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An Analysis of Pictures for Improving Reading Comprehension: A Case Study of the New Hanyu Shuiping Kaoshi

Fei Yu

Abstract: This study examines pictures from reading comprehension tasks of the New Hanyu Shuiping Kaoshi (the New HSK), also referred to as the New Chinese Proficiency Test, to see (a) what kind of pictures facilitate reading comprehension, (b) if and how pictures in the New HSK reading comprehension tasks facilitate test candidates in comprehending the reading text, and (c) what are the effects of pictures on reading comprehension. Based on previous studies (e.g., Levin, 1983; Omaggio, 1979), a picture facilitating reading comprehension is expected to meet four criteria simultaneously: (1) not including too much information about the content of the reading text; (2) depicting information from the beginning paragraph(s) of the text; (3) mirroring language complexity of the text; and (4) depicting information that is invited to be processed in the text. Analyzed through these four criteria, 29 out of 60 pictures were identified as facilitative pictures promoting reading comprehension. The remaining 31 pictures were found to be distracting or superfluous and thus unable to effectively help readers comprehend the text. Suggestions for test designers about how to choose pictures facilitating reading comprehension are also provided.

Key words: pictures; the New HSK; reading comprehension; reading comprehension tasks
Introduction

Hanyu Shuiping Kaoshi (HSK), also referred to as the Chinese Proficiency Test, is a national standardized test in China which tests and assesses Chinese language proficiency of non-native speakers, including foreigners, overseas Chinese, and members of ethnic minorities in China. The first HSK test was developed in 1984 by Beijing Language and Culture University (BLCU) and was officially made a national standardized test in 1992. In November, 2009, a new version of HSK test (The New HSK) was launched by the Chinese National Office for Teaching Chinese as a Foreign Language (Hanban) in order to better serve Chinese language learners. Since then, the New HSK has been regarded as the sole authoritative HSK test. According to the statistics report from Hanban, by 2012, 532,909 non-native Chinese speakers from all around the world have taken this test.

From the old version to the new one, HSK has experienced some significant changes, such as the reformation of the ranking system from three proficiency levels to six proficiency levels, and the inclusion of both spoken and written segments in all proficiency levels. Comparing between the test papers of the two versions, one of the noticeable changes is the use of a large amount of pictures in the New HSK test papers. Colorful and real-life pictures, which used to only appear in the listening part of the elementary level and intermediate level of the old version, are now also used in reading comprehension tasks of the New HSK. Specifically, each reading text is presented with multiple choice questions and a matching picture. By reviewing the thirty sets of sample test papers which were used in previous tests and are now officially published online, it has been found that reading comprehension tasks are only included in the test papers of the New HSK proficiency level 5 (Section III of the Reading part) and level 6 (Section IV of the Reading part). Each reading text appears together with

1 See http://blog.sina.com.cn/s/blog_53e7c11d0101f02j.html
four multiple choice questions and one picture. The use of pictures in reading comprehension tasks is regarded as a new attempt for test designers and a new experience for test takers.

Feedback from test takers who took the old version of HSK showed that the difficulty of the test scared away many students and teachers. Some students said that after learning Chinese as a second language for several years in China, they still could not get a satisfactory score in the HSK-Basic Level test. Chinese language teachers indicated that they did not like HSK because the test requirements were too high for their students and that they would not encourage students to take this exam (Research and Development Group, 2009). With feedback and suggestions from different sides, the New HSK has been developed to overcome problems arising from the old version. One of the big steps is expanding the three proficiency levels of the test into six levels and relatively reducing the test difficulty for each level. It is said that a relative lowering of test difficulty would make the New HSK encouraging instead of daunting, popular instead of appalling, a “springboard” instead of a “block” for learning Chinese (ibid., p.2). For many test takers, the reading comprehension task is one of the most challenging tasks in HSK test (Li, 2012). Pictures are then used in order to facilitate candidates' reading comprehension, which would consequently reduce their stresses during the test. Furthermore, according to the Research and Development Group of the New HSK (2009), pictures are used in order to make the test more vivid and closer to real life communication and promote Chinese language worldwide.

This paper specifically investigates pictures used in the reading comprehension tasks of the New HSK test papers while addressing the following three questions:

(1) What kind of pictures facilitates reading comprehension?

(2) If and how pictures in the New HSK reading comprehension tasks facilitate test candidates in comprehending the reading text?

