

AN ANALYSIS OF INSTRUCTIONAL PICTURES USED IN PRIMARY ENGLISH COURSEBOOKS

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Abstract

This study analysed the types and roles of instructional pictures used in selected English coursebooks for elementary schools in Indonesia, and more specifically, the extent to which the pictures corresponded to the characteristics (principled set) of effective instructional pictures. Results of the analysis indicated that the type of pictures mostly belonged to less realistic type which was suitable for supporting the roles the pictures played in accompanying English words/text. The picture roles were mostly for introducing the meanings of new target words they accompanied, i.e., to support students' comprehension of written text (target words) and for reinforcing and/or establishing the target words that had been introduced by accompanying varied activities represented through the written text (words), i.e., to enhance students' retention of new target words. Most instructional pictures in the selected coursebooks were considered very effective to support their roles as they met the characteristics of effective instructional pictures (relevance, clarity, familiarity, suitability of picture type, and completeness of pictorial aspects). These findings suggest that selection of instructional pictures used to complement information presented in text should consider such aspects as suitability of types, roles, and characteristics of effective pictures in supporting their roles, in particular, for the purpose of enhancing English learning. Implications in developing and selecting instructional pictures are discussed.

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Introduction

Pictures are increasingly more inseparable from everyday communication. They are likely to enhance clarity of communication. For example, verbal explanation from local people accompanied with a simple drawing depicting an area in a city helps tourists to imagine the location of a bus station while listening to the direction, and more importantly, to remember the information later. In relation to learning, the use of picture-text combination caters students' need to take information from two channels in order to understand and retain information better (Paivio, 1986). Instructional pictures present and reinforce meaning of such new information as context of a lesson unit (e.g., Mukarto, Sujatmiko, Murwani, & Kiswara, 2016), words and structures (e.g., Wright, 1989), texts (e.g., Hibbing & Rankin-Erickson, 2003), concepts of content area subject presented in a second language (Marzano, Pickering, & Pollock, 2001), and instruction (Fleming & Levie, 1993). They provide a concrete representation of actions, ideas, time, and space information.

With regard to types of instructional pictures, they can be classified on the basis of three categories: (1) level of realism, (2) interface, and (3) content. Based on level of realism, types of instructional pictures may vary as a continuum ranging from realistic to simplified pictures. The level of realism is determined by details and colors in the picture. Adapting Dwyer's (1972) realism continuum, picture 1 serves to illustrate the decrease level of realism. The highly realistic photograph of ear provides superfluous details and uses color that faithfully represents human skin tone. Then, the level of realism decreases gradually as more manipulations are given in the picture. The picture is simplified by removing the details and using color that is less like human skin tone. The simplified pictures

containing essential information are believed to enhance the effectiveness and efficiency when dealing with a depiction. In addition, they are economical to the use of less realistic colors.

Photograph	Realistic (closely resembles real object)	Less realistic	Line drawing
			
Taken from http://www.pn-gall.com/Wp-content/uploads/2016/04/Ear-PNG-HD.png	Taken from https://cgcookie.com/app/uploads/2015/03/resources2.jpg	Taken from https://previews.123rf.com/images/viktorijareut/viktorijareut1510/viktorijareut151000136/45908375-Vector-illustration-of-human-ear-Ear-icon-symbol-Deaf-ear-hearing-Stock-Vector.jpg	Taken from http://drawinghowtodraw.com/stepbystepdrawinglessons/wp-content/uploads/2010/07/4-drawing-ears.png
High level of realism			Low level of realism

Picture 1. Sample pictures with different level of realism continuum

Based on interface, types of instructional pictures can be classified as 2D picture and real 3D picture. 2D picture refers to a picture that has width and length dimensions. It can be presented as flat-on picture or picture with perspective. 2D picture is useful for presenting static information and commonly used in printed material such as books, magazines, maps or advertisements. Meanwhile, the 3D picture by definition refers to a picture that has width, length, and depth dimension. It can be precisely said as real 3D picture as the picture depicts an object, imaginary character (Picture 2b), etc. as if they are real things that can be found in an everyday life.



a



b

Picture 2. 2D vs 3D Pictures

(taken from <https://austinvisuals.com/wp-content/uploads/2013/03/mario2d3d.jpg>)

Based on content or messages presented in the instructional pictures, (as adapted from Wright's (1989) and Hill's (2013) typology of instructional pictures), types of instructional pictures are classified as: (1) a single type of objects, (2) several types of objects, (3) one person, (4) several people, (5) people who do action, (6) people who interact, (7)

famous people, (8) incomplete object, (9) place, (10) map and symbol, and (11) picture with a lot of information.

