To What Extent Can Defining Graphic/Written Text Relations Support The Teaching of Reading Comprehension in Multi-Modal Texts?

By

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Abstract

Due to the increasing number of image-based multi-modal texts used in the English Language Teaching (ELT) classrooms, teaching reading comprehension is becoming a growing challenge. Research suggests that defining the underlying graphic/written text relations that constitute image-based multi-modal texts can help teachers meet that challenge. However, this area is under researched. This dissertation will propose a theoretical model of graphic/written text relations that can support reading comprehension in ELT classrooms. In order to create the model it will align two areas of research, systemic functional grammar and second language reading comprehension research. It then demonstrates how the model can be applied to an authentic multi-modal text to predict the effects the text will have on students' reading comprehension. The study tests the predictions in a classroom context and discusses to what extent the model was successful. It also discusses the extent to which a definition of graphic/written text relations is practical in an ELT classroom context. It suggests that further research into a more comprehensive definition of graphic/written text relations is an appropriate goal for ELT.
Part 1 Introduction

1.1 New Literacies and Graphic/Written Text Relations

The term “new literacies” refers to the underlying changes in social practices (Kist, 2005, p. 5-6) that have made society and therefore modern classrooms, if they are to remain relevant (Lankshear and Knobel 2006), more likely to utilize texts that incorporate multi-modal text relations to send their message. The most obvious example of this change in literacy is screen-based digital texts (computers, mobile phones, and iPods), where the traditional linear structure of reading left to write on a page is challenged by a visual hyperactive reading path that follows the rules of visual design as well as the rules of written language (Kress, 2003, pp. 35-60).

A less obvious example of this change can be seen in the traditional written text itself. Written texts can be defined as multi-modal texts because they are made comprehensible by visual design, that is, letters, punctuation marks, and indents (Baldry and Thibault, 2005). Moreover, written texts, like most things in life, have always undergone change. However, in a modern digital society where the means of production are shifting and writers are now taking on many of the publication tasks once considered specialized, written texts are using far more visual features-bullet points, excel tables, and pictures-than they have 50 years ago (Kress, 2003, pp. 16-34). The final area of changing literacy, which is in the kind of text researched in this study, is in the pedagogical acceptance of popular media texts. Here, texts that may not have been considered useful in the classroom 30 years ago (e.g., comic books and computer games,) are now being recommended as essential to the modern curriculum (Coiro, 2008; Black, 2008).

Therefore, in a society dominated by the printed word, defining linguistic relations (from the traditional grammar of Latin and Greek to the more modern approaches such as Consciousness Raising) has always played a role in education. Thus, in a society where the “hegemony” (Stein, 2004, p. 95) of the printed page is being replaced by texts that
incorporate graphics, defining written/graphic text relations must play an educational role. Hence, researchers and practitioners are calling for an increased understanding of graphic/written text relations, a visual “grammar” (Kress and Van Leeuwen, 2006), or a “multi-modal meta-language” (Unsworth, 2008). Indeed, in a Teaching English to Speakers of Other Languages (TESOL) context, a need for a “multi-modal communicative competence” has been suggested (Royce, 2002).

Yet, while a practical definition of graphic/written text relations may be pedagogically beneficial, at the moment, there is no accepted comprehensive definition of it that can be applied to the classroom (Fei, 2004, p. 222). However, the goal of this study is not to create a comprehensive definition of graphic/written text relations. Rather, it will attempt to create a definition of graphic/written text relations that can be applied to one area of the English as Foreign Language (EFL) classroom, which is multi-modal reading comprehension. However, before the details of the study are explained, the next section will look first into the proposed role a definition of graphic/written text relations can have in the classroom.

1.2 The Role of a Definition of Graphic/Written Text Relations

The role of a definition of graphic/written text relations is to aid the processing of multi-modal texts for teachers and students. For many researchers and practitioners, (Unsworth 2008; Kress and Van Leeuwen, 2006; Luke, 2003), multi-modal text processing is seen as more complex, and it makes multi-modal texts far harder for readers to comprehend than has been accounted for in existing educational research. Multi-modal texts can be seen as complex because they combine at least two modal systems to create their meaning (Kress and Van Leeuwen, 2006). They combine graphic text modality, where visual elements are placed in pictures according to spatial rules of design, and a written text modality, where words are placed in sentences according to linguistic rules (Kress and Van Leeuwen, 2006, pp. 16-44). Therefore, reading multi-modal texts can be challenging for teachers and students as it requires “parallel processing” (Luke, 2003, p. 399), processing graphic and written messages simultaneously to make one overall meaning.
Thus, semiotic research suggests that in order to read a multi-modal text effectively, the reader must initially and perhaps unconsciously decode two semiotic systems: the spatial system of design to decode the images and the linear system of the writing to decode the words. The reader then must interpret how the two systems combine to make one overall meaning (Royce, 2002). Therefore, although multi-modal texts may have simple ways of presenting information, the underlying relationships may be complex. Unsworth, (2008, p. 378), points out the effect of “naturalization” where these complex underlying semiotic relationships can be hidden by the writers to create cohesive texts. Indeed, in an EFL context, processing multi-modal texts can be seen as extremely complex because learners not only have to process the graphic and written modes, but they also have to translate them into their own language.

Therefore, the role of a definition of graphic/written text relations in modern literacy classroom is to enable teachers and students to decode these naturalized semiotic relationships in a meaningful way that can be applied to particular teaching contexts (Unsworth, 2008). It has been suggested that the Systemic Functional Grammar (SFG) can offer a theoretical modal that can support this process.

1.3 SFG and Defining Graphic/Written Text Relations

The SFG model can support the processing of multi-modal texts because it can be used to decode the underlying complexity of semiotic relationships (Fei, 2004, pp. 221-222). Thus, the SFG model can decode multi-modal texts because it can separate and analyze the interrelated modes that make up the text. The graphic system and the written system can be separated and examined for their individual functions or for their combined functions. However, more research is needed to determine how the SFG model can be applied to education in general (Unsworth, 2008) and EFL classrooms in particular (Royce, 2002, p. 19).
The goal of this research is to apply the SFG model to the EFL context of multi-modal reading comprehension. To do this, two areas of research will be aligned. First is the SFG grammar research, which suggests that the graphic/written text relations that make up multi-modal texts can be defined and that those definitions are applicable to teaching. Second is the EFL research, which also suggests that graphic/written text relations can be defined. The SFG grammar research will be explained next to be followed by the EFL research.

1.4 SFG Principles Used in this Study

To create the definition of graphic/written text relations used in this study, two areas of systemic research will be focused on. The first area is Kress and Van Leeuwen’s (2006) SFG model. This model classifies image-based multi-modal texts into two contrasting types: images that offer information to a viewer or images that create an emotional response from a viewer. The second area is semiotic research, which has applied Kress and Van Leeuwen’s original model to multi-modal texts in order to define graphic/written text relations, as summarized by Unsworth (2008). These researchers examined how graphic text combines with the written text to communicate the overall meaning of the multi-modal text to the reader. As combinations of graphic/written text relations can be wide ranging and complex, (see Unsworth, 2008 for a full treatment), this study will focus on two definitions. First is concurrence, where, as illustrated in Section 4, the graphic text and the written text combine to send very similar messages. Second is complementation, which is also illustrated in Section 4, where the graphic text and the written text combine to send messages that, while closely related, do not repeat each other but rather augment each other to communicate the overall message of the text to the reader.

The goal of this study then is to investigate to what extent the image classifications identified by Kress and Van Leeuwen, and the graphic/written text relations summarized by Unsworth (2008) can be applied to EFL reading comprehension research. The next section will examine EFL research.
1.5 Graphic/Written Text Relations and their Effects on Reading Comprehension

This study will focus on Luis’s 2004 study which suggests that the graphic/written text relations contained in multi-modal texts can have four effects on reading comprehension (Lui, 2004, pp. 235-239). The first effect is support. Multi-modal texts can support comprehension when the graphic text repeats the same information as the written text, for example, a graphic/written text relationship of “reiteration” (Lui, 2004, p. 237). Support occurs in this type of graphic/written relationship when the students’ proficiency level is just below the level of the written text. Here, students can use the images to infer the meaning of the words. The second effect is redundancy. Graphic texts can create redundancy when, again, there is a graphic/written text relationship of reiteration. However, here the students’ proficiency level is above the level of the written text; thus, they do not need the graphic text to infer the meaning of the words. Therefore, the students do not use the graphic text.

The third effect is incomprehension. Multi-modal texts can create incomprehension when there is no relationship of reiteration between the written text and the graphic text. Here, rather than reiterating each other, the graphic text and the written text contain closely related information that augment each other in some way. Incomprehension occurs in this type of graphic/written text relation when the students’ proficiency is lower than the words in the text. The lack of textual integration means students cannot use the graphic text to infer the meaning of the words, making them unable to understand the text.

The fourth effect is miscomprehension. Miscomprehension occurs, again, when rather than the graphic text reiterating the information in the written text, it augments it in some way. Likewise, the students’ proficiency level is lower than the written text. However, here the students make the wrong assumption about the graphic/written text relationship. They assume that the graphic text does reiterate the information in the written text, that is, that the graphic text can support the words. However, the lack of harmony between the written text clues and the graphic text clues creates processing difficulties. The students
then make the wrong inferences about the text. Thus, the graphic text hinders the comprehension of the written text.

While Lui’s 2004 study shows that different types of graphic/written text relations produce different effects on reading comprehension, it offers no detailed definition of the graphic/written text relations that create, support, or inhibit reading comprehension. This study will attempt to build on Lui’s 2004 study by offering such a definition. Moreover, this study will attempt to use the aforementioned systemic research to create this detailed definition of graphic/written text relations.