(3) What are the effects of pictures on the reading comprehension of test candidates?


**Literature Review**

Since the present study is about the reading comprehension task, previous research about this task in *the New HSK* has been reviewed with a particular concern about research conducted after 2009 when the test was launched. Only a few studies have been conducted. Zhang (2012) and Li (2012) analyzed text content, types of questions, and answering skills for the reading comprehension task in *the New HSK*. They found that while this task emphasized testing students' basic knowledge of Chinese, it focused on students' abilities to use Chinese, particularly their ability to communicate effectively with Chinese. Chai (2012a) did an empirical study testing validity of the reading comprehension task in *the New HSK* by focusing on reading texts and multiple choice questions. He found that this task had reliable validity as no special knowledge and additional cognitive learning skills were required from test takers for non-linguistic comprehension when they took the test. In the same year, Chai (2012b) studied the application of the implicational scaling procedure to detect the differential passage difficulty order of the reading comprehension task in *the New HSK*. He found that this task did not give privilege to test takers with a particular professional background as the reading texts did not require any professional knowledge besides language knowledge itself. Miao (2012) compared and contrasted the words and phrases used as cohesive devices in the reading comprehension task of *the New HSK*. He found that lexical cohesion techniques applied in the reading texts helped test takers to fully grasp its meaning as a whole. At the time this paper was written, research has not been located specifically about pictures added into the reading comprehension task of *the New HSK* test papers. The current study attempts to fill, at least partially, this gap by investigating the added pictures and their potential impact on test takers' understanding of reading texts.
Effects of Pictures on Reading Comprehension

Studies concerning the effects of pictures on reading comprehension has also been investigated. A significant body of research (e.g., Alesandrini & Rigney, 1981; Daley, 2003; Eisner, 2002; Evans, 2003; Gambrell & Jawitz, 1993; Reid & Beveridge, 1990; Waddill & McDaniel, 1992) has been found. A general consensus is that pictures play a positive role in helping readers to comprehend a text. Some researchers (Bernhardt, 1991; Gyselinck & Tardieu, 1999; Hibbing & Rankin-Erickson, 2003) believed that pictures provided readers with a new source of information in addition to what they could get from reading the text itself, and that the two sources of information facilitated reading comprehension. However, according to Hadley (1993) “a picture is not always worth ten thousand words......it is certainly possible to construct differentially effective pictures for the same learning task” (p. 274). Therefore, the question concerning how to choose a supplemental picture that can effectively facilitate reading comprehension has come into many people’s eyes. Some research has been done on this topic, which can be generally classified into the following four categories.

The Part of Text Depicted by Pictures

Early in 1979, Omaggio first conducted a study with a group of learners of French as a second language to look at their use of a variety of pictures while working on a reading comprehension task. Omaggio (1979) found that all pictures were not equally effective in enhancing comprehension in the second language. Instead, the most effective picture was the one depicting information from the beginning paragraph(s) of the reading text.
Learning Task vs. Picture

In 1983, Levin studied the pictorial strategies employed by students in reading and pointed out that the degree to which a picture facilitated reading comprehension depended on the relationship between the learning task and kinds of pictures provided. For instance, when a reading text requires its readers to understand the complex relationships within the text, a relational picture illustrating the relationship among information from the text, instead of a detailed picture depicting a particular piece of information, is more helpful for reading comprehension. Later, Waddill, McDaniel and Einstein (1988) further confirmed Levin’s findings in their study, which showed that a picture effectively increased the recall of information from a reading text only when that information was invited to be processed, that is, when what the picture depicted was directly related to the task content and component processes. To be more specific, the facilitation function of a picture depends on the relationship between the type of the picture and the type of the learning task.

Content and Language vs. Pictures

In 1999, Gyselinck and Tardieu proposed that the effect of pictures on reading comprehension largely depended on the quality of the repetition effect. In this sense, when the information depicted in the picture also appears in the text, it helps to reduce readers’ cognitive load. When the picture provides information that is difficult to be understood through the text, it promotes readers’ reading comprehension. Therefore, it is argued that pictures should match the reading text to help readers understand both its content and language. Pan and Pan (2009) investigated the reading comprehension learners of English as a foreign language, which further confirmed the proposition of Gyselinck and Tardieu (1999). Pan and Pan (2009) suggested that a picture which closely reflected the structure and complexity of the text had a more facilitative effect. Which means, on
on one hand, the information integration between the text and the picture can improve reading performance of readers. On the other hand, the facilitative function of the picture diminishes or disappears when it does not positively match with the linguistic complexities of the reading text.