This should be noted that second language learning could benefit from instructional pictures only if they are appropriately used and designed. Unfortunately, there is still a lack of principled guidelines for using and designing instructional pictures. Therefore, pictures used in such ESL/EFL teaching/learning resources as textbooks/coursebooks or multimedia representations are often distracting rather than facilitating learning. Some studies revealed the ineffective use of instructional pictures, e.g., mismatch of content between text and illustration (Hibbing & Rankin-Erickson, 2003) and the deficiencies found in design of pictures that interfere with prepositional learning (Pramono, 2005). Therefore, teachers and learning material writers need to be equipped with knowledge of how students process pictorial and verbal information altogether. Schnotz, Böckheler, and Grzondziel (1999) combine dual coding theory and mental model theory to provide explanation on how students might benefit from picture-text combination in understanding text. It emphasizes the importance of picture-text complementarity and students' background knowledge of presented subject matter in order to facilitate the construction of appropriate mental model of externally presented information. Adopting Mayer and Gallini's (1990) idea on increasing effectiveness of instructional pictures, Pramono (2005) proposed characteristics of effective instructional pictures as follows: (1) the choice of type of instructional picture should fit the roles of pictures, (2) instructional pictures should provide complete relevant information and make the key point explicit, (3) instructional pictures should make key information salient, and (4) instructional pictures should depict subject matters that are familiar to students.

It is by far the evaluation of roles of pictures in English coursebooks in Indonesia emphasizes on cultural aspect of the picture used in the coursebooks (e.g., Emilia, Moecharam, & Syifa, 2017; Hermawan & Lia, 2012; Damayanti, 2014). Unlike the previous studies, this present

study emphasizes on the analysis of instructional pictures used in primary English coursebooks with special focus on identifying the types of pictures that are mostly used, the roles the pictures play in complementing text, and the extent to which the pictures correspond to the characteristics of effective instructional pictures.

Based on the discussion above, the study was aimed at analysing (1) the types of instructional pictures used in the primary English coursebooks, (2) the roles of instructional pictures used in the primary English coursebooks, and (3) the extent to which the pictures correspond to the characteristics of effective instructional pictures.

Methods

This study is a principle-based evaluation that analyses the use of instructional pictures in recently published thematic English coursebooks for primary schools by Erlangga publisher, entitled “*Grow with English*” Book I and II which emphasize on spoken language competence. The pictures constituting the whole coursebooks played crucial roles in language learning. Adapting Renandya et. al.’s (2015) method of coursebooks selection and sampling technique, the coursebooks were selected based on the following criteria: (1) the coursebook is published by highly reputable publishers (e.g., Erlangga) and/or those whose material writers are well-known authors. Such coursebooks are chosen since they are likely to be used all over Indonesia, (2) the coursebooks selected for further analysis should include those written for lower elementary level in which visuals are assigned a special role for second language learning, (3) the coursebook should provide large proportion of pictures that contains stories. In addition, they are well-scaled and generally visually pleasing to pupils. In order to provide detailed analysis while providing a representative sample, samples of four units from each selected coursebook were used for analysis. Units 1, 3, 5, and 7 were chosen from each selected coursebooks. In total, 8 units were sampled from the two coursebooks for

analysis. The units of analysis were pictures used in units 1, 3, 5, and 7 of the selected coursebooks.

The research instruments are the researchers themselves and rubrics. The rubrics, i.e., Appendix A, Appendix B, and Appendix C were developed on the basis of three classifications, i. e., (1) types of instructional pictures, (2) roles of instructional pictures, and (3) a principled set (characteristics) of effective instructional pictures identified after a careful review of selective literature.

Prior to data collection, learning tasks found in the selected English coursebooks were closely examined to identify the roles the pictures could support in learning, particularly, the key points depicted in the pictures. Then, the pictures throughout the selected coursebooks were numbered to help locate a picture in a page. Lastly, the types and roles of instructional pictures were encoded for practicality reason. The codes are presented in Appendix A and Appendix B. As for gathering the data, rubrics that have been developed beforehand were used.

Data were analysed with the following procedures using the rubrics that had been developed beforehand. First, identifying types of instructional pictures used in the selected coursebooks and counting the numbers of the pictures. Based on content, the types of instructional pictures were classified as (1) a single type of objects, (2) several types of objects, (3) one person, (4) several people, (5) people who do action, (6) people who interact, (7) famous people, (8) incomplete object, (9) place, (10) map and symbol, (11) picture with a lot of information. Based on level of realism, the types of instructional pictures were classified as (1) photograph, (2) realistic, (3) less realistic, (4) line drawing. Based on interface, the types of instructional pictures were classified as (1) 'Flat on' 2D picture, (2) 2D picture with perspective, (3) real 3D picture, and (4) pictures with mixed interface.

Next, identifying roles of pictures used in the selected coursebooks and counting the numbers of the pictures. The roles of

instructional pictures were classified as follows: (1) instructional pictures functioning as decoration, (2) instructional pictures introducing context that is related to lesson unit or learning target, (3) instructional pictures introducing meaning of information (target words, texts, concept, and instructions), (4) instructional pictures establishing or reinforcing meaning of information (target words, texts, etc.), and (5) instructional pictures performing mixed roles.

