

# Flip-a-Chip to build vocabulary

*Lee Mountain*

Here is a word-game strategy that builds vocabulary and comprehension while motivating students.

Do readers outgrow the appeal of word games, puzzles, and language play during adolescence? Not according to the experts (Lederer, 1990; Nilsen & Nilsen, 1999) or the secondary students who “flipped” over my Flip-a-Chip approach to vocabulary study.

Why use this playful hands-on approach? Because effective vocabulary instruction requires active and positive student participation (Carr & Wixson, 1986), and because personal engagement with a new word can lead to deep processing of the meaning (Dole, Sloan, & Trathen, 1995). But most of all, because I want my students to enjoy vocabulary study so much that they become language enthusiasts, lovers of words, appreciative readers, and word-conscious writers—verbophiles.

Therefore, I frequently develop novel approaches to word study for use in my classroom. The Flip-a-Chip approach not only promoted my students’ vocabulary development but also helped me teach syllables, comprehension of meaningful affixes, and the use of context in composition. The fun was a bonus.

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## Flipping four words: How to do it

I introduced Flip-a-Chip by saying, “Let me show you how you can start with four syllables, and *flip* four words. Watch my demonstration.” I had two white poker chips ready to flip like coins. (Any hard circles would do for flipping.)

I held up the first chip. On the front I had printed *PRO*. On the back I had printed *RE*.

Then I held up the second chip. On the front I had printed *DUCE* and on the back, *VOKE*.

Then I told my students, “No matter how you flip these syllables, you will get a word. Try it.”

Andrew (all students’ names are pseudonyms), a student sitting in the front of the classroom, volunteered immediately. He flipped the first poker chip and got *RE*. Then he flipped the second and got *DUCE*.

“Reduce,” exclaimed Andrew’s buddy, Jackson. “It works.”

Then two more students, Carolina and Mackenzie, wanted to try. The girls kept on trying until they had flipped all four words: *produce*, *provoke*, *reduce*, *revoke*.

Andrew started drawing circles on his paper. “I want to see how that mix-match works,” he

muttered as he filled in the poker-chip circles and labeled them (see Figure 1).

“Okay,” said Andrew. “Now I see how you can mix-match the four syllables into four words. What’s next?”

“Next, let’s talk about the meanings of the four words,” I went on. My students were acquainted with these syllables as prefixes and roots, so I thought they could comprehend the words in context. After we discussed the word elements as meaningful chunks, I showed the class the following “fill-in-the-blanks” paragraph that I had written. I hoped my built-in context clues would give the students a conceptual network for the words, as recommended by Eeds and Cockrum (1985).

“The words you flipped can fit in this paragraph,” I told them. “Now, figure out from the context which is the right spot for the words: *produce*, *reduce*, *provoke*, and *revoke*.”

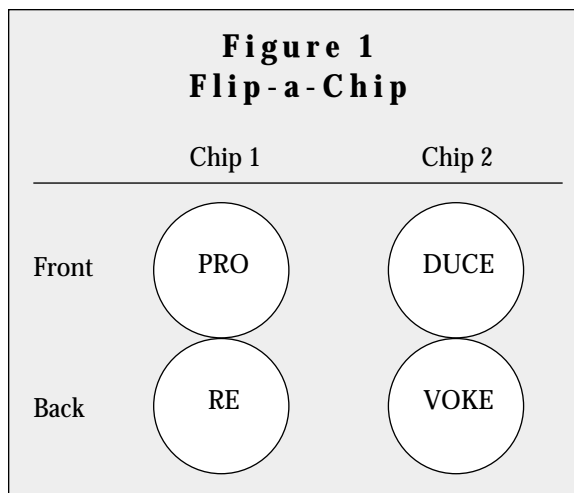
Ms. Jones was angry. She said, “My students \_\_\_\_\_ me when they are tardy. They \_\_\_\_\_ one excuse after another. I want to \_\_\_\_\_ the number of tardies, so I’ll \_\_\_\_\_ the privileges of any pupil who is late.”