1.6 The Goals of this Study

This study suggests that the graphic/written text relations of reiteration in Lui’s research can be directly related to the graphic/written text relations of concurrence outlined above. Moreover, the more complex relationships that produce, inhibit, or hinder reading comprehension can be directly related to the graphic/written text relations of complementation outlined above.

Therefore, by aligning these two areas of research, a model of graphic/written text relations can be created that is directly applicable to teaching reading comprehension in EFL classrooms. This study will use the principles of SFG, as identified by Kress and Van Leeuwen (2006) and Unsworth (2008), to define two things: the graphic/written text relations of concurrence that may, as this study suggests, support reading comprehension or cause redundancy, and the graphic/written text relations of complementation that may, as this study suggests, produce incomprehension or miscomprehension.

Once these relationships are identified, the second stage is to test the validity of the theoretical model in the classroom by measuring whether these predicted reading comprehension relationships actually occur in a group of second language (L2) learners. The actual research questions are as follows:
1) To what extent can the systemic principles of graphic/written text relations be used to predict the effects a multi-modal text will have on L2 students reading comprehension?

2) What effects does presenting students with a written text supported by graphics have on L2 students’ reading comprehension?

1.7 Hypothesis

It is hypothesized that the principles of SFG can be effectively used to efficiently categorize two types of multi-modal texts. Furthermore, these categorizations can be used to predict the effects the two text types will have on reading comprehension.

- Texts that support reading comprehension because the graphic texts repeat the written texts’ meaning in concurrent relationships
- Texts that do not support reading comprehension because the graphic texts and written texts work together to create a complimentary meaning

Therefore, students who read texts that display concurrent relationships may be expected to show higher level of comprehension than those who read texts that display complementary relationships. However, if the students' proficiency is higher than the written text, the images may cause redundancy, as the students will not need the images to compensate for any linguistic deficiencies. Moreover, students who read texts that incorporate complementary relationships should show signs of incomprehension or miscomprehension.

1.8 Organization of the Study

This study will have seven parts. Part 2 or the literature review will focus on why defining graphic/written text relations is considered beneficial to the classroom and research into the effects of graphic/written text relations on reading comprehension.
Moreover, it will discuss SFG’s usefulness as a model for defining graphic written text relations and introduce the key SFG principles that can be used to classify image-based texts. Part 3 will create a theoretical definition of graphic/written text relations that can predict students’ potential reading comprehension from the research introduced in Parts 1 and 2. This definition will attempt to predict the effects graphic/written texts relations will have on students’ reading comprehension. Part 4 will apply that definition to an authentic graphic-based text to predict the effects the text will have on students’ reading comprehension. Part 5 will explain the methodology used to test the definition in the classroom, and Part 6 will discuss the findings. Part 7 will offer the final conclusion.
Part 2 Literature Review

2.1 Defining Graphic/Written Text Relations to Support Multi-Modal Reading Comprehension

In the teaching of reading comprehension for written texts, standard classroom activities (textual comparisons, assessments, and so on) are possible as the underlying textual relationships in written texts can be expressed explicitly. Thus, the various methods of linguistic description that already exist for written texts assist the teaching of those texts in the classroom. At the moment, however, in multi-modal texts, teachers and students have no agreed upon pedagogical system to talk about multi-modal texts. Therefore, defining graphic/written text relations clearly for teachers and students should help them talk about multi-modal relationships explicitly in the classroom. Being able to talk about multi-modal relationships should, in turn, assist the teaching of multi-modal texts. For example, the ability to explicitly articulate multi-modal relationships can make possible textual comparisons between different multi-modal texts, examination of writers/illustrators choices in textual constructions, assessment of the effectiveness of those textual choices, and so on (Unsworth, 2008, p. 378).

Indeed, Royce (2002, p. 201) pointed out that the inability to talk about multi-modal texts accurately in the classroom may account for the negative attitude (as observed by Kress, 2004, p. 30; Gravett, 2004, p. 12) towards multi-modal texts that still exist in the society and in the classroom. This negativity is disturbing because, as pointed out in the introduction, multi-modal texts are becoming increasingly prevalent in the modern classroom. The ability to define graphic/written text relations accurately may help to foster positive and more informed attitudes towards multi-modal texts.

For example, comic books have been recommended to facilitate the development of literacy (Day and Bamford, 1998; Gorman, 2003) and language learning (Cary, 2005; Norton and Vanderheyden, 2004), and to increase students’ awareness in popular culture
(Bhatia, 2006; Norton and Vanderheyden, 2004). However, Bhatia pointed out that teachers still believe in the “compensatory hypothesis,” in which the only function of comic books is to “fill the deficiency gap left by the verbal component” (Bhatia, 2006, p. 281). As mentioned in the introduction, Lui’s research (2004) indicated that the effect of compensatory hypothesis can indeed be observed in multi-modal texts. However, it is only one effect and it only occurs, as it is suggested, with certain graphic/written text relationships and with students of a particular proficiency level. Moreover, as will be explained in the next section, other more complicated effects can be observed with different graphic/written text relations and different student proficiency levels. By defining graphic/written text relations accurately, teachers can evaluate which part of the graphic text will compensate the verbal component and which parts of the text will require more complicated multi-modal processing. Overall, this should improve the standing of multi-modal texts in the classroom.

Moreover, as pointed out in the introduction, complicated semiotic relationships are often hidden or “naturalized” (Unsworth, 2008, p 378) in texts to create a cohesive whole. An example of this is in the teaching of news stories or advertisements. According to Unsworth (2008, p. 388), graphic/written text relations are often manipulated in news stories to reinforce negative or positive messages. This is the effect of foregrounding in which, for example, negative images of participants can be chosen to directly support negative written texts. More subtly, complex graphic/written text relations can also be used to send subliminal messages to the readers. Therefore, unveiling these hidden relationships can improve teachers’ and students’ ability to read texts critically.

While classrooms increasingly use multi-modal texts (textbooks, web pages, maps, instructions, and others), little work has been done to determine how effectively they employ underlying multi-modal relationships (Kress, 2004, p. 7). Accurately defining graphic written text relations can help teachers make more informed decisions about the type of texts created or chosen as classroom materials (Lui, 2004, p. 239; Stenglin and Iedema, 2001, pp. 195-208). For example, graphic text relations that have a positive effect on reading comprehension can help students process linguistic information.
However, graphic/written text relations that create incomprehension or miscomprehension can de-motivate students (Lui, 2004, p. 239). Thus, graphic/written text relations are important to better inform teachers and students about the multi-modal materials they are already using.

The ability to accurately define graphic/written text relations can therefore potentially support reading comprehension in EFL classrooms. The extent to which graphic/written text relations can practically support reading comprehension in the classroom depends upon two things. First is to what extent can graphic/written text relations be accurately and efficiently defined. This will be discussed in Section 2.3. Second is to what extent can the effects graphic/written text relations have on reading comprehension be accurately measured. This will be discussed next.

**2.2 Reading Comprehension Research**

Research has shown (as summarized in Lui, 2004, p. 226) that presenting students with visual representations of words can help them overcome comprehension-processing difficulties (Gyselinck and Tardieu, 1999). Indeed, using images to support reading comprehension is common in many classrooms. The learning system often used to explain the positive effects multi-modal texts have on comprehension is Paivio’s dual coding theory (Leu, 2004, p. 752). Dual coding theory suggests that the mind has two separate processing systems: the linguistic system and the visual system (Sadoski and Paivio, 2001 pp. 42-66). Presenting students with a written text accompanied by graphics, as opposed to just written text alone, allows readers to activate and integrate both the visual and the linguistic systems, and this interconnection helps readers generate inferences about the text (Sadoski and Paivio, 2001, pp.117-136).

However, as stated in the introduction, Lui’s 2004 study found that images only support the written text when the image and the written text send very similar messages. Moreover, Lui (2004, p. 237) suggests Marcus, Cooper, and Sweller’s (1996) mental model theory as an alternative explanation to dual coding theory. This theory suggests
that graphic information is relatively easy to understand because it is concise information. Here, the illustrator has realized and imagined a mental picture for the readers. On the other hand, written information demands more cognitive processing than graphic information because readers must make their own mental model of the words. Therefore, if a graphic text and a written text repeat the same message, the reader’s cognitive load is reduced, as the graphic/text has already realized (imagined) the words for the reader. This can account for graphic texts supporting comprehension in lower proficiency students. It can also account for the graphic/written texts creating redundancy; if the words are easy for the students, they do not need the mental picture to help them realize the words (Lui, 2004, pp. 236-237).

Additionally, the mental modal theory also accounts for incomprehension. Here, as explained in the introduction, the graphic/written text relations are not directly interconnected, that is, the graphic text does not reiterate the message of the written text. Thus, comprehension is not supported. The mental model theory can help explain these findings, as in this type of graphic/written text relation students cannot use the image to mentally realize the word. They have to rely on linguistic knowledge alone, which, at their level of proficiency, is insufficient (Lui, 2004, p. 237).

To explain the effect of miscomprehension, Lui suggested Schmidt’s noticing theory (1990). According to this theory, readers continually analyze and compare what they notice during reading. In a multi-modal text, if the graphic and written texts are interconnected, this noticing will support reading comprehension. However, if the graphic and written texts are not closely integrated, the noticing effect may be negative. Students may assume that the graphic and written texts are integrated and may make the wrong inferences about the text, which will “hinder” reading comprehension (Lui, 2004, p. 239).

