by two-way ANOVA. In other words, captioning exerted a facilitative effect on all participants' vocabulary acquisition regardless of their linguistic levels.

To address the second sub-question, the participants' performance on overall form recognition and vocabulary acquisition was analyzed solely on linguistic competence variable. The results suggested that the participants who differed in linguistic competence level benefited from captioning to different extents in overall form recognition and overall vocabulary acquisition. Specifically, in both vocabulary tests, the students who were of high linguistic competence tended to outperform those at the intermediate level; those at the intermediate level of linguistic competence tended to outscore those at the low linguistic competence level. Such finding is in line with Lwo and Lin's (2012) study and suggests that captioning which used to be considered as optimal listening support for low-level learners actually benefits high-level learners

more. In Neuman and Koskinen's terms, vocabulary acquisition through incidental learning tends to follow the rule of *Matthew Effect*—"rich get richer."

This result could be explained by the requirement for incidental vocabulary acquisition from context (i.e., massive exposure to comprehensible input). With regard to vocabulary learning, inference skill is often considered as a crucial part in word gains from context. Nagy (1995) reported that there are three categories of knowledge that contribute to contextual inferencing—(1) linguistic knowledge such as syntactic and vocabulary knowledge, (2) world knowledge, and (3) strategic knowledge. As for spoken text, Buck (2001) also indicated that the subskills involved in inferring word meaning from spoken text consist of lexical knowledge, parsing skills, and inference-making ability. Accordingly, when video materials are employed for language teaching and learning, learners with better linguistic competence in the target language are more likely to benefit from them owing to great vocabulary knowledge and sophisticated strategy use, the abilities they originally possess. By contrast, leaners with limited linguistic competence may be less effective at using video context for word growth, until they achieve a higher level of linguistic competence of the target language.

In sum, this study yielded the results which were in contrast to the belief of most EFL teachers with regard to the usefulness of captioning for students at different linguistic levels and demonstrated that learners' linguistic competence appears to be a crucial factor affecting the efficacy of using authentic captioned video material for L2 acquisition. From a pedagogical point of view, this implies that video-based instruction which includes incidental vocabulary learning as one of the learning objectives must provide learners at lower level of linguistic competence with other learning support for improved learning outcomes.

Within-group Effects

The discussion in this section is based on the results of paired samples *t*-test. By comparing the means in the first test, as the baseline, with the average scores in the follow-up tests (from test 2 to test 8), the quantitative results in Tables 12 and 13 demonstrated that over the follow-up seven-week viewing sessions, the availability of captioning tended to be more beneficial to high-level EFL middle school students in fostering the ability of acquiring phonological vocabulary knowledge. In addition, the

results of the first and follow-up tests comparison suggested that low-level EFL students seemed to improve slightly after receiving the weekly viewing sessions under the non-captioned condition.

These results revealed that after undergoing the weekly video-viewing learning sessions without explicit vocabulary instruction for eight weeks, the high-level EFL middle school students improved in terms of spoken word gains through watching videos *with* captioning, while the low-level students made slight improvement in vocabulary acquisition through watching videos *without* captioning. Such outcomes, once again, were in opposite to the traditional assumption, which regarded captioning as a listening support which was more beneficial for students of low linguistic competence while some high-level learners might consider it as an impediment to information processing. In sum, based on the significant main effect of captioning and the results revealed from paired samples *t*-test mentioned above, this study indicated a strong demand for more learning support for lower-level learners in multimedia learning environment.

Qualitative Results

In the previous section, discussion about the results presented in Chapter Four was reported. However, there are still some inherent noteworthy features that could not be observed solely from statistic results. Thus, certain important aspects revealed from teachers' observation notes and the participants' feedback collected from the follow-up question session are provided in this section.

1. Learners at different linguistic competence levels may have different perception towards the availability of captioning.

Based on the data collected from participants' feedback, the majority of the students displayed a positive attitude towards captioning and regarded it as an aid to language learning. Additionally, some students in the captioned group even reported that they were so motivated by the learning sessions that they would like to start using captioned video material outside of the classroom for language learning.

However, when taking learners' linguistic competence into consideration, differences emerged in terms of perception towards the visual text. Results indicated that while students at low linguistic level all expressed their appreciation of the

presence of captioning, some students at high linguistic level reported their preference for viewing *without* captioning. One of the high-level students in the captioned group reported that when captioning was available, she would feel obliged to focus on reading the running text, rather than devoting her attention to listening to the language. Thus, she thought that if there had been no captioning presented on the screen, she would have concentrated more on the audio, and this might have led to improved listening ability. However, although this has been a commonly worrying aspect of captioning, the evidence in this study strongly proved that the learners did in fact benefit from the visual text and made marked improvement in listening ability in aspects of vocabulary knowledge.

While some of the high-level students tended to consider captioning as something intrusive, one low-level student in the captioned group clearly expressed the great benefits he got from the presence of captioning. He reported that watching video with captioning made the story much more comprehensible to him. Additionally, he also indicated that at first he was quite nervous, but then he realized the enjoyment of watching English video and gradually built up his confidence in learning English over the period of the study. This feedback has two important implications for foreign language acquisition through video viewing. One is that the visual text can effectively decrease learners' anxiety and contribute to a low affective filter, by which language gains may be more likely to occur. In addition, continual exposure to captioned video material and practical use of captioning may have great power in increasing language gains.

2. There was potential evidence for partial vocabulary knowledge to occur.

By looking into the participants' answers on the vocabulary tests, certain significant aspect of form recognition was revealed. Specifically, the results suggested that there was a possibility that the participants had the ability to recognize the aural form of the target word, but failed to correctly distinguish it from the four phonologically similar options. For example, one item in the seventh form recognition test asked the participants to phonologically identify the target word "meteor" after listening to the four aurally-presented options— (A) mediate, (B) medial, (C) meteor, and (D) medium, and it turned out that several students chose the distractor (B) medial, which sounded highly similar to the target word.

Such finding revealed that the participants might have acquired partial knowledge of the unfamiliar aural word form, but just failed to choose the correct answer because the test was probably a bit demanding for them or because of the insufficient encounters to the target word. Therefore, although statistic results of the mean scores indicated that students failed to identify certain target words phonologically, it was possible that they had the ability to recognize them, but had not fully learned it. That is, instead of treating the concept of vocabulary learning in an all-or-nothing manner, the participants' data suggested signs of partial vocabulary knowledge to take place.

3. Students displayed heavy reliance on teachers' systematical explicit vocabulary instruction.

Although results of this current study empirically proved that captioned video material could facilitate EFL junior high school students' vocabulary acquisition without explicit instruction, most of the participants reported that they would like to receive the teachers' explicit vocabulary teaching along with the viewing sessions. Many of them indicated that if there was the teachers' systematical explicit vocabulary instruction, they could have learned the target words more efficiently in class. Moreover, several low achievers even reported that without the teachers' explicit instruction, they would *never* know the meaning or the usage of the unfamiliar word.