Finally, examining the extent to which the pictures correspond to the characteristics of effective instructional pictures. Scores were given to each picture in accordance with certain characteristics of effective instructional pictures (relevance, clarity, familiarity, suitability of picture type, and completeness of pictorial aspects, then, the scores were combined to get the percentage (higher percentage indicates higher effectiveness level of an instructional picture). Criteria for scoring and defining level of effectiveness of instructional pictures are presented as follows:

Criteria of Effectiveness	Level of Effectiveness
Relevance 3= Information is mostly irrelevant 5= Some information is relevant 7 = All information is relevant	Very effective (81-100%) Effective (66-80%) Less effective (56-65%) Not effective (46-55%) Not very Effective (45% and lower)
Clarity 2= Unclear and confusing for students 4= Clear and comprehensible only to some extent for students 6= Perfectly clear and comprehensible for students	<i>Note: As for effectiveness levels, this was in accordance with assesment commonly used at schools and universities</i>

Criteria of Effectiveness	Level of Effectiveness
<p>Familiarity</p> <p>1= Objects are unfamiliar to most students</p> <p>3= Objects are familiar to some students</p> <p>5= Objects are familiar to most students</p> <p>Types</p> <p>1= Unsuitable for the role of picture</p> <p>2= Fairly suitable for the role of picture</p> <p>3= Suitable for the role of picture</p> <p>Completeness</p> <p>1= Important information is not included</p> <p>2= Some important information is included</p> <p>3= All important information is included</p> <p><i>Note: The score weight is determined on the basis of level of importance of picture criteria</i></p>	

In order to support reliability of the analysis result, triangulation was conducted. Triangulation is by principle a process of qualitative cross-validation that aims at comparing information to determine corroboration (Wiersma, 2000, as cited in Maramis, 2013). The researcher and triangulators consolidated which pictures were counted as a single picture or as a group when numbering the pictures. Cross-validation of the data

was also conducted when identifying types and roles of pictures used in the selected coursebooks.

Findings

Research question 1 - types of instructional pictures used in the primary English coursebooks

The types of instructional pictures used in the selected coursebooks are presented in Table 1.

Table 1.
Types of instructional pictures used in the elementary English coursebooks

No.	Types of pictures	Frequency	%
Based on content (Adapted from Wright's (1989) and Hill's (2013))			
1.	A single type of objects	117	31.71
2.	Several types of objects	19	5.15
3.	One person	14	3.79
4.	Several people	15	4.07
5.	People who do action	99	26.83
6.	People who interact	18	4.88
7.	Famous people	N/F	N/F
8.	Incomplete object	20	5.42
9.	Place	34	9.21
10.	Map and symbol	5	1.35
11.	Picture with a lot of information	28	7.59
Total		369	100
Based on level of realism			
1.	Photograph	13	3.52
2.	Realistic	N/F	N/F
3.	Less realistic	325	88.08

4.	Line drawing	31	8.40
Total		369	100
Based on interface			
1.	'Flat on' 2D picture	225	60.98
2.	2D picture with perspective	95	25.75
3.	Real 3D picture	N/F	N/F
4.	Pictures with mixed interface	49	13.27
Total		369	100

Based on the content or message presented in the depiction, the instructional pictures used in the selected coursebooks were dominated by a single type of objects (31.71%) and people who do action (26.83%) while the other types of the pictures were less than 9 % (ranging from 1.35% to 9.21 %). For example, picture 3a depicted a single type of objects (dirty hands) whereas picture 3b depicted people who do action. Furthermore, the distribution of pictures types in the table 1 (number 1 to 6 and number 8 to 10) indicated that more portions in the selected coursebooks belonged to a single picture depicting one unit of meaning rather than a complex picture depicting multiple meanings.



Picture 3a. Sample picture of a single type of objects *Grow with English Book 2*, Page 30)



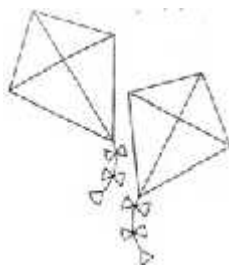
Picture 3b. Sample picture of people who do action (taken from *Grow with English Book 2*, Page 28)

Based on the level of realism, the instructional pictures used in the selected coursebooks were dominated by less realistic picture (88.08%). They were mostly in the form of avatar or cartoonish drawing commonly found in online messaging services, e.g. picture 4.



Picture 4. Sample picture of avatar (taken from *Grow with English Book 1*, Page 20)

With regard to the type of instructional pictures based on interface, the instructional pictures used in the selected coursebooks were dominated by Flat-on 2D pictures, e.g., picture 5a (60.98%) and 2D picture with perspective, e.g., picture 5b (25.75%). Real 3D pictures were not found in the selected coursebooks. Most of them used usual everyday view of subject matter, i.e., front view and side on view.