Moreover, the effects of incomprehension and miscomprehension can be supported by the schema theory, which suggests that comprehension is a mixture of incoming information being matched to the readers’ expectations (Cook, 1989, pp. 68-75). When
the schema is activated, readers create their own concepts of what is happening in the text as they read it. If the incoming data do not match the their expectations, they will reject the data. Thus, in multi-modal texts this process can become complex because readers need to match the incoming data from the different modes, for example, the written and the visual, to their own textual expectations. This process is of course more complicated for L2 learners because they have the additional cognitive load of translating the texts. Multi-modal texts in L2 environments require translation, matching the graphic with the written text, and then further matching with the learners’ own developing schema (Wolf, 1987, p. 313). Thus, multi-modal texts, where there is little direct integration between the modes, are likely to create incomprehension. It is of course possible that the learners may believe that the incoming data do match their own textual perceptions, which can cause miscomprehension.

Finally, dual coding theory is a universal theory of cognition, (Sadoski and Paivio 2001), while other theories (mental modeling theory and noticing schema) are not, which suggests that they can co-exist. Thus, it would seem that mental modeling and the schema can better account for the complexities of multi-modal processing than the universal dual coding model. More research is needed to determine what actually occurs when L2 students are faced with the task of processing multi-modal texts (Lui, 2004). This is addressed in the second research question of “What are the effects of multi-modal texts on L2 comprehension?” However, while Lui’s study clearly suggests the possible effects multi-modal texts will have on reading comprehension, as stated in the introduction, no detailed examples of graphic/written text relations were given in the study. Furthermore, as outlined in the introduction, semiotic research suggests that graphic/written text relations can be complex. Therefore, how can teachers or students recognize the graphic/written text relations of integration or non-integration described in the study on multi-modal texts?

The first research question of “Can the principles of SFG be used to create an accurate definition of these graphic/written text relations?” is intended to address this need. The SFG model used as the foundation for the definition will be examined next.
2.3.1 Applying the SFG Model to the Multi-Modal Classroom

The SFG model can be effectively used to analyze multi-modal texts (O’ Halloran, 2004), and it has been applied successfully to pedagogical contexts (Unsworth, 2001; Baldry and Talbot, 2005). However, more research is needed to determine how it can be applied to the classroom (Unsworth, 2008) and in particular, as pointed out above, in EFL contexts (Royce, 2002). Creating a definition of graphic/written text relations for the classroom can be problematic. Image-based texts have been proven to be difficult to define efficiently because how an image is interpreted can theoretically be very broad (Fei, 2004, p. 222; Prosser, 1998, pp. 97-112). Moreover, applying SFG to multi-modal texts requires a meta-language that can appear complex and difficult unless the readers are familiar with it (Jewitt and Oyama, 2001, p. 154). Finally, the benefit of grammar in written/spoken language has been the source of much debate in EFL (Brown, 2001, p. 391). Similar debates can be expected in an attempt to create a multi-modal grammar.

Consequently, the definition of graphic/written text relations in this paper, which will be outlined next, needs to address these problems. Therefore, it needs to be explainable in relatively simple terms, needs to be practically applicable to teaching contexts, and should reflect modern approaches to the teaching of the formal rules of language learning.

2.3.2 The Principles of an SFG Approach to Visual Design

The theoretical foundation for defining graphic text relations is Halliday’s “trinocular” (Halliday and Matthiessen, 2004, p. 31) perspective on language, which analyzes written/spoken texts using three meta-functions: textual, experiential, and interpersonal. Kress and Van Leeuwen (1996, 2006) applied this model to image-based texts to produce the three related meta-functions as follows:

- the compositional function (related to the textual function)
• the representational function (related to the experiential function)
• the interactive function (related to the interpersonal function)

The following sections will explain each function.

2.3.3 The Compositional Function:

The “compositional meta-function” is related to the textual meta-function in written analysis (Jewitt and Oyama, 2001, pp. 147-151). Consequently, just as the placement of clauses in a written text determines the importance of the information placed within the clause (Halliday and Matthiessen, 2004: p. 64; Fries, 1994, p. 230), so too does the placement of elements in a picture determine the visual importance of the elements.

Kress and Van Leeuwen (2006, p. 177) identified the three elements of framing, salience, and information value (explained below), which can be combined in different ways to create different "meaning potentials" in visuals. Meaning potential means the intended effect of words and images have on the receiver of the information. How the information is actually received will depend on the receiver’s ability to interpret it (Halliday and Matthiessen, 2004, p. 26: Kress and Van Leeuwen, 1999, p. 379).

2.3.3.1 Framing

Framing refers to how elements are connected or disconnected through framelines. For example, in Figure 1 below, the king and his attendants, who are receiving news from the battlefield, are joined shoulder to shoulder in one frameline, while the wounded soldier, who is the deliverer of the news, is disconnected from the receivers by the yellow framing of the tent. The written text is separated from the visual text by framelines. Thus, the parchment scroll text box, which orientates readers to their place in the play, is disconnected from the simple text box, which orientates readers to the setting of the scene. It is significant, for this study, that the image is composed in a way that allows the written text to repeat the information in visual text. This is the relationship of
concurrence, introduced in section 1.4, and it will be examined in more detail in parts 3 and 4.

**Figure 1- Framing**

2.3.3.2 Information Value

The decision to place elements on top or at the bottom of an image gives them a certain value (Jewitt and Oyama, 2001, p. 196). In Figure 2 (below), the placement of information on top of the picture carries the "ideal" information, which is the more general content of the message. The placement of information beneath the image carries the "real" information, more specifically, the practical information (Kress and Van Leeuwen, 2006, pp.186-193). This meaning potential can be observed historically. In Christian art, for example, religious paintings depict the "divine" of the sky contrasted with the ground of man. It can also be observed in day-to-day life. An example is in car advertisements where the "ideal" image of the car is placed on top while the "real" factual information, which supplies details about the car, is placed at the bottom (Kress and Van Leeuwen, 2006, pp.186-193).

In Figure 2 below, the image follows the same pattern as the car advertisement described above, describing a graphic text-based image. Here, the main idea the image is trying to convey (the "ideal information") is carried in the upper placed graphic text (the picture of witches engaged in the powerful act of casting a spell), while the lower placed written text carries the details (the actual words of the spell which are incomprehensible unless you understand witchcraft). From an L2 perspective this image is not composed in a way that the graphic text repeats the main idea of the visual text. Rather the modes augment each other. This is the relationship of complementation, introduced in 1.4, and will be discussed in more detail in parts 3 and 4.
2.3.3.3 Salience

Salience refers the prominence given to one image element over another. Obviously, this is done through size, color, contrast, and others, but it can also be achieved by choosing to place images at the center or along the margins of the picture. Returning to Figure 1, p.16, the information central to the overall story—the speech bubbles and pictures of the king receiving news—is placed in the center, while the peripheral information—the orientating information and background pictures of the camp—are placed along the margins. In Figure 3 below, the written text is made salient by the reduction of the image elements to just the speech bubble and the head of the speaker. Comparing the two images from an L2 perspective, unlike Figure 1, in Figure 3 the image is not composed with a reiterating relationship between visual and words. Figure 3, like Figure 2 above, also has a relationships of complementation. This will be explained in more detail in parts 3 and 4.

Figure 3- Salience
2.3.4 The Representational Content

The representational content of a picture, which is closely related to the experiential function of the written text, defines how participants, processes, and circumstances are portrayed (that is, represented) in a picture (Kress and Van Leeuwen, 2006, p. 114; Jewitt and Oyama, 2004, pp.141-142). This can be done visually in two ways, as "narrative images" or as "concept images."

2.3.4.1 Narrative Images

Narrative images, of which Figures 1 and 2 (p.19) are examples, are images that are composed to create a sense of action or a sense of an event taking place in the imagined world. This is achieved by creating a "vector," a line that connects two or more participants in an image (Kress and Van Leeuwen, 2006, p. 59). In Figure 1, the vector is created by direction. All the participants (the king, his son, the attendant, and the eavesdropping soldier) are gazing at or pointing to the direction of the wounded soldier. Likewise, the soldier is returning the gaze by looking in the direction of the king. This tells the reader that the main event in the picture is the wounded soldier reporting the news to king. In Figure 2 (p.19), the vector is the fire. The witches' attention is focused on the fire, and the fire is connected to the witches by framing and color. This communicates to the reader that the main action of the image is centered on the witches and the fire.

2.3.4.2 Concept Images

In concept images, the participants are not represented in action; no vector joins them. Rather, the participants are represented in a fixed state of being, such as a portrait painting (Kress and Van Leeuwen, 2006, p. 79). Figure 3 (p.19) is a concept picture. Here, the witch is represented in a close-up, as in a portrait, staring in the direction of the viewer.

2.3.4.3 Classifying Narrative and Concept Images

It is possible to classify images, through an understanding of the representational function, into two contrasting types: narrative images or concept images. This can be done quite
simply by asking a series of representational questions once the basic principles are understood, as shown below.

1) Is the image representing a narrative? (Is it portraying an event? Does it have a vector?)
2) Is the image representing a concept? (Are the participants not joined in action together? Are they staring at the viewer or into the distance? Is the image portraying an idea rather than event?)

Similarly, analyzing images for their underlying interactive content also allows the images to be classified into two contrasting types, as will be shown in the next section.

Figure 1

Figure 2

Figure 3

2.3.5 The Interactive Content

The interactive content of a picture is very similar to the interpersonal function. Therefore, just as content of language can be categorized into two basic positions, either offering or
demanding information/goods and services (Halliday 2004, p. 107), so too can the content of images be categorized into two types of images: offer image or demand image.

