Prepositions and Pictures in the English Learning Materials

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Abstract: This paper explores the types of prepositions and the common picture types used to teach these prepositions found in English textbooks commonly used in primary schools. The results showed that the types of pictures may be problematic for presenting spatial relations due to an ambiguity the pictures may create and so as may affect the understanding and use of prepositions. Ideally all accompanying pictures should play an active and effective role in supporting learning.

Key words: prepositions of location, spatial relations, effective picture characteristics, picture-text complementarity

Text and pictures have long been combined in various ways to provide complementary sources of English learning on a variety of topics. There are convincing arguments for using pictures as a means of making content easier to understand and more memorable. However, it is too simplistic to base instructional actions on the folk-wisdom that 'a picture is worth a thousand words'. One problem with this statement is that it implies all pictures are the same (and equally accessible). Another problem is the implication that pictures in general have some intrinsic value that makes them more effective than other ways of presenting information (such as words).

The review of literature has shown that pictures could sometimes be even more confusing for the learners rather than helping them to better understand the topic being learned (e.g., Samuels, 1970; Schnotz & Grzondziel, 1996). The extent to which the content and types of a picture complements the text it accompanies is likely to be of crucial importance in determining the instructional effectiveness of such a combination. Teachers, textbook writers, and material developers need a principled basis for allowing them to distinguish between effective and ineffective pictures.

Theoretically pictures can function to remove potential ambiguity in the verbal (textual) presentation of subject matter by providing additional information. However, the pictorial information needs to be complementary to the textual information in order to disambiguate the verbal presentation. 'Complementarity' refers to the condition where both sources of information (text and picture) must be processed in order to reveal the entire meaning of text-picture/diagram combination. That is, textual information has gaps which have to be filled by the information contained in the picture, and vice versa (Molitor, Ballstaedt, & Mandl, 1989).

Children learning English as a foreign or second language in many parts of the world including Indonesia have found prepositions to be a particularly problematic area (see Brala, 2003; Cheng, 1993; Jabbour-Lagocki, 2001; Lindstromberg, 2001; Lo, J.-J., Wang, H.-M, & Yeh, S.-W, 2003; Pramono, 2002; South, 1996; Vriend, 1988). Pictures and other graphics are an increasingly popular way to address the problems with misunderstanding and misuse of prepositions. English learning materials for primary schools in Indonesia, in particular, have made extensive use of pictures to support the prepositions learning process. Prepositions indicate relations between things, often involving space and time. These pictures are intended to depict the relevant prepositional relations so as to remove a potential ambiguity that a text alone may create. However, the pictures themselves may also cause the learning to be ineffective. There are several variables influencing effective learning with pictures, for example the quality of the picture that complements the text, learner's background knowledge of both the picture and its content (Lowe, 1996), his or her intensity of pictures processing, and his or her pictorial literacy.

In regard with the first variable (the quality of the pictures), an evaluation of the pictures concerned is crucially important. The study presented here, then, aimed to discover the types of prepositions and the common picture types used to teach these prepositions which exist in English textbooks commonly used in primary schools in Surabaya. The main purpose is to inform teachers, particularly primary school teachers, textbook writers, and material developers, of the types of pictures which are commonly used to teach prepositions and which are likely to facilitate learning and particularly of the problems in understanding the meaning and use of prepositions that may be caused by any potential ambiguities the pictures may create. Knowledge of what the pictures or illustrations in textbooks are like and which characteristics of pictures are useful could serve to guide teachers, researchers, and theoreticians to important questions of practical relevance (Evans, Watson, & Willows, 1987). This

knowledge could also help teachers to provide means for learners to understand content knowledge that is presented via text-picture combination.

MATERIALS

The five main English textbooks used by primary schools in the East Java region of Indonesia were analysed (Table 1). All these textbooks follow much the same format; they contain topics that are thematically rather than grammatically oriented. Accordingly, they do not discuss prepositions as a separate issue but deal with them embedded in communicative contexts via such topics as 'where are things?' or 'location'. All textbooks examined used pictures as part of their teaching approach.