These self-reported comments on teachers' explicit vocabulary instruction revealed students' reliance and the need for instructors' explicit teaching. Hence, despite the fact that viewing captioned video material seemed to substantially increase EFL young learners' incidental vocabulary learning, explicit vocabulary instruction should not be abandoned. Instead, teachers are recommended to try to make good use of both incidental and intentional learning and then investigate how the various ways of learning vocabulary can be integrated together and promote optimal word growth in multimedia context.

Pedagogical Implications

As Markham (1999) suggested, the availability of captioning could be a powerful aid to second language acquisition by positively transferring the information from the visual text to subsequent listening-only tasks. The findings of this current study further

proved the validity of this argument. Moreover, the study could shed more light on language acquisition in multimedia context by examining different aspects of vocabulary knowledge of EFL learners with varying linguistic competence under captioned and non-captioned conditions. Based on the results of this current study, several pedagogical implications can be provided for EFL junior high school teachers and educators in Taiwan, which are presented as follows.

First of all, instead of being a distractor or resulting in cognitive overload, the availability of captioning could facilitate EFL young learners' vocabulary acquisition in the aural aspects, lower learners' anxiety, increase learning motivation, and hence can be a beneficial learning support. Despite the fact that some teachers tend to decide whether to use the captioning or not just by instinct, the potential benefits of language gains derived from video viewing may be diminished. Instead, by visualizing what the video viewers hear, captioning may serve as an excellent tool in addressing the challenges that learners may encounter associated with foreign language acquisition. Therefore, when EFL junior high school teachers try to employ English video as teaching material, presenting it with captioning is strongly encouraged, especially when the teachers include incidental vocabulary learning as an aim. In addition, textbook editors may consider incorporating *authentic* video material into the textbook and including the videos matching the newly-learnt topic or certain related new vocabulary as supplementary material.

Second, two times of viewing with captioning is adequate for EFL incidental vocabulary acquisition to take place. The fact is that when teachers try to use video material in classroom, they often face a dilemma in terms of the deployment of viewing times for improved learning outcome. Apparently, one-shot exposure will probably not be sufficient to enable an EFL young learner to acquire word gains from context (Nation, 2001). In this study, as mentioned earlier, the participants gained significant benefits in terms of spoken vocabulary acquisition from being exposed to each captioned video *twice* while the focal attention was on comprehension. Although it may be argued that viewing the same video three times or more may strengthen gains of the target language, excessive viewing (i.e., more than two time) is very likely to bore the students. In light of this tradeoff, when EFL junior high school teachers try to adopt captioned video material in classroom, it is highly recommended to provide the learners with the chance to watch the captioned video *twice* (or maybe 3-4 times for lower-level

students) for enhanced language acquisition no matter what the follow-up language-oriented activity is.

Third, EFL teachers must recognize the potential obstacles faced by learners of lower linguistic competence in learning from captioned video and help them to overcome the problems. As demonstrated earlier, although the availability of captioning improved word gains of foreign language at all levels, high-level students tended to significantly outperform those at low linguistic level on either form recognition or vocabulary acquisition. To address the issue of "rich get richer" in terms of L2 learners' linguistic competence, instructors should provide alternatives or give some learning support for low-level learners when employing captioned video material for foreign language instruction. For example, more times of repeated viewing (3-4 times) could be provided, when needed, to low-level students for better comprehension and acquisition of other aspects of language. Besides, teachers could employ some strategies such as advance organizers to help reduce low-level students' learning burden and hopefully facilitate their language acquisition. Chung (1999) reported that by using the approach of topic introduction to provide learners with background information beforehand, the level of anxiety may be decreased. As a result, learners at lower level of linguistic competence would be better equipped to understand the video and eventually improve language acquisition from the viewing experience.

Finally, as demonstrated in Figures 2 and 3, during the eight weekly video-viewing sessions, the mean scores of the captioned group in both vocabulary tests remained relatively flat during the first three sessions and reached the highest in the fourth session. After that, the means fell gradually until the last session. In addition, based on the feedback received from the participants after the experiment, some students indicated that keeping watching the videos from one cartoon series made them feel bored gradually. Accordingly, this study appeared to provide certain pedagogical implication that the ideal number of video-viewing sessions may be no more than four times. For optimal learning outcomes, different tasks are advised for EFL middle school teachers to adopt after students receive the video-viewing learning sessions about four times, as an intermission in the learning sessions.

Limitations of the Present Study

Although the current study yielded results which have insightful implications for

foreign language teaching and learning, there are still some limitations needing to take into consideration.

First, the findings revealed in this study obviously would not imply universal generalizability to all other languages or educational contexts since this study focused on Taiwanese middle school students in order to suggest the pedagogical implications of captioned video material for language learning in EFL context. Additionally, the results cannot be generalized to other Taiwanese middle school students out of Taipei City without caution because this study only recruited 118 middle school students in Taipei as participants.

Second, aiming to investigate incidental vocabulary learning from viewing captioned video, this study employed 8 videos from a cartoon series called *Olivia* as learning material, of which the text coverage, as reported in the pilot study, is more than 90 percent. Therefore, the findings in this study should not be overgeneralized to other video materials since text coverage varies from genre to genre as well as from video to video.

Third, as mentioned earlier, the two types of vocabulary tests seem imbalanced in terms of the difficulty-level. According to the unexpectedly different mean scores of the two types of tests and the students' feedback, the form recognition test conducted in this study may be too demanding for the EFL young learners. Thus, the unexpected results associated with overall form recognition and vocabulary acquisition should be taken into consideration in discussion.

Finally, for encouraging the occurrence of incidental vocabulary acquisition, the participants were asked to repeatedly view each video during the 10-week learning sessions (i.e. watch each video two times). However, according to the researcher's observation, while the participants displayed great interest and were very focused on viewing the video during the first viewing, they tended to be more absent-minded and inattentive during the second viewing. In addition, as mentioned earlier, based on the feedback received from the participants that they felt bored gradually during the 10-week repeated learning sessions and the ups and downs illustrated in Figures 2 and 3, students' performance dropped gradually after the fourth session. Under this circumstance, the results, to some extent, may be interfered with participants' degree of involvement.

Suggestions for Future Research

This current study investigated and compared the effects of captioning on EFL young learners' form recognition and vocabulary acquisition under captioned and non-captioned conditions. Despite the positive effects of captioning on vocabulary acquisition demonstrated in this study, some valuable suggestions for future research are provided as follows.

First, since this study used cartoon videos from a cartoon series as materials, whether the positive results yielded from this study might also extend to other video genres such as commercials and news program is an important area for future research. Besides, to have a clear picture of learning from video viewing, it is recommended for future research to employ different video genres over the period of study. By employing multiple video genres might yield findings of learning from video viewing more holistically. Besides, the diversity of video genres may meet the needs of students with differential linguistic abilities and interests, and may also help maintain their leaning motivation more effectively. Therefore, further investigation of the effects of captioning on language acquisition in EFL context should continue to verify the positive results of this study with various video genres.