2.3.5.1 Offer Images

Figures 1 and 2 (above) are pictures offering information to the viewer. The reader of the image is placed, through long shots, at a detached distance from the image and is expected to observe and analyze various elements framed in the picture: the participants, what the participants are saying, and the circumstances.

2.3.5.2 Demand Images

Figure 3 (p.19), in contrast to Figures 1 and 2, demands attention from the viewer. The receiver is placed at a close-up, almost face to face with the sender of the information. Thus, as outlined in 2.3.3.3, the illustrators have increased the value of the elements placed in the picture. The reader is expected to focus on the words in the text, which carry the general meaning of text because they have been given salience and placed on top. Additionally, the reader is expected to focus on the face of the witch, and with eye to eye contact between the reader and the witch, the reader is expected to be emotionally involved with the sender of the information (Eisner, 2004, p.89).

Understanding the emotional content of demand images is important in creating a definition of graphic/written text relations because, as Kress and Van Leeuwen (2006, pp.1-15) point out, if multi-modal texts are to be effectively analyzed, the definition must not prioritize the linguistic system over the visual. The definition needs to reflect both modes. Thus, when reading a text, it is important for the reader to consider not just the words in the written text but why the writer has chosen, for example, a demand image rather than an offer image at a particular point in the text.

Furthermore, demand/concept pictures have a restricted use in visual storytelling. Overusing them can reduce their emotional value, and they do not display actions efficiently in what is essentially a visual medium (Eisner, 2004, p.89). When they are used, the writers sacrifice textual efficiency for emotional content. Thus, understanding these multi-modal text decisions is important if a full understanding of graphic/written text relations is to be achieved.
2.3.5.3 Classifying Offer and Demand Images

Again, it is possible to classify images, through an understanding of the interactive function, into two types: offer and demand. This can be done quite simply by asking a series of interactive questions once the basic principles are understood, as shown below.

1) Is the image interacting with the viewer by *offering* information to the viewer?
2) Is the picture interacting with the viewer by *demanding* attention from the viewer?

2.3.6 Classifying Images Into Types: Narrative Offer Images and Concept Demand Images

Kress and Van Leeuwen’s model for visual analysis can be used to classify images into two contrasting types: narrative offer pictures and concept demand pictures. Figures 1 and 2 (p.19) are narrative offer pictures, wherein the illustrators offer narrative information to the viewers. On the other hand, Figure 3 (p.19) is a demand concept picture. The illustrators present an idea, not an action, and they demand an emotional response from the viewer.

Part 3, next, will show how this classification of images into two contrasting types can be applied to the definitions of graphic/written relations, as outlined by Unsworth (2008), (introduced p.4, and part 2.3.3). Furthermore, it will relate these semiotic definitions of graphic/written text relations to the relationships of support, redundancy, incomprehension, and miscomprehension, (introduced on p. 5 and part 2.2).
Part 3 A Definition of Graphic/Written Text Relations that Can Be Used to Support Reading Comprehension

3.1 Introduction

Aligning the definitions of graphic/written text relations in systemics with EFL reading comprehension research can, this paper asserts, create a model of graphic/written text relations that can be used to predict the potential effects a text will have on reading comprehension, which is the goal of the first research question, (p.6-7). This section will explain the model. Section 2 will examine graphic/written text relations in the narrative offer panels; Section 3 will examine graphic/written text relations in the demand concept panels; and Section 4 will summarize the theoretical model.

3.2.1 Concurrence in Narrative Offer Panels

To recap, concurrence occurs when the visual and the written text send equivalent information (Unsworth, 2008, p. 387). This relationship is shown in Figure 1 below. As mentioned in 2.3.3.1, the information in the graphic text concurs with, that is, repeats the information in the written text. The written information framed in the text box “In his camp at Forres, King Duncan receives news of his army’s battle …” is repeated in the visual frames. The receivers of the news, the king and his attendants, are framed in one frameline, receiving news. The wounded soldier is framed in a separate frameline, delivering the news. Similarly, the graphic frame supports the information framed in the speech bubbles of the central dialogue. When the king asks “Who is this man covered in blood?” he is referring to the wounded soldier framed at a distance from himself.

Figure 1 Concurrent Offer Panel
This type of panel, with a reiteration of the key linguistic items in the visual, is expected to support reading comprehension (Lui, 2004, p. 237). The graphic text and the written text compensate each other in making the overall message comprehensible to the reader. However, while this panel has the potential to support reading comprehension, the images may also be redundant for L2 learners because they may not need the images to support the words. For this paper, this type of panel will be called Concurrent Offer Panels (CCOP).

3.2.2 Complementation in Narrative/Offer Panels

Complementation occurs when the graphic text and written text send messages that, although clearly connected, do not reiterate each other (Unsworth, 2008). As mentioned above, in Figure 2 below, the reader is expected to process complex information that is spread across both the graphic and the written texts. Thus, the graphic text framed at the top communicates the main action of the witches casting a spell. The written text framed beneath the image does not directly reiterate the graphic text; it augments it by adding additional details such as the words of the spell itself. These words, ("I come Graymalkin," “Paddock calls,” and others) may be difficult to relate to the visual text unless the reader has both a linguistic and perhaps cultural knowledge of witchcraft.

Figure -2 Complementary Offer Panel

Again, this graphic/written text relation can be related to reading comprehension research. In these panels, the graphic mode and the written mode do not closely reiterate
the same message. Therefore, they are not expected to support reading comprehension (Lui, 2004, p. 238). Incomprehension or miscomprehension may occur with these types of panels. For this paper, these panels will be called Complementary Offer Panels.

3.2.3 Complementation vs. Concurrence in Narrative Offer Panels

It can be generalized that there are two kinds of graphic/written text relations in narrative offer panels: concurrence and complementation. It is important to note that in an authentic text rather than a teacher created text, the writers are obviously not concerned with using images to create linguistic support for their readers. Therefore, concurrence in narrative offer panels is used for textual reasons. Here, perhaps it is used to efficiently set the scene for the readers at a key orientating point in the text.

From an L2 reading comprehension perspective, this graphic/written text relation in narrative offer panels cannot be expected to dominate authentic texts. The majority of the texts are prospective, as they point forward (Moon, 2000, p. 53). Repeating key information in concurrent relationships creates redundancy in texts (Unsworth, 2008, p. 387). Thus, it is often used in children’s books where repetition of ideas can be supportive for young learners. However, it may be of limited use to more mature readers, as readers would become bored if the story repeated itself all the time. Indeed, complementary offer panels may be more likely used in graphic narrative texts because they can communicate more information and move the text forward as well. If concurrent graphic/written text relations are limited in certain narrative texts, for example, in graphic novels, reading those texts may be very difficult for L2 students because they cannot rely on the images to repeat the key linguistic items.

3.3.1 Complementation in Demand/Concept Pictures

The graphic/written text relation of complementation also occurs in demand/concept pictures. In Figure 3, below, the written text carries information that is not directly integrated with the graphic information. Thus, as explained in part 2.3.5.2, the writers/illustrators have chosen to make the words salient. Moreover, they have chosen not to illustrate the underlying function of the words in the image. Rather, they focused the reader’s attention
on the face of the speaker. From a textual viewpoint, as explained in Section 2.4.5.2, this increases the significance of the written text and the emotional content of the graphic text. However, from an L2 perspective, the image cannot help the readers create a mental picture of the written text because the image is communicating a different message from the written text.

**Figure 3 – Complementary Demand Panel**

![Image of a comic panel with the text: When shall we three meet again? In thunder, lightning, or in rain?](image)

A generalization can be made on these types of panels in texts. If illustrators use these demand/concept panels, they expect the readers to focus on the written text and the image to send an emotional message. From a reading comprehension perspective, if this type of panel exists in a narrative text, L2 learners' role is expected to be extremely active in this panel. The readers must process all the words linguistically with no visual clues and then process the significance of the image separately. Relating this type of image to reading comprehension research (Lui, 2004, pp. 238) with little integration between the graphic text and the visual text, the image is not expected to support reading comprehension. Rather, it is expected to create incomprehension or miscomprehension. In this study, these types of images will be called Complementary Demand Panels (CDP).

### 3.4 The Theoretical Model for Defining Graphic/Written Text Relations in Support of Reading Comprehension

The theoretical model for defining graphic/written text relations that can support reading comprehension involves three steps. First, the compositional, representational, and interactive meta-functions can be applied to image-based multi-modal texts to classify
two types: demand/concept images and narrative/offer images. Second, graphic/written
text relations of concurrence or complementation can be applied to the image types to
subdivide the images into three: Complementary Demand Images, Complementary Offer
Images, and Concurrent Offer Images. Third, the reading comprehension research
findings can be applied to the image classifications to predict their potential effects on
reading comprehension. Thus, complementary demand images and complementary offer
images are not expected to support reading comprehension because the graphic text and
the written text are not closely integrated. Concurrent Offer Images are expected to
support reading comprehension because they are closely integrated.

