

# Getting Your Hands on Learning: Manipulative Tools in Content ESL/EFL Instruction

Con las manos en el aprendizaje: herramientas palpables en enseñanza de contenido en cursos de inglés como segunda lengua y como lengua extranjera (ESL/EFL, por sus siglas en inglés)

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## Abstract

*Manipulatives are only for math classes and kindergartners, right? Wrong! Since Rita Dunn's ground-breaking research on learning styles and Howard Gardner's theory of multiple intelligences, educators of all subjects have tried to develop teaching techniques that allow all types of students to learn. Because of their highly visual and kinesthetic/tactile character, manipulatives are an especially powerful tool for ESL-content instruction. However, they are relatively unknown in the ESL field because many teachers believe that manipulatives can only be used with the very young or in math classes. In this article, I will explain how using manipulatives in class can turn learning into a fun and meaningful experience. I will provide 7 different teacher-made manipulatives that have been used in ESL language arts, science and social studies classes.*

**Key Words:** manipulatives; content instruction; language arts; science; social studies.

## Resumen

*Los objetos palpables se usan sólo en clases de matemáticas y en preescolar, ¿no es cierto? ¡Incorrecto! Desde la novedosa investigación sobre estilos de aprendizaje de Rita Dunn y la teoría de las inteligencias múltiples de Howard Gardner, docentes de todas las materias han tratado de desarrollar técnicas de enseñanza que permitan aprender a estudiantes de todo tipo. Gracias a su carácter altamente visual, cenestésico o táctil, los objetos palpables son una herramienta poderosa para la enseñanza de contenidos en inglés como segunda lengua. Sin embargo, estas herramientas son relativamente desconocidas en el campo de la enseñanza de inglés como segunda lengua ya que muchos docentes consideran que los objetos palpables sólo pueden usarse con estudiantes muy jóvenes o en clases de matemáticas. En este artículo, explico cómo el uso de objetos palpables en el salón de clase puede lograr que el aprender sea una experiencia divertida y significativa. Presento siete objetos palpables distintos fabricados por un docente que se han usado en clases de lengua y artes, ciencias naturales y ciencias sociales en inglés como segunda lengua.*

**Palabras Claves:** objetos palpables; enseñanza de contenidos; lengua y artes; ciencias naturales; ciencias sociales.

## INTRODUCTION

When we think about typical secondary content English as a Second Language (ESL) or English as a Foreign Language (EFL) classes, what comes to our minds? Do we imagine the students sitting in rows and paying rapt attention while the teacher or another student reads in language arts class? Are students watching a film about space and completing a worksheet in science class? Are they listening to a lecture on the causes of World War I and taking notes in social studies? Although all of these activities are valid and parts of good teaching, over 15% of the students in the class are being ignored.

No good educator would intentionally ignore 15% of his or her students, but as Richard Gage (1995) suggests, often these students are the ones who stare out the window, talk to their friends, throw paper wads, or even walk around in the middle of class. Many times they are written off as lazy, misbehaved, and unmotivated, instead of what they really are—not having their learning styles met (52).

Research on learning styles has been an important catalyst for both curricular and methodological change in the classroom. According to Judith C. Reiff (1992), learning style is defined as “the sensory channel or pathway through which individuals give, receive, and store information” (17). Researchers in learning styles have found that children learn through three primary modalities: auditory, visual, and kinesthetic (Barbe and Milone 1980, 45). Auditory learners use sound as their primary mode for learning, and remember best what they hear or say. Visual learners need to see pictures and/or written words. Kinesthetic learners are more actively and directly involved in the process of learning. Richard Gage describes them as learning better “when they touch or are physically involved in what they are studying” (52).

However, the examples given earlier favor those students who are auditory and visual learners. Indeed, Wendy F. Simeone (1995) agrees that most educators plan lessons that take into account both visual and auditory learners (60), but often kinesthetic learners are forgotten. When instruction focuses on other learning modalities, kinesthetic learners are likely to be hostile to school and learning and fall behind the other students (Reiff, 17). Thus, since kinesthetic learners make up 15% of the student population (Barbe and Milone, 45), it is necessary that teachers consider the needs of these learners when planning instruction. Gage emphasizes the need for educators to “remain consistently aware of modality differences and be willing to frequently stretch our imaginations to include all learning styles—kinesthetic, in particular” (53).

