

Building Academic Vocabulary in After-School Settings: Games for Growth With Middle School English-Language Learners

Academic word knowledge has the potential to increase access to academic texts for all students, and the games and activities suggested in this article are effective approaches for building that knowledge.

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On a hot, sunny afternoon in southern California, 20 middle school English-language learners (ELLs) were moving through a timed gallery walk with student-designed pictures posted on the walls of a classroom. The students were taking part in an after-school program called Language Workshop, and the gallery pictures illustrated words like *process*, *function*, *consistent*, and *benefit*. Students had created the pictures for these words in teams. The teams then made their way around the room, trying to guess which words other teams had illustrated, and they could only spend two minutes at each picture. For those familiar with speed dating, we called this “speed gallery walking,” and, despite the gorgeous weather and the voluntary nature of this after-school program, students were engaged in learning academic vocabulary words. The goal of the Language Workshop program was to improve ELLs’ academic vocabulary as one way of increasing their access to textbooks and other instructional materials. Language Workshop achieved this goal, and my purpose in this article is to share the engaging games and activities that contributed to the program’s success, as well as the theoretical and empirical rationale behind them.

Language Workshop: Considerations for Designing the Intervention

Language Workshop was the intervention at the center of a study designed to determine if vocabulary instruction strategies shown to be effective with elementary students learning general vocabulary words would also be effective in a new context. Specifically, the context for this study involved (a) general academic vocabulary words, which are used across content areas, have abstract definitions, and are challenging to master, and (b) middle school English-language learners. To design a successful intervention, we (the author and teaching assistants) had to answer three questions from the existing literature: (1) What is academic vocabulary, and why is it important? (2) What instructional strategies for vocabulary are supported by empirical research?

(3) How can we engage adolescent ELLs in learning academic vocabulary words? Because of the difficulty experienced by ELLs in attaining academic English proficiency, Hakuta, Butler, and Witt (2000) recommended extra instructional time in after-school and other settings to accelerate academic English development. Thus, the three design questions were all considered in the context of a voluntary after-school program.

What Is Academic Vocabulary and Why Is It Important?

The literature on academic English in the K–12 setting has dramatically expanded in the last few years (Hakuta et al., 2000; Scarcella, 2003; Schleppegrell, 2004), particularly as it has been shown to be a barrier for ELLs as they work to access the curriculum. Academic vocabulary words are one element of academic English, “a variety or a register of English used in professional books and characterized by specific linguistic features associated with academic disciplines” (Scarcella, 2003, p. 19). Schleppegrell (2004) explained that as students move through the years of schooling, the literacy demands of their academic work increase. As Corson (1997) stated, academic language is primarily accessed through texts, not conversation, and

some children are well-positioned to gain access to this language and others are not. Because many academic words have Greek and Latin roots, they have lost their semantic transparency. For example, the word *interpretation* does not reveal much of its meaning through its root or affixes. Thus, explained Corson, for students who “do not have opportunities outside the classroom to use academic words in motivated ways (and few people do)...their learning of these words becomes a hit-and-miss affair” (p. 688).

The target words for Language Workshop were the 60 most common academic words according to Coxhead’s (2000) Academic Word List (AWL); see Table 1 for a list of these words. The AWL comprises general academic words as opposed to discipline-specific words. Thus, the words are used across disciplines, and typically they are not targeted for instruction to the same degree as essential content-specific words. However, as Hyland and Tse (2007) concluded, general academic words have specific meanings in different contexts; understanding the meaning of the word *structure* in respect to the structure of a cell does not guarantee understanding of the structure of a poem. In designing Language Workshop, we considered these challenges of academic vocabulary words along with evidence-based

Table 1 Target Words for Language Workshop

| | | | | |
|----------------|--------------|----------------|-------------|-------------|
| analysis | contract | factors | legal | research |
| approach | create | financial | legislation | response |
| area | data | formula | major | role |
| assessment | definition | function | method | section |
| assume | derived | identified | occur | sector |
| authority | distribution | income | percent | significant |
| available | economic | indicate | period | similar |
| benefit | environment | individual | policy | source |
| concept | established | interpretation | principle | specific |
| consistent | estimate | involved | procedure | structure |
| constitutional | evidence | issues | process | theory |
| context | export | labour | required | variables |

Note. These are the 60 most frequent academic words from Coxhead’s (2000) Academic Word List.

practices for vocabulary development and recommendations for effective adolescent literacy programs.

