

Teaching Spatial Prepositions in 3D

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Abstract: Conceptual learning methods were incorporated into two A-1 level adult English as a second language classes in 2018. Toys and found objects, together with printed cards, comprised the curricula supplementing the textbook to teach spatial prepositions. Students produced oral and written output tasks while positioning objects relative to each other and the container box. Grammar was tied to meaning. Via images and objects, students engaged through participation. Teachers and students can create their own flashcards with relevant images and words, following the curriculum structure. Thus, lessons can be specific to subjects, localized experiences, and varying proficiency levels.

Key words: constructivism, contextual, oral, prepositions, spatial

Introduction

Due to the frequency of prepositions in English as well as their inherent polysemy (different meanings), learning preposition can be problematic. Both English as a second language students, and English as a foreign language students struggle with prepositions. Two methods using three dimensional props and graphic images were applied in beginning ESL classes for lessons on spatial prepositions. Using everyday objects and color prints, students constructed oral and written output tasks. These tools have potential as cognitive linguistics, and/or user based participation methods, which form their theoretical basis.

Cognitive learning pedagogy, which includes cognitive linguistics, cognitive semantics, and user-based learning, offered an alternative to rote learning, especially as applied to spatial prepositions. As students interacted with the images and objects, they drew on their own experiences, linguistic and non-linguistic. Graphics as well as objects provided impetus for learning in the classroom. In non-credit courses at a community college in southwestern USA, the instructor utilized this method with adult ESL students. The curriculum repeated throughout the semester, beyond the initial lessons which introduced spatial prepositions.

Literature Review

Visual input enhancement, provided by the flash cards and found objects, comprised one aspect of this constructivist method. In this theory, visuals promote noticing of grammatical forms and thus acquisition ensues. A metadata compilation of film's effectiveness in the ESL classroom was published in 2016 (Massi & Blázquez, 2012). Text enhancement aimed at focusing students on grammar form was tested on college students studying Spanish as a second language. Conclusions were not statistically significant compared to input flood (quantity of examples of the grammar form) (Loewen & Inceoglu, 2016). On the effectiveness of teaching grammar in second language acquisition, visual input enhancement exhibited neutrality (Comeaux & MacDonald, 2018).

However, a qualitative study incorporating context cues and pictures, together with puppets, reading aloud, and students' involvement in writing a play, concluded positive for these methods. In the United Kingdom, fourth graders explored an approach relying heavily on involving bilingual students in literature. Children were tasked to turn a children's story into a play. The researcher concluded it was successful for teaching grammar, including prepositions, for these below-grade level English students (Eade, 1997).

Using context-driven models, an English teacher in middle school encouraged active participation as an alternative to rote-memory grammar learning. Via textual enhancements based on students' world views, environment, and imagery, grammar was transformed into a spatial and sensory interaction. (Cushing, 2018, 2020). Other recent studies focused on preposition teaching with positive results in English as a second language adults via experience-based methods (Jach, 2017), cognitive linguistics (Hung and Nguyen, 2018), and contextualized learning (Kilimci).

Theoretical basis

Learning prepositions had proven difficult for both English as a foreign language (EFL) and English as a second language (ESL) students. Polysemy inherent in the words and syntax, plus differences between L1 and L2, contributed to teachers' and students' struggles. (Kilimci 2017, p. 682-84; Hung 2018, p. 41). Compared to other languages, English usage contained a high percentage of prepositions: 12% written and 8% spoken (Kilimci, 2017). New methods were then sought to encourage grammar learning. These methods, referred to as

cognitive learning, experiential learning, and constructivist learning, provided an alternative to memorizing grammar rules, when applied to prepositions (Kilimci, 2017).

These methods relied on putting the exemplars in context and allowing students to construct meaning derived from their real world experiences, both linguistic and otherwise. Lessons began with rich enhanced input, and proceeded through hands on activities, group activities, and student participation, (Kilimchi, 2017, Cushing, 2018). Grammar became sensory, spatial, and experiential (Cushing, 2020). Through these lessons, spatial prepositions lost their arbitrary characteristics typical in rote learning (Kilimchi, 2017). This “experienced based perspective” eschewed the innate language theory (Jach, 2017, p. 273).

