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PENGARUH PERKULIAHAN AGAMA TERHADAP SIKAP
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*Ign. Esti Sumarah, P. Hary Susanto, S.J., Suryadi, R. Winantyo Sudjas,
Suryanto*

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WIDYA DHARMA

Majalah Ilmiah Kependidikan

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L. Rische Purnama Dewi, S.Pd.

SEKRETARIS ADMINISTRASI

M.B. Rohaniwati
Agnes Lusia Budi Asri

ALAMAT REDAKSI

FKIP, Universitas Sanata Dharma
Tromol Pos 29, Yogyakarta 55002
Telepon : (0274) 513301, 515352 Fax. : (0274) 562383
E-mail : widya_dharma@staff.usd.ac.id

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AN ANALYSIS OF ENGLISH PREPOSITION DIFFICULTIES AMONG THE STUDENTS OF ELEMENTARY SCHOOLS IN SURABAYA

Y.G. Harto Pramono

ABSTRACT

The purpose of the study is to identify which prepositions are problematic and analyse the factors that may contribute to the difficulties faced by Elementary school students in Surabaya.

The research is done by providing the students with a set of simple sentences in English from each of which the preposition is omitted. Each sentence is accompanied by a static picture representing the missing preposition. Error analysis is, then, used to identify difficult prepositions and to indicate possible causes of students' difficulty. The results of the analysis suggest that students have difficulties in understanding the 'locational' and especially the 'motion' prepositions. The pictorial and non-pictorial factors might also contribute to their problems.

Key words: error analysis, prepositions, spatial relations, pictorial and non-pictorial factors

1. INTRODUCTION

English prepositions have been commonly considered as one of the most troublesome areas in the learning of a second or foreign language (Brala, 2003; Cheng, 1993; Jabbour-Lagoeki, 1990; Lindstromberg, 2001; Lo, J.-J., Wang, H.-M., and Yeh, S.-W., 2003; South, 1996; Vriend, 1988). Lindstromberg notes (2001: 80) that "less than 10 % of upper-level EFL students can use and understand prepositions correctly." Evidence that English prepositions are particularly problematic has come from many parts of the world where English is a second or foreign language. Students of English as a second or foreign language, including Polish (Skrzypczynska, 1998), Arabic (Zughoul, 1979), and German speakers (Jabbour-Lagoeki, 1990) have particular difficulties with the correct use of prepositions in the target language. Chinese speakers (Lo *et al.*, 2003; Vriend, 1988) often omit or misuse English prepositions in speaking or writing; for these students and also for Chilean students (Germany and Cartes, 1995), interference of the L1 was found to be a particular source of errors for them. Chinese speakers' confusion about English prepositions seemed to be the most significant reason of their learning difficulties (Cheng, 1993). These facts have inspired me to conduct a similar study on preposition difficulties among the Indonesian students of elementary schools. However, while these previous studies analysed the preposition difficulties based only upon non-pictorial factors that may contribute to the difficulties, the present study presented here analysed the difficulties based upon pictorial as well as non-pictorial factors.

More specifically, this study was trying to identify which prepositions are problematic and analyse the factors (both pictorial and non-pictorial) that may contribute to the difficulties. In this study, error analysis was used to identify difficult prepositions and to indicate possible causes of students' difficulty. A particular focus of this analy-

sis was the extent to which picture design deficiencies could contribute to such difficulties, as indicated by the findings of the previous study conducted by Pramono (2005) that characteristics of pictures may contribute to the understanding and use of prepositions. This study builds on the findings of the previous study conducted by Pramono (2005) to explore the extent to which pictorial ambiguity may actually affect the understanding and use of prepositions.

Prepositions indicate relations between things, often involving space (*i.e.*, *spatial* prepositions) and time (*i.e.*, *temporal* prepositions). Prepositions expressing spatial relations are of two kinds:

- a) Prepositions of location, also called prepositions of place (*e.g.*, Murphy, 1994; Nelson, 1995-1996) or prepositions of position (*e.g.*, Beare, n. d.); and
- b) Prepositions of direction, also called motion prepositions (*e.g.*, Galton, 2002; Herskovits, 1986; Xu and Badler, n. d.) or prepositions of movement (*e.g.*, Nelson, 1995-1996; Shepherd, 1995).