**The Amount of Information**

Some researchers (Filippatoua & Pumfrey, 1996; Pan & Pan, 2009) recommended that a picture should not include too much information because it might confuse readers when looking for the useful information. “A simple illustration that serves as an advance organizer makes comprehension of a second-language test less difficult” (Omaggio, 1979, p.115). Based on the literature review, effective pictures that can promote reading comprehension need to meet the following four basic criteria simultaneously:

1. Not including too much information about the content of the reading text;
2. Depicting information from the beginning paragraph(s) of the text;
3. Mirroring language complexity of the text; and
4. Depicting information invited to be processed in the text.

A picture is expected to meet all the four criteria to be an effective and facilitative picture for readers, especially for second language (L2) readers.

According to Omaggio (1979), L2 learners are usually at a disadvantage position in reading mainly for two reasons. First, they need to recall cues that they are not familiar with or know imperfectly in their native language. Second, they “must simultaneously predict future cues and make associations with past cues” (p.109). Thus, providing facilitative pictures for the reading comprehension task in the New HSK has significant meanings for test candidates.
Methodology

Data

Beginning in 2013, New HSK test papers were no longer kept confidential and are officially published online one week after the test date. The data source for this study was twelve sets of New HSK test papers with reading comprehension tasks (Proficiency Level 5 and Proficiency Level 6), which were used for tests in 2013 and are now accessible through the official website of Hanban, <www.chinesetest.cn>. The reading comprehension task per test paper includes five reading texts, and each text is assigned with one picture. Thus, the data analyzed in this paper consisted of 60 reading texts and 60 pictures. See Appendix 1 for permission from the Confucius Institute Headquarters/Hanban to use these tests in the current study.

Procedure

The focus of this paper was on the pictures from reading comprehension tasks of New HSK test papers. Based on the four criteria, the present study looked for pictures facilitating reading comprehension that met all the four criteria. At first, all 60 pictures were classified into different categories based on the first criteria. For instance, I divided them into two categories: one category with pictures delivering “not too much” information and the other category with pictures delivering “too much” information as elaborated in the Analysis and Results section. Within each category, representative examples of pictures were given and analyzed to see their impact on reading comprehension. Following the analysis with the first criterion, only those pictures met the first criterion continued to be analyzed with the second criterion. The same procedure continued until pictures that met all four criteria were found out, which were regarded as
facilitative pictures delivering effective information that helped to promote readers' comprehension. During the analysis, besides pictures, I also looked at the reading texts appearing together with pictures. The possible effects of different pictures on readers were explored.

**Analysis and Results**

Data analysis was conducted in four phases. In each phase, pictures were analyzed through one of the four criteria discussed in the Literature Review section. In a linear sequence, only those pictures meeting the first criterion could continue to be analyzed in the next phase with the second criteria. The same went for the third and the fourth criteria. At the end of the analysis, only pictures meeting all the four criteria simultaneously were identified as facilitative pictures for reading comprehension.

**Pictures Including “Not Too Much” Information**

Based on the first criterion, a facilitative picture for a reading text should not include too much information about the content of the text. The questions then become how to define “not too much” information? How much is “not too much”? According to Miller (1956), there were some limits on the human capacity for processing information. Specifically, Miller (1956) posited that the number of objects an average human could hold in working memory was 7 ± 2. In the context of the present study, the reading comprehension task was taken as a whole, where readers needed to process different sources of information almost at the same time. Since test takers of the New HSK test are non-native speakers of Chinese, the information required to be processed in the reading task roughly include four chunks: (1) the content of the text, (2) the language of the text, (3) the multiple choice questions, and (4) the picture. Within the four chunks, informational variation between 4±2 is acceptable based on Miller’s Law (1956). Specifically, for each reading task, three (the content of the text,
the language of the text, and the multiple choice questions) of the seven chunks have already been occupied. Thereafter, only four chunks are left to be taken up by the picture. Keeping with Miller's 7 ± 2 law (1956) and taking the flexible two chunks into consideration, the maximum chunks that can be used by picture turn out to be six, and the minimum is two. From this, I deduce that a picture carrying 2-6 pieces of information is more realistic and acceptable for test takers. Within this range, a picture with the minimum information of two pieces works better for readers who have had some prior knowledge about the topic of a reading task, and a picture with the maximum information of six pieces works better for readers who do not have enough prior knowledge. Out of this range, there is the risk of either not fully using readers’ cognitive capacity or overloading it.