The lesson in 3D here incorporated these methods, as well as and including visual input enhancement. The flash cards illustrated the words with graphic images. The preposition structure and syntax were emphasized through the cloze and written task. Enforcing the linguistic meaning of spatial prepositions, the three-dimensional objects and cards gave students opportunity to demonstrate meaning by manipulating their positions. Output tasks in both writing and speaking reinforced each other. Although the literature review presented mixed conclusions about visual input enhancement, the instructor observed effective noticing via these visuals. Further, the repetition of preposition use in different formats and modalities provided a consistent input flood (see Louwen & Inceoglu, 2016).

Likewise, the experiential aspect of cognitive, constructivist methods played out in the lesson. Students positioned the objects in space as they chose and utilized the matching preposition. This was accomplished via both written and oral output tasks. Flashcards will allow for teachers to substitute words and images illustrated here with those corresponding to whatever subject lesson. The cloze structure and spatial prepositions will remain the same, in both the written and spoken word. Thus, students will incorporate their own experiences, environment and world views and become more so participants in the lesson.

Although correct grammar was instrumental at all levels of English proficiency, competencies related to spatial prepositions clustered at the lower bands in the Central European Frame of Reference rubric. Implications of spatial preposition proficiency at the A1 level included to describe where the student lives, ask and give directions, explain how to get somewhere, and orient using a map. Further, listening to spoken directions and following written instructions on the same, were included. Use of simple grammatical structures in everyday situations began at A2 level. Good grammatical control was expected at B2 level, with complexity and accuracy increasing in upper levels. At B1, students described an incident or accident. (Council of Europe, 2020).

Enhanced visual input and contextualized curriculum was implied in Victorian Curriculum for Assessment Authority (VCAA) rubrics. Its rubric incorporated image, symbol and object recognition and use in standards for English proficiency. Levels 0 through 10 encompassed the years of schooling in the public educational system. (VCAA a, 2020).

Levels A,B, and C comprised competencies prior to these years. For levels A-C, students were tasked to respond to images, objects, and symbols in the environment. Students were evaluated for their ability to use and recognize objects, images and symbols in texts, and connect the object to written word and sounds. At level C “students are provided with experiences that engage”, and were expected to recognize images to represent an event or idea, as well as to express themselves via image selection, (VCAA b, 2020). At the higher levels, students were expected to use images, both still and film/video, to express ideas. These standards applied to ESL students as they move into mainstream curriculum. For distinct ESL stages, contextualized learning was considered instrumental in the beginning levels. (VCAA c).

Description of the processes

Two A1 level adult classes were taught during the same semester. A community college in southwestern USA was the location. Classes were held at local public schools after regular school hours, typically from 6-8 pm. Between the college’s two ESL programs, one credit and one non-credit, these students participated in the latter. Although no grades were issued, the instructor corrected all written tasks and gave oral feedback on speaking tasks. One class consisted of 15 enrollees with average attendance 5. Thirty-five were enrolled in the second, with 15 in average attendance.

The course followed a B-1 ESL textbook, and these methods' initial introduction coincided with the lesson on spatial prepositions. This occurred prior to lessons on past tense. The instructor evaluated students as most being at A-1 level, with some below that. Although students were not given any grades or results of these evaluations, such contributed to understanding of teaching expectations and achievements in the classroom.

Textbook exercises consisted of a vocabulary list of spatial prepositions, and a street map, and examples of "where are" questions and answers involving events, locations, and people. Tasks included writing the correct preposition according to relationships among the buildings on the map. After typical oral and written explanation by the teacher, students completed the written assignment. Introduction of the supplemental curriculum ensued.

The one-page list of spatial prepositions with the written task to write three sentences utilizing them was distributed to students. These consisted of: about, above, across from, against, along side, around, at, before, below, behind, between, in, in back of, in front of, inside, near, next to, on top of, out of, over, together with, through and under. Students had this for reference while the teacher demonstrated relationships and positions with the objects.