Picture 5a. Sample picture of Flat- on 2D pictures (taken from *Grow with English Book 1*, Page 74)



Picture 5b. Sample picture of 2D with perspective (taken from *Grow with English Book 1*, Page 74)





Research question 2 - roles of instructional pictures used in the primary English coursebooks

The roles of instructional pictures used in the selected coursebooks are presented in Table 2. The results were compared between two triangulators to support reliability.

Table 2. Data of the roles of instructional pictures used in the primary English coursebooks

No.	Roles of pictures	Frequency	%
1.	Functioning as decoration	N/F	N/F
2.	Instructional pictures introducing context that is related to lesson unit or learning target	8	2.7
3.	Instructional pictures introducing meaning of information (target words, texts, concept, and instructions)	113	30.62
4.	Instructional pictures establishing or reinforcing meaning of information (target words, texts, etc.)	186	50.41
	a. Repetition	78	21.14
	b. Recombination	N/F	N/F
	c. Describing	N/F	N/F
	d. Identifying	78	21.14
	e. Matching	13	3.52
	f. Sequencing	N/F	N/F
	g. Ordering	N/F	N/F
	h. Memorizing	3	0.81
	i. Mini dialogue	14	3.79
	j. Role play	N/F	N/F
5.	An instructional picture performing mixed roles	62	16.8
Total		369	100

Table 2 shows the roles instructional pictures play in accompanying texts. The majority of the instructional pictures used in the selected coursebooks had their role to establish or reinforce meaning of information (target words) that had been introduced before (50.41%) and the second biggest percentage shows that the role of instructional pictures is to introduce meaning of information (target words) (30.62%). For example, picture 6a (a yellow shirt) and picture 6b (brown shoes) had been introduced in earlier part of the book to help the students identify the meaning of target words (name of an object and its color); whereas picture 6c and 6d depicted afterwards had the role to reinforce the target words the students had learned, by asking the students to color the pictures in order that they would remember the name of the object and its color. None of the instructional pictures found in the coursebooks was used as decoration to a page.

 <p>a yellow shirt</p> <p>Picture 6a. Picture of a yellow shirt (taken from <i>Grow with English Book 2</i>, Page 65)</p>	 <p>brown shoes</p> <p>Picture 6b. Picture of brown shoes (taken from <i>Grow with English Book 2</i>, Page 65)</p>	 <p>a pink shirt</p> <p>Picture 6c. Picture of an incomplete object (taken from <i>Grow with English Book 2</i>, Page 66)</p>	 <p>brown shoes</p> <p>Picture 6d. Picture of an incomplete object (taken from <i>Grow with English Book 2</i>, Page 66)</p>
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Research Question 3 – the extent to which the pictures correspond to the characteristics of effective instructional pictures

To determine the level of effectiveness of the instructional pictures used in the selected coursebooks, the pictures were analysed based

on the characteristics of effective instructional pictures, i.e., relevance, clarity, familiarity, appropriateness of types, and completeness (see Appendix C). Results of the analysis were compared between two triangulators to support reliability.

Table 3. Data of level of effectiveness of instructional pictures used in the coursebooks

No.	Effectiveness Level	#Picture	%
Pictures with higher effectiveness level			
1	Very effective (81-100%)	317	85.91
2	Effective (66-80%)	18	4.88
Pictures with lower effectiveness level			
3	Less effective (56-65%)	3	0.81
4	Not effective (46-55%)	12	3.25
5	Not very Effective (45% and lower)	19	5.15
Total		369	100

Table 3 shows the level of effectiveness of the instructional pictures in the selected coursebooks. Based on characteristics of effective instructional pictures, most instructional pictures used in the selected coursebooks were considered very effective (85.91% and 4.88%). The instructional pictures with high level of effectiveness were found to have the following characteristics:

1. Relevance

Almost all the instructional pictures contained information related to the text they accompanied. For example, picture 7 (a student in uniform who stands up) depicts the action named in the text it accompanies. This helped students identifying the meaning of the target word, i.e., verb denoting action. In some cases, the instructional pictures contained

partly irrelevant information. This problem along with the consequence are discussed in another part of this article.



Picture 7. Picture of a student in uniform who stands up (taken from *Grow with English Book 1*, Page 4)

2. Clarity

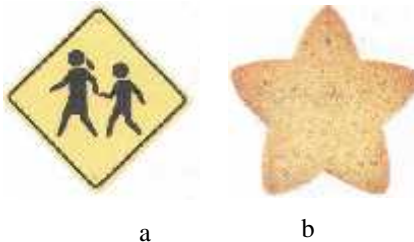
Almost all the instructional pictures made the key information salient to students. For example, picture 8 was used for introducing the word “house” and the English names (words) for parts of a house (living room, bedroom, bathroom, and kitchen). To make the rooms different and distinctive from each other, clear pictures of furniture were depicted. The room-sectioning and distinctive furnitures let students differentiate one room from another. In other words, the presentation directed students’ attention to a specific and individual picture of a room. However, small number of instructional pictures remained unclear to students because of the inappropriate picture type, inappropriate picture arrangement, and improper design. These problems along with the consequences are discussed in another part of this article.