By examining all the 60 pictures, in terms of objects depicted by each picture, all pictures were classified into three categories: (1) pictures depicting one object, (2) pictures depicting two to six objects, and (3) pictures depicting more than six objects, as shown in Table 1. The number of pictures under each category is also included in the table. Objects depicted in pictures here are defined as things that have their name in Chinese and can be discretely described if taken out of the picture. In the analysis that follows, pictures from each category are discussed. Since space is limited, only some of the pictures are presented here as examples for each category.

Table 1

<table>
<thead>
<tr>
<th>Amount of Objects Depicted by Each Picture</th>
<th>Number of Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Object</td>
<td>26</td>
</tr>
<tr>
<td>2-6 Objects</td>
<td>34</td>
</tr>
<tr>
<td>More than 6 Objects</td>
<td>0</td>
</tr>
</tbody>
</table>

As shown in Table 1, 26 out of 60 pictures were classified as pictures depicting one object, accounting for 43% of all pictures. These pictures depict a wide range of objects. Some of them are common to people from
different cultures, and some are specific to Chinese culture. Table 2 presents five examples of one-object pictures from the *New HSK* test papers. Both the Chinese and the English names for each object depicted are provided in the table. Through these examples, each picture depicts one discrete object which can be assigned a name in Chinese.

Table 2

*Pictures Depicting One Object*

<table>
<thead>
<tr>
<th>Depicted objects</th>
<th>Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lion 狮子</td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>Folding fan 折扇</td>
<td><img src="image" alt="Folding fan" /></td>
</tr>
<tr>
<td>Mushroom 蘑菇</td>
<td><img src="image" alt="Mushroom" /></td>
</tr>
<tr>
<td>Funnel 漏斗</td>
<td><img src="image" alt="Funnel" /></td>
</tr>
<tr>
<td>Plum Blossom 梅花</td>
<td><img src="image" alt="Plum Blossom" /></td>
</tr>
</tbody>
</table>

In Table 1, 34 out of 60 pictures depict 2-6 objects simultaneously, accounting for 57% of all pictures. Table 3 shows two example pictures taken from the *New HSK* test papers. The two pictures are regarded as the most “complex” ones among all the 60 pictures, since each of them depicts five objects simultaneously; more objects than any other pictures on the test.
Table 3

*Pictures Depicting 2-6 Objects*

<table>
<thead>
<tr>
<th>Depicted objects</th>
<th>Pictures</th>
</tr>
</thead>
<tbody>
<tr>
<td>山，水，渔船，渔夫，渔网</td>
<td><img src="image1.jpg" alt="Picture 1" /> <img src="image2.jpg" alt="Picture 2" /></td>
</tr>
<tr>
<td>城楼，城墙，马，将军，随从</td>
<td></td>
</tr>
</tbody>
</table>

Through analysis, all the 60 pictures met the first criterion and could continue to be analyzed with the second criterion. Although 43% of the pictures fell out of the 4±2 range, which are detail pictures with only one discrete pictorial element, they still met the first criterion as they did not provide “too much” information. Moreover, according to Omaggio (1979), a very simple picture could still serve to promote comprehension, especially when it provided information that the reader could not understand through the text. A good example here is a picture depicting a new but key word appearing in the reading text to help promote readers’ comprehension.

**Depicting Information from the Beginning Paragraph(s)**

When considering where the information a picture was trying to capture could fall in a reading text, these 60 pictures continuing to be analyzed were classified into three categories: pictures depicting information from (1) the beginning paragraph(s) of the text, (2) the middle paragraph(s), and (3) not appearing in the reading text. Table 4 shows the three categories, the corresponding examples for each category, and the number of pictures under each category.
From table 4, 51 out of 60 pictures met the second criterion, accounting for 85% of the pictures continuing being analyzed. According to Omaggio (1979), one of the reasons these pictures, which she referred to as "prerhematic context pictures" in her study, were most helpful was that they "depict(ed) events from the beginning of the story, thereby aiding the reader in organizing his existing store of knowledge prior to reading the opening paragraph" (p.115).