Theoretically, at least in this reading context, to a large extent it is possible to create a
model of graphic/written text relations that can be used to predict the potential effects a text
will have on reading comprehension, which was goal of research question 1, (pp.6-7). Thus,
the principles of SFG can be used to define graphic written text relations. Moreover, the
definitions of graphic/written text relations can be related to reading comprehension
research to assess student’s potential comprehension. Parts 4, 5 and 6 of this paper will
test the validity of the model in a classroom context. Part 4 will apply the model to an
authentic text, “Macbeth: The Graphic Novel” (McDonald et al., 2008), to analyze the
texts underlying graphic/written text relations and predict their potential effects on
reading comprehension. Part 5 will explain the methodology used to test those
predictions in the classroom. Part 6 will discuss the findings.
Part 4 Defining the Graphic/Written Text Relations in the Macbeth Text

4.1 Introduction

Part 4 will analyze an authentic text (a text not produced for the TESOL classroom) excerpt, “Macbeth: The Graphic Novel’s” (McDonald et al., 2008) Act 1 scenes 1 and 2(shown in Appendix 1), for its graphic/written text relations and their effects on reading comprehension. Section 2 will classify the text into narrative offer or demand/concept images. Section 3 will examine the graphic/written text relations in the images. Furthermore, it will use those definitions to predict the effects the images have on reading comprehension. Section 4 will summarize the findings. To test the validity of the findings in the classroom, the images will be re-classified as information units, which will be explained in Section 5. Finally, after applying the theoretical model to Macbeth, the original research hypothesis, as outlined in 1.7, can be restated. This restatement will be discussed in Section 6, which outlines the predicted effects each image will have on students reading comprehension.

4.2 Determining Panel Types in the Macbeth Text

Applying the compositional, representational and interactive functions to the Macbeth text, using the system of question (summarized in Table 2p.28) classified the 10 panels into two types: Narrative Offer Panels and Concept Demand Panels (summarized in Table 1 p.28). As shown in the table, the majority of the panels are narrative offer panels, while concept demand panels constitute only 3 of the 10 panels.

Having determined the image types, Section 3 will show how the image types are analyzed for their underlying graphic/written text relations and how those relations may potentially affect reading comprehension.
Table 1.  *Image Types in the Macbeth Text*

<table>
<thead>
<tr>
<th>Image Type 1</th>
<th>Image Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative/Offer</td>
<td>Concept/Demand</td>
</tr>
<tr>
<td><em>Panels 1,5,6,7,</em></td>
<td><em>Panels 2,3,4</em></td>
</tr>
<tr>
<td><em>8,9,10</em></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.  *Determining Image Functions in Texts*

<table>
<thead>
<tr>
<th>The Representational Function</th>
<th>The Interactive Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>What is the image representing?</em></td>
<td><em>What is the image asking the reader to do?</em></td>
</tr>
<tr>
<td>Is the image representing a narrative?</td>
<td>Is the image offering information to the viewer?</td>
</tr>
<tr>
<td>Is the image representing a concept?</td>
<td>Is the image demanding attention from the viewer?</td>
</tr>
</tbody>
</table>

4.3.1 Concurrent Offer Panels

Concurrence occurs in Panel 7 below (p.29), as explained in 3.2.1 as Figure 1, where the information in the graphic text concurs with, that is, repeats the information in the written text. Panel 1 (p.29) also shows a strong relationship of concurrence because the image clearly depicts the words in the written text, which is the description of the location. Therefore, as stated in part 3, both these images are expected to support reading comprehension. However, the images in the text may also be redundant from an L2 perspective if students do not need the words to understand the images.
4.3.2 Complementary Offer Panels

Panels 5, 6, 7, 8, and 9 show complimentary processing relationships because the graphic mode does not repeat the information in the written mode. The reader is expected to process complex information that is spread across both the graphic and the written texts.

Thus, in Panel 5 (p.30), the words framed on top point cataphoricly to a later meeting with Macbeth, while the image is of an event happening now (three witches talking-spell casting-around the fire). Panel 6 (p.30), as explained in 3.2.2, is an image dominant text, where the most salient information is carried in the visual act of the witches casting a spell.
In Panels 8, 9, and 10(p.31-32), the details of the battle are lexically communicated by the wounded soldier’s reports, while the images convey other meanings connected to those details. In Panel 7, the image is concerned with expressing the bloody mood of the battle in general and the battle’s bloody outcome (the decapitation of Macdonwald framed at the bottom). In Panels 8 and 9, the images convey the king’s reaction to the soldier’s report.

Again, in relating this graphic-written text relation to reading comprehension research, the graphic mode and the written mode in these panels are not closely integrated, and therefore they would not be expected to support reading comprehension (Lui, 2004, p. 238). Moreover, miscomprehension may occur in these panels.
Complementary Offer Panel 8

Complementary Offer Panel 9
4.3.3 Complementary Demand Panels

Panels 2, 3, and 4 (below) show complementary graphic/written text relationships. All three panels show the same graphic/written text relation; the written text is not reiterated in the graphic text, and readers are expected to process both the words and the meaning of the visual simultaneously.

Complimentary Demand Panels 2, 3, 4

4.4 The Predicted Effects of Graphic/Text Relations on Reading Comprehension

The results of the analysis of the Macbeth text for its underlying graphic/written text relations and their potential effects on reading comprehension are shown in Table 3 (p.33). Only two panels, 1 and 7, show the graphic/written text relation of concurrence expected to support reading comprehension. The other images ask the reader to process complimentary
written text messages and graphic text messages which are not closely integrated. Therefore, students are expected to find the text difficult to process.

**Table 3. Graphic/Written Text Relations and their Effects on Reading Comprehension**

Key-CCOP=Concurrent Offer Panel; CDP=Complementary Offer Panel; COP=Concurrent Offer Panel; R/C= Reading Comprehension

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Panel Number</th>
<th>R/C Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCOP</td>
<td>1</td>
<td>Support/Redundancy</td>
</tr>
<tr>
<td>CCOP</td>
<td>2</td>
<td>Supports/Redundancy</td>
</tr>
<tr>
<td>CDP</td>
<td>3</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>4</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>5</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>6</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>7</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>8</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>9</td>
<td>No support/hindrance</td>
</tr>
<tr>
<td>COP</td>
<td>10</td>
<td>No support/hindrance</td>
</tr>
</tbody>
</table>

**4.5 Classifying the Panels as Information Units**

To test the panels in the classroom, which will be explained in detail in the next section, the images are classified into information units, as shown in Table 4(p.34) below. Reclassifying the panels as information units allows groups A and B to read identical texts. The original panels and the information units (IU) follow an almost identical sequence except for Panels 2, 3, and 4. These panels are summarized as one IU because they share an identical graphic text relation, which is CDP, and they can be logically summarized in the written text.
Table 4. Reclassifying the Panels as Information Units

Key-CCOP=Concurrent Offer Panel; CDP=Complementary Offer Panel; COP=Concurrent Offer Panel; R/C= Reading Comprehension

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Graphic Text Information Unit</th>
<th>Original Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCP</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CCP</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>CDP</td>
<td>2</td>
<td>2,3,4</td>
</tr>
<tr>
<td>COP</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>COP</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>COP</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>COP</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>COP</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

4.6 Applying the Theoretical Model to the Hypothesis

Finally, after establishing the combination of graphic/written text relations that may support or hinder multi-modal reading comprehension in the Macbeth text, the original hypothesis, as introduced in Part 1, can now be directly applied to the text to make the following predictions:

- Concurrent Offer Panels (GIU-1, 5): Students in Group A reading the graphic texts are expected to understand more than Group B, who only have the written text, because the graphic images reinforce the events happening in the panels. However, if the students' proficiency is higher than the written text, the images may cause redundancy, as the students will not need the images to compensate for any linguistic deficiencies.

- Complementary Offer Panels (GIU-3, 4, 6, 7, 8): There should be no significant difference between the two groups in comprehension because the graphics do not support the words. Moreover, research suggests that images may cause miscomprehension of the comprehension of written texts. This is because the visual text can distract the reader from the linguistic processing needed to translate the written text. If this occurs, the students in Group A may then have lower comprehension results than those in Group B.
• Complimentary Demand Panels (GIU-2): The graphic text does not support the written text; thus, there should be no expected difference in comprehension between the two groups. Again miscomprehension may occur.
Part 5 Methodology

5.1 Introduction

The classroom research was based on Lui’s 2004 study which focused on testing a teacher-created comic strip with a large group of students at different proficiency levels. Lui recommended that future research should be based on smaller classroom-based studies using different genres and different research instruments (Lui, 2004, pp.239). The goal of this current research is to repeat Lui’s study using an authentic graphic text in a classroom situation with a modified research instrument. Section 2 will explain the participants, Section 3 the data-collection, Section 4 the procedures, and Section 5 the piloting of the study.

5.2 Participants

The participants were intermediate Japanese university students aged between 18 and 22 years. Their level was decided by a university placement test taken during their first year, and all the students had followed the same compulsory first year English program. As second year students, they studied an elective English program. The students were all members of my authentic reading class and had all been introduced to a variety of authentic texts

5.3.1 Data Collection

Data collection was based on immediate recall protocols (IRPs) used in Lui’s 2004 study. IRPs offer advantages over other methods (e.g., comprehension questions, true/false questions, etc.) because they avoid the problem of “interrelatedness” (Bernhardt, 1983, pp.27-28). Interrelatedness refers to how the information in a research instrument repeats
key information from the passage and, therefore, gives extra linguistic clues. For example, in a comprehension question, skilled readers can relate key words in the question to key words in the passage, a common test-taking strategy. In this type of study, which measures the effects of visual information compared to linguistic information, these key words may have given extra linguistic clues to the readers.

5.3.2 Modifying Immediate Recall Protocols

Immediate recall protocols were modified for this experiment. The goal of this study is to measure the effect graphic/written text relations had on reading comprehension in nine different panels. Therefore, it was important to measure the effect of the graphic/written text relation at each stage of the reading process (e.g., panel 1, panel 2, etc.). However, immediate recall protocols are traditionally used to measure comprehension after students have read the whole text. In Lui’s study, for example, students were given one written text with a comic script and asked to recall key events from the whole passage after they had read it. However, in this study, asking students to recall nine panels, essentially nine different texts, would, it was felt, overwhelm the students and not give insights into the effect the graphic/written text relation was having on reading comprehension in each panel. Therefore, in this study, students were asked to summarize in writing the nine texts separately, as they read them.