Table 1. Details of English textbooks used for teaching 'prepositions'

Book title	Name of publisher	Place and date of publication	Number of pages	Number of pages devoted to 'prepositions'
'Get Ready' For Beginners; Jilid 1, Bahasa Inggris untuk SD	Penerbit Erlangga	Jakarta, 1997	122	5
'First Step 2' An English Book for Primary schools	P.T. Intan Pariwara	Surabaya, 1998	36	7
'Get in Touch with English' Pelajaran Bahasa Inggris untuk SD	P.T. Edumedia	Jakarta, 1994	84	9
'Getting Started with English' Untuk Sekolah Dasar, Kelas 4, Tengah Cawu 2 dan Cawu 3	P.T. Mitreka Suryakarya	Surabaya, 1998	44	9
'English for SD' 4C; Pelajaran Bahasa Inggris untuk Kelas 4, Cawu 3	P.T. Grasindo	Jakarta, 1998	42	11

METHODOLOGY

Prepositions covered in the textbooks that were accompanied by pictures were analysed according to their type. The accompanying preposition-related pictures were analysed with respect to their characteristics and frequency. Table 2 summarises the characteristics examined.

Table 2. Picture characteristics

Characteristics	Description
Subject matter of the picture	Familiar or unfamiliar to learners (e.g., balls, cars, fire stations)
Relatedness of picture content to textual information	Related or unrelated to text
Completeness of the depiction	Whether or not illustrations depict all required information (i.e., target object, reference object, relations)
Arrangement of depicted entities within illustration	Unambiguous or ambiguous arrangement
Complexity of relational aspect	Single or complex prepositional relations

FINDINGS AND DISCUSSION

Types of prepositions

Across the five textbooks examined, the prepositions accompanied by pictures were found to be of two types:

(1) 'Locational' prepositions that indicate position in space at a particular instant of time (e.g., on, in, under, such as in 'The book is on the table.'). The most common locational prepositions were: in, on, at, under, beside, near, between, in front of, behind, above, among, next to. Directional/motion prepositions that indicate the behavior of subject matter over time (e.g., into, through, across, such as in 'The students walked into the classroom.') were not found. It is necessary for the textbook writers to rethink about the reasons why the latter type of prepositions were not included in the textbooks, particularly those examined. The textbook writers and teachers need to ask themselves whether in the future directional prepositions need to be included in the textbooks as the learning materials in addition to locational prepositions.
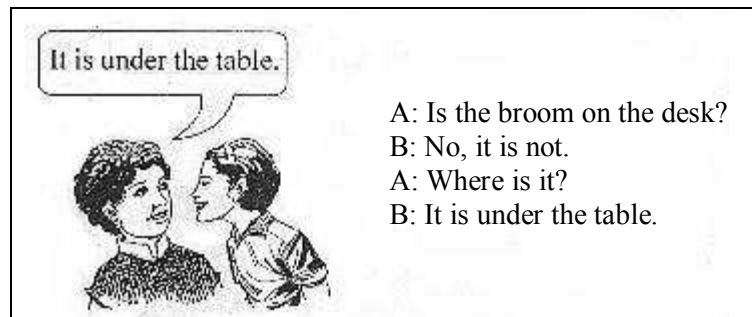
(2) 'Temporal' prepositions that indicate simple passage of time (e.g., at, on, in, such as in 'He goes to school at 7 o'clock.'). However, because the pictures for temporal prepositions do not play a role in specifying relation, that is, the relation between the entities involved cannot be explicitly represented through the depiction, temporal prepositions were not of interest in this research.