## Fitting the words into the paragraph

Andrew raised his hand to read the paragraph aloud. He started rapidly, “Ms. Jones was angry. She said, ‘My students *reduce* me when they.... No, that doesn’t make sense. Wait—it says in the first sentence that she was angry, so she’d get provoked. It must be ‘My students *provoke* me—not *reduce* me—when they are tardy.’”

“The third blank is where *reduce* fits,” said Mackenzie. “It makes good sense to say, ‘I want to reduce the number of tardies.’ That fits the context.”

Carolina said, “I have each word in the right blank.” She read the following paragraph aloud.



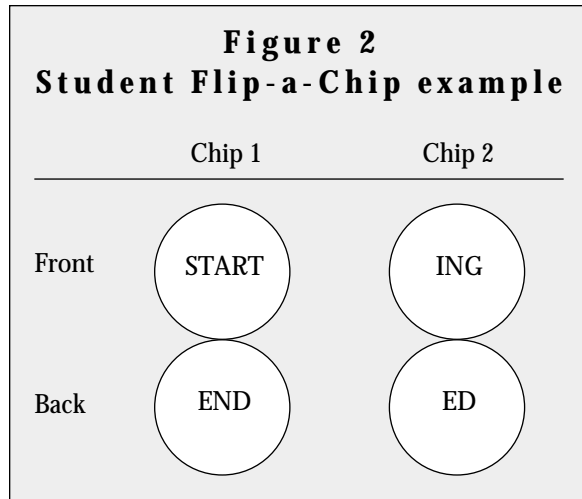
Ms. Jones was angry. She said, “My students *provoke* me when they are tardy. They *produce* one excuse after another. I want to *reduce* the number of tardies, so I’ll *revoke* the privileges of any pupil who is late.”

I was encouraged by the success of my students with this cloze-type paragraph. Their readings of it showed the connection of vocabulary in context with comprehension. During the last decade, researchers have named vocabulary knowledge as the most important factor in reading comprehension (LaFlamme, 1997).

## Making Flip-a-Chip packets in pairs

Then I told my students they could work in pairs and gave each pair a marker and two white poker chips in a plastic bag. I said, “Print four syllables on your chips when you come up with combinations that you can flip into four words. Then write a paragraph with blanks for the words.”

I wanted my students to write paragraphs in which the context would clearly demonstrate the meaning of each word because this writing would require them to do some deep processing of the words and would enhance their comprehension (Rosenbaum, 2001; Stahl, 1986). I also knew that feedback from classmates was a sure way to test



the strength of context in the paragraphs and to promote revision.

My final instructions were, “When you have polished your paragraph, put it in your plastic bag along with your chips. Label your bag with your names, as authors and creators of a Flip-a-Chip packet. Then trade bags with another pair of students and see if they can figure out which of your words belongs in which blank.”

## Working with *-ing* and *-ed*

At once, Jackson grabbed a dictionary, pulled his chair beside Andrew’s, and got to work. I had already sold those two boys on other word games, so they were ready to tackle Flip-a-Chip. But some of my weaker students needed more help.

I suggested to one struggling pair that they use the simple inflectional endings *-ing* and *-ed* on one chip and two verbs on the other. They soon came up with *start* and *end* as their verbs for the first chip, which flipped for the words *started*, *starting*, *ended*, and *ending*.

One of the students picked up a chip and printed *start* on the front of it. Then he turned it over and began to print *ing* on the back.

“No!” exclaimed his partner. “That’s not going to work. Both words have to go on one chip, and both endings on the other. Let’s use Andrew’s

idea of filling in circles before we print on our chips, just to be sure the mix-matching will make four words.” (See Figure 2.)

The paragraph that those partners eventually produced showed good use of context clues.