Moreover, IRPs traditionally summarize the key textual information into units and then assigns a numerical rank to each piece of information, for instance, 1 for the least significant information, 4 for the most significant (Bernhardt, 1983, Lui, 2004, pp. 234). However, again, the goal of this research is to find the effects graphic/written text relations were having on each stage of the reading process. Creating overall numerical ranking scores would not, it was felt, give detailed insights into the effects each graphic/written text relation was having in each panel. Therefore, students were asked to write their responses and the rater (1 rater, the writer) read each response individually. Reading the responses individually allowed both quantitative and qualitative data to be collected.
The quantitative data compared how many students understood the “gist” of what was happening in each panel. A score of understanding the gist was given if the students could summarize the basic function of each text. For example, in Fig. 4 below, a student’s response of “The witches are talking about meeting Macbeth later” would be given a score of understanding the gist. Giving an overall rating for general gist in this way would allow the difference in the comprehension of the nine panels to be compared numerically. The qualitative data examined the student’s responses for details that the numerical scores might not indicate. For example, in Fig. 4, qualitative data could ascertain whether or not the students confined themselves to explaining the linguistic text, the visual texts, or both.

5.3.3 Student Feedback Sheets

Student feedback sheets were created to collect the data (see example p.39 and in Appendices 3 and 4). The feedback sheets divided the texts into a series of Information Units: Graphic Text Information Units (GIU) for group A based on comic book panels and Written Text Information Units (WIU) for group B. The sheets were divided into IUs’ rather than panels or chunks of written text to ensure both groups of students had identical written information at each stage of the summary process.
5.4 Procedure

Both groups of students read the text, Appendix 1 for group A and Appendix 2 for group B. As the students read the text they were asked to summarize the information they understood for each IU in the relevant box on the feedback sheets, Appendix 3 for Group A and Appendix 4 for Group B. Due to the potential difficulty in some areas of the authentic text, summarization could be detailed or brief and in English or Japanese. However, no students took the option of writing their responses in Japanese. Likewise, students were given the option of writing “I do not understand.”
5.5 Piloting the Study

The study was piloted on 12 intermediate Japanese university students aged 18-22. The research instruments were shown to be effective with minor modifications to the layout of the feedback sheets.
Part 6 Results and Discussion

6.1 Introduction

This chapter has 5 sections. Section 2 will summarize the quantitative results using Tables 5(p.42), 6(p.42), and 7(p.43). Sections 3, 4 and 5 will discuss the quantitative and qualitative results in detail. Thus, section 3 will discuss complementary offer panels; section 4 complementary demand panels; section 5 concurrent offer panels.

6.2 Results

The results for the t-test (see Table 7p.43) show that there was no significant statistical difference in reading comprehension between the two groups. As predicted in the theoretical model of graphic/written text relations, Complementary Demand Panels (Table 5/6: CDP 2, Group A=6, Group B=8) did not support reading comprehension for Group A. In fact, it is interesting to note that fewer students understood the text in Group A than in Group B. Similarly, Complementary Offer Panels (COP) did not support reading comprehension. COP 6 (Table 5/6: Group A=3, Group B=O), COP 7 (Table 5/6: Group A=2, Group B=0), and COP 8 (Table 5/6: Group A=1, Group B=0) show no support. However, the results for Complementary Offer Picture 4 (Table 5/6: Group A=9, Group B=3), although not statistically significant, are interesting because despite the predicted effect of incomprehension or miscomprehension, nine students were able to understand the text in group A with only three understanding it in Group B (see Table 5/6). This will be examined in more detail in the qualitative data. Overall, this supports the hypothesis proposed in Section 1.7, which states that complementary graphic/written text relations will not support reading comprehension.

In Concurrent Offer Panels, again, there was no significant difference between the two groups (Table 5/6: CCOP 1, Group A=11, Group B=12, CCOP 5, Group A=12, Group B= 12). However, these results cannot provide insights into the level of support offered by concurrent graphic/written text relations. In both groups, students’ comprehension was high. This suggests that their proficiency level was not below the level of the written text.
Therefore, the effects of the graphic/written text relation’s level of support cannot be measured. However, the results do indicate redundancy. Thus, from an L2 perspective, the graphic text is redundant because students could understand the words without the images.

**Table 5  Group A Reading Comprehension Results**

**Key-**  
**CCOP**=Concurrent Offer Panel;  
**CDP**=Complimentary Demand Panel;  
**COP**=Complimentary Offer Picture;  
**R/C**=Reading Comprehension  
+ = understood gist;  - = didn’t understand gist

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Information Unit</th>
<th>R/C Relationship</th>
<th>Group A – Graphic Text Student Research Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>CCOP</strong></td>
<td>1</td>
<td>Supports</td>
<td>+</td>
</tr>
<tr>
<td><strong>CCOP</strong></td>
<td>5</td>
<td>Supports</td>
<td>+</td>
</tr>
<tr>
<td><strong>CDP</strong></td>
<td>2</td>
<td>No support</td>
<td>-</td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>3</td>
<td>Little support/</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>4</td>
<td>Little support/</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>6</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>7</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>8</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
</tbody>
</table>

**Table 6  Group B Reading Comprehension Results**

**Key-**  
**CCOP**=Concurrent Offer Panel;  
**CDP**=Complimentary Demand Panel;  
**COP**=Complimentary Offer Picture;  
**R/C**=Reading Comprehension  
+ = understood gist;  - = didn’t understand gist

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Information Unit</th>
<th>R/C Relationship</th>
<th>Group B – Written Text Student Research Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>CCOP</strong></td>
<td>1</td>
<td>Supports</td>
<td>+</td>
</tr>
<tr>
<td><strong>CCOP</strong></td>
<td>5</td>
<td>Supports</td>
<td>+</td>
</tr>
<tr>
<td><strong>CDP</strong></td>
<td>2</td>
<td>No support</td>
<td>-</td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>3</td>
<td>Little support/</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>4</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>6</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>7</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
<tr>
<td><strong>COP</strong></td>
<td>8</td>
<td>Little support/</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindrance</td>
<td></td>
</tr>
</tbody>
</table>
Table 7  Differences in Comprehension Between Groups A and B

The table shows there was no significant statistical difference in the comprehension of the texts by the two groups. The paired, two tail t-test yielded a t of 0.315890663, which was insignificant at p < 0.05 (with df=23) and a critical value of 2.069.

Key-  COP=Copmlimentary Offer Panel; CDP=Complimentary Demand Panel; COP=Copmlimentary Offer Picture.

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCP 1</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>CCP 5</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>CDP 2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>COP 3</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>COP 4</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>COP 6</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>COP 7</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>COP 8</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>t-test</td>
<td>0.315890663</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5.923987851</td>
<td>5.625</td>
</tr>
</tbody>
</table>

6.3 Discussion Of Complementary Offer Panels 3,4,6,7,8

As stated above, overall, the results show that the graphic/written text relation of complementation found in these panels does not support reading comprehension. However, as noted above, it is interesting that nine students in group A, compared to only three in group B, could understand the difficult linguistic clues in this panel. As explained in Section 4.3.2 (p.29), the words (“I come Graymalkin,” “Paddock calls,” etc.) rely on both linguistic and, perhaps, cultural knowledge of witchcraft to be interpreted. Moreover, as explained in Section 4.3.2, (p.29) the graphic/written text relationship in the panel does not support the words. Therefore, according to the theoretical model, this panel should not have helped students. However, in Group A, the graphic text seems to have helped nine students.

The explanation for why Group A could decipher these ambiguous terms of witchcraft seems to have been a combination of the visual panels’ sequencing and the changes in color modality. The qualitative data for these panels, summarized in Table 8 (p.45) indicates that students could slowly build an overall picture. Thus, referring to Appendix
1, students could read the setting of the scene offer picture (panel 1) through the detail giving demand pictures (panels 2, 3, 4) to the final climatic—in the words of one student, “It’s magic impact” (S3 Table 8)—offer pictures (panels 4, 5). Moreover, the color modality of the panels change, as noted by the students, from the neutrality of greens and browns to the drama of red as the spell is being cast (S7, S8, S10, S12; see Table 8 below).

Thus, the qualitative feedback suggests that comprehending multi-modal texts does not simply depend on graphic/written text relations alone. It supports the contention that other factors, such as the juxtaposition of images (McCloud, 1993, pp. 2-8) or color modality (Kress and Van Leeuwen, 2006 pp. 160-174), must also be drawn into any model of how multi-modal texts organize information to make meaning. Moreover, an explanation for the positive effect of visuals could be found in the schema theory. As explained in Section 2.2 (p.11), schema theory suggests that incoming data must be matched to readers’ expectations for comprehension to occur. For the nine Group A students, the juxtaposition of the images and the color modality may have assisted in how they interpreted and matched the incoming data with their own expectations. This is an area for future research.
Table 8  Group A Student Feedback Table

Key: CCOP=Concurrent Offer Panel; CDP=Complementary Demand Panel; COP=Concurrent Offer Panel;
  S=student