Then, teacher introduced the bucket with toys and found objects. Each object was named orally and written on the white board. Students acquired new vocabulary, such as "crocodile" (toy crocodile in a boat). Other toys were a mouse on wheels, a car, a boat, a dinosaur, a dump truck, cardboard tubes, and various sized rubber and fabric balls. Then, use of each preposition was modelled by the teacher using the objects in relation to the bucket, and to each other. For example, "through" was demonstrated by passing objects through an angel food cake, or jello mold pan, and large plastic rings, as the bucket could not accommodate "through".

In addition, the action of a toy car and the mouse on wheels zooming through a tube effectively exemplified "through". Thus, the syntax involved both the copula and action verbs. Variation on these themes would be limited only by the teacher's and students' creativity. For example, students could use objects in the classroom as well. Classroom furniture presented available possibilities for relationships with the objects. Other emphasis resulted from use of the world globe with the toy airplane to demonstrate "over," "around" and "above."

From these props, derived various tasks.

- Bucket of objects was passed around the room and each student chose one, placed it in relationship to the bucket, and speaks a sentence description
- Students demonstrated the correct relationships with objects and toys as teacher announced the preposition
- Teacher positioned objects and bucket and students then described their relationships
- At group tables, with objects, buckets and white boards. Each table configured four relationships, wrote corresponding sentences on white board, and demonstrated orally to class. The winning table received prizes of erasers shaped like junk food.
- Students composed three written sentences with the target prepositions
- Teacher positioned objects and asked students "where is" questions

Evoking the same interactive principles and exercises, flash cards and boxes also allowed students to implement spatial prepositions. Here, a box with a lid served the same function as the bucket. It provided not only a container for the cards, but a platform and negative space in which the objects represented by the cards form spatial relationships. In addition, the finite boundaries of the box distinguished the spatial prepositions from their polysemy counterparts. E.g., the snake is in the box, vs. she excels in math.

The flash cards (4 cut from 8-1/2" x 11" cardstock) contained an image on one side. On the reverse, a cloze sentence with the copula prompted students to position the object and insert a spatial preposition. For example: the airplane is flying _____ the _____; the children are _____ the _____. Images included a group of children, a snake, a bulldozer, a dump truck, bagels, bananas with strawberries, sports balls, and a jet airplane.

A variation with an action verb can be included, as mentioned previously for “through” and “over” exercises. By identifying the object, printed words served a mnemonic function as well. Dry-erase laminate can be applied to the cards. Or, in class, the cloze can be completed as an oral output task and/or written on separate paper. Otherwise, students can make their own cards, and complete the cloze for each position demonstrated.

Z-fold format provided another shape for the same images (2 cards cut from 8-1/2” x 11” cardstock). These emphasized three dimensionality. Designed to stand up and emulate, as it were, a toy or found object, they still folded flat to fit in the box, as it were a package, or preposition box. The identifying word was printed on the reverse side. This completed the interactive function, which elicited unending combinations for constructing spatial preposition sentences.

Meaningful images, apropos to any specific lesson can be substituted for the examples here. Students therefore can participate not only in manipulating positions and constructing sentences, but also in choosing images and vocabulary. The syntax and target grammar structure remain while the students participate by adding meaningful scenarios.

Results. Teacher’s observations provided opportunities for assessing this method. As noted above, as this was an ungraded course, so students were not given any summative evaluations. It could be seen in the smaller class that the preposition boxes, bucket, toys and objects served as a prompt to evoke oral and written responses from students. Among these, the oral responses were more successful than the written. Further, short (5 minutes) textbook DVD video also prompted students in similar oral output, mostly involving verb recall. In addition, the method was repeated four times throughout the semester, at times owing to students missing prior demonstrations. No issue ever arose of boredom or the method becoming ineffective upon repetition. Rather, students became more engaged each time.

With the larger class, the sequence of assigning the written sentences after one demonstration resulted in a truncated student response. Students were reluctant to participate orally or complete the writing. For the oral tasks, half the class declined, and the highest achiever had already attained the high level of fluency showed (no increase in fluency).

In subsequent classes, an elaborated teacher demonstration met with more success. Students engaged via speaking by responding to teacher’s questions. They identified the objects and their various relationships as placed by the teacher, and responded to task assignments to create complete sentences (spoken). As an accompanying written assignment, students completed the textbook exercise choosing spatial prepositions for locations on a map.