Which Instructional Strategies for Vocabulary Are Supported by Empirical Research?

McKeown and Beck (2004), whose earlier work on vocabulary instruction demonstrated that vocabulary instruction can improve reading comprehension (Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Perfetti, 1983), have outlined the kind of vocabulary instruction that influences reading comprehension. Based on their research, they asserted that vocabulary instruction should offer multiple exposures of the target words, employ a breadth of information with varying contexts for the target words, and provide opportunities for students to process and interact with word meanings actively and deeply. Other leaders in the vocabulary literature have also identified these strategies as effective based on the instructional and intervention research available for both native English speaking (NS; Blachowicz & Fisher, 2000; Nagy, 2005; Stahl & Fairbanks, 1986) and ELL populations (August, Carlo, Dressler, & Snow, 2005; Calderón et al., 2005; Shanahan & Beck, 2006). In addition to these principles of vocabulary instruction, August et al. (2005) asserted that ELLs need increased visual support and increased practice time for new vocabulary. Thus, the guiding principles for all Language Workshop activities were the following:

- Provide multiple exposures to words in multiple contexts.
- Provide multiple opportunities to process words.
- Encourage personalization of words.
- Provide visual support and extra practice time whenever possible.

While these principles of vocabulary instruction have both a theoretical and empirical foundation, they had not been empirically studied with academic vocabulary words and adolescent ELLs prior to this study.

How Can We Engage Adolescent ELLs in Learning Academic Vocabulary Words?

Literacy development is essential for all adolescents, but ethnic- and language-minority students, as well as students living in poverty, continue to perform below their NS and privileged peers in literacy achievement, as measured by the National Assessment of Educational Progress (Institute of Education Sciences, 2006). Sturtevant et al. (2006) suggested that efforts to improve adolescent literacy must be rooted in contexts and instructional materials that are relevant and motivating to students. In addition, they recommended that dynamic and diverse instructional and collaborative strategies should be used in concordance with direct instruction of reading comprehension, vocabulary, and relevant background information. Like Sturtevant and her colleagues, Klingner and Vaughn (2004) posited the value of cooperative learning activities among adolescents, but they added additional recommendations based on their review of the literature on ELLs. Klingner and Vaughn asserted that adolescent ELLs need high-quality instruction and teachers who understand the cognitive processes of bilingual students. They emphasized the heightened importance of vocabulary for ELLs and recommended less recitation, more opportunities for meaningful practice with language, and increased instruction of reading comprehension and vocabulary using graphic organizers and direct strategy instruction.

Language Workshop: The Design

Following the examination of these three areas of the literature—academic English, evidence-based vocabulary instruction, and adolescent engagement—the context of a voluntary after-school program was then considered. As recommended by Noam, Biancarosa, and Dechausay (2003), after-school programs should include fun, mentoring, enrichment, and support of academic learning. Thus, the Language Workshop sessions were designed with collaborative, fast-paced, and highly interactive activities combined with elements of direct instruction and text-based discussions of the target words.

In designing Language Workshop, we absolutely had to respond to needs for engagement and fun; a

voluntary after-school program on academic vocabulary words without these components would not have yielded much student attendance. Each session involved direct instruction of words and discussions around words as they appeared in short pieces of informational text that were accompanied with many diagrams and pictures. The texts used were from a discovery series of books; they were titled *Stars and Planets* (Levy, 2003) and *Great Inventions* (Wood, 1995), and they allowed for authentic academic exposures to many of the target words in expository writing. Following these introductory activities, at least half of each session was oriented around fast-paced games that allowed for active practice and personalization of word meanings. Our efforts to maintain attendance appeared to be successful: most of the students who signed up attended Language Workshop at least 15 out of the 20 sessions.

Each of the activities described below incorporated instructional strategies that have research support, and this support is identified in the descriptions. Additionally, the design of the 20 sessions was crafted with consideration of the research showing that students build word knowledge incrementally (Stahl & Nagy, 2006). Thus, one exposure, even a meaningful one, would not be sufficient to help students build enduring knowledge of the target words. Games, then, allowed for regular practice with many target words every day. Finally, games enabled an essential component of engaging adolescent literacy programs: collaboration with peers.