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Information Unit</th>
<th>Student Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCOP</td>
<td>1</td>
<td>S1 ‘Three witches are laughing on a rock, it seems they are making something on a fire.’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2 ‘The bad mediums do something in a deserted open place’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S3 ‘The witches are on a hill at night, it is very dark, they are screaming something’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S8 ‘They are fighting on a cliff’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S12 ‘It looks like very bad things will happen’</td>
</tr>
<tr>
<td>CCOP</td>
<td>2</td>
<td>S1 ‘The witches are very ugly looking’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S5 ‘They have red eyes and green hair’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S7 ‘There is an idea of impending evil’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S8 ‘They will use magic’</td>
</tr>
<tr>
<td>CCOP</td>
<td>3</td>
<td>S3 ‘They are around the green fire’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S8 ‘They hate Macbeth’</td>
</tr>
<tr>
<td>CCOP</td>
<td>4</td>
<td>S2 ‘They became crazy’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S4 ‘It’s magic impact’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S5 ‘They used magic’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S6 ‘Three witches spelled together under the lightening, around the fire’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S7 ‘The fire is more hard and they are like cursing’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S8 ‘They are playing with magic, fire change form green to red’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S9 ‘The three witches are doing something like curse, the fire is now turned into red and there is lightening in the sky again’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S11 ‘At the center of them the fire is starting to burn, they are screaming, using spells, ritual is completed’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S12 ‘The fire explodes from the pod, the witches turn to red by reflecting the fire. They scream something like magic spells.’</td>
</tr>
</tbody>
</table>

Moreover, by comparing the qualitative data for complementary panels as a whole, it is significant to note that Group A produced detailed student feedback for complementary offer panels, IUs 2, 3, 4. Group B, with only written text information, did not produce detailed feedback for these IUs. However, for IUs 6, 7, 8, neither group produced detailed feedback. Here, students in both groups reacted to the information in these panels in the same way, confining themselves to summarizing the main functions they felt they understood and/or writing “I don’t understand.” This is incompatible with the dual coding theory explained in Section 2.2 (p.11). Dual coding theory suggests that presenting students with multi-modal texts builds an interconnected reading field that allows for more inferring. Consequently, according to dual coding theory, Group A, in reading a graphic text, would be expected to produce more inferences than group B even though
they may not be able to understand the entire text. However, as explained above, this effect of increased inferring was not indicated by the student’s responses.

While the result may have been encouraged by the research instrument, which clearly offers writing “I don’t understand” as an option, students also had the option of writing in Japanese. Therefore, it may indicate that once students became aware of the graphic/written text relationship in Complementary Offer Panels 6, 7, and 8 (i.e., that the picture would not support linguistic information), they dismissed the whole text. This suggests that the complementary parallel processing relationship can overload the students, which results in them not attempting to read the text in detail. Again, this can be supported by the schema theory. Here, the students were unable to match the incoming information with their own conceptions, thus they rejected the information. Moreover, mental modeling theory, explained in 2.2(p.11), can also account for this. Thus, unlike dual processing theory, schema and mental modeling theories are not universal. Therefore, the two effects can co-exist. Thus, schema and dual modeling are not incompatible as an explanation for miscomprehension. Here students, unable to create a mental model of the words in the text, could not build an appropriate schema and did not attempt to infer the meaning of the words.

Therefore, while the qualitative data supported the effect of incomprehension occurring, it did not support miscomprehension. Lui suggests that miscomprehension occurs due to “noticing” (Schmidt, 1990, quoted in Lui, 2004, pp.237). Noticing, as explained in Section 2.2(p.11), suggests that, rather than the images supporting reading comprehension, in complementary relationships, the image distracts students’ attention from complex language. This is understandable if the image is, as occurs in complementary relations, sending a connected but fundamentally different message. However, in these panels, the only indication of hindrance seems to have been due to a failure in lexical processing. Thus, complementary offer panel 7 student 8 (Group A) and student 1 (Group B) both lexically misinterpreted the “idea of a storm” for the actual weather.
An explanation for the lack of miscomprehension could be found in the degrees of complementary and concurrent relations in the images. Unsworth suggests that graphic/written text relation are not fixed, rather the extent to which written or graphic texts concur or complement each other can vary (Unsworth, 2008, pp. 387-397). A common example of this would be in visual instructions that accompany the assembling of household objects (e.g., installing a personal computer). Stenglin and Iedema (2001, pp. 199-201) show that instructions mix graphic/written text relations of both concurrence and complementation. However, complementary offer panels 3, 4, 6, 7, and 8 have strong relationships of complementation, as shown in Section 4. Therefore, the effects of different images, that mix concurrence and complementation in more complex ways, should be researched.

6.4 Discussion Of Complementary Demand Panel 2

Clearly, with no significant statistical difference between the groups (Group A=6, Group B=8), the lexical signaling of the words was at least as efficient as the visual realization of the words. Interestingly, hindrance was evident for two students, S1 and S5 (see Table 8p.45), where they described the images in detail but did not attempt to decipher the words. This is important because it would seem that, while the students did not comprehend the linguistic meaning, they did become involved in the visual meaning, that is, the panel demanded their attention (see Section 3.3.1). Thus, for these two students, the effect of noticing can be observed. The students seemed to have noticed the images and, consequently, did not focus on the difficult lexical processing needed to translate the words. However, while the students were distracted from the words in this panel, overall, the results may not have been negative. Instead, as was explained for the concurrence panels above (COP 4 above), the sequencing of images from panels 1-4 seems to have had an overall positive effect on reading comprehension. Thus, as shown in Table 8(p.45), students 1 and 5 understood the gist of complementary panels 3 and 4. This supports the discussion for complementary offer panel 4 that both hindrance and
juxtaposition of images must be accounted for in a comprehensive definition of graphic/written text relations.

6.5 Discussion Of Complementary Offer Panels 1 and 5

The results seem to support Lui’s findings (2004) that whether graphic/written text relations produce support or redundancy is closely linked to proficiency. Here, almost all the students (Table 4/5: CCOP 1, Group A=11, Group B=12, CCOP 5, Group A=12, Group B=12) understood the relatively straightforward orientating information. Therefore, as stated in 6.2 (p. 41), for Group A the repetition of the key content of the written text in the representational content of the graphic text may well have been redundant. Thus, if Group B understood the text without images, then there is no reason to assume Group A could not. Indeed, Unsworth (2008, pp.387) points out that redundancy is common in concurrent multi-modal relationships. Thus, as explained in Section 3.2.3, this relationship is common and helpful in children’s books where readers need reiteration but not so common in graphic novels. This suggests that reading comic books, despite the reputation they may have of only fulfilling only the “compensatory hypothesis”, explained in section 2.2 (p.11), may be very difficult for learners to read. Also, perhaps more research needs to be done on the uses of concurrence in an EFL context where redundancy of this kind may not always be needed. For example, many textbooks may be using concurrent relationships were they are not needed. Moreover, redundancy may have a negative effect on language acquisition because it prevents students from filling in the linguistic content of the visual text. More research needs to be done to determine at what proficiency level a relationship of concurrence causes redundancy, as was indicated by this research, or support, which may be indicated by repeating this part of the experiment with less proficient learners.

Finally, research suggests that, just as the proficiency level of students seems to influence the effect of graphic/written text relations, other factors need to be considered as well. Indeed, efficient multi-modal processing may depend on learner types; research suggests that field-independent learners may be more apt with deciphering complex multi-modal
texts than field-dependent learners (Leu, 2000, p.753). Moreover, how visual texts are interpreted may be culturally influenced (Jewitt and Oyama, 2001, pp. 154). This is related to the information value. Thus, as explained in Section 2.3.3.2 (p16), the placement of elements in images gives them a certain value. The value given to these elements, for example, the use of the top of a picture carrying the ideal information being associated to the divining of the sky (p.16), may not be universal. Thus, images may be interpreted differently in different cultures. More research needs to be done in these areas.
Part 7 Conclusions

7.1 To What Extent Was The Definition of Graphic/Written Text Relations Successful?

The definition of graphic/written text relations was largely successful. The definition could predict the effect multi-modal texts would have on reading comprehension. Thus, in the relationships defined as concurrence, where the images might have supported reading comprehension, the graphic text made no positive contribution to reading because, at this level of proficiency, the students could understand the written text without the images. In the relationships defined as complementation, where the graphic text added to or augmented the information given in the written text, rather than repeating it, the graphic/written text relation did not support reading comprehension because the students could not use the images to infer the meaning of the words.

Additionally, the research suggests that the graphic/written text relations of concurrence or complementation may not cause miscomprehension. Overall, the images did not interfere with the written text. Thus, as the results for complementary panels show, (see p.42) students seemed to be able to recognize that the graphic/written text relation were not reiterating the same ideas and, therefore, did not attempt to use them to decipher the text.

Therefore, this study supports the hypothesis (outlined in section 1.7) that SFG can be effectively used to support reading comprehension in the EFL classroom. The principles of a visual approach to systemics (the compositional, representational, and interactive functions) can efficiently be applied to images to define two distinct types: demand and offer images. Thus, through a series of simple questions (see p.28) the panels of the Macbeth text could be analyzed and related to the classifications outlined in Kress and Van Leeuwen’s (2006) model (see parts 3 and 4). Further, the effects these types of images will have on reading comprehension could be ascertained. As shown in Part 4,
research findings on reading comprehension could be related to systemic definitions of graphic/written text relations.

Therefore, overall, the hypotheses, (p.7), that state concurrence may support reading comprehension or cause redundancy while complementation may cause incomprehension were supported. However, it was hypothesized (p.7) that complementation may cause incomprehension which, as stated above, was not supported by this study. More research is needed in this area. Moreover, the underlying complexities of graphic/written text relations were also indicated by the study, which suggests that there are limitations to the model that deserve further investigation. These will be examined next.

7.2 Limitations to the Definition

This discussion suggests that a comprehensive model of graphic written text relations needs to include the effects of juxtaposition of images. The juxtaposition of images in a sequence may change how the reader interprets that image. This supports Royce’s (2002) study that suggests textual cohesion, as applied to written texts by Halliday and Hanson (1976), is applicable to multi-modal relations. Moreover, a comprehensive model of graphic/written text relations needs to include the effects of different and more complex graphic/written text relations (as described by Unsworth, 2008) than the two included in this study.