Types of pictures

Overall, pictures appeared to have been used for two main educational functions: (a) to introduce the meaning and use of prepositions, and (b) to assess students' understanding of the meaning and use of prepositions. Individual pictures used for these two functions were found to have the following characteristics:

(1) Subject matter of the picture:

Subject matter familiar rather than unfamiliar to learners used in an illustration could help them comprehend the information presented in the illustration better. Most pictures contained subject matter likely to be familiar to students irrespective of where they live (city or village), such as balls, bicycles, cars, horses and dogs. However, some pictures contained subject matter that would probably be more familiar to students living in the city than to those living in villages. For example, fire stations, video shops, post offices, planes and helicopters are unlikely to be found in most Indonesian village communities. While children in village schools may have heard about or seen such facilities second hand, most would not have had direct experience of them.

(2) Relatedness of picture content to textual information:

The content of a picture should be related to the text it accompanies because content-related pictures may support the comprehension of the information presented in text, while content-unrelated pictures may hamper text comprehension. While the content of most pictures in the textbooks was content-related, a few (4%) were not. These latter pictures do not actually depict the essential components of the prepositional relations. For example, the picture below was used for the 'under' prepositional relation between the entities, but the picture depicts two people having a dialogue, talking about the location of an object (the broom), rather than depicting the location of the broom

and its relation with its reference object (the table). The illustration does not depict the broom, the table, the desk, or the relationship mentioned in the accompanying text.


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It is under the table.
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A: Is the broom on the desk?
B: No, it is not.
A: Where is it?
B: It is under the table.

(3) Completeness of the depiction:

Pictures can present the relation between entities involved. However, the relation between entities would not be explicitly and successfully shown in the depiction that does not contain complete entities. While most pictures examined depicted all the basic entities (i.e., target and reference objects) needed to represent the intended prepositional relation (see picture a), a small minority (4%) were lacking in this regard (see picture b). Picture 'a' provided the basic entities: 'the dog' as the target object, that is, the object that is to be located and 'the house' as the reference object, that is, the object in relation to which the target object is located. Picture 'b' was meant to represent a prepositional relation in which a whiteboard is on the wall but only the whiteboard (target object) is depicted explicitly, whereas the presence of the wall (reference object) requires inference.
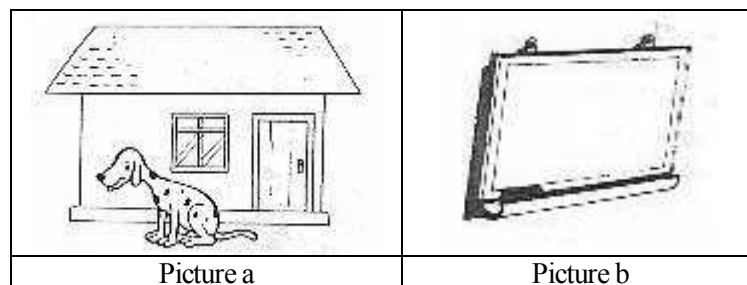
| Picture a | Picture b |

'The dog is in front of the house.'   'The whiteboard is on the wall.'

(4) Arrangement of depicted entities within illustrations:
Pictures need to give an unambiguous depiction of the entity arrangement such that the pictures would not show multiple relations that can be present simultaneously. Pictures showing multiple relations would not be able to specify the intended prepositional relation depicted. Most pictures examined had an appropriate composition of picture components. These were simple pictures depicting a single prepositional situation in that the target and reference objects were arranged in a way that was not ambiguous because a single relation only was present. However, in 6% of the pictures the picture components were arranged in a way that was ambiguous because equally plausible multiple relations were present simultaneously (e.g., pictures c and d). Picture 'c' was intended to represent a particular spatial relation ('the tree is behind the car') but another spatial relation was also possible ('the tree is near the car'). Picture 'd' was intended to represent a spatial relation ('he was walking in front of the office') but a temporal relation was also possible ('he was walking out of the office').
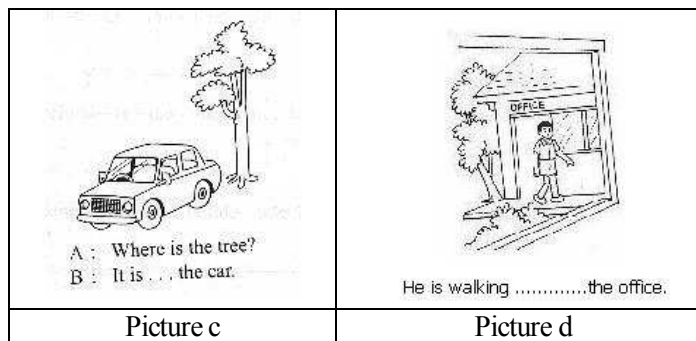
| Picture c | Picture d |