Picture 8. Picture of a house with its parts (taken from *Grow with English Book 1*, Page 46)

3. Familiarity

All the instructional pictures contained subject matter were likely to be familiar to Indonesian students living in the city or village, e.g., picture 9 (road sign and cookie). Indonesian students might have heard about or seen the depicted subject matters second hand and have had direct experience of them.



Picture 9. Picture of road sign (a) and cookie (b) (taken from *Grow with English Book 2*, Page 36)

4. Appropriateness of the picture types

The overall types of instructional pictures used in the selected coursebooks were aligned with the roles of instructional pictures. In terms of content, the use of single pictures instead of complex pictures was effective for minimizing the distraction caused by irrelevant information. This picture type allowed the presentation of information

that was related to corresponding text only and focused students' attention to the key point presented in the picture. Speaking of level of realism of the pictures, the pictures in the selected coursebooks mostly belonged to the less realistic type. This picture type was sufficient to depict the basic shape of objects or human being and human actions that the students could identify without difficulties. The pictures functioned as a complement to the text (words) introducing the new information (target words). With regard to interface of the pictures, the use of 2D pictures was adequate and interesting enough for students, 3D picture was exaggerated (not necessary) for the purpose of introducing the target words.

5. Completeness

Almost all the instructional pictures provided complete and essential information so that the key information could be explicitly shown in the depiction. For example, picture 10 was used for introducing the words "fly the kite". It depicted the action and object named in the corresponding text, although few pictures lack some of key information. This problem with its consequences is discussed in another part of this article.



Picture 10. Picture of a boy flying a kite (Taken from *Grow with English Book 1*, page 75)

Meanwhile, there was a small percentage of instructional pictures with lower effectiveness level but the percentage was not significant at all (ranging from 0.81% to 5.15%). Types of problems are summarized in Table 4.

Table 4. Problems found in the pictures with lower level of effectiveness

No.	Types of problems	# of Picture	%
1	Partly irrelevant information	17	50
2	Incomplete information	6	17.65
3	Not perceptually salient key information	11	32.35
Total		34	100

The detailed description is presented as follows:

1. *Partly irrelevant information*

Fifty percent of ineffective instructional pictures contained information that was partly irrelevant to the text they accompanied. For example, picture 11 was used to represent shape and color. It depicted the shape named in the text, but it did not depict color named in the text. The color of the image is magenta but the text says red. Consequently, students could mistakenly associate the word with the color it represents. Therefore, the color of the shape should correspond to the one represented in the text.



Picture 11. Picture of a magenta triangle
(taken from *Grow with English Book 1*, page 56)

Interestingly, the problem was more frequently found in sequence of pictures depicting procedures. Picture 12 represented stages of card game just in the same manner to teacher's demonstration. Unfortunately, it did not depict the right sequence of actions. The second picture represented the girl with brown skin and curly hair throwing the picture cards instead of girl wearing veil throwing up the card. Consequently, the students might feel a bit confused when performing the task. Picture 12 needs revision.

<p>L Play a game.</p> <p>This is my card and this one is your card.</p> <p>Let me throw the card.</p> <p>I want my card.</p>	<p>Teacher's model of how to do the task:</p> <p>“Tigor, give me a card. Look. This is my card and this one is your card. Let me throw them (throwing the cards). Look at the cards. They are facing up. I comb my hair (pointing to one picture). This is mine. What about this, Tigor? What picture is it? (Pointing at another card) Right. I wash my hands. Now you can keep the card. Now find a partner and play the game.</p>
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Picture 12. Picture of stages in picture card games (taken from

2. *Incomplete information*

Seventeen point six five percent of ineffective instructional pictures lacked some key information that is crucial for comprehending the texts they accompany. For example, picture 13 was used to represent a target object “bank”, a reference object, “school”, and more importantly their spatial relationship, “behind”. However, the reference object was not depicted in the picture. Consequently, the spatial relationship could not be explicitly shown in the picture.



Picture 13. Picture of a bank

(taken from *Grow with English, Book 2, page 105*)

3. *Not perceptually salient key information*

Thirty two point three five percent of ineffective instructional pictures were presented in such a way that did not make the key information stand out visually. Factors that made the instructional pictures unclear to students are summarized as follows:

a) *Inappropriate picture type*

Cartoonish drawing without outline that dominated the selected coursebooks could not highlight small details. For example, picture 14a was used for representing a finger pointing to mouth. However, this was unclear which part of the face the finger pointed to. Compared to picture 14a, picture 14b (the original picture (mouth) was added with an outline) could highlight the action named in the text it accompanied. This picture type was also unable to represent objects that were new to most students. For example, picture 15a was used for introducing a traditional toy named spin top that was likely to be unfamiliar to some students in the city. The picture seemed to be unable to give students idea on the appearance of the depicted object. Unlike the picture version used in the selected coursebook, the photograph of spin top (picture 15b), which was much clearer, can help students imagine the shape and color of the toy.