The mystery story *started* on page 1 and *ended* on page 148. Just as I was *starting* to read it, my brother spoiled it for me by telling me the surprise *ending*.

Another pair of students decided to combine *-ing* and *-ed* endings with the verbs *blast* and *pound*. They were planning to write an onomatopoeic paragraph featuring the words *blasting*, *blasted*, *pounding*, and *pounded*.

I was surprised at how effectively some of my weaker high school students incorporated their flipped words into their paragraphs. However, according to Duin and Graves (1988), students younger than mine had handled this task successfully. Those researchers taught vocabulary as a writing prompt to seventh graders, and they found that their students were capable of incorporating specified words into meaningful essays.

## Working with *-er* and *-est*

A pair of my English as a Second Language students needed practice on the comparative and superlative suffixes *-er* and *-est*, so I had them use those two suffixes as their final syllables. Nagy, Diakidoy, and Anderson (1993) supported the teaching of such suffixes because they contribute to meaning. When a pair of my students selected the adjectives *mean* and *hard* for their initial syllables, I felt a little uneasy about the content of paragraphs that would feature the four words *meaner*, *meanest*, *harder*, and *hardest*. Even after multiple revisions, their math teacher took a beating in their paragraph.

“Math is a lot *harder* than science,” said Raul. “Math is my *hardest* subject.” “It’s not the subject,” said Kim. “It’s the teacher. Our math teacher is mean. She is

*meaner* than our science teacher. She is the *meanest* teacher in the school.”

## Using the dictionary

I wandered back to Jackson and Andrew, and asked, “How are you doing?”

“We’re working with *im*,” said Andrew, pointing to a dictionary page. “Lots of words start with *im*.”

“Yes,” agreed Jackson. “We have *impose*, *impress*, *imprint*, *improve*, and lots more. All we need now is another first syllable that will go with two of those second syllables.”

“I’ve got one,” exclaimed Andrew. “*Sup*. *Suppose* and *suppress*. They’ll work with the *im* words for our Flip-a-Chip paragraph. We’ll use *impose*, *impress*, *suppose*, and *suppress*. Then let’s see if Carolina and Mackenzie can figure out where each word fits.”

Andrew and Jackson were now so sure of themselves that they didn’t bother to label circles on paper before they marked their chips. But they did set up the four syllables and the four words in a list before starting to work on their paragraph.

A while later, they were waving their hands in the air to show me their paragraph. Sure enough, it contained the four words they had flipped and each word was used correctly.

The dictator wanted to *suppress* the revolt and *impose* his will on the rebels. But his advisor said, “Just *suppose* you listened to the rebels for once. That would *impress* them more than a show of force.”

Jackson said, “Our history teacher would really like that paragraph.”

“And how!” agreed Andrew. “He’s been having us read a lot about how history repeats itself with dictators and rebels.”

I smiled, realizing that the boys were applying the knowledge they acquired through reading in another class to their writing in my class. They were

showing me a connection akin to the reflective-thought connection of reading and writing described by Birnbaum (1986).

## Working with plurals and possessives

Mackenzie and Carolina were ready to trade Flip-a-Chip packets with the boys.

“But we better explain in advance,” Mackenzie said to me. “We did something a little different. Instead of final syllables, we used apostrophe *s* and plural *s* as our word endings.”

Carolina added, “With the words *dog* and *aunt* on the first chip, and the endings apostrophe *s* and plural *s* on the second, we still flipped four words. Here they are.” She listed the words *dogs*, *dog’s*, *aunts*, and *aunt’s* and I nodded in approval.

“Jackson and Andrew are going to have to know their plurals and possessives pretty well before they can fit the right word in the right blank in our paragraph,” said Mackenzie.

Rover and Lassie are the names of the *dogs* who belong to my two *aunts*. Aunt Virginia says that her *dog’s* life is better than her life. But I’ll bet Rover thinks my *aunt’s* life is better.