Second, it would be also useful to examine the factors involved in gains of target language from captioned video material. This study and several previous ones (Lwo & Lin, 2012; Neuman & Koskinen, 1992; Taylor, 2005) indicated that learners' linguistic ability of the target language may be a crucial factor in language learning from viewing captioned video. However, there are still a number of different factors involving in learning from audiovisual material such as individual differences, learning styles and the use of learning strategies. Since this current study only focused on students' linguistic competence levels, investigating different factors would help to shed more light on foreign language acquisition from viewing video.

Third, longitudinal studies should be conducted in the future to shed light on the effects of captioning on L2 acquisition of students of varying linguistic competence over time. By taking the approach of extensive reading, regular and extensive watching of video materials in target language may increase the chances of multiple encounters with the same unknown word, which in turn may facilitate incidental vocabulary learning.

Fourth, foreign language learners' vocabulary acquisition through video viewing

can be assessed in a more comprehensive manner. This current study only administered two types of vocabulary tests (form recognition and form-meaning mapping) to measure their *receptive* vocabulary knowledge. However, vocabulary knowledge is definitely more than recognizing its aural form and connecting form and meaning; rather, it also includes *productive* knowledge. Therefore, other test formats, such as oral or writing tests, are recommended in future research. Besides, future research may conduct different measurement that meets the students' ability to assess their vocabulary acquisition more accurately.

Finally, the effects of multiple presentations of visual text on language acquisition could be further investigated. In fact, this current study only focused on the effects of captioning since it provided learners with the maximal exposure to the target language. Future studies might be conducted to explore the effects of different visual text presented on the screen (e.g., L1, L2, or L1 plus L2) on foreign language learners' listening abilities and vocabulary acquisition.

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APPENDIXES

Appendix A　Pre-learning Questions

同學們：

為了瞭解各位同學觀賞英文發音影片與英語學習的情況，請協助填答以下問題，謝謝大家！

I. 個人資料

班級：_____ 座號：_____ 姓名：_____

性別：□男 □女　　年齡：_____

1. 你學英文多久了？_____年
2. 你是否曾在**英語系國家**居住過**半年以上**？ □是 □否
   如果勾選「是」的話，是下列哪個英語系國家？

   □美國 □加拿大 □英國 □澳洲 □紐西蘭 □其他:_____

   承上題，居住多久呢？_____年_____月

   承上題，居住目的為何？_____

II. 觀賞英文發音影片與英語學習

1. **課堂中**，你是否喜歡老師播放英文發音的影片？ □是 □否
   承上題，為什麼？_____
2. **課餘時間**，你常觀賞的英文影片是下列哪一種？(可複選)
   □卡通 □電影 □音樂錄影帶(MV) □體育節目
   □新聞 □國家地理頻道 □旅遊生活頻道 □網路短片
   □其他：_____
3. **課餘時間**，你常觀賞的英文發音影片有字幕嗎？
   □沒有 □有，是**英文**字幕 □有，是**中文**字幕 □其他：_____
4. **課餘時間**，你大約多久看一次英文影片？
   □每天 □二~三天一次 □四~七天一次 □其他：_____
5. 看影片時，遇到**不懂的內容**，你**通常會怎麼做**？
   □聽對話 □看影像 □看字幕 □其他：_____

Appendix B　Posttest 1: The Mighty Five

The Mighty Five

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. What does the evil Dr. Trouble like to steal?

(A) Noises　(B) Pigs

(C) Cookies　(D) Books

_____ 2. What is Ian' super power?

(A) He can move fast.　(B) He can hear every sound.

(C) He can eat anything.　(D) He can make a robot.

_____ 3. What is Olivia's super power?

(A) She makes loud noises.　(B) She thinks of good ideas.

(C) She hears clearly.　(D) She moves very fast.

_____ 4. How many superheroes are there in Olivia's superhero team?

(A) 3　(B) 4

(C) 5　(D) 6

_____ 5. What is Harold's stinky food?

(A) Milk　(B) Hamburger

(C) Cake　(D) Sandwich

_____ 6. Why does Parry run out from its dog house?

(A) Because of the smell　(B) Because of the noise

(C) Because of the fire　(D) Because of the dance

_____ 7. What does Parry come out with in its mouth?

(A) A bottle of water　(B) A box of dog food

(C) A bag of chocolate　(D) A bowl of fruit

_____ 8. How do they make the thief come to them?

(A) By making the same noise as the toy does

(B) By making a lot of delicious sandwiches

(C) By making everyone laugh out loud

(D) By making a powerful super robot

_____ 9. Where do they find the stuff that they are looking for at last?

(A) On the bed　(B) In a box

(C) Under the table　(D) At the door

_____ 10. Who is the thief?

(A) Olivia the pig　(B) Gwendolyn the cat

(C) Parry the dog　(D) Dr. Trouble the evil pig

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

The Mighty Five

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) cattle*	*(B) cuddle*	*(C) rattle*	*(D) ruddle*
2.	*(A) villain*	*(B) vilely*	*(C) vellum*	*(D) venal*
3.	*(A) grab*	*(B) graph*	*(C) grant*	*(D) grad*
4.	*(A) lug*	*(B) tug*	*(C) pug*	*(D) mug*
5.	*(A) spleen*	*(B) split*	*(C) splice*	*(D) spear*
6.	*(A) castelet*	*(B) casteless*	*(C) castanet*	*(D) castigate*
7.	*(A) masthead*	*(B) masterwork*	*(C) masticate*	*(D) mastermind*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*steal*	(A) 撲倒	(B) 旋轉	(C) 宣誓	(D) 偷竊
_____ 2.	*mastermind*	(A) 反抗者	(B) 受害者	(C) 策劃者	(D) 支持者
_____ 3.	*stinky*	(A) 臭的	(B) 假的	(C) 活的	(D) 壞的
_____ 4.	*rattle*	(A) 鞋子	(B) 玩具	(C) 裝飾	(D) 力量
_____ 5.	*noisy*	(A) 可疑的	(B) 遺失的	(C) 吵雜的	(D) 敏銳的
_____ 6.	*castanet*	(A) 響板	(B) 紗裙	(C) 把戲	(D) 後臺
_____ 7.	*evil*	(A) 正義的	(B) 邪惡的	(C) 調皮的	(D) 溫馴的
_____ 8.	*villain*	(A) 壞人	(B) 使者	(C) 聯盟	(D) 詭計
_____ 9.	*trap*	(A) 急速	(B) 偵探	(C) 陷阱	(D) 成員
_____ 10.	*split*	(A) 追逐	(B) 拉扯	(C) 丟擲	(D) 分開
_____ 11.	*follow*	(A) 修理	(B) 跟隨	(C) 搖晃	(D) 蹲下
_____ 12.	*tug*	(A) 拉	(B) 追	(C) 抹	(D) 逃
_____ 13.	*hide*	(A) 躲藏	(B) 滾動	(C) 出現	(D) 招集
_____ 14.	*grab*	(A) 跳躍	(B) 休息	(C) 轉彎	(D) 抓住
_____ 15.	*team*	(A) 座位	(B) 時鐘	(C) 團隊	(D) 圖畫

Appendix C　Posttest 2: Olivia Plans a Tea Party

Olivia Plans a Tea Party

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. What does Olivia's mom do?