a



b

Picture 14 Picture of a girl pointing at her mouth
(taken from Grow with English Book I, page 22)



a



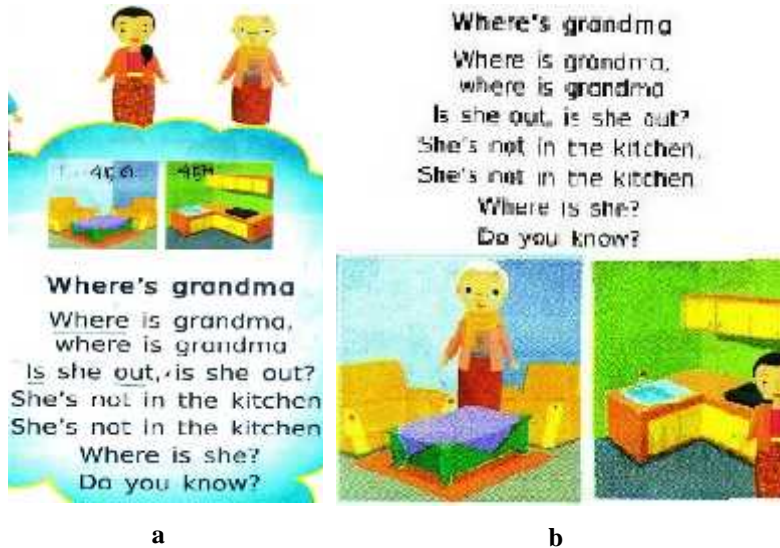
b

Picture 15. Picture of a spin top

(Picture 15a taken from *Grow with English Book I*, page 73; Picture 15b Taken from <http://static1.squarespace.com/static/52fba463e4b06a15922188cb/53038b47e4b098d249d5ac77/5553611ae4b08503d74d16dc/1448305552237/?format=1000w>)

b) *Inappropriate picture arrangement*

Pictures with closely related information were presented as separated pictures that were far from each other. For example, picture 16 was used for helping students to locate people and part of a house named in the text, and more importantly, to recognize the spatial relationship in order that they could answer the question. It depicted the object to be located, i.e., people and its location, i.e., a room of a house. However, the two objects were represented as separated pictures. The picture of one person (representing a family member) was not embedded to the picture of place (representing a room of a house). Such presentation could create an impression that those pictures carried unrelated information. Consequently, students could not instantly recognize the spatial relationship between people and the room of a house. In order to make the relationship apparent, the picture of one person should be cut and pasted into the picture of place (see picture 16b)



a b

Picture 16. Picture of people and place
(taken from *Grow with English Book I*, page 53)

c) *Improper design*

Other than inappropriate picture types and picture arrangement, the lack of variation of design techniques also contributed to make instructional pictures unclear to students. For example, picture 17a was used for encouraging students to use the word “too” in a mini dialogue practice. It depicted a boy wearing oversized shorts. However, the picture did not show the extremely different size between the shorts and the T-shirt worn by the boy. In addition, the color of tops and bottoms seemed to fight for attention. Consequently, students might have been unaware that they were expected to talk about the oversized short. In order to make the key information presented in this picture more compelling, the picture of the shorts needs to be made fewer inches bigger to highlight the exaggeration of the shorts (picture 17b).

In addition, the color of tops needs to be replaced with lighter color to draw students' attention into the oversized bottoms.

Model of dialogue

A: Put on the shorts

B: Oh no. They are... (*expected answer: "too big"*)



a



b

Picture 17. Picture of a boy wearing oversized shorts
(taken from *Grow with English Book 2*, page 74)

In conclusion, most instructional pictures in the selected coursebooks were appropriately used and designed. The choice of types of instructional pictures generally reduced cognitive load for students and ensured the visibility of subject matters depicted in the instructional pictures. Speaking of the roles, most instructional pictures functioned to introduce meaning of new words, and more importantly, reinforcing meaning of new words. Fortunately, these roles were mostly supported with proper design of instructional pictures used in the selected coursebooks. The ineffective pictures were minor in the selected coursebooks. Problems commonly found in pictures with lower effectiveness level were related to partial irrelevance of content, incompleteness of content, and saliency of key information.