Prepositions of location deal with static situations, such as *on*, *in*, *at*, *under*, and appear with verbs describing states or conditions, especially the verb "to be." For example, 'The ball is *on* the table'. In this sentence, the location of the first object (the ball) is constrained with respect to the second (the table) by the spatial relation denoted by the preposition *on*. The first (or located) object is termed the *target* object while the object in relation to which the first object is located is termed the *reference* object. Prepositions of direction are animated (dynamic) and have a directional meaning, such as *to*, *from*, *up*, *down*, *through*, *towards*, and appear with verbs of motion (movement) such as *roll*, *walk*, *swim*, *come*, *go*. While prepositions of location express spatial relations only, prepositions of motion express temporal (dynamic) relations in addition to spatial relations because they describe a change in situation. The use of a motion preposition in combination with a verb of motion is illustrated in the following sentence: 'The ball rolled *towards* the boy'. Here, the target object (*the ball*) moves while the reference object (*the boy*) is still while the motion preposition (*towards*) constrains the trajectory or path of the target object and the verb rolled describes the type of movement involved.

The prepositions involving time (*i.e.*, *temporal* prepositions) such as *at* (in 'He goes to school *at* 6 o'clock every morning') were not dealt with in this study because this study focused on pictures while 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. This study thus dealt with only the prepositions that express *spatial* relations.

2. METHOD

2.1 Participants

Year four students (aged 9-10 years) from 12 primary schools in Surabaya participated in the study (N=851). Schools were selected so as to be representative with regard to academic level, socioeconomic grouping and location. The academic level was determined on the basis of the school accreditation status as assessed by the Education Department of Indonesia: A, B, C, and not accredited. The participating schools covered A, B, and C accreditation status. The socioeconomic grouping was determined on the basis of the average school fees paid with participating schools selected from the range of low, average, and above average fees. The schools represented locations spread across the city centre, suburbs, and villages nearby Surabaya.

2.2 Materials

The test of English prepositions was used to identify difficult prepositions. The test was also intended to reveal which types of pictures may exacerbate such difficulties. A 26 item test was initially piloted with a sample of students with regard to the text and picture suitability. A final version of the test was produced after revising it on the basis of (a) appropriateness of each test item for its purpose, (b) appropriateness of the alternative answers, and (c) appropriateness of the accompanying illustrations.

Fundamental criteria for choosing prepositions to be included in the test were that they were widely used in primary schools and had already been introduced to the students who were to be tested. This was identified from the extensive exploration of textbooks used in primary schools. In addition, prepositions that were likely to be particularly problematic for primary school students were chosen. The possible difficulties were theoretically determined with respect to Indonesian children learning English prepositions that may be problematic because of differences between their first language (L1-Indonesian) and target language (TL-English). These differences include: (i) several English prepositions are represented by one Indonesian preposition (e.g. *on*, *in*, *at* are represented by one Indonesian preposition *di*); (ii) a number of different prepositions in English have a similar meaning (e.g. *below* vs. *under*, *near* vs. *next to*, *in* vs. *inside*); (iii) one English preposition is used for some different contexts, for example, the preposition *on* can be used in 'The book is on the table' and 'The lamp is on the ceiling.'

The test consisted of 13 multiple choice items and 13 completion items, with both sets of items covering the same types of prepositions. 'Locational' prepositions covered in the test were: *in*, *on*, *under*, *opposite*, *in front of*, *among* and *between*. Most of these prepositions have one meaning and so were tested by a single item. However, *under* and *on* have multiple common meanings (two and three meanings respectively). In these latter cases, each of these alternative meanings was tested (Table 1).

Table 1. Multiple meanings of prepositions tested.

	Meaning#1	involving surface	e.g. <i>The ball is on the table.</i>
on	Meaning#2	indicating a relationship where the target object is joined by nails, screws, or other mechanical devices with the reference object	e.g. <i>The lamp is on the ceiling.</i>
	Meaning#3	indicating the position of the target object enclosing the reference object or its movement is restricted because of its geometry or that of the reference object	e.g. <i>The gloves are on her hands.</i>
under	Meaning#1	locating the target object relative to the reference object (either in contact or separation)	e.g. <i>The cat is under the table.</i>
	Meaning #2	describing the next layer towards the centre of concentric layers	e.g. <i>He is wearing a jacket under his coat</i>

The *motion* prepositions covered in the test were: *up*, *across* and *through*. For each of these prepositions, a single meaning was tested.