In addition, this study was limited to Japanese learners at one proficiency level. A comprehensive pedagogical model of graphic/written relations in multi-modal texts needs to examine the effects of graphic/written text relations on different types of learners. Therefore, further investigation is needed into the effects of complementary and concurrent relations on different proficiency levels, field dependent vs. field independent learners, and learners from different cultural backgrounds.

In general, these limitations to the study suggest graphic/written text relations might be dependent upon usage. Thus, the placement of an image in the context of a text will
change the meaning of that particular image. Moreover, how images are interpreted when they are used might not be universal. These limitations, however, are not usual in language learning, be it a written language, visual, or a mixture of both. For example, corpus approaches to grammar suggest that grammatical structures vary enormously when actual usage is examined (Sinclair 1991) and that consideration of learner types is an integral part of communicative teaching (Nunan, 1999).

Therefore, creating a comprehensive definition of graphic/written text relations can be closely linked to much of the existing research on language learning. Indeed, pedagogical approaches already exist, such as data-driven learning (Johns, 1994) or consciousness-raising (Rutherford, 1987), where language, to account for the communicative complexities of language learning, is observed in use and students are taught the skill of hypothesizing about how the language is used in that particular situation.

Such an approach could be applied to the model outlined in parts 3/4, where teachers and students use the underlying principles of SFG to create a hypothesis or rules of thumb about the graphic/written text relations found in multi-modal texts, which can then be adjusted to suit any complexities that emerge as the text is further analyzed. Therefore, this paper supports the suggestions outlined in the introduction that defining graphic/written text relations is important for the classroom. Indeed, a definition of multi-modal relations, as part of a general grammar of multi-modality (Unsworth, 2008), would be a practical aid in supporting the teaching of reading comprehension of multi-modal texts in the new literacy environments of the modern EFL classroom.
Appendixes

Appendix 1 Macbeth Graphic Text
Act One
Scene Two

in his camp at Ferrara, King Parmice receives news of his army’s battle against a rebellion.

Was it this man covered in blood? He looks like he can die on the latest arrow from the battlefront.

Greetings, my brave friends! Tell the king how things stand.

He was poised on a horse-nosed, battle-armed war-horse, exalted and exalted, that heartless, his lover, macabre, brought in apprehensions from the sea (from the sea).

But I didn’t last — because pride in victory neglected his own safety and carried his way through them with a bloody sword, sharing cheers — until he faced macabre.

He didn’t stop to thank anyone he saw orphans — he just waved the island from across to jail and started his advance on the battlefronts.
Appendix 2 Macbeth Written Text
Macbeth Act 1 scene 1/2(Plain Text Version)
Location- A deserted open place
1.1 Thunder lightening. Enter three witches.

First Witch
When shall we three meet again?
In the thunder lightening or in rain?

Second Witch
When the hurly-burly’s done,
When the battle is lost and won.

Third Witch
That will be before the set of the sun.

First Witch
Where the place?

Second Witch
Upon the heath

Third Witch
There to meet with Macbeth.

First Witch
I come, Grimalkin

Second Witch
Paddock calls

Third Witch
Anon

All Witches
Fair is foul and foul is fair,
Hover through the fog and filthy air.

Exit

1.2 At his camp at Forres, King Duncan receives news of his army’s battle against a rebellion. King Duncan, Malcolm, Donalbain, Lennox, with attendants meeting a bleeding Captain.

King Duncan
Who is this man covered on blood? He looks like he can give us the latest news from the battlefields.

Malcolm
This sergeant fought like a real soldier to save me from being captured.
Greetings my brave friend!
Tell the king how things stand.

Captain
It was poised on a knife-edge. Both armies were exhausted and deadlocked, that heartless evil rebel, MacDonwald, brought in reinforcements from the western Isles. That is when things began to go his way and fortune smiled on him like a rebel whore.
But it did not last because brave Macbeth neglected his safety and carved his way through them with a bloody smoking sword—until he faced MacDonwald. He didn’t stop to shake hands or say goodbye—he just ripped the villain from navel to jaw and stuck his head on our battlements.

**King Duncan**
What a brave cousin and great man.

**Captain**
But our sun didn’t shine for long. The storm broke out again and our triumph was short lived. Listen to this song, king of Scotland—No sooner had the Western Islanders run away than the Norwegian commander began another assault, with reinforcements and fresh weapons.

**King Duncan**
Didn’t this worry our captains Macbeth and Banguo?

**Captain**
As much as sparrows worry eagles or hares worry loins. I’m telling you the truth they were like fighting machines. They tore into the enemy as if they wanted to cover themselves in blood or create another Golgotha.

But I am weak my wounds need attention.

**King Duncan**
Your words are as honorable as your wounds. Go get him to the surgeons.

*Group B – Macbeth Act 1 scene 1/2 (Plain Text Illustrated Version) – same text as A but has illustrations.*
Appendix 3 Student Feedback Sheet Group A
Feedback Sheets Group A

Students Instructions

1) Read the text and write down as much as you can understand about the each panel in the summary box. You do not need to fill the whole box.
2) Write in English or in Japanese.
3) If you don’t understand anything in the panel that is okay, but please write ‘I don’t understand.
4) The panels have been reprinted on these pages as a reminder, please use the main text when summarizing.
4) Please read the examples, below, carefully before starting.

Example Student 1

Summary
The soldier falls down because he is hurt and weak.
The soldier wants to see a doctor.
The king tells him he is an honorable man and sends for a doctor.
The king asks who is coming.

Example Student 2

Summary
The soldier is on the ground the king is standing above him.
The soldier is weak and the king sends for a Doctor.

Example Student 3

Summary
I don’t understand

Example Student 4

Japanese okay
Summary 7

_________________________
_________________________
_________________________
_________________________
_________________________
_________________________
_________________________
_________________________
_________________________

________________________________________

Summary 8

_________________________
_________________________
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_________________________

________________________________________
Student Instructions     Group B
1) Read the text and write down as much as you can understand about the each panel in the summary box. You do not need to fill the whole box.
2) Write in English or in Japanese.
3) If you don’t understand anything in the panel that is okay, but please write ‘I don’t understand.
4) Please read the examples, below, carefully before starting

Examples

Example Student 1

Summary
The soldier wants to see a doctor because he has been hurt and he is weak.
The king tells him he is an honorable man and calls for a doctor.

Example Student 2

Summary
The soldier is weak and the king sends for a Doctor.

Example Student 3

Summary
I don’t understand.

Example Student 4

Japanese okay

Text

Captain
But I am weak and my wounds need attention.

King Duncan
Your words are as honorable as your wounds.
Go get him to the surgeons.
Feedback Sheet Group B

Summary 1
_____________________
_____________________
_____________________
_____________________
_____________________

Location- A deserted open place
1.1 Thunder lightening. Enter three witches.

Summary 2
_____________________
_____________________
_____________________
_____________________
_____________________

First Witch
When shall we three meet again?
In the thunder lightening or in rain?

Second Witch
When the hurly-burly’s done,
When the battle is lost and won.

Third Witch
That will be before the set of the sun.
Summary 3

First Witch
Where the place?

Second Witch
Upon the heath

Third Witch
There to meet with Macbeth.

Summary 4

First Witch
I come, Grimalkin

Second Witch
Paddock calls

Third Witch
Anon

All Witches
Fair is foul and foul is fair,
Hover through the fog and filthy air.
Summary 5

1.2 At his camp at Forres, King Duncan receives news of his army’s battle against a rebellion. King Duncan, Malcolm, Donalbain, Lennox, with attendants meeting a bleeding Captain.

King Duncan
Who is this man covered in blood? He looks like he can give us the latest news from the battlefields.

Malcolm
This sergeant fought like a real soldier to save me from being captured.
Greetings my brave friend!
Tell the king how things stand.

Summary 6

Captain
It was poised on a knife-edge. Both armies were exhausted and deadlocked, that heartless evil rebel, MacDonwald, brought in reinforcements from the western Isles. That is when things began to go his way and fortune smiled on him like a rebel whore. But it did not last because brave Macbeth neglected his safety and carved his way through them with a bloody smoking sword-until he faced MacDonwald. He didn’t stop to shake hands or say goodbye— he just ripped the villain from navel to jaw and stuck his head on our battlements.
<table>
<thead>
<tr>
<th>Summary 7</th>
<th>King Duncan</th>
</tr>
</thead>
<tbody>
<tr>
<td>What a brave cousin and great man.</td>
<td></td>
</tr>
<tr>
<td>Captain</td>
<td></td>
</tr>
<tr>
<td>But our sun didn’t shine for long.</td>
<td></td>
</tr>
<tr>
<td>The storm broke out again and our triumph was short lived.</td>
<td></td>
</tr>
<tr>
<td>Listen to this song, king of Scotland-</td>
<td></td>
</tr>
<tr>
<td>No sooner had the Western Islanders ran away than the Norwegian commander began another assault, with reinforcements and fresh weapons.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary 8</th>
<th>King Duncan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn’t this worry our captains Macbeth and Banguo?</td>
<td></td>
</tr>
<tr>
<td>Captain</td>
<td></td>
</tr>
<tr>
<td>As much as sparrows worry eagles or hares worry lions. I’m telling you the truth they were like fighting machines.</td>
<td></td>
</tr>
<tr>
<td>They tore into the enemy as if they wanted to cover themselves in blood or create another Golgotha.</td>
<td></td>
</tr>
</tbody>
</table>
Captain
But I am weak my wounds need attention.

King Duncan
Your words are as honorable as your wounds. Go get him to the surgeons.
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