Language Workshop: Activities and Games

Picture Puzzlers

Because academic vocabulary words are so abstract, it is difficult to match pictures with the actual definitions of the words, and this is what makes picture puzzlers puzzling. We chose pictures with contexts that suited the target words for each day and then used those pictures to prompt small-group and whole-class discussion. For example, according to the *Longman Dictionary of American English* (Murphy, 2004) the definition of *function* is “(n.) the job or purpose that something has; (v.) work the correct way.” Such definitions

are nearly impossible to illustrate with a picture, but a picture of a computer working correctly (or incorrectly) provides an opportunity to discuss what it means when something is functioning. A picture of a household item such as a kitchen sponge or a screwdriver allows for a discussion of the functions of these items. Picture puzzlers are a great hook for a class; students can discuss them in small groups or write about them, and the graphics can all be linked to one content area, even the topic of the day, since academic vocabulary words can be used in so many contexts. Picture puzzlers are linked to the research in that they allow for exposures to words in multiple contexts, opportunities to process and personalize word meanings, and visual support.

With all of our activities, we repeatedly saw that students do indeed learn words incrementally. An engaging discussion around a picture puzzler does not mean that a word has been learned. For example, in Language Workshop we discussed the word *benefit* in relation to pictures showing a team, and students brainstormed the benefits of being part of a team, such as being able to accomplish more than you could on your own and having the chance to be with friends. Later in that session, we asked students what *benefit* meant, and several students raised their hands right away. Their responses were all something to the effect of “it means when you’re part of a team.” These responses demonstrated that students had started the process of fast-mapping (Carey & Bartlett, 1978), which involves creating initial associations with words and the contexts in which they are used. The students had connected, or mapped, the word *benefit* to a familiar context, but they would need to explore the word in other contexts before they could understand it in isolation. Because the Language Workshop sessions were designed to give students multiple exposures to the words in multiple contexts, we saw these responses as a good first step and we continued to build on them.

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Matching activities involved the three to four target words for that day, as well as target words from previous sessions, allowing students to revisit the target words repeatedly in different contexts.

Music Puzzlers

A music puzzler has the potential to be especially engaging to adolescents. We used students' favorite songs in class and asked students to talk about the songs using the target words for the day. Discussion prompts included the following (target words are in italics): (1) *Interpret* the song—say what you think it means. (2) What do you like or dislike about the song? Be *specific*; share exact details. (3) What is this song *similar* to? What is it almost the same as? Activities such as this one had

built-in engagement for using the target words, because students were using the words to discuss music they really enjoyed. This activity is an example of using words in multiple contexts and personalizing word meanings, a recommendation of McKeown and Beck (2004) among others.

Matching Games

Adolescents need opportunities to interact with their peers, and such opportunities are very motivating (Klingner & Vaughn, 2004; Sturtevant et al., 2006). A series of matching games that we played in Language Workshop gave students opportunities to process word meanings in multiple contexts and to interact with peers. Matching activities involved the three to four target words for that day, as well as target words from previous sessions, allowing students to revisit the target words repeatedly in different contexts. Such strategies, as aforementioned, are widely recommended in the vocabulary literature (Beck, McKeown, & Kucan, 2002; Blachowicz & Fisher, 2000; Stahl & Nagy, 2006).

Here is the play-by-play for our matching activities. On card stock, we created a set of cards for each of the target words in Language Workshop. Each student would draw a card from a hat, and each card had a word, a definition, or a sentence (with a blank where the word would go). Students with a word card would have to find the students with the matching definition and sentence cards. Variations on these

matching games created different challenges for students. For example, students sometimes had to find their groups in complete silence, and sometimes their cards were taped to their backs so that students had to help each other get into the right groups. Games like these meet both adolescents' previously mentioned word-learning needs and social needs because the games allow for multiple exposures to words in multiple contexts, opportunities to practice word meanings, and opportunities for collaboration.