Each multiple choice item consisted of an incomplete text expression plus a list of four plausible candidate alternative prepositions that could be used to complete the expression. All items were also accompanied by a static illustration intended to provide support for selection of the missing preposition from the list. Subjects were required to choose the most appropriate answer from the four alternatives such that their answer was the best possible choice on the basis of information given in the illustration. With the completion items, subjects were required to supply their own appropriate preposition on the basis of information given in the accompanying static illustration.

Some of the given illustrations were designed to be ambiguous. This was done to probe the contribution of illustrations to incorrect choice of prepositions/ completion. For example, with *locational* prepositions, a certain situation was depicted such that it could be interpreted as involving more than one spatial relation. For motion prepositions, there were no external directional symbols added to the depiction so that the direction of the target object change could be ambiguous.

2.3 Procedure

The test was administered by the teacher as part of the normal classroom activity. Participants worked individually to produce their answers directly onto the test paper.

2.4 Data Analysis

Data were analysed to: (a) identify prepositions with which students had difficulty and (b) determine possible causes of these difficulties. Prepositions were considered 'difficult' if fewer than 80% of the students gave the right answer. Possible sources of difficulty were considered by analysing both inter-lingual and intra-lingual deviations using contrastive and non-contrastive approaches. Contrastive analysis hypothesises that elements that are 'similar' in the first language (L1) and the target language (TL) will be easier to learn than those that are different: if the elements are similar, the learners benefit from positive L1 transfer; however, if they are different, the learners are encumbered by negative transfer or interference (James, 1998; Lado, 1957). Contrastive analysis can highlight and predict the difficulties of the students (Politzer, 1967). Non-contrastive analysis is based on the findings from linguistic studies that some second language (L2) learners' errors do not have their source in L1. An analysis by Richards (1996) indicated that several errors made by learners were not the result of interference from mother tongue or L1, but were due to other variables independent of TL influence.

To be capable of providing support for appropriate processing of associated text, pictures must be relevant to text and unambiguous, that is, it can clearly represent the intended situational relation. The data analysis therefore examines not only the relative difficulty of preposition, but also the role of the associated picture may have had in contributing to that difficulty.

3. RESULTS AND DISCUSSION

3.1 Difficult Prepositions

The results indicated that many of the 'locational' prepositions were difficult (i.e., in, on (meaning #2), among, opposite, under (meaning #2) and on (meaning #3)). All the 'motion' prepositions tested were found to be difficult (i.e. up, through and across). Although the number of difficult 'motion' prepositions overall was smaller, they appeared to be more demanding because the rate at which students chose the intended responses was only 25% - 38% compared with the choice rate for 'locational' prepositions of 50% - 70%.

3.2 Possible Causes of the Difficulties

The main distractors chosen by students for the multiple choice items and the unintended responses given for completion items give some indication as to why students had difficulties with the target prepositions. In the following discussion of possible sources of difficulties, references to multiple meanings of prepositions are based on those shown earlier in Table 1.

(1) 'In'

The preposition in indicates the relationship where the target object is bounded by an enclosed area that is the reference object, for example, multiple choice item 3, *The ball is _____ the grass*. In this item, instead of choosing *in*, some subjects chose among (37%). It seemed that the choice was not due to L1 or TL influence because another item (completion type) assessing the same meaning and usage of preposition in, that is, item 14, *The toy is _____ the box*, was not classified as difficult. A possible cause of the difficulty with item 3 was the content of the accompanying picture and the way it depicted the relationship between the target object (the ball) and the reference object (the grass). As depicted (see Figure 1), the relationship shown in this particular illustration could be indeed interpreted as *among* instead of *in* because *among* conveys an idea of 'surrounding' and the reference object could be thought of as multiple entities (the grass as many individual pieces rather than as a coherent body of material).



Figure 1: An illustration intended to represent a situation where the ball is 'in' the grass.

This example shows the possibility that even if subjects are familiar with the meaning of prepositions, they may use them inappropriately unless the accompanying picture clearly represents the situation/context and the relationship between the target and reference objects.