Picture NO.1 in Table 4 was analyzed here in relation to its reading text to see how it would help comprehension. The picture shows a plate of noodles, and the reading text with this picture is about Shanxi Noodle. The first paragraph of the reading text is as follows:

Shanxi Noodle has a long history. Its name has been changing with time and place in its long history of 2000 years. During the Eastern Han Dynasty, it was called "Zhu bin"; in Wei and Jin Dynasties, the name was changed to "Tang bin"; in Northern and Southern Dynasties, it was "Shui yin"; and later in Tang Dynasty, it was known as "Leng Tao". As the old saying goes, "The more beloved one gets more beloved names", since Shanxi Noodle is given so many names, this fully explains its importance to Shanxi people.
The text talks about different names used for Shanxi Noodle throughout history, which explains Shanxi people’s particular love for noodles. In such a short paragraph, five historical names for Shanxi Noodle and one Chinese old saying are included. These noodle names and the old sayings, which are difficult even for native speakers to understand, may frustrate second language readers. Even worse, it may distract the readers’ attention and make them fail to catch key points in the text. Readers of this paragraph may have a feeling that it is about noodles, but may still be confused by all these “elusive” names involved. When this occurs, by looking at picture NO.1, it would help readers to confirm their uncertainty and catch the point from the beginning of their reading. This overarching understanding would also help readers to understand the rest of the text about the noodle culture of Shanxi.

From Table 4, nine out of 60 pictures depict information not from the beginning paragraph(s) of reading texts, accounting for 15% of the pictures continuing to be analyzed. Specifically, seven of them depict information from the middle of reading texts, and two of them depict information that does not appear in reading texts.

Picture NO.2 in Table 4 was analyzed in relation to the reading text which it accompanies. The picture shows a traditional Chinese bow and a bundle of arrows, both of which were used as weapons in wars of ancient China. The following translation is corresponding to the beginning and the middle of the reading text.

Long time ago, there lived a man, whose name was Guang Yue. Guang had a good friend, who always visited him. When his friend did not come to visit, Guang was so worried about him. He went to the friend’s house, and found him sick in bed. When Guang asked the reason, his friend told him as follows, "The last time when I visited you, you invited me to have a drink. I refused your invitation at first because I saw a snake in the wine bowl. Later, you invited me again, for politeness, I accepted your invitation and drank the wine in the bowl. From
then on, I always feel that there is a snake in my stomach and I cannot eat anything.
Guang wondered why his friend could see a snake in his wine bowl? After going back home, he walked around the room trying to find out the reason. Suddenly, he saw the bow hanging on the wall. "Is this the reason?" He asked himself. Then, he poured a bowl of wine and put it on the table. By moving the bowl on the table, finally he found the shadow of the bow clearly projected in the bowl. When the bowl moved, it seemed that there was a snake moving in it.

New HSK test 2013-5 Level5

A story episode between Guang and his friend is described in the beginning of the reading text, where neither the bow nor the arrows are mentioned. It is in the middle of the text that a bow hanging on the wall is mentioned, when a large part of the story has already passed. Even though the bow is an important element in the story, if a reader fails to understand the context of the story where the bow needs to be understood, then a picture depicting a bow and arrows would not be beneficial for their overall comprehension. As Omaggio (1979) stated in her study, a picture “provide(s) cues to events occurring late in the story and might therefore have failed to suggest an effective organizational scheme to aid comprehension of the opening paragraphs” (p.115).

Picture NO.3 in Table 4 is from a reading text from the New HSK test 2013-5 proficiency level 6, a story about the three visits of Bian Que, a famous doctor in ancient China, to Duke Caihuan, the King of Qi. The two objects depicted in picture NO.3, an ancient Chinese medical book and an herb, are not mentioned in the reading text. There might be “some” relationship between the picture and the text, because Bian Que is always associated with medical books and herbs in Chinese culture. However, even if this is the case and a test taker realizes this relationship, this would not help him/her to understand the story, since the text itself has nothing
to do with things depicted in the picture. On the contrary, this picture may distract or, even worse, mislead readers’ comprehension.

Through analysis, the majority of pictures (51 out of 60) used in the New HSK test depict information from the beginning paragraph(s) of reading texts, which could assist readers in building up background knowledge necessary for understanding the content of the reading text. However, some pictures depict information appearing in the middle or at the end of the reading texts, which may fail to help readers organize the text information effectively; and some pictures depict information not appearing in the reading text, which may mislead readers. Thus, only the 51 pictures meeting the second criterion, depicting information from the beginning of paragraph(s), continued to be analyzed with the third criterion.