Discussion

The objectives of this study were to analyse the types and roles of instructional pictures used in the selected coursebooks, and more importantly, the extent to which those pictures correspond to the characteristics of effective instructional pictures. In order to achieve these objectives, rubrics were specifically constructed to analyse the types of pictures, roles of pictures, and the extent to which those pictures correspond to the characteristics of effective instructional pictures. The first research objective was to identify the types of instructional pictures used in the selected coursebooks. They were identified based on three categories (content, interface, and level of realism). Based on content, results indicated that the selected coursebooks contained mostly single pictures depicting one meaning rather than complex pictures depicting multiple meanings. Based on level of realism, results indicated that the instructional pictures were dominated by less realistic pictures that came in the form of cartoonish pictures commonly found in online messaging services. Based on interface, results indicated that the instructional pictures mostly belonged to flat-on 2D pictures and 2D pictures with perspective. The second research objective was to analyse the roles the instructional pictures play in the selected coursebooks. Results indicated that most instructional pictures were used to introduce meaning of new target words, and more excessively, reinforce the target words already introduced and learned. The third research objective was to examine the extent to which the instructional pictures used in the selected coursebooks correspond to the characteristics of effective instructional pictures. Results indicated that the instructional pictures used in the selected coursebooks generally complied with five characteristics of effective instructional pictures (relevance, clarity, familiarity, suitability of picture type, and completeness of pictorial aspects), only a few pictures violated the relevance of content,

completeness of content, and salience of key points presented in the pictures.

As far as the types of instructional pictures were concerned, nearly all the pictures in the selected coursebooks belonged to single type of pictures such as single objects and people who do action. Single pictures suited for representing the texts that were mostly simple phrases and sentences denoting one meaning and would help students to focus their attention on the meaning of text the pictures accompanied by presenting only the related information. The pictures were likely to support comprehension of text. This was aligned with the previous work which found better comprehension learning from simplified pictures containing essential information rather than complex pictures (Dwyer, 1972; Butcher, 2006; Scheiter, Gerjets, Huk, Imhof, & Kammerer, 2009). A single type of pictures used in the selected coursebooks may also relate to cognitive load theory, as Clark & Lyons (2010) suggest, chunking and sequencing information reduces irrelevant mental load.

Speaking of picture realism, less realistic pictures could represent subject matters with copying basic shape of object and human action. Therefore, using highly realistic photograph that cost more in the production would not be necessary. Comparing to line drawing, the use of cartoonish drawing commonly found in online messaging services could appeal to children humor. Regarding the interface of pictures, 2D pictures suited for overall learning tasks in the selected coursebooks that did not require students to explore the depiction from different perspectives.

As for the roles of instructional pictures, the instructional pictures used in the selected coursebooks really supported activities in the coursebooks; none was used merely for adding aesthetics. Most instructional pictures in the coursebooks were used for introducing meaning of information (new words), and more importantly, establishing and reinforcing the meaning of information. The instructional pictures (e.g., picture 6a and 6b) provided direct presentation of meaning of new words

that enable students to understand the language immediately. Using visual aid for presenting meaning was a good way to avoid translation in mother tongue that often increased time thinking process for students of foreign language. Brewster (2007) suggests that visual aids help young learners acquire the meaning and the use of new words, in particular, in early language program. Similarly, previous works embedded instructional pictures in the activities for supporting comprehension of a new language (e.g., Shahrokni, 2009; Rezaei & Sayadian, 2015).

As learning progress, large portion of the instructional pictures were dedicated to prompt learners to actively use new target words that have been introduced in various learning tasks that include multiple sensory. These learning tasks would enhance learners' retention. Similarly, previous works used pictures to support retention of new language (e.g. Sheridan & Markslag, 2017).

It could be concluded that most instructional pictures used in the selected coursebooks were properly designed and thus effectively supported the roles they played in accompanying texts as they corresponded to five criteria of effective instructional pictures adapted from Pramono (2005). In terms of choice of picture type (i.e., less realistic) used in the selected coursebooks, the less realistic type was relevant to the learning task and relevant to the learners' age and interest. In terms of relevance and completeness of pictures, most instructional pictures provided a complete relevant information and made key information explicit to students. They were likely to support comprehension and recall of illustrated texts. This finding is consistent with previous work which indicated that picture and text carrying the same information could support the understanding and retention of the information from both sources of information (e.g., Pan & Pan, 2009; Ghazanfari, Ziaee, & Sharifianfar, 2014). In terms of clarity of pictures, most instructional pictures could make the key information salient to students. They could direct students' attention to key information presented in the depiction such as Picture 8

that could highlight the difference between one room from other rooms in a house with room sectioning and distinctive furnitures. In terms of familiarity of pictures, most instructional pictures contained subject matter likely to be familiar to Indonesian students living in the city and village, e.g., balls and dogs. In addition, the types of pictures were appropriate to the age of students.

In some cases, very few of the instructional pictures violated some criteria of effective instructional pictures. They showed the following characteristics: (1) the instructional pictures provided information that did not match the text they accompanied. Few pictures contained partly irrelevant information. Interestingly, it was apparent on sequence of pictures as seen on Picture 12. It is suggested that material writers need to include additional pictures containing related information; (2) meanwhile, other pictures provided incomplete information as seen on Picture 13. The mismatch of content could interfere with comprehension of text. The implication could be that to be careful with logical order of pictures in sequence and to incorporate all related information in the pictures; and (3) the instructional pictures could not make key information salient. It was related to inability of pictures for signalling key information due to limited range of design features. Chapelle (1998) suggests that instructional materials need to include features that prompt learners to notice important aspects of the language. Similarly, Peterson (1998) argues that visual cueing help direct attention to the essential points, thus promoting learning.