(A) A party planner　(B) A teacher

(C) A firefighter　(D) A designer

_____ 2. Why does Olivia's mom have to lie in bed?

(A) Because her legs hurt.　(B) Because she stays up late.

(C) Because she is sick.　(D) Because she is too lazy.

_____ 3. What does Olivia's mom ask Olivia to do?

(A) To buy some apple juice, cups and plates.

(B) To answer the phone calls and take notes.

(C) To go to the lady's beautiful garden for her.

(D) To take her little brother, William, to the park.

_____ 4. What food do they prepare for the lady's garden club?

(A) Strawberry ice cream　(B) Chocolate cake

(C) Cookies and orange juice　(D) Sandwiches with jam

_____ 5. How many people are there in Olivia's party planning team?

(A) 1　(B) 2

(C) 3　(D) 4

_____ 6. Who asks for pirates on the phone?

(A) The lady's garden club　(B) Oscar and Ardo's mom

(C) Francine's parents　(D) Olivia and Ian's mom

_____ 7. How many phone calls do they answer?

(A) 1　(B) 2

(C) 3　(D) 4

_____ 8. How do the ladies feel when they see the pirates at first?

(A) They feel happy.　(B) They feel sad.

(C) They feel shocked.　(D) They feel bored.

_____ 9. How do the ladies feel about the party at last?

(A) They love it.　(B) They hate it.

(C) The feel angry.　(D) They feel bored.

_____ 10. Why is Olivia's mom proud of her daughter?

(A) For making all the phone calls.　(B) For taking care of Ian.

(C) For thinking of the idea of pirates.　(D) For planning the party.

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia Plans a Tea Party

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) pale*	*(B) dale*	*(C) vale*	*(D) wale*
2.	*(A) muffle*	*(B) riffle*	*(C) sniffle*	*(D) waffle*
3.	*(A) splinter*	*(B) splendid*	*(C) splenic*	*(D) sprang*
4.	*(A) flipper*	*(B) harper*	*(C) plover*	*(D) proper*
5.	*(A) dainty*	*(B) dental*	*(C) dangle*	*(D) damper*
6.	*(A) bounce back*	*(B) bounce off*	*(C) bounce flash*	*(D) bounce house*
7.	*(A) respectful*	*(B) painful*	*(C) delightful*	*(D) dreamful*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*splendid*	(A) 極好的	(B) 混淆的	(C) 可靠的	(D) 有效的
_____ 2.	*machine*	(A) 機器	(B) 貼紙	(C) 餐具	(D) 棉被
_____ 3.	*pirate*	(A) 造型	(B) 尿布	(C) 工具	(D) 海盜
_____ 4.	*proper*	(A) 嬉鬧的	(B) 有趣的	(C) 適當的	(D) 特殊的
_____ 5.	*itchy*	(A) 好的	(B) 癢的	(C) 貴的	(D) 錯的
_____ 6.	*bounce house*	(A) 粗繩索	(B) 茶具組	(C) 彈跳屋	(D) 戲劇服
_____ 7.	*delightful*	(A) 震驚的	(B) 愉快的	(C) 失望的	(D) 難忘的
_____ 8.	*pancake*	(A) 薄煎餅	(B) 乾燥花	(C) 包裝紙	(D) 免洗盤
_____ 9.	*treasure*	(A) 鮮花	(B) 碗盤	(C) 美食	(D) 寶物
_____ 10.	*pale*	(A) 新鮮的	(B) 錯誤的	(C) 髒亂的	(D) 蒼白的
_____ 11.	*chopsticks*	(A) 鍋子	(B) 筷子	(C) 杯子	(D) 盤子
_____ 12.	*napkin*	(A) 枕頭	(B) 襪子	(C) 餐巾	(D) 茶壺
_____ 13.	*dainty*	(A) 美味的	(B) 用心的	(C) 活力的	(D) 創新的
_____ 14.	*assistant*	(A) 電話	(B) 休息	(C) 助理	(D) 計畫
_____ 15.	*sniffle*	(A) 口罩	(B) 鼻塞	(C) 牙齦	(D) 圍裙

Appendix D　Posttest 3: Olivia's Christmas Surprise

Olivia's Christmas Surprise

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. What is Ian's present from Olivia?

(A) A toy penguin　(B) A toy rocket

(C) A toy elephant　(D) A toy plane

_____ 2. What can the toy do?

(A) It can talk and sing.　(B) It can walk and tell jokes.

(C) It can run and dance.　(D) It can talk and shake hands.

_____ 3. Who helps Olivia to keep the present as a secret when she wraps it?

(A) Francine　(B) Dad

(C) William　(D) Parry

_____ 4. Why does Olivia have to hide the present?

(A) Because it is expensive　(B) Because it is the wrong gift

(C) Because Parry hates it　(D) Because Ian wants to open it

_____ 5. Why does Ian keep running after the dog, Parry?

(A) Because he likes the dog　(B) Because he needs exercise.