(2) 'On' (meaning #2)

One meaning (meaning #2) of the preposition *on* indicates a relationship where

the target object is joined by nails, screws, or some other forms of mechanical attachment with the reference object, as in multiple choice item 4, *The lamp is _____ the ceiling.* In this item, instead of choosing *on*, some subjects chose either *under* (20%) or *above* (12%). Subjects who chose *under* may have viewed the relationship between the target and reference objects inappropriately. They may not have viewed the target object (the lamp) in a 'joining' relation to the reference object (the ceiling). Instead, they viewed the target object as located beneath the 'lower surface' of the reference object. Accordingly, they used *under* (meaning #1) for this context. With those who chose *above*, L1 interference may have been responsible. English makes a clear distinction between *on* and *above*. However, both prepositions can be represented by a single term *di atas* in Indonesian. So to say '*on or above the ceiling*,' Indonesian people use the same one preposition '*di atas the ceiling*.'

The accompanying picture itself did not seem to be a source of ambiguity because both the target object (the lamp) and the reference object (the ceiling) were clearly and completely depicted, as was the relationship between them. It also contained a single picture that implied one preposition only. In this case, the picture provided did not seem to be the source of the difficulty.

Difficulties with the preposition *on* also occurred in completion item 21, *The picture is _____ the wall.* Instead of using *on*, some subjects used *in front of* (13%). One possible explanation is that the target object (the picture) appeared to be positioned 'further forward' than the reference object (the wall) as shown in the illustration. Subjects may have viewed the relationship between the target object and the reference object in terms of relative positioning rather than the intended meaning of attachment (*on*, meaning #2).

(3) 'Among'

The preposition *among* means that the target object is located within a set of many reference objects, as in multiple choice item 8, *The teacher is standing _____ his students.* For this item, some subjects chose *between* (13%) instead of *among*, possibly because of L1 interference. In the Indonesian language, *between* and *among* are not distinguished, both being represented by a single preposition *di antara*, so *between* and *among* may be regarded as interchangeable. Some subjects chose *around* (17%) instead of *among*, possibly because they reversed the spatial relationship between the target object and the reference object 'His students are standing *around* the teacher.' In terms of picture influence, the accompanying picture (see Figure 2) appeared unlikely to contribute to the students' difficulty in using *among* because the picture depicted all the necessary entities involved explicitly and clearly presented the multiple spatial relationship involved.



Figure 2. An illustration intended to represent a situation where the teacher is standing 'among' his students.

Difficulty in using the preposition *among* also occurred with a similar completion item (item 19), *You are standing _____ your friends*. Some subjects used *between* (29%) instead of *among*. A similar cause of difficulties to that described above may also apply for this item.

(4) 'Opposite'

The preposition *opposite* implies that the target object and the reference object more or less face each other, which in turn requires that the target object and reference object have 'faces,' or fronts, as in multiple choice item 2, *The school is _____ the office*. In this item, many subjects did not choose *opposite*. Some subjects chose *in front of* (30%) instead, a choice probably due to L1 interference. Indonesian uses the same term '*di depan*' to say both *in front of* and *opposite*, so the students may have thought that *in front of* and *opposite* are synonymous and can be used in the same way. In terms of picture influence, the accompanying picture did not seem to contribute to the difficulty because it depicted all the necessary entities that could explicitly represent the spatial relationship between the entities involved.

Subjects also had difficulties in using *opposite* in a similar completion item (item 22), *The museum is _____ the bank*. 42% of students used *in front of* instead of *opposite*, suggesting that a similar difficulty was involved.

(5) 'Under' (meaning #2)

One meaning (meaning #2) of the preposition *under* is that it describes the next layer towards the centre of concentric layers, as in multiple choice item 9, *He is wearing a jacket _____ his coat*. Some subjects did not choose *under* for this item. This is possibly due to subjects' lack of familiarity with the meaning of *under* as used to describe the next layer. Some subjects used either *inside* (16%) or *in* (14%), possibly because of L1 interference. In the Indonesian language *inside* and *in* have the same meaning, that is, '*di dalam*' and the people commonly say '*di dalam* (inside/in) a coat' instead of '*under* a coat'. They commonly use *under* in 'She is wearing a skirt under a blouse.' It is also common for them to say 'what goes under the blouse—a skirt or trousers?' So in Indonesian *under* is used to encode the relationship in which the target object is located vertically under the reference object not *in the layer* just under the reference object.