Follow-Up Activities to Matching Games

The matching activities were engaging ways to form groups, and we used a series of follow-up activities to help students personalize word meanings and generate new situations in which the words might be used. In particular, activities included ones with visual support for the target words. For example, we sometimes asked groups to create a short skit to dramatize the word, draw a picture of a context using the word, or write a new sentence using the word. They would then present their work to the rest of the groups, and the rest of the groups would have to guess each group's word. When students drew pictures or wrote sentences, speed gallery walking proved to be a very engaging activity. On flipchart paper, teams drew their pictures or wrote new sentences (with a blank where the word should be) for the target words. In groups, students traveled around to each poster and wrote down the word they thought the group was trying to portray.

Dice Games

Large dice proved to be a great prompt for an active game for students because it encouraged active processing and personalization of word meanings. We taped a target word to each side of one die, and a task to each side of another die. The tasks included instructions such as *write a sentence*, *act it out*, and *draw a picture*. Students took turns rolling the dice. Then, small groups worked together to complete the task indicated by the task die for the word indicated by the word die.

Academic Taboo

Based on Taboo by Hasbro, this quick-thinking word game involved words in multiple contexts with opportunities for students to process and personalize word meanings. The object of the game is for a student to get his or her team to say a target word by describing it using related words; however, there is a list of closely related words that cannot be used. For example, the student might have to get the team to say the word *umbrella* without using the words *rain*, *open*, *protect*, or *water*. For Language Workshop, we modified this game somewhat. First, we made new game cards with the academic target words and other words that came up in our instructional texts and discussions. The group was divided into two teams, but two students would come up at the same time to play for their teams. This took the spotlight, and the pressure, off just one student, and allowed students who were not as proficient in English to actively participate with their peers. Also, because academic vocabulary words are so abstract, we did not include a list of related words that were banned from each play. If students had the word *context*, for example, they could say whatever they could think of to get their team to say the word. Students would go through as many words as they could in one minute, and then the next team would send up two students to play. Our modification of *Taboo* gave us a fast-paced and highly interactive game that provided students practice with word meanings and with connections between words.

Pictionades

Many students are familiar with both Pictionary by Milton Bradley and Charades, and this game was a combination of both. It involved multiple contexts for words, visual support, and, again, opportunities for students to actively practice and personalize word meanings. The format used in Language Workshop was similar to the format for Academic Taboo, but two students would come up for each team to draw the word and silently act it out rather than talk about it. Simple Pictionary proved to be very difficult with the academic words (anecdotally, we even watched college students have a difficult time trying to depict words like *interpret* or *specific*), so we added the charades component, hence Pictionades! This was a

great game to practice words from our instructional texts that had more concrete definitions, such as *astronomer* and *Leonardo da Vinci*. Students who struggled with explaining these words, but who had some initial conceptual understanding of them, could demonstrate their knowledge using actions and pictures. Their representations, then, gave all students participating in the game additional semantic information in a code other than language.

Action Jeopardy!

Although time-intensive to create, an Action Jeopardy! game (based on the TV show Jeopardy! by Sony Pictures) for a set of target words can really engage students in active processing of many words at once. The Action Jeopardy! game board, which is posted for all to see, has a series of answers for which the contestants have to provide questions. In Language Workshop, the categories at the top of the game board were definition, synonym, antonym, sentence, and context, as well as one category from the two discovery texts on the solar system and great inventions used in the intervention. Each category had answers worth from 1 to 6 tickets (tickets could be used in the Language Workshop “store” for school supplies and games), with the answers getting increasingly harder with increasing ticket values. There was also a second “double-jeopardy” round, which, similar to the TV show, included more challenging answers that were worth double the ticket values. Together, both rounds of the game led to a total of 60 answers on 60 different words. Because so many different words were included in the game, and because students’ English proficiency levels varied widely, each student had a word list and a dictionary to use as resources.

Students were divided into three groups of six or seven students, and each team took turns choosing answers. If the team who chose the answer could not provide an accurate question (e.g., “What is *benefit*?”) in one minute, the other two teams would each have a chance to write down responses. To include students with limited English proficiency, all students were occasionally selected to be the team speaker, which involved selecting the next answer and providing responses on behalf of the team.