(C) Because Parry has the present　(D) Because Parry is fast and noisy

_____ 6. Why does Francine hold her breath in William's room?

(A) Because of the diapers　(B) Because of the dog

(C) Because of the clothes　(D) Because of the milk

_____ 7. Where does Olivia hide the present at last?

(A) In William's bedroom　(B) Under the bucket

(C) Under the Christmas tree　(D) In the living room

_____ 8. Why can't Olivia find the present on Christmas morning?

(A) Because she oversleeps　(B) Because the snow is heavy

(C) Because Parry eats it　(D) Because the wind is strong

_____ 9. What's the color of the bucket?

(A) White　(B) Black

(C) Red　(D) Green

_____ 10. How does Ian feel about the present from Olivia?

(A) Surprised　(B) Angry

(C) Unhappy　(D) Bored

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Christmas Surprise

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) reek*	*(B) beak*	*(C) leak*	*(D) peek*
2.	*(A) hamper*	*(B) pamper*	*(C) damper*	*(D) tamper*
3.	*(A) squeak*	*(B) squishy*	*(C) squeeze*	*(D) squint*
4.	*(A) spinach*	*(B) spin-dry*	*(C) spindle*	*(D) spinnary*
5.	*(A) slobber*	*(B) snobbery*	*(C) swapper*	*(D) snotter*
6.	*(A) waddle*	*(B) raddle*	*(C) paddle*	*(D) daddle*
7.	*(A) teapoy*	*(B) teepee*	*(C) tripping*	*(D) tinplate*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*bark*	(A) 吠	(B) 挖	(C) 嗅	(D) 夾
_____ 2.	*fake*	(A) 乾的	(B) 臭的	(C) 假的	(D) 近的
_____ 3.	*squeeze*	(A) 丟	(B) 壓	(C) 踢	(D) 吹
_____ 4.	*peek*	(A) 飛奔	(B) 遮蔽	(C) 偷看	(D) 放置
_____ 5.	*machine*	(A) 發條	(B) 機器	(C) 燈泡	(D) 沙堆
_____ 6.	*paddle*	(A) 鍋鏟	(B) 紙箱	(C) 船槳	(D) 桶子
_____ 7.	*penguin*	(A) 企鵝	(B) 幼犬	(C) 松鼠	(D) 火雞
_____ 8.	*guard*	(A) 追逐	(B) 欺騙	(C) 躲避	(D) 看守
_____ 9.	*empty*	(A) 空的	(B) 難的	(C) 多的	(D) 對的
_____ 10.	*spin-dry*	(A) 劇雪	(B) 懸吊	(C) 組裝	(D) 脫水
_____ 11.	*teepee*	(A) 彩帶	(B) 毛帽	(C) 帳篷	(D) 韁繩
_____ 12.	*bucket*	(A) 箱子	(B) 水桶	(C) 夾子	(D) 鞦韆
_____ 13.	*hamper*	(A) 籃子	(B) 罐子	(C) 爐子	(D) 棚子
_____ 14.	*ruin*	(A) 阻擋	(B) 毀滅	(C) 揭曉	(D) 說服
_____ 15.	*slobber*	(A) 口水	(B) 衣物	(C) 階梯	(D) 閣樓

Appendix E　Posttest 4: Olivia's Kite Party

Olivia's Kite Party

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. What is Olivia going to do with Edwin at first?

(A) Go picnicking　(B) Go camping

(C) Go jogging　(D) Go shopping

_____ 2. How do Olivia and Ian go to the moon?

(A) By rocket ship　(B) By pirate ship

(C) By airplane　(D) By air balloon

_____ 3. What do Olivia and Ian do after they decide to fly some kites?

(A) They buy some kites.　(B) They borrow some kites.

(C) They order some kites.　(D) They make some kites.

_____ 4. What did Olivia's dad make his kite out of when he was a kid?

(A) Trash bags, paper, and strings　(B) Paper, chopsticks, and strings

(C) Newspapers, sticks, and rags　(D) Toilet paper, sticks, and rags

_____ 5. Who gives Olivia and Ian the stuff that they can use to make a kite?

(A) Edwin　(B) Dad

(C) Mom　(D) Daisy

_____ 6. What do Olivia and Francine do for the kite party?

(A) Send the invitations　(B) Decorate the house

(C) Make some phone calls　(D) Dress themselves up

_____ 7. Who doesn't bring a kite to the party?

(A) Francine　(B) Daisy

(C) Olivia's dad　(D) Ian

_____ 8. Why do they decide to go home without flying a kite?

(A) Because they are busy　(B) Because they are hungry

(C) Because the rain is heavy　(D) Because there is no wind

_____ 9. Who rides the bike to make the wind?

(A) Olivia　(B) Daisy

(C) Ian　(D) Francine

_____ 10. What is Olivia's kite like?

(A) A butterfly　(B) A moon

(C) A pirate　(D) A robot

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Kite Party

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) blowy*	*(B) cloy*	*(C) glowing*	*(D) ploy*
2.	*(A) strength*	*(B) string*	*(C) stretch*	*(D) strike*
3.	*(A) sip*	*(B) zip*	*(C) nip*	*(D) rip*
4.	*(A) yarn*	*(B) darn*	*(C) barn*	*(D) tarn*
5.	*(A) clustering*	*(B) flustered*	*(C) blasting*	*(D) blustery*
6.	*(A) refusing*	*(B) relaxing*	*(C) refreshing*	*(D) reducing*
7.	*(A) streaker*	*(B) streamer*	*(C) stringer*	*(D) street*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*blowy*	(A) 熱鬧的	(B) 掃興的	(C) 風大的	(D) 有趣的
_____ 2.	*fancy*	(A) 隨機的	(B) 刻意的	(C) 平凡的	(D) 精緻的
_____ 3.	*bow*	(A) 機器人	(B) 加速器	(C) 粗繩索	(D) 蝴蝶結
_____ 4.	*rip*	(A) 拉扯	(B) 奔跑	(C) 拖曳	(D) 猛衝
_____ 5.	*belong*	(A) 屬於	(B) 黏貼	(C) 尋找	(D) 求助
_____ 6.	*invite*	(A) 創新	(B) 前進	(C) 邀請	(D) 提議
_____ 7.	*streamer*	(A) 絲帶	(B) 小船	(C) 扇子	(D) 屋簷
_____ 8.	*captain*	(A) 客人	(B) 船長	(C) 路人	(D) 對手
_____ 9.	*string*	(A) 細繩	(B) 棍子	(C) 輪胎	(D) 手套
_____ 10.	*create*	(A) 跌坐	(B) 斷裂	(C) 創作	(D) 吹落
_____ 11.	*refreshing*	(A) 無效的	(B) 提神的	(C) 柔軟的	(D) 消失的
_____ 12.	*breeze*	(A) 呼吸	(B) 微風	(C) 速度	(D) 圓圈
_____ 13.	*yarn*	(A) 風帆	(B) 船槳	(C) 毛線	(D) 項圈
_____ 14.	*mind*	(A) 厭惡	(B) 介意	(C) 租借	(D) 改變
_____ 15.	*blustery*	(A) 狂風的	(B) 暫時的	(C) 散落的	(D) 假想的

Appendix F　Posttest 5: Olivia's Road Race

Olivia's Road Race

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. Why didn't Olivia enter the car race last year?