Conclusion and Pedagogical Implications

The study identified the types and roles of instructional pictures used in primary English coursebooks, and more importantly, investigated the extent to which the pictures in the primary English coursebook correspond to characteristics of effective instructional pictures. The results showed that the types and roles of most instructional pictures used in the coursebooks were appropriate. The role of the pictures was to support

comprehension of the meaning of text information and to reinforce the meaning of information in order to facilitate the acquisition of new target words. Most instructional pictures were aligned with the characteristics of effective instructional pictures. Only a few of instructional pictures might remain unclear to students. The problems were related to partial irrelevance of content, incompleteness of content, and saliency of key information. Some pedagogical implications were identified. First, by analysing the instructional pictures used in the selected coursebooks, this study provided confirmation for the book writer and illustrator about the appropriateness and effectiveness of the pictures to support learning. Second, the study would make teachers and learners realize that pictures used in coursebooks were not just to attract learners' attention and interest, also to add cosmetics or decoration to a page, but more importantly to support comprehension and enhance retention.

Limitation of the study should be acknowledged, i.e., the evaluation was according to the writer's opinions based on some related theories. Last but not least, future research would be necessary to investigate teachers and students' perceptions on the instructional pictures used in the selected coursebooks.

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Appendix A
Rubric of Instructional Picture Types

Codes used in picture types rubric

TC 1 A single type of objects
TC 2 Several types of objects
TC 3 One person
TC 4 Several people
TC 5 People who do action
TC 6 People who interact

TC 7 Famous people
TC 8 Incomplete object
TC 9 Place
TC 10 Map and symbol
TC 11 Picture containing a lot of information
TR 1 Photograph

TR 2 Realistic
TR 3 Less realistic
TR 4 Line drawing
TI 1 'Flat on' 2D picture
TI 2 2D picture with perspective

Picture Type PIC #	Based on Content											Based on Realism				Based on Interface		
	TC 1	TC 2	TC 3	TC 4	TC 5	TC 6	TC 7	TC 8	TC 9	TC 10	TC 11	TR 1	TR 2	TR 3	TR 4	TI 1	TI 2	TI 3
PIC 57	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
PIC 58	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
PIC 59	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
PIC 60	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
PIC 61a,b	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0
↓																		
TOTAL	117	19	14	15	99	18	0	20	34	5	28	13	0	325	31	274	144	0

Note:
This table presents how the data are coded, tabulated, and counted. The data are pictures from the selected coursebooks; the data presented in the table are sample of data. 0 indicates that the picture does not belong to the picture type, while 1 indicates that the picture belongs to the picture type. The total frequency of each picture type is the sum of each column from top to bottom. A picture may consist of mixed types of interface

Appendix B
Rubric of Instructional Picture Roles

Codes Used in picture Roles Rubrics

DC Decoration	DES Describing	MID Mini Dialogue
IC Introducing context (lesson unit)	IDEN Identifying	ROP Role Play
IM Introducing meaning of information	MAT Matching	
REP Repetition	ORD Ordering	
REC Recombination	MEM Memorizing	

PIC #	DC	IC	IM	REP	REC	DES	IDEN	MAT	SEQ	ORD	MEM	MID	ROP
PIC 57	0	0	0	0	0	0	1	0	0	0	0	0	0
PIC 58	0	0	0	0	0	0	1	0	0	0	0	0	0
PIC 59	0	0	0	0	0	0	1	0	0	0	0	0	0
PIC 60	0	0	0	0	0	0	1	0	0	0	0	0	0
PIC 61	0	0	1	0	0	0	1	0	0	0	1	1	0
↓													
TOTAL	0	16	142	91	4	2	114	30	0	0	12	28	0

Note:

This table presents how the data are coded, tabulated, and counted. The data are pictures from the selected coursebooks; the data presented in the table are sample of data. 0 indicates that the picture does not belong to the picture role, while 1 indicates that the picture belongs to the picture role. The total frequency of each picture type is the sum of each column from top to bottom. One picture may have more than one roles

Appendix C
Rubric of Instructional Picture Effectiveness

Pic #	Criterion															Score	%	Remarks
	Relevance			Clarity			Familiarity			Types			Completeness					
	3	5	7	2	4	6	1	3	5	1	2	3	1	2	3			
PIC 57																24	100	very effective
PIC 58																24	100	very effective
PIC 59																24	100	very effective
PIC 60																18	75	effective
PIC 61																24	100	very effective
↓																		
PIC 169																		

Note:

This table presents how each picture is scored based on the criteria; indicates the score the picture gets. The table presents only an example of the collected data.