## WHY MANIPULATIVES?

Educators of all subjects have followed the recommendations of researchers on learning styles and have tried to develop teaching techniques that allow all types of students to learn. One strategy that has been implemented, especially in mathematics and with lower elementary school students, is using *manipulatives*. Manipulatives are defined as objects that can be touched or moved by students to reinforce a concept. There has been well-documented success of their use in math classes, so much that even the Curriculum and Evaluation Standards for School Mathematics from the National Council of Teachers of Mathematics have “explicitly recommended a sample list of manipulatives for each classroom in grades K-8 grade” and advocate their use at all grade levels (Hartshorn and Boren, 1990).

As experiential education (which is based on the idea that active involvement increases student learning) has become more popular, the use of manipulatives has begun to spill into other

content areas and with different age groups. However, manipulatives continue to be relatively unknown in the field of ESL/EFL and secondary content classes. This is a shame because manipulatives can be a powerful tool for reaching both kinesthetic and visual learners at the elementary and secondary levels.

Because of their highly visual and kinesthetic/tactile character, manipulatives are an especially powerful tool for ESL/EFL-content instruction. Because second-language learners in content classes have the double task of learning content and language, often second language teachers rely on *realia*, visuals, and manipulatives during instruction to allow students to transform the language input that they receive into comprehensible input (Snow, 1990; Laplante, 1997, 68-69). Therefore, when they are allowed to physically “manipulate” information, they have the opportunity to process and organize the information on their own and at their own pace.

Obtaining and holding students’ attention is one of the most difficult and important parts of education. Studies have indicated that one way to obtain attention is “novelty.” Activities that are “discrepant from what people usually do, that cause people to expand their capacities, are perceived as being interesting and sought out” (Zahorik, 1996, 552). In a study by John A. Zahorik (1996) on how teachers make learning interesting, he found that “nearly every teacher saw hands-on activities as critical to establishing and maintaining student interest” (555). One of the important hands-on activities listed was manipulatives. According to Zahorik, other strategies that teachers use to gain the interest of the students are groups tasks, varied materials, and varied activities, among others. Manipulatives, when used as a group activity, can fulfill all of the aforementioned interest-grabbing strategies that teachers employ in their classroom.

Finally, manipulatives can be used for a variety of educational activities. Depending on a teacher’s purpose for using the manipulative, it can be used to introduce process, review, recall, or organize information. For example, a manipulative can be used to preview vocabulary words before a text, order a sequence of events while reading, review the countries involved in World War II, organize organisms into the 5 kingdoms, etc. Thus, the use of manipulatives is only limited by the creativity of the educator in the classroom.

## STRATEGIES FOR USING MANIPULATIVES

In order to use manipulatives effectively, an educator must design them very carefully. Zahorik (1996) found that although teachers felt that hands-on activities were indispensable for generating interest, often these activities led to little learning, and some even detracted from acquisition of the content. Often teachers saw the hands-on activities “more as ends than as means” (561) and lost sight of the content that they were trying to impart.

How can we keep our manipulatives from becoming hindrances to learning? First, manipulatives should be directly related to the standard or objective being taught. Not only will this ensure that students manipulate the desired content information, it will save the teacher time. Manipulatives, because they are mainly teacher-made, take time and effort. Thus, if they are related to a standard in the curriculum, they can be used with many classes for several years.

Besides relating the manipulative to the standard, there should always be some type of worksheet to accompany them. Having a worksheet allows the students to have a hard copy of their work so they can review the information at a later time. It also permits them, especially when used with upper secondary students, to see the manipulative as academic work and not just a “filler” activity.

Further, because ESL/EFL content classes often have a large number of students, it is important that the manipulative be self-correcting. This allows the teacher more freedom in helping the students that need assistance, while also permitting other students to continue at their

own pace. One way to do this is to write with permanent markers on the back of the manipulative pieces—either an number, a color, an alphabetic letter, or any other code that is useful. Also, some teachers give a photocopied answer sheet to the students. Many teachers are against making the manipulative self-correcting because they feel that their students will cheat on the activity. However, it is necessary to see “cheating” from a different perspective. If the students complete the worksheet, even if they copy, they have the opportunity to see and write the content information one more time. Mayra Rundle, a 9th grade mainstream teacher from Alexandria City Public Schools in Alexandria, Virginia, USA and strong supporter of manipulatives, commented that when she sees students copy the manipulative activity instead of doing it correctly, she feels satisfied that at least they “took notes” on the information presented in the manipulative.