(A) Because she wasn't old enough　(B) Because she didn't like to race

(C) Because she didn't have time　(D) Because she didn't have a car

_____ 2. Who won the car race in the past?

(A) Olivia's aunt　(B) Olivia's mom

(C) Olivia's dad　(D) Olivia's brother

_____ 3. Why does Olivia's car get ruined?

(A) Because of the fire　(B) Because of the rain

(C) Because of the dog　(D) Because of the traffic

_____ 4. Who helps Olivia to build the race car?

(A) Ian　(B) Francine

(C) Daisy　(D) Oscar

_____ 5. How does Olivia build her second car?

(A) She borrows one from Ian　(B) She buys one at an online shop

(C) She dries her first race car　(D) She puts wheels on a doghouse

_____ 6. Who's Olivia's co-driver?

(A) Ian　(B) Parry

(C) Daisy　(D) Francine

_____ 7. How does Oscar and Ardo's car move?

(A) By big wheels　(B) By strong engine

(C) By foot power　(D) By powerful wings

_____ 8. Why does Olivia's car stop in the middle of the race?

(A) Because it's stuck in the mud　(B) Because it's broken

(C) Because the weather is bad　(D) Because it's too old

_____ 9. How does Olivia's car get back to the track again?

(A) Ian gives her a big shovel　(B) Parry helps dig it out

(C) Olivia gets it out herself　(D) Her parents helps her

_____ 10. Who's the super good advisor to Olivia?

(A) Ian　(B) Parry

(C) Mom　(D) Dad

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Road Race

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) pit crew*	*(B) road crew*	*(C) cabin crew*	*(D) sound crew*
2.	*(A) arrestment*	*(B) refreshment*	*(C) harassment*	*(D) banishment*
3.	*(A) gorse*	*(B) Norse*	*(C) source*	*(D) course*
4.	*(A) keen*	*(B) peen*	*(C) lean*	*(D) dean*
5.	*(A) hardbound*	*(B) hardboard*	*(C) hardback*	*(D) hardbitten*
6.	*(A) rural*	*(B) rude*	*(C) rueful*	*(D) ruin*
7.	*(A) shovel*	*(B) shortfall*	*(C) shallow*	*(D) shudder*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*pit crew*	(A) 加速器	(B) 鋁箔包	(C) 維修員	(D) 望遠鏡
_____ 2.	*stuck*	(A) 困住	(B) 超越	(C) 競爭	(D) 歡呼
_____ 3.	*course*	(A) 材料	(B) 路線	(C) 下坡	(D) 膠帶
_____ 4.	*dig*	(A) 停	(B) 追	(C) 壓	(D) 挖
_____ 5.	*hardboard*	(A) 團體照	(B) 小木屋	(C) 方向盤	(D) 硬紙板
_____ 6.	*drive*	(A) 倒車	(B) 開車	(C) 停車	(D) 超車
_____ 7.	*lean*	(A) 塌陷	(B) 煞車	(C) 傾斜	(D) 組裝
_____ 8.	*advice*	(A) 建議	(B) 灰塵	(C) 觀眾	(D) 記者
_____ 9.	*refreshment*	(A) 飲料	(B) 終點	(C) 彎道	(D) 泥沼
_____ 10.	*paint*	(A) 座位	(B) 輪胎	(C) 顏料	(D) 螺絲
_____ 11.	*ruin*	(A) 嘗試	(B) 毀壞	(C) 協助	(D) 尋找
_____ 12.	*prize*	(A) 獎品	(B) 夥伴	(C) 關鍵	(D) 手冊
_____ 13.	*shovel*	(A) 裁判	(B) 敵人	(C) 毛刷	(D) 鏟子
_____ 14.	*proud*	(A) 疲累的	(B) 興奮的	(C) 驕傲的	(D) 無趣的
_____ 15.	*box*	(A) 地圖	(B) 箱子	(C) 速度	(D) 方向

Appendix G　Posttest 6: Olivia's Meteor Mania

Olivia's Meteor Mania

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. Who likes bath but not showers?

(A) Olivia　(B) Ian

(C) Harold　(D) Francine

_____ 2. Why does Olivia's mom let the family stay up late?

(A) Because of the spaghetti　(B) Because of the cute faces

(C) Because of the teacher　(D) Because of the hot bath

_____ 3. What food do Olivia and her mom prepare for the night?

(A) Star fruit　(B) Cheese cake

(C) Ice cream　(D) Apple pie

_____ 4. Where does Olivia's dad put the tail?

(A) On Edwin's tail　(B) On the falling star

(C) On the white wall　(D) On the front door

_____ 5. Who's afraid of the tickle monster?

(A) William　(B) Ian

(C) Olivia's mom　(D) Olivia's dad

_____ 6. Who wakes up when there is light like the morning sun?

(A) Olivia　(B) Ian

(C) Olivia's mom　(D) Olivia's dad

_____ 7. Who wakes up with noise?

(A) Olivia　(B) Ian

(C) Olivia's mom　(D) Olivia's dad

_____ 8. Who is the first one to fall asleep?

(A) Olivia　(B) Ian

(C) Olivia's mom　(D) Olivia's dad

_____ 9. Who doesn't fall asleep?

(A) Olivia's parents　(B) Ian and Edwin

(C) Olivia and Ian　(D) Olivia and William

_____ 10. What does Olivia wish for?

(A) Growing up fast and happily　(B) Staying young and healthy

(C) Staying up late every night　(D) She doesn't make any wish

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Meteor Mania

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) mediate*	*(B) medial*	*(C) meteor*	*(D) medium*
2.	*(A) puzzling*	*(B) dazzling*	*(C) muzzling*	*(D) guzzling*
3.	*(A) jester*	*(B) caster*	*(C) nester*	*(D) pester*
4.	*(A) bagpipe*	*(B) baptize*	*(C) reptile*	*(D) pentite*
5.	*(A) startle*	*(B) starch*	*(C) stochastic*	*(D) stardust*
6.	*(A) pickle*	*(B) buckle*	*(C) tickle*	*(D) seckel*
7.	*(A) pitchy*	*(B) catchy*	*(C) witchy*	*(D) itchy*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*meteor*	(A) 光芒	(B) 流星	(C) 天空	(D) 宇宙
_____ 2.	*firework*	(A) 毛球	(B) 碗盤	(C) 繩索	(D) 煙火
_____ 3.	*jester*	(A) 小丑	(B) 銅像	(C) 鹽巴	(D) 旗子
_____ 4.	*feather*	(A) 舞蹈	(B) 布條	(C) 羽毛	(D) 遊戲
_____ 5.	*stardust*	(A) 表演	(B) 味道	(C) 星塵	(D) 冰塊
_____ 6.	*bagpipe*	(A) 光線	(B) 鐵鎚	(C) 手鍊	(D) 風笛
_____ 7.	*asleep*	(A) 睡著的	(B) 忙碌的	(C) 歡樂的	(D) 迷失的
_____ 8.	*catchy*	(A) 倉促的	(B) 易記的	(C) 吵鬧的	(D) 緊張的
_____ 9.	*monster*	(A) 袋子	(B) 喇叭	(C) 椅子	(D) 怪物
_____ 10.	*dazzling*	(A) 耀眼的	(B) 放鬆的	(C) 聰明的	(D) 有趣的
_____ 11.	*tail*	(A) 頭頂	(B) 側面	(C) 尾巴	(D) 中央
_____ 12.	*awake*	(A) 醒著的	(B) 激烈的	(C) 光亮的	(D) 擁擠的
_____ 13.	*tickle*	(A) 搔癢	(B) 敲擊	(C) 滾動	(D) 黏貼
_____ 14.	*tape*	(A) 粉末	(B) 小鼓	(C) 膠帶	(D) 車燈
_____ 15.	*wish*	(A) 鋼琴	(B) 願望	(C) 庭院	(D) 夜晚

Appendix H　Posttest 7: Olivia's Dog Wash

Olivia's Dog Wash

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. What does Olivia's mom raise money for?