In following classes, the method was reintroduced with the flash cards and cardboard boxes. The images on the cards comprised a variety adequate to serve in multiple subject lessons, for example, both workforce and cooking. This complemented a lesson on present continuous verb tense, where students matched images to verbal expressions. “What are they doing?” provided the prompts.

The same process segued into the preposition demonstration. Students identified objects’ positions and relationships using spatial prepositions. Prompt questions morphed into “Where is” and the flash cards’ cloze. Group activity ensued, where three sentences were composed using the flash cards and boxes, written on desk-sized white boards, and then presented orally to the class.

Conclusions. The curriculum evoked constructivist and cognitive learning dynamics. Students’ participation paralleled their output strength. The images, oral exercises and written words repeated the syntax in which the spatial prepositions were embedded and focused students on the grammar form. The method and process prompted students to engage with language and the target structures. Compatibility with other prompts, such as audio-visuals, picture matching and maps, successfully accompanied this method. The components comprised adaptable tools which were used effectively throughout the semester. Thus, repetition became inherent and instrumental to the method.

References

Comeaux, I., & MacDonald, J.M. (March 2018). “Determining the effectiveness of visual input enhancement across multiple linguistic cues. *Language Learning*, 68(1), 5-45.

Council of Europe. (2020). *Common European Framework of Reference*. Retrieved from <https://europa.eu/europass/es/common-european-framework-reference>.

Cushing, I. (2018). Suddenly, I am part of the poem': Texts as worlds, reader-response and grammar in teaching poetry, *English in Education*, 52(1), 7-19.

Cushing, I. (2020) A textured and sensory grammar for the experience of reading. *English in Education*, 54(2), 131-145.

Eade, J. (1997). Using a core text with bilingual children. *English in Education*, 31(3), 32-39.

Hung, B.P., Truong, V., & Nguyen, N.V. (2018). Students' response to CL-based teaching of English prepositions. *Eurasian Journal of Educational Research*. 73, 41-58.

Jach, Daniel. (2017). A usage based approach to preposition placement in English as a second language. *Language Learning*, 68(1), 271-304, 2017.

Kilimci, Abdurrahman. (2017). Integrating cognitive linguistics insights into data-driven learning: Teaching vertical prepositions. *Journal of Language and Linguistic Studies*, 13(2), 681-719.

Loewen, Shawn, & Inceoglu, Solène. (2016). The effectiveness of visual input enhancement on the noticing and L2 development of the Spanish past tense. *Studies in Second Language Learning and Teaching*. (6)1, 89-110.

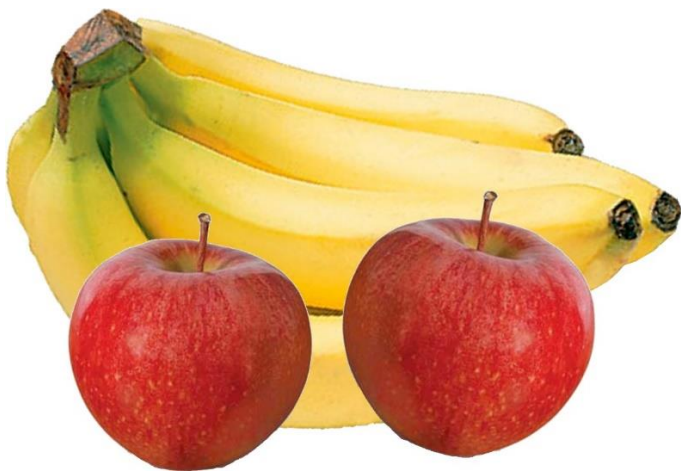
Massi, Maria P., & Blázquez, Bettiana A. (2012). A short is worth a thousand films! *Teaching English with Technology*, (12)3, 62-86.