## Dueling paragraphs

“That last paragraph doesn’t make much sense,” Jackson complained, after he and Andrew had gotten mixed up on the girls’ plurals and possessives. “But baseball makes sense,” he went on, starting to jot down a new set of syllables. “I’ll bet I can flip four words for a baseball paragraph with these pairs.” He wrote down *bat*, *-ting*, *set*, and *-tle*. The others looked over his shoulder and murmured the words *batting*, *battle*, *setting*, and *settle*.

Jackson started writing. He scratched out a few words, revised, and produced this paragraph, which Andrew read aloud.

Let's *settle* this argument peacefully before we get into a *battle*. I'm sure that my *batting* average is higher than yours because I'm *setting* a new record this season.

Mackenzie said, "Those words make me think of a different kind of battle, the battle we have at home about setting the table."

Carolina nodded and put pencil to paper. After a while the girls countered with this paragraph, which had nothing to do with baseball.

*Setting* the table was a chore that caused a *battle* every evening in the Lee family. "Let's *settle* this for once and for all," said Mother. "I'm tired of *batting* my head against the wall to get you children to help."

"That last blank is wrong," said Andrew. "It's not *batting* my head against a wall. It's *beating* my head against a wall."

"*Batting* makes just as good sense," said Mackenzie.

Carolina was poring over the dictionary. "There's another kind of *batting*," she announced. "Cotton *batting*, used inside bandages to make them thick and soft." She gave Jackson and Andrew a superior smile. "We could make up a paragraph about our battle with two boys who needed cotton *batting* bandages after they dared to say our last blank was wrong."

## Enjoying the results

That's the kind of battle that I, as a teacher, enjoy. The more my students battle about word choices, the better I like it. Their Flip-a-Chip battles often became heated when the students tried to fill in each other's blanks and then demanded rewrites from each other for clarification. The rewrites usually provided stronger context clues in the paragraphs, so revision was worthwhile.

I used this strategy in reading and writing lessons all semester. I also encouraged students to

work on new Flip-a-Chip packets whenever they finished an assignment ahead of time.

Often, two or more pairs of students would write competing paragraphs to go with the same set of words, as in the case of Jackson and Andrew versus Carolina and Mackenzie with their *battle* paragraphs.

As the semester progressed, my students continued to produce sets of chips and paragraphs featuring verb combinations with *-ing* and *-ed*, *-es* and *-s*; adjective combinations with *-er* and *-est*; noun combinations with apostrophe *s* and plural *s*, and even the plural possessive *s*; and mixed combinations of frequently used syllables (e.g., a prefix and a root).

## Teaching high-frequency prefixes and roots

The prefix my students used most often was *re-*, with *im/in-*, *com/con-*, and *dis-* not far behind. *Re-*, *im/in-*, and *dis-* are "must teach" items—according to structural analysis research—because of their high frequencies (White, Sowell, & Yanagihara, 1989). Flip-a-Chip gave me many opportunities to point out the meanings associated with these bound morphemes.

Certain roots (as well as the aforementioned prefixes) recurred in many different packets because students often flipped overlapping sets of words. For example, the word elements *re-* and *port* appeared in the packet containing *report*, *resist*, *deport*, *desist*, and also in the packet containing *report*, *relate*, *transport*, and *translate*.

The root used most frequently by my students was *port*. It was combined in various Flip-a-Chip packets with *de-*, *ex-*, *im-*, *re-*, *sup-*, and *trans-* to produce *deport*, *export*, *import*, *report*, *support*, and *transport*. These words provided me with teachable moments in which I could help my students construct meaning using structural analysis as recommended by Graves, Juel, and Graves (1998). Tompkins (2001) also supported

the teaching of Latin roots like *port* because of their high frequency in English words.