**Mirroring Language Complexity of the Text**

According to the third criterion, objects and/or content depicted in pictures should reflect the language difficulty of the reading text. All reading comprehension tasks analyzed in this paper are from the test papers of the New HSK proficiency level 5 and level 6, who are advanced learners who have already passed the New HSK beginner level and intermediate level. Depicted information in pictures is required to correspond to words or phrases that can be found in the New HSK vocabulary list of level 5 and level 6 or above the two levels.

To find out whether depicted information in a picture corresponded to words or phrases at or higher than the New HSK level 5, two steps were carried out. First, each reading text that appears with a picture was reviewed, during which words and phrases depicted in the picture were located in the text. Second, the New HSK vocabulary list was referred to see whether and at which level the depicted words and phrases were on the list. Table 5 shows the two general levels of language depicted in pictures: (1) lower than the New HSK proficiency level 5, and (2) equal/higher than
level 5. Number of pictures under each level and examples of pictures are also provided in this table.

Table 5  
Language Depicted in Pictures

<table>
<thead>
<tr>
<th>Language Depicted in Pictures</th>
<th>≥ new HSK level 5</th>
<th>&lt; new HSK level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Pictures</td>
<td>41</td>
<td>10</td>
</tr>
<tr>
<td>Examples</td>
<td>NO.4</td>
<td>NO.5</td>
</tr>
<tr>
<td></td>
<td>NO.6</td>
<td>NO.7</td>
</tr>
</tbody>
</table>

Through Table 5, 41 out of 51 pictures depict language equal to or higher than the vocabulary requirement of the New HSK proficiency level 5, accounting for 80% of the pictures continuing being analyzed. Since these pictures depict information from the reading text for test candidates who have already passed the New HSK beginner level and intermediate level and are “supposed” to reach the advanced level, the depicted words and phrases equal to or higher than the advanced level (proficiency level 5) would help to facilitate the reading.

The two examples in Table 5, picture NO. 4 and NO.5, were analyzed with the reading text that they accompany respectively to see the language depicted in each picture. Picture NO.4 is about xi qu (Chinese traditional opera). The phrase “xi qu” appears five times in the reading text, and its synonym, li yuan (another name for Chinese traditional opera), fourteen times. In total, the same concept is mentioned nineteen times in the text, specifically, eight times in the first paragraph, five times in the second and third paragraphs respectively, and one time in the last paragraph. Since the concept runs through the whole text, which is actually the topic of the
text, understanding of this concept would greatly improve readers’ understanding of the whole text. Moreover, when referring to the New HSK test syllabus, I found that both phrases “xi qu” and “li yuan” are beyond the vocabulary requirement for the current test level and are not required to be mastered by test takers. Hence, a picture depicting the key concept of a reading text corresponding to words or phrases higher than the “supposed” current proficiency of test takers is particularly important.

Picture NO.5 appears together with a reading text about the development of basket in basketball games. From the New HSK syllabus, the phrase “da lan qiu” (play basketball) is a level 2 phrase, however, the word “kuang” (basket) is a word beyond the requirement of the syllabus. Thus, picture NO.5 depicting a basket would mostly promote readers’ comprehension of the reading text.

From Table 5, 10 out of 51 pictures depict information corresponding to language lower than the New HSK proficiency level 5, accounting for 20% of the pictures continuing to be analyzed. As mentioned before, the reading comprehension task is only included in test papers for the New HSK proficiency level 5 and level 6, which are particularly for advanced Chinese learners who have already passed tests for proficiency levels 1, 2, 3 and 4. Therefore, if a picture only depicts information corresponding to language required for the New HSK proficiency level 4 or lower, it would be too easy for test takers and not match with the language difficulty of the reading comprehension task. Two examples are given below.

Picture NO.6 in Table 5 shows an egg. The picture appears together with a reading text, a Chinese mythology about the beginning of the world. In the first paragraph of the text, the universe is compared to an egg. Except the first paragraph, the phrase “ji dan” (egg) does not appear in the other paragraphs. Referring to the New HSK syllabus, “ji dan” (egg) is a level 2 phrase. Thus, the “egg” picture is superfluous for the reading text in this specific context for two reasons. First, “ji dan” (egg) was not a key concept requiring to be processed in order to understand the text (See the next section for further analysis). Second, as “ji dan” (egg) is a beginner
level phrase, and it is not necessary to be depicted for advanced level test takers here.