Some other subjects chose *below* (14%) instead of *under*. These particular students were probably familiar with the notion of how to express in the TL the relationship in which the target object is in the layer just under the reference object. However, they might have been unfamiliar with the difference in meaning and usage between *below* and *under*. *Below* more usually excludes contact between the target object and the reference object, while *under* is neutral about such contact (may include or exclude contact). The relationship between the target object (a jacket) and the reference (a coat) is in contact, so *below* is not appropriate to encode this relationship.

With respect to the accompanying picture, the target object (a jacket) and the reference object (a coat) were not depicted equally explicitly. Although the target object was the focus, it was depicted less explicitly than the reference object. This may have contributed to the subjects' problems in identifying the relationship in which the target object was in the layer just under the reference object. Thus, the picture may have been partly responsible for students failing to choose *under*.

This application is supported because subjects also had difficulties in using *under* in a similar completion item (item 20), *She is wearing a blouse _____ her coat*. Some subjects used *inside* (31%) instead of *under*.

(6) 'On' (meaning #3)

One meaning (meaning #3) of the preposition *on* is to indicate a relationship where the target object encloses the reference object or its movement is restricted because of its geometry and that of the reference object, as in multiple choice item 6, *The gloves are _____ her hands*. A possible reason for the subjects' difficulty with this item is that they do not know that *on* is also used for this context. The more common meaning for *on* is for something supported by a surface. Those who chose *over* (21%) instead of *on* may have done so because *over* indicates the location of the target object nearest the upper surface of the reference object and crossing this surface from side to side. This concept was incorrectly applied to '*The gloves are _____ her hands*.' Those who chose *in* (12%) instead of *on* possibly reversed the spatial relationship between the target object and the reference object—the target object (the gloves) were enclosed by the reference object (her hands). The relationship in which one object is enclosed by another is commonly encoded by the preposition *in*. Based on this notion they used *in* to express '*the gloves are _____ her hands*.'

Subjects' difficulties in using *on* (meaning #3) in this context did not seem to be due to the accompanying picture because it depicted all the necessary entities explicitly and the relationship between the entities was clearly represented. Subjects also tended not to use *on* in a similar completion item (item 16), *The shoes are _____ her feet*. Some subjects used *under* (19%) instead of *on* for this item. These subjects may have used a similar strategy as that used for *over* in the above item, *The gloves are _____ her hands*. However in this case, they used *under* as the opposite of *over* in *The shoes are _____ her feet* to indicate the location of the target object nearest to the lower surface of the reference object and crossing this surface from side to side. This concept was incorrectly applied. Some other subjects also used *in* (15%) instead of *on* as was the case with the similar item (item 6), *The gloves are _____ her hands*. The cause of the difficulty described above also appears to apply to item 16 in which the students possibly reversed the relationship between the target object and the reference object—the target object (the shoes) were enclosed by the reference object (her feet).

As was the case with item 6, the accompanying picture for item 16 depicted all the necessary entities explicitly and the relationship between the entities was clearly represented. Therefore, the picture was unlikely to be a source of subjects' difficulties in using *on* in this context.

(7) 'Up'

The preposition *up* indicates a position higher than before, as in multiple choice item 12, *The boy is climbing _____ the tree*. In this item, most subjects (61%) did not choose *up*. An analysis of the choices made by these subjects suggests that the accompanying picture invites two possible interpretations involving either (i) movement (dynamics) or (ii) no movement (static). Those who responded in a manner consistent with the situation involving movement were likely to choose either *up* (46%) or *down* (13%). In contrast, those who did not regard the picture as involving movement

were likely to choose the preposition *on* (25%) (static) rather than *up/down* (dynamic). The key source of the difficulty in this item seemed to be picture ambiguity, the accompanying illustration (see Figure 3) did not provide an explicit directional cue (such as an arrow) to show a definite direction of target object movement. Responses to this item suggest that inclusion of an explicit directional cue in the illustration could be crucial for directing students to use an intended 'motion' preposition.



Figure 3. An illustration intended to represent a situation where the boy is climbing 'up' the tree.

Subjects also had difficulties in using *up* in another similar completion item (item 25), *The boy ran _____ the stairs because he was late for class.* In this item, some students chose *on* (31%) instead of *up*. With regard to the picture effect, as was the case with item 12 above, the accompanying picture for item 25 did not provide a sign of movement (e.g., an arrow pointing up!). Results for this item tend to support the suggested explanation above that without an external directional cue (an arrow, for instance), the direction in which the target object moved was less likely to determine preposition choice. As a result, these subjects selected *on* (indicating spatial relation) instead of *up* (indicating temporal relation).