The “Action” part of Action Jeopardy! was our effort to keep all students engaged, moving around, and having fun. Occasionally, students would select an answer only to find a physical challenge instead of an academic word. All teams participated in each physical challenge, which included activities like doing 10 push-ups or holding a yoga pose for one minute. Students who did not wish to participate could opt out, and other students could complete the challenge for them. Language Workshop was 20 sessions long, and sessions 10 and 20 were Action Jeopardy! tournaments. These tournaments provided students with multiple exposures to words in multiple contexts, opportunities to process word meanings, and opportunities for collaboration with peers.

The Instructional Context for the Games

As already mentioned, much of the engagement we saw in Language Workshop can be attributed to these games. However, the games were nested in a larger instructional context that directed students’ involvement, built students’ background knowledge, and addressed students’ misconceptions about word meanings. As the National Reading Panel (National Institute of Child Health and Human Development, 2000), among others (Baumann, Edwards, Boland, Olejnik, & Kame’enui, 2003; Scarcella, 2003), suggested, there is no one best strategy (e.g., direct instruction, active practice) for teaching vocabulary. Rather a combination of strategies will have the biggest impact. Without this instructional context, the games, in isolation, may not have resulted in the growth they did. Following is a description of a typical afternoon in Language Workshop as an illustration of how the games were part of a larger framework of direct instruction and teacher support.

On one warm Wednesday afternoon, 19 students made their way into the Language Workshop classroom. They dropped off their backpacks, grabbed pencils and paper, and chose seats. A few students gazed up at the picture puzzler on the overhead to try to make sense of the words and pictures. After a few minutes, we (the author and teaching assistants) started a discussion on which words might go with which pictures. Students volunteered their ideas and

explained their choices. We addressed any misconceptions and asked students about other contexts for using the words. Next, we turned our attention to the dry-erase board, where cards with target words for the day, as well as cards with matching definitions and sentences, clung to the board with magnets. Volunteers came to the white board to try to match the words with their definitions and sentences. We then led a whole-class discussion on the words and their definitions, and we did a choral reading of the words and definitions to give all students an opportunity to read and pronounce the words. Following this initial practice with words and their meanings, we looked at one of the discovery books, drawing students’ attention to vocabulary words and their contexts. Students took turns reading out loud, analyzing the pictures, and discussing the content with their partners. The goal of these activities was to help students connect the target words to prior knowledge and to see the words in context. Following the activities, we moved into the games, and after each game we held a whole-class discussion to address any misconceptions that arose during the games. Additionally, because many of the games involved small groups, we were able to provide scaffolding during the games. Without this instructional framework, it is likely that the games would not have resulted in meaningful growth. Experiencing meaningful opportunities to practice and personalize word meanings, one of the guiding principles of vocabulary instruction, requires that students have some prior knowledge of the word meanings to engage in those opportunities.

Study Design and Results

Language Workshop was implemented as part of an experimental study in a suburban school in southern California. (For a detailed explanation of the study and results, see Townsend & Collins, 2008). The sample for this study ($n = 37$) consisted of middle school English-language learners with a variety of language backgrounds. The sample was broken into two groups, one with 20 students and one with 17 students, and the groups attended Language Workshop separately. Participants’ first languages included Spanish, Gujarati, Japanese, Vietnamese, and Arabic, and participants’ English proficiency status ranged

from beginning to early advanced. Students were tested before and after their participation in Language Workshop, which consisted of 20 after-school sessions lasting 75 minutes each, and also before and after a comparable length of time spent in other after-school activities. A number of measures were administered, but the measure aligned with the intervention was a modified form of the Vocabulary Knowledge Scale (Paribakht & Wesche, 1997), which we titled the Measure of Academic Vocabulary (MAV). The MAV was a measure of receptive academic vocabulary knowledge; below is a sample item:

1. analyze
 - a. I have never seen this word before.
 - b. I have seen this word before but I don't know what it means.
 - c. I have seen this word before and I think it means: _____
 - d. I can use this word in a sentence (if you answer this part, also answer part c). _____