Picture NO.7 is in the same case, where the depicted word in the picture, “ping” (bottle), is a third-level vocabulary in the New HSK syllabus. Although the reading text is about the value of empty bottles, the picture depicts a concept which test takers have already known. Thus, it would not be helpful for the understanding of the text.

By analyzing with the third criterion, a large majority of the pictures (41 out of 51) depict information mirroring the language complexity of the reading text, which correspond to words or phrases from the reading text that are equal to or beyond the “supposed” current language proficiency of test takers. For pictures depicting information corresponding to language lower than the “supposed” current proficiency of the test takers, they are considered to be unnecessary in the text, even though sometimes the depicted information is one of the key concepts. For the analysis in the next section, the remaining 41 pictures which meet the first, second, and the third criteria simultaneously will continue to be analyzed.

**Depicting Information to be Processed in the Text**

According to the fourth criterion in this paper, pictures should depict information that is invited to be processed in the reading text, meaning that pictures should depict key concepts that are important for understanding of the reading text. Table 6 shows two categories of information processing: depicted information in the picture (1) requires to be processed in the text and (2) does not require to be processed. The number of pictures in each category is provided in Table 6, with one example picture presented for each category.
Table 6

<table>
<thead>
<tr>
<th>Information Processing</th>
<th>Depicted information</th>
<th>Depicted information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>required to be processed</td>
<td>not required to be processed</td>
</tr>
<tr>
<td>Number of Pictures</td>
<td>29</td>
<td>12</td>
</tr>
</tbody>
</table>

Examples

![NO.8](image1.png)  
![NO.9](image2.png)

From Table 6, 29 out of 41 pictures depict information required to be processed in the reading text, accounting for 71% of the pictures continuing being analyzed. Picture NO.8 is an example for this category, which depicts a Chinese traditional concept: “xiang” (alley). The text appearing together with this picture tells a story about the origin of the concept “xiang” in Chinese, and the historical site “Liu Chi Xiang” in China. The whole text is about the concept “xiang”. Moreover, the concept “xiang” is an advanced level vocabulary according to the New HSK syllabus. Thus, this picture here definitely depicts information that is invited to be processed in the reading text. If a reader does not process this concept correctly, s/he may not know what the text is about. Thus, the picture provided with the reading text depicting the image of “xiang” in Chinese culture would effectively promote readers’ information processing concerning this concept, which would consequently improve their comprehension of the text.

Accordingly, 29% of the 41 remaining pictures do not depict information required to be processed in the text. Picture NO.9 in Table 6 provides an example, which shows a flying dragon drifting in the clouds. The text appearing together with this picture is about a painter’s story, based
on which the Chinese four-word phrase, “Hua long dian jing” was created. The story tells about a painter who painted a dragon without eyes; later, when he added two eyes for the dragon, it came alive and flew away. Based on the story, the word “jing” (eyes) instead of “long” (dragon) is the focus of the four-word phrase. And the “jing” (eyes) part of the story is required to be processed by test takers in order to understand the reading text and work on reading questions. However, the picture only depicts a normal dragon drifting in the clouds, which would easily distract readers' attention from the eyes (“jing”) of the dragon. Moreover, since the depicted information is not needed to comprehend the reading text, the picture seems unnecessary in this situation.

Through analysis with the fourth criterion, more than half of pictures (29 out of 41) depict information required to be processed in the text. By providing real images for key and difficult concepts in the text, these pictures would help facilitate readers' comprehension. On the other hand, pictures depicting information not necessary to be processed in the text would always seem superfluous, even worse, they may mislead readers sometimes.

Discussion

Why are pictures used with reading texts in the New HSK? Through the analysis, we see that pictures are not effectively used in the reading comprehension task of the New HSK test. As mentioned at the beginning of this paper, one of the major purposes for using pictures with reading texts is to facilitate test takers' comprehension in reading. However, in the analysis, the author has found pictures with superfluous and distracting information, and even pictures depicting information that could not be found in the corresponding text. The appearance of these pictures in test papers produce the impression that the New HSK test designers did not really consider the effect of a picture for comprehension when using it with the reading text. This would consequently reduce the reliability of the New
According to Hughes (2013), one of the two components of test reliability is that performance of candidates from occasion to occasion should be consistent. Distracting pictures, however, provide an unfavorable factor for test takers to show their real comprehension ability; thereupon, add one more layer of uncertainty leading to a similar performance on different occasions.