(A) Children's playground　(B) Children's kindergarten

(C) Children's coffee shop　(D) Children's reading room

_____ 2. Who washes Parry to make it clean?

(A) Olivia　(B) Francine

(C) Daisy　(D) Nobody

_____ 3. What is Daisy's pet?

(A) A cat　(B) A pig

(C) A dog　(D) A mouse

_____ 4. What's the firefighter's name?

(A) Tom　(B) Fred

(C) Ken　(D) Jack

_____ 5. How do Olivia and Francine make everyone know the dog wash?

(A) They draw pictures and send emails

(B) They dance in the park all day long

(C) They walk on the street and sing songs

(D) They show everyone how to wash a dog

_____ 6. What does Mrs. Hogan Moller keep as a pet?

(A) Cats and a turkey　(B) Dogs and a turkey

(C) Cats and a dog　(D) Just three cats

_____ 7. How many stations are there in their dog wash?

(A) 1　(B) 2

(C) 3　(D) 4

_____ 8. Why are the animals out of control?

(A) Because of the turkey　(B) Because of the squirrel

(C) Because of Olivia　(D) Because of the baseball

_____ 9. According to Olivia, what do dogs like more than a squirrel?

(A) A ball　(B) A cat

(C) A bird　(D) A bone

_____10. What works and makes the dogs stop chasing the squirrel?

(A) A dog bone on a toy car　(B) A ball on a toy car

(C) A turkey in the tall tree　(D) A bird in the tall tree

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Dog Wash

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) scrape*	*(B) scrabble*	*(C) scratch*	*(D) scramble*
2.	*(A) muddle*	*(B) toddle*	*(C) puddle*	*(D) riddle*
3.	*(A) dose*	*(B) hose*	*(C) wuss*	*(D) whole*
4.	*(A) grooming*	*(B) glooming*	*(C) looming*	*(D) booming*
5.	*(A) galvanize*	*(B) gathering*	*(C) gallantry*	*(D) guarantee*
6.	*(A) splatter*	*(B) spleenful*	*(C) splashing*	*(D) splotchy*
7.	*(A) lance*	*(B) rinse*	*(C) ranse*	*(D) panse*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*owner*	(A) 路人	(B) 商人	(C) 賓客	(D) 主人
_____ 2.	*puddle*	(A) 海綿	(B) 桌墊	(C) 泡沫	(D) 水坑
_____ 3.	*spot*	(A) 肥皂	(B) 斑點	(C) 梳子	(D) 藥水
_____ 4.	*chase*	(A) 堆疊	(B) 搬動	(C) 追逐	(D) 垂釣
_____ 5.	*guarantee*	(A) 噴灑	(B) 逃竄	(C) 保證	(D) 打擊
_____ 6.	*success*	(A) 慌張	(B) 成功	(C) 從容	(D) 經驗
_____ 7.	*rinse*	(A) 美白	(B) 整理	(C) 擦乾	(D) 沖洗
_____ 8.	*library*	(A) 體重機	(B) 塑膠袋	(C) 圖書館	(D) 洗衣機
_____ 9.	*scrape*	(A) 海灘球	(B) 擦乾淨	(C) 大合唱	(D) 企劃書
_____ 10.	*splashing*	(A) 飛濺	(B) 秩序	(C) 專業	(D) 接送
_____ 11.	*raise*	(A) 打聽	(B) 給予	(C) 珍惜	(D) 募款
_____ 12.	*grooming*	(A) 充氣	(B) 撲空	(C) 打扮	(D) 讚賞
_____ 13.	*muddy*	(A) 泥濘的	(B) 機警的	(C) 無畏的	(D) 乾淨的
_____ 14.	*hose*	(A) 軟管	(B) 泥巴	(C) 音箱	(D) 推車
_____ 15.	*customer*	(A) 顧客	(B) 園長	(C) 贈品	(D) 費用

Appendix I　Posttest 8: Olivia's Hiking Adventure

Olivia's Hiking Adventure

影片理解閱讀測驗：請根據影片內容，從四個選項中，選出一個正確答案。共 10 題，每題 1 分。

_____ 1. Where do Olivia and Francine decide to go hiking?

(A) April Mountain　(B) April Hill

(C) Mayflower Hill　(D) Maywood Hill

_____ 2. Who DOESN'T go hiking with them?

(A) Francine　(B) Parry

(C) William　(D) Dad

_____ 3. What DOESN'T Olivia's dad prepare for the hike?

(A) A map of the trail　(B) A jump rope

(C) A guide book　(D) Lots of water

_____ 4. Who gets tired most easily?

(A) Francine　(B) Olivia

(C) Dad　(D) Parry

_____ 5. What do they use to get over the big fallen tree?

(A) Snow shoes　(B) Headband

(C) Cookies　(D) Jump rope

_____ 6. What do they use to cross the mud?

(A) Snow shoes　(B) Headband

(C) Close pins　(D) Jump rope

_____ 7. Who carries Parry to cross the mud?

(A) Francine　(B) Dad

(C) Olivia　(D) Nobody

_____ 8. What do they use to shoot the cookie?

(A) Snow shoes　(B) Headband

(C) Lots of water　(D) Jump rope

_____ 9. Why do they use the close pins?

(A) Because Parry is stinky　(B) Because Olivia is energetic

(C) Because Francine is tired　(D) Because Dad brings a lot

_____ 10. What do they do when they get to the top of the hill?

(A) They have a picnic　(B) They take pictures

(C) They plant a flag　(D) They ride bicycles

班級：_____ 座號：_____ 姓名：_____

※ *Words in italics were aurally presented.*

Olivia's Hiking Adventure

得分：_____

單字辨識聽力測驗：此測驗中，每題你將聽到四個選項，一個選項含有一個單字，請由四個選項中選出剛剛影片中出現過的單字，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 7 題，每題 1 分。請同學仔細聆聽、認真作答。

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____

1.	*(A) gadget*	*(B) cadge*	*(C) badge*	*(D) pladge*
2.	*(A) baton*	*(B) belie*	*(C) bereave*	*(D) berate*
3.	*(A) campus*	*(B) compass*	*(C) compose*	*(D) compost*
4.	*(A) squint*	*(B) squinch*	*(C) squeaky*	*(D) squishy*
5.	*(A) cuddle*	*(B) muddle*	*(C) puddle*	*(D) reddle*
6.	*(A) skunk*	*(B) spunk*	*(C) slunk*	*(D) shrunk*
7.	*(A) bald*	*(B) malt*	*(C) halt*	*(D) Walt*