There were 20 items in total, and each item was worth a total of 5 points; the maximum score on this measure, thus, was 100. Half of the items were based on target words from Language Workshop and half were also from the Academic Word List (Coxhead, 2000) but were not Language Workshop target words. The MAV was administered in an interview format to capture word knowledge without confounding results with reading and writing abilities. We used *t*-tests to compare students' growth during the intervention with their growth during a comparable period of time with no intervention, and we calculated Cohen's *d* as an indicator of practical, or educational, significance of these results. (See Table 2 for data on student growth.) Students made more growth during

the intervention, $t(36) = 2.49, p < 0.05, d = 0.74$, and this growth was both statistically and practically significant. In addition, we compared students' growth on the target words with their growth on the nontarget words. Students made more growth on the target words $t(36) = 6.34, p < 0.001, d = 1.05$, and this growth was both statistically and practically significant. In other words, students increased their knowledge of the target words in the intervention, which demonstrated that strategies that had previously been shown to be effective with general vocabulary words and younger students are also effective with abstract academic words and adolescent ELLs. Finally, an ANOVA showed that students' growth on the MAV increased with each successive level of English proficiency. Thus, students at advanced levels made the most growth while students at the beginner level made the least growth, $F(4,32) = 4.16, p < 0.01, partial \eta^2 = 0.34$ (*partial* η^2 is an effect size measure with the following conventions for interpretation: 0.02 indicates a small effect, 0.15 indicates a medium effect, and 0.35 indicates a large effect). Thus, these differences were both statistically and practically significant. Regrettably, we were unable to conduct delayed posttesting with the participants to determine whether their learning endured. This is an area for future research, but the results from the current study suggest the potential for instructional interventions like Language Workshop. Additionally, the current results suggest that ELLs at intermediate and advanced levels of English proficiency, when compared with students at earlier levels of English proficiency, have more of the linguistic resources necessary to build their knowledge of abstract, academic words in English.

Table 2 Mean Growth During Treatment and Control Periods

| Measure of academic vocabulary | Growth during treatment period | Growth during control period |
|--------------------------------|--------------------------------|------------------------------|
| Total Score | 7.19 (9.04) | 1.11 (7.39) |
| Target Word Items | 5.89 (7.28) | 0.46 (5.72) |
| Nontarget Word Items | 1.43 (9.16) | 0.65 (9.84) |

Note. Standard deviations appear in parentheses.

Considerations for Practice

Academic word knowledge has the potential to increase access to academic texts for all students, and especially for ELLs. This study suggested that the games and activities used are effective approaches for building academic word knowledge among adolescent ELLs. The games were, by far, the most engaging part of the intervention, and they were an essential draw to the program for students who would not have been easily convinced of the immediate value of learning words like *factor*, *variable*, and *consistent*. However, Language Workshop was more than just games. A combination of direct instruction, reading of expository texts, instructional activities, and games were used at every session. The instructional integrity of the games was based on the larger instructional context in which they were used and on research-based principles of vocabulary instruction. For ELLs, visual support and extra practice are also essential. The games described here were part of the Language Workshop program because they allowed for these principles to be put into practice in very engaging ways. For example, the Picture Puzzlers began the fast-mapping process (Carey & Bartlett, 1978), the first part of incremental word learning, which subsequent matching games built upon. Academic Taboo and Pictionary prompted students to generate new connections between the target words and their background knowledge. The Dice Games and Action Jeopardy! encouraged students to work in teams to make decisions about how to represent and explain words. The Music Puzzlers and Gallery Walk preparation encouraged students to personalize word meanings. And words were revisited repeatedly throughout the 20 sessions, allowing for the extra practice that ELLs need in learning new vocabulary.

The primary focus of Language Workshop was to build enduring understanding of academic vocabulary words. However, future research in this area, and improvements in Language Workshop, should include delayed posttesting to examine whether students' learning endured as well as the goal of helping students understand the power they gain when they build word knowledge and language awareness. For now, this study provides evidence that middle school ELLs, who generally demonstrate smaller vocabularies

(Geva, Yaghoub-Zadeh, & Schuster, 2000) and more difficulties in academic English than some of their NS peers (Corson, 1997), can successfully build academic word knowledge.

All of these activities have the potential to be adapted to other academic words and to the content areas. They can be used as introductory activities, or as review activities. These activities put students in charge of making connections between words and applying them in new contexts. Stahl (2005) asserted, "Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world" (p. 95). Activities such as the ones referenced in this article have real potential to help students build that knowledge, while having a little fun in the process. Finally, the opportunities for collaboration with peers meet an essential need of adolescents as they learn to navigate the social world and determine their own roles within it.

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