## TYPES OF MANIPULATIVES

Manipulatives come in a variety of forms. Below I have described several examples of manipulatives that can be used for any content-based ESL/EFL course, but this, of course, is not an exhaustive list.

- **Task Card:** It is a card that is cut in half, leaving a design cut out so the pieces can be joined to make one. Information is written on each part, and students pair each half with its correct match. They are best used when learning or reviewing any information that has a one-to-one relationship (i.e., synonyms, autonyms, math facts and formulas, vocabulary, authors and their works, important historical figures and their legacy, etc.)
- **Puzzle Pieces:** This is a blank puzzle (that can be bought in any teacher-store or made by photocopying a blank puzzle on card stock) where desired content information is written on each piece. The puzzle is broken up and given to a student to put back together. They function best when the information is in a sequence (i.e., steps of the scientific method, main events in a war, the plot of a story, etc.).
- **Learning Circle:** A learning circle uses a large circle copied on cardstock, divided into pie-shaped parts, and clothespins. Information is written on each piece of the circle and on the end of each clothespin. The self-correcting symbol is put on the back of the learning circle and clothespin. Students match the clothespin to the correct part of the circle. This can be used in various forms: question/answer practice, labeling types of information (facts/opinions, types of consumers, verb forms and sentences, questions-answers, etc.), among others.
- **Sequence Strips:** This is an easy-to-make manipulative which is effective with information that compels the student to understand the sequence of events for full understanding. On a different strip of paper, the teacher writes each part of a sequence. The strips are scrambled and students put them into the correct order. If it is a long sequence, the student can take notes and submit the notes. This type of tool is best used with items in a sequence (i.e., plot of a story, lyrics of a song, events in a war, etc.)
- **Card Sort:** It is used to organize and classify information into groups. There are two types of card sorts—closed and open card sorts. Closed card sorts have one specific answer while open card sorts allow students the flexibility of classifying information into groups that make sense to them. Each card contains a word, phrase, sentence, picture, etc. that students classify. Card sorts can be used to organize ideas, classify information into groups, prioritize information, and open up discussion on a subject.

- **Pull-Ups:** This manipulative is an activity which provides practice for reinforcing difficult material, introducing new material, and reviewing material. The student reads an item requiring an answer and selects an answer by placing a pencil, golf tee, plastic coffee stirrer or straw into the corresponding hole. Then the card is pulled up. If the card can be pulled out of the pocket folder, then the student has chosen the correct answer; otherwise, the answer is incorrect and they should try again until it is correct.
- **Question Card or Tee Card:** This is an alternative to pull-ups and is used for similar objectives, but requires much less preparation. Questions are typed onto index cards (or this step can be eliminated by copying the questions onto card stock paper) and a single hole punch is made by each possible answer choice. On the back of the card, the teacher indicates the correct answer by circling the hole, drawing an arrow, placing a sticker, etc. The students are given the cards and use a golf tee (or pencil or straw) to answer the questions.
- **Flip Sheet:** This is another alternative to pull-ups or tee cards. Here questions and multiple-choice answers are typed on a piece of paper. A sheet with the correct answers is developed in a way that it can be copied on the reverse side of the paper in order to create one side with questions and the other with the correct answers. Then the teacher cuts a square hole to create boxes next to each question. The students answer the questions on their own sheet of paper and then flip the paper to check their answers.

There are many other types of commercial and teacher-made manipulatives that can be just as effective as the aforementioned ones. I have designed and seen other teachers use manipulatives from a map of a country, the shape of an organism, etc. If an educator is imaginative, almost anything can become an effective manipulative—if it is designed well.

## CONCLUSION

Actively involving students in the learning process is one of the most difficult but necessary tasks of an educator. Although there are many successful strategies that should be used in the classroom, I have found manipulatives to capture the interest of the students, draw students into becoming active learners, and teach and reinforce content material effectively. In addition, they meet the needs of an often ignored student population—kinesthetic learners.

Thus, it is important that ESL/EFL content teachers critically consider the needs of all learners—not just those who fit in with the curriculum, teaching style, and expectations that they have. Richard Gage (1995) urges teachers to remain aware of the different learning modalities that the students in their classes have while both planning and teaching. He also encourages educators to “be willing to frequently stretch our imagination to include all learning styles—kinesthetic, in particular” (53). Once minds are opened to new ideas on what teaching is and how best to help students, teachers will use more creative techniques and risk-taking in their teaching, such as manipulatives. In my experience, the extra effort yields rich rewards—higher achievement and better behavior.

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### BIODATA

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