(5) Complexity of relational aspect:
Pictures may show multiple (rather than single) prepositional relations. Multiple prepositional relations could induce an ambiguity because the prepositional relation that is actually intended to be presented in the picture could be interfered by the presence of other possible prepositional relations. Most of the illustrations used in the textbooks consisted of a single picture depicting a single prepositional situation (e.g., picture a below: The briefcase is on the table.). However, a few (4%) were complex pictures that showed multiple (rather than single) prepositional relations. For example, the

picture of a living room (picture b below) contains a range of items. This type of picture may invite responses based on a variety of possible relations. When a question, such as 'Where is the TV?' is asked, plausible responses could include: (i) The TV is on the table, (ii) The TV is under the picture, and (iii) The TV is beside the lamp.

Picture e. Single picture	Picture f. Complex picture
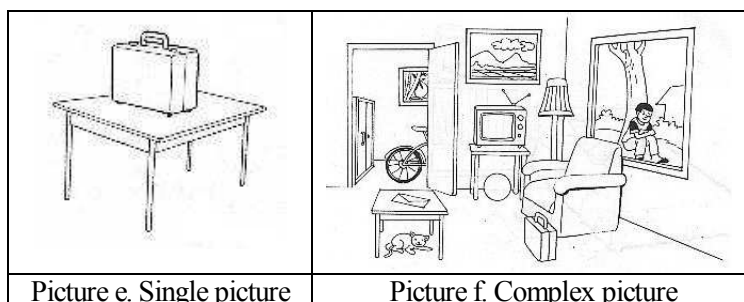
The analysis revealed that:

a) Some of the pictures examined showed a range of characteristics that can pose problems for learners, and

b) The nature of the problems varied: (i) pictures containing unfamiliar subject matter may not be as effective as those containing familiar subject matter in supporting the comprehension of information presented in text the pictures accompany, (ii) content-unrelated pictures to textual information may impede the comprehension of the text, (iii) pictures that do not contain complete entities involved may not be able to explicitly and successfully present the relation between the entities, (iv) ambiguous depiction of the entity arrangement may result in the pictures showing multiple relations of the entities that could not specify the intended prepositional relation, and (v) pictures that show multiple (rather than single) prepositional relations could induce ambiguity because other prepositional relations may interfere with the intended prepositional relation presented.

CONCLUSION AND SUGGESTION

Pictures have been used in the English textbooks for primary schools as a means of introducing the meaning and use of prepositions and assessing students' understanding of the meaning and use of prepositions.

The literature has shown that the use of pictures in the learning of prepositions in principle can be beneficial but, to some extent, it can also be problematic. The results of the present study showed that the characteristics of pictures may be problematic for preposition learning due to an ambiguity the pictures may create and so may affect the understanding and use of prepositions. The pictures may be problematic for presenting spatial relations. The main potentially problematic characteristics of pictures for presenting spatial relations are pictures with unfamiliar subject matter, content-unrelated pictures, and ambiguous depiction of the entity arrangement. These problematic characteristics could not help or may even interfere with the learning of prepositions. It is suggested that all accompanying pictures should play an active and effective role in supporting (preposition) learning. Thus, teachers or textbook writers need to be careful in choosing pictures intended to support verbal explanation by being aware of the picture characteristics that may not instruct and even hamper learning.

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