Victorian Curriculum Assessment Authority. (2020 a). *Victorian curriculum*. Retrieved from <https://victoriancurriculum.vcaa.vic.edu.au/english/introduction/about-english>

Victorian Curriculum Assessment Authority. (2020 b). *Victorian curriculum, Level C (Towards foundation)*. Retrieved from [https://victoriancurriculum.vcaa.vic.edu.au/levelc\(towardsfoundation\)?layout=1&d=E](https://victoriancurriculum.vcaa.vic.edu.au/levelc(towardsfoundation)?layout=1&d=E)

Victorian Curriculum Assessment Authority. (2020 c). *Victorian curriculum, English as an additional language*. Retrieved from <https://victoriancurriculum.vcaa.vic.edu.au/english/english-as-an-additional-language-eal/introduction/rationale-and-aims>

Appendices



The airplane is flying

the

_____.

The children are

the

_____.

The snake is

the

_____.

The bananas and
apples are

the

_____.



The bread is

the

The dump truck is

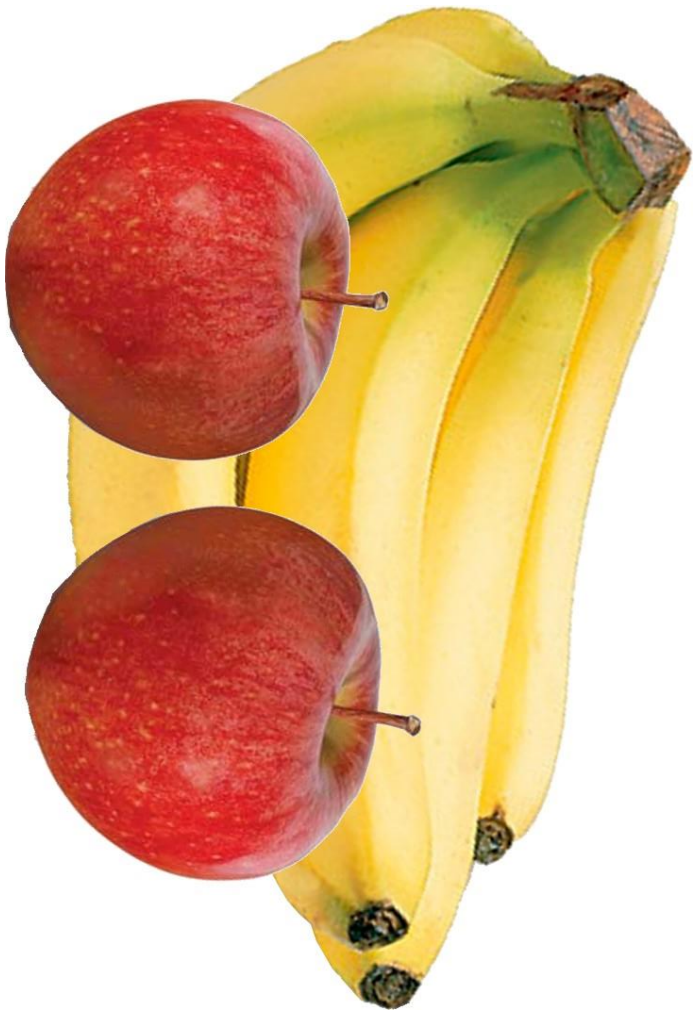
the

The bulldozer is

the

The balls are

the



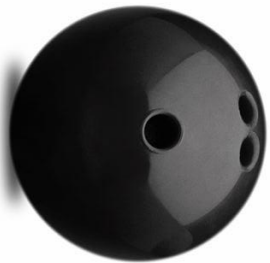
jet airplane

bananas, apples and
strawberries



dump truck

bulldozer



snake

balls



children

bread

SPATIAL PREPOSITIONS
about
above
across from
against
alongside
around
at
before
below
behind
between
in
in back of
in between
in front of
inside
next to
on
on top of
over
through
under
Write three sentences using spatial prepositions

TASKS

- **student choses one object or card, places it in relationship to the bucket, and speaks a sentence description**
- **students demonstrate relationships of objects or cards as teacher announces the preposition**
- **students describe relationships of objects or cards at teacher demonstration**
- **each group configures four relationships with objects or cards, students write sentences on white board, and demonstrate orally to class**
- **Teacher asks students “where is” questions about an object or card, prompts students to respond in complete sentences.**