得分：_____

單字字義測驗：此測驗中，每題你將聽到一個英文單字，聽完後，請從該題四個選項中，選出最符合此單字的中文解釋，每題只有一個正確答案。題目只念一次，作答時間為 5 秒鐘，共 15 題，每題 1 分。

_____ 1.	*scout*	(A) 會議	(B) 童軍	(C) 證明	(D) 任務
_____ 2.	*baton*	(A) 百寶箱	(B) 指揮棒	(C) 長方巾	(D) 急救包
_____ 3.	*skunk*	(A) 彈簧	(B) 臭鼬	(C) 小徑	(D) 胸針
_____ 4.	*march*	(A) 前進	(B) 跨越	(C) 輕踩	(D) 躲避
_____ 5.	*badge*	(A) 徽章	(B) 軟帽	(C) 手冊	(D) 榮譽
_____ 6.	*halt*	(A) 對峙	(B) 喘氣	(C) 逃跑	(D) 停止
_____ 7.	*spray*	(A) 搖晃	(B) 倒退	(C) 噴灑	(D) 追逐
_____ 8.	*compass*	(A) 藤編籃	(B) 緩爬坡	(C) 指南針	(D) 風景區
_____ 9.	*sink*	(A) 飛越	(B) 搬運	(C) 下沉	(D) 扭動
_____ 10.	*squishy*	(A) 暈眩的	(B) 堅持的	(C) 痛苦的	(D) 濕軟的
_____ 11.	*nature*	(A) 登山車	(B) 後背包	(C) 大自然	(D) 露營地
_____ 12.	*flag*	(A) 旗子	(B) 繩索	(C) 水壺	(D) 玩偶
_____ 13.	*muddle*	(A) 混亂	(B) 秩序	(C) 毅力	(D) 體能
_____ 14.	*hike*	(A) 游泳	(B) 跳傘	(C) 健行	(D) 攀岩
_____ 15.	*prepare*	(A) 等候	(B) 準備	(C) 漫步	(D) 邀請

Appendix J　Follow-up Questions (Captioned group)

各位同學：

請你根據這三個月以來，對於「透過影片訓練英文聽力」這項學習活動的體驗，提供你的意見。對於 1~13 題的敘述，請依你個人的情況圈選回答；14~17 題，歡迎你提出你寶貴的意見，謝謝你！

班級：_____ 座號：_____ 姓名：_____

I. 觀賞影片與英語學習

1. 每次觀賞影片時，我「聽影片對話」的時間為
   A. 總是　B. 大部分的時間　C. 一半的時間　D. 有時候　E. 從不
2. 每次觀賞影片時，我「看影片動畫」的時間為
   A. 總是　B. 大部分的時間　C. 一半的時間　D. 有時候　E. 從不
3. 每次觀賞影片時，我「看影片字幕」的時間為
   A. 總是　B. 大部分的時間　C. 一半的時間　D. 有時候　E. 從不
4. 觀賞影片時，當我遇到不認識或不確定的單字，我會
   A. 看字幕　B. 聽對話　C. 看影片　D. 其他：_____
5. 觀賞影片時，英文字幕能幫助我理解「影片的內容」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意
6. 觀賞影片時，英文字幕能幫助我學習「字彙的發音」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意
7. 觀賞影片時，英文字幕能幫助我學習「字彙的意思」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意

II. 影片教材

8. 影片內容難易度
   A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
9. 影片內容有趣度
   A. 非常有趣　B. 有點有趣　C. 剛好　D. 有點無聊　E. 非常無聊
10. 影片對話速度
   A. 非常慢　B. 有點慢　C. 剛好　D. 有點快　E. 非常快

III. 影片觀賞後測驗難易度

11. 閱讀測驗
   A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
12. 單字聽力辨識測驗
   A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
13. 單字字義測驗
   A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難

14. 做測驗時，我曾經遇到的困難是：

_____

_____

_____

_____

IV. 綜合意見

15. 這三個月以來，透過英語影片觀賞訓練聽力，對於你在英語學習上，有哪些幫助呢？透過英語影片來學習英文，有那些優點呢？請列舉出你的意見。

_____

_____

_____

16. 這三個月以來，透過英語影片學習英文，有哪些需要改進的缺點呢？請列舉出你的意見。

_____

_____

_____

17. (1) 你認為老師在課堂中詳細解釋單字重要嗎？
A. 重要　B. 不重要　C. 不確定
(2) 為什麼？

_____

_____

_____

[意見調查結束]

Appendix K　Follow-up Questions (Non-captioned group)

各位同學：

請你根據這三個月以來，對於「透過影片訓練英文聽力」這項學習活動的體驗，提供你的意見。對於 1~12 題的敘述，請依你個人的情況圈選回答；13~16 題，歡迎你提出你寶貴的意見，謝謝你！

班級：_____ 座號：_____ 姓名：_____

I. 觀賞影片與英語學習

1. 每次觀賞影片時，我「聽影片對話」的時間為
   A. 總是　B. 大部分的時間　C. 一半的時間　D. 有時候　E. 從不
2. 每次觀賞影片時，我「看影片動畫」的時間為
   A. 總是　B. 大部分的時間　C. 一半的時間　D. 有時候　E. 從不
3. 觀賞影片時，當我遇到不認識或不確定的單字，我會
   A. 聽對話　　B. 看影片　　C. 其他：_____
4. 觀賞影片時，如果有英文字幕，能幫助我理解「影片的內容」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意
5. 觀賞影片時，如果有英文字幕，能幫助我學習「字彙的發音」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意
6. 觀賞影片時，如果有英文字幕，能幫助我學習「字彙的意思」。
   A. 非常同意　B. 有點同意　C. 有點不同意　D. 非常不同意

II. 影片教材

7. 影片內容難易度
   A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
8. 影片內容有趣度
   A. 非常有趣　B. 有點有趣　C. 剛好　D. 有點無聊　E. 非常無聊
9. 影片對話速度
   A. 非常慢　　B. 有點慢　　C. 剛好　D. 有點快　　E. 非常快

II. 影片觀賞後測驗難易度

10. 閱讀測驗
    A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
11. 單字聽力辨識測驗
    A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難
12. 單字字義測驗
    A. 非常簡單　B. 有點簡單　C. 剛好　D. 有點困難　E. 非常困難

13. 做測驗時，我曾經遇到的困難是：

_____

_____

_____

_____

III. 綜合意見

14. 這三個月以來，透過英語影片觀賞訓練聽力，對於你在英語學習上，有哪些幫助呢？透過英語影片來學習英文，有那些優點呢？請列舉出你的意見。

_____

_____

_____

15. 這三個月以來，透過英語影片學習英文，有哪些需要改進的缺點呢？請列舉出你的意見。

_____

_____

_____

16. (1) 你認為老師在課堂中詳細解釋單字重要嗎？

A. 重要　B. 不重要　C. 不確定

(2) 為什麼？

_____

_____

_____

[意見調查結束]