Other roots flipped by my students, which also appeared on a list of Greek and Latin roots compiled by Fox (1996), were *cess*, *claim*, *duce*, *fine*, *ject*, *pel*, *port*, *pute*, *scribe*, *spect*, *strict*, *tract*, and *voke*. Familiarity with these high-frequency roots promotes comprehension of numerous words in which they occur as meaningful chunks.

## Scaffolding toward more advanced morphology

I encouraged the class to expand their Flip-a-Chip efforts to include derivational suffixes like *-ful* and *-less* that changed a word to produce adjectives (e.g., *fearful*, *fearless*, *helpful*, *helpless*). I also pointed out to my students that a suffix like *-en* could turn adjectives like *weak* and *dark* into the verbs *weaken* and *darken*. Another suffix, *-ness*, could turn the same adjectives into nouns, *weakness* and *darkness*. So, of course, we had a Flip-a-Chip packet with *weak* and *dark* on the first chip and *-en* and *-ness* on the second chip to produce *weaken*, *weakness*, *darken*, and *darkness*. The students then came up with the derivational suffixes *-ish*, *-ly*, and *-er*. My Flip-a-Chip approach to morphology was rooted in the work of Nagy et al. (1993) who showed the benefits of learning how suffixes contribute to the meaning of derivatives.

Andrew and Jackson ambitiously moved beyond one-syllable morphemes on their chips. In small print, they squeezed the suffixes *-able* and *-acity* on the front and back of a suffix chip. With *cap* and *ten* on the other chip, they flipped *capable*, *capacity*, *tenable*, and *tenacity*. It was a challenge for the students to fit these words together meaningfully, but they managed to produce the following paragraph that contained adequate context clues.

It takes stick-to-it-iveness, or *tenacity*, to write a Flip-a-Chip paragraph containing three-syllable and four-syllable words. But we are *capable*. Our brains are big,

so we have the intellectual *capacity*. But it is not *tenable* to push for five-syllable words.

I agreed heartily with the conclusion they reached.

Mackenzie and Carolina came up with three prefixes and five roots that could be mix-matched (in sets of four) to produce numerous Flip-a-Chip packets. But they met with some objections from classmates when they showed their list, which included the prefixes *re-*, *in-*, and *con-* and the endings *fer*, *form*, *quest*, *voke*, and *verse*. One of the girls had to use the dictionary to prove to the class that *convoke* and *inverse* were really words.

Suffix possibilities were not lost on Carolina and Mackenzie when they generated their list. They showed me how the suffix *-ence* could be added to the verbs *refer*, *infer*, and *confer* to make the nouns *reference*, *inference*, and *conference*. But they told Andrew and Jackson that it was “untenable” to produce Flip-a-Chip packets containing *three* poker chips for *three* meaningful chunks—prefix, root, and suffix.

## No end in sight

Near the end of the semester, as I looked at our class's big pile of Flip-a-Chip packets, Andrew asked me, “Do you think we've put together all the combinations yet?”

I shook my head and patted the dictionary. “We haven't even made a dent.”

“Good,” said Jackson. “That gives Andrew and me time to make an even longer mix-match list than Mackenzie and Carolina.”

“Good,” I echoed, pleased that my new approach, Flip-a-Chip, was doing its job. My students were engaged and motivated. They hardly realized how much they were learning. Innovative approaches have repeatedly proved to be strong motivators for learning (Guthrie & McCann, 1997; Myerson & Kulesza, 2002) and strategies

grounded in vocabulary research have repeatedly improved reading comprehension (Nagy, Winsor, Osborn, & O'Flahavan, 1994; Wysocki & Jenkins, 1987).

For many semesters, activities like Flip-a-Chip (along with crossword puzzles and other forms of wordplay) have helped me create a pleasantly literate environment in my classroom. Such activities have a long history of effective classroom use (Augarde, 1984). Over the years, they have enabled me to develop many appreciative readers and word-conscious writers (like Carolina, Mackenzie, Jackson, and Andrew) who have become language enthusiasts and lovers of words—verbophiles.

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