Are pictures with culture-specific information helpful for reading comprehension? The answer to this question could be yes and no. In the analysis, the author has found that many pictures about Chinese culture were used together with reading texts. On one hand, since test takers of the New HSK are non-native speakers who are not expected to know every aspect of Chinese culture, a picture depicting specific cultural elements, such as a picture of “Liu chi xiang” as analyzed before, would greatly help readers to understand the content of the text. On the other hand, there are still other considerations that should be taken into account in order to choose a picture depicting culture. For example, the depicted cultural aspects need to be processed in the reading text, and the language corresponding to the cultural aspects needs to be equal to or higher than the “supposed” current language proficiency of test takers. Otherwise, the picture would not serve well for promoting comprehension. There are some pictures used in the New HSK test showing great Chinese culture, however, the depicted information accounts little of the text content and does not have any impact on test candidates’ understanding of the text itself. This unavoidably makes people question the function of these pictures. “Some pictures play an active role in promoting Chinese culture, showing modern China and Chinese spirits” (Zhang, J., Xie, N., Wang, S., Li, Y., & Zhang, T., 2010). While no one would disagree with using culture-specific pictures with reading text, it is important and essential for test designers to look at their functions and carefully consider questions concerning how a picture could facilitate reading comprehension of test takers before making the decision to use pictures.
Conclusion

Based on previous research that has been done about pictures in reading tasks, this paper summarizes four criteria that facilitative pictures for reading comprehension tasks are expected to meet: (1) not including too much information about the content of the reading text, (2) depicting information from the beginning paragraph(s) of the text, (3) mirroring language complexity of the text, and (4) depicting information that is invited to be processed in the text. Through analysis with these four criteria, 29 out of 60 pictures from the New HSK reading comprehension tasks were found to meet all simultaneously, accounting for 48% of all pictures analyzed. Specifically, all the 60 pictures met the first criterion. However, through continued analysis with the other three criteria, the amount of pictures decreased after each criterion was applied. Pictures eliminated from the list were found to be distracting, superfluous, or unrelated to reading text. In real testing situations, while it is not easy for each picture to meet all the four criteria, the author suggests that test designers keep these four criteria in mind when choosing or designing pictures for the New HSK test papers in order to protect the efficiency of pictures to reach facilitation purpose.

According to the feedback from test takers of the old version of HSK test, the test was too hard, which discouraged many people to take the test and even to learn Chinese. The New HSK test is designed with adjusted test difficulty to help test takers see their achievement in learning Chinese and encourage more people around the world to learn Chinese. Adjusting test difficulty does not mean to lower the requirements for test takers, but rather to provide them with language learning tools and strategies to perform better on the test. Facilitative pictures added to reading comprehension tasks are regarded as one of these tools. Test designers should do their best and take the responsibility to find effective and facilitative pictures for each reading text.
Limitations

The first limitation of this research is the number of pictures analyzed in this study. Due to the limited availability of data, only 60 pictures were analyzed, which, to some extent, leads to the lack of statistical generalizability of this study. A second limitation is having only one researcher analyze all the data involved. Although I have referred to various sources about the New HSK test and have been regularly reflecting on my role as a researcher to avoid potential subjective biases during this study, it would have given more credibility to this study if I had invited research peers to discuss the findings emerging from this study, or more ideally, invited test takers to participate in this study. Therefore, for future research, a larger amount of test data are suggested to be used with the involvement of both test takers and peer researchers to enhance the credibility of such studies.

References


Appendix 1

Permission from Confucius Institute Headquarters/Hanban

From: Xiaolong Liu <liuxl@chinesetest.cn>
To: Fei Yu <fayuzone@gmail.com>
Date: Fri, Dec 26, 2014 at 1:27 AM
Subject: Permission for using the New HSK test data

Dear Fei Yu,

Your application for using the New HSK tests published on the Hanban official website (www.chinesetest.cn) is approved. You are only permitted to use the New HSK tests in your research study but not in any other ways. We hope that you can share your research findings with us.

Best Regards,
刘小龙 (LIU XIAO LONG)
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