(8) 'Through'

The preposition *through* involves movement and a 'containing' area; the target object is a moving object and the reference object is a containing area, as in multiple choice item 13, *The snake rushed _____ the grass.* For this item, most subjects failed to choose *through*. They chose *in* (42%) (static) instead. A possible reason for this difficulty may be subjects' lack of familiarity with the meaning of *through* that involves movement (dynamic). Based on the context, the text required the dynamic preposition *through* instead of the static *in* as was implied in the verb *rushed*. A possible explanation is that, due to their lack of familiarity with the preposition *through*, these students over-generalised the use of *in*. However, the subjects' difficulty may have been exacerbated by the fact that the accompanying picture (see Figure 4) did not provide a symbol indicating movement explicitly (like an arrow pointing in this direction ®). Without an indication of change in position, the explicit spatial relation (*in*) may have been more salient than the implied temporal relation (*through*).



Figure 4. An illustration intended to represent a situation where the snake rushed 'through' the grass.

Difficulties in using the preposition *through* also occurred in the corresponding completion item (item 26), *A bird flew into the room _____ the window.* For this item, only 25% of students chose *through*, with the rest choosing other prepositions. The two most common unintended answers were *in* (16%) and *under* (8%). Those who chose *in* may have overgeneralised the use of *in* as discussed above, while those who chose *under* may have been influenced by the accompanying picture. If students noted that the position of the bird was below the upper part of the window frame, they may have chosen *under*. In addition, the picture did not explicitly represent movement so that the possibility of temporal change for the target object was neglected.

(9) 'Across'

The preposition *across* indicates a contact (attachment) and movement of the target object on the surface of the reference object, as in multiple choice item 11, *The ball rolled _____ the grass.* For this item, most subjects did not choose *across*: most of them (65%) chose *on* instead. *Across* indicates a contact on surface and so does *on* but *across* necessarily entails movement while this is not a required condition for *on*. The context involved in the item provides the verb *rolled* as a trigger for the preposition *across*. However, most subjects chose *on*. This may be due to their lack of familiarity with the idea that *across* involves movement. They may have overgeneralised the use of *on* for that context due to its greater familiarity. In addition, subjects' difficulty may have been exacerbated by the fact that the accompanying picture lacked an explicit directional cue indicating movement (e.g., an arrow) so that the idea of movement that needs the preposition *across* was not highlighted.

A similar result occurred to the corresponding completion item (item 23), *The boy ran _____ the street.* Only 38% of the subjects used *across*, and the major unintended answer was *on* (27%). The same difficulty may have been responsible for both items 11 and 23.

4. CONCLUSIONS

The findings indicate that students can have difficulties with both 'locational' and 'motion' prepositions, and that 'motion' prepositions may be especially difficult. Possible causes of difficulties suggested by an error analysis include both pictorial and non-pictorial factors.

- a) Pictorial factors included potential ambiguity of the accompanying illustration depicting the target and reference objects as well as the relations between them, for example:
 - No explicit cues provided for movement or direction.
 - The target object and/or the reference object were incompletely depicted; the target object and the reference object were not depicted with an equal degree of explicitness. This would have been especially problematic if the target (which is more important than the reference object) was depicted even less explicitly than the reference object.
- b) Non-pictorial factors include:
 - The subjects' knowledge deficit with respect to the meaning and use of the TL prepositions. This may have resulted in the subjects overgeneralising meanings and using prepositions they are more familiar with.

- The subjects' L1 interference which may have resulted in the subjects' inability to distinguish the use of one preposition from another.
- Inappropriate processing (i.e., reversing) of the relationship between target and reference object.

Teachers and practitioners so far may have not realised that the sources of students' difficulties in understanding and using English prepositions may include both pictorial and non-pictorial factors. Even more, they may have neglected the role of pictorial factors in preposition learning. As the result of the analysis presented here has clearly indicated that both pictorial and non-pictorial factors may contribute to the preposition difficulties, it is therefore suggested that in teaching prepositions teachers need to be aware of these factors. And with regard to the use of pictures in preposition learning and also other topics, teachers need to be careful in selecting and using pictures. Ideally pictures that are selected should be those that can play an active and effective role in supporting learning.

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