Word Generation

Intervention Report | English Learners Topic Area

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Improving vocabulary and reading comprehension is critical to students' academic success, particularly for English learners who may have less exposure to academic language than native English-speaking students.[1] *Word Generation* is a supplemental program that aims to improve students' reading comprehension by building students' vocabulary, academic language, and perspective-taking skills through classroom discussion and debate. *Word Generation* was designed for all students; however, English learners in particular could benefit from its focus on academic language. *Word Generation* consists of a series of interdisciplinary units with daily lessons focused on a high-interest topic to increase student engagement. Each unit targets a small number of academic vocabulary words that are integrated into texts, activities, writing tasks, debates, and discussions across content areas. Several *Word Generation* programs exist. In the *Word Generation Weekly (WordGen Weekly)* and *Word Generation Elementary (WordGen Elementary)* programs, units are designed to be used across English language

arts, math, science, and social studies in grades 6–8 and grades 4 and 5, respectively. In the Science Generation (SciGen) and Social Studies Generation (SoGen) programs, units can supplement or be used in place of regular science and social studies curriculum units in grades 6–8. The different *Word Generation* programs can be implemented separately or together.[2]

This What Works Clearinghouse (WWC) report, part of the WWC's English Learners topic area, explores the effects of *Word Generation* on English language proficiency and reading comprehension for English learners. The WWC identified nine studies of *Word Generation* that focused on English learners. One of these studies meets WWC standards. The evidence presented in this report is from one study of the impact of *Word Generation* on English learners in a range of grades— 4th through 7th—and in a variety of school settings, including elementary, middle, and K–8 schools in urban, suburban, and small town districts.

What Happens When Students Participate in *Word Generation*?[3]

The evidence indicates that implementing *Word Generation*:

- **May result in little or no change in English language proficiency.**
- **May result in little or no change in reading comprehension.**

Findings on *Word Generation* from the one study that meets WWC standards are shown in Table 1. The table reports an effectiveness rating, the improvement index, and the number of studies and students that contributed to the findings. The improvement index is a measure of the intervention's effect on an outcome. It can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention.

Table 1. Summary of findings on *Word Generation* from the one study that meets WWC standards

Outcome domain	Effectiveness rating	Study Findings	Evidence meeting WWC standards (version 4.0)	
		Improvement index (percentile points)	Number of studies	Number of students
English language proficiency	No discernible effects	+9	1	241
Reading comprehension	No discernible effects	+1	1	241

Note: The improvement index can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention. For example, an improvement index of +9 means that the expected percentile rank of the average comparison group student would increase by 9 points if the student received *Word Generation*. The improvement index values are generated based on one finding from the outcome analysis that meets WWC standards conducted within each domain, as reported by Kim et al. (2018). A positive improvement index does not necessarily mean the estimated effect is statistically significant. The English language proficiency outcome reported in the study is the Core Academic Language Skills-Instruments (CALS-I). The reading comprehension outcome reported in the study is the Global Integrated Scenario-based Assessment (GISA). The effects of *Word Generation* are not known for other outcomes within the English Learners topic area, including alphabetics, reading fluency, general literacy achievement, writing conventions, writing productivity, writing quality, mathematics achievement, science achievement, and social studies achievement.

BOX 1. HOW THE WWC REVIEWS AND DESCRIBES EVIDENCE

The WWC evaluates evidence based on the quality and results of reviewed studies. The criteria the WWC uses for evaluating evidence are defined in the Procedures and Standards Handbooks and the Review Protocols. The studies summarized in this report were reviewed under WWC Standards (version 4.0) and the Primary Mathematics topic area protocol (version 4.0).

To determine the effectiveness rating, the WWC considers what methods each study used, the direction of the effects, and the number of studies that tested the intervention. The higher the effectiveness rating, the more certain the WWC is about the reported results and about what will happen if the same intervention is implemented again. The following key explains the relationship between effectiveness ratings and the statements used in this report:

Effectiveness Rating	Rating interpretation	Description of the evidence
Positive (or negative) effects	The intervention is **likely** to change an outcome	Strong evidence of a positive effect, with no overriding contrary evidence
Potentially positive (or negative) effects	The intervention **may** change an outcome	Evidence of a positive effect with no overriding contrary evidence
No discernible effects	The intervention **may result in little to no change** in an outcome	No affirmative evidence of effects
Mixed effects	The intervention **has inconsistent effects** on an outcome	Evidence includes studies in at least two of these categories: studies with positive effects, studies with negative effects, or more studies with indeterminate effects than with positive or negative effects

How is *Word Generation* Implemented?

The following section provides details of how *Word Generation* was implemented. This information can help educators identify the requirements for implementing *Word Generation* and determine whether implementing this intervention would be feasible in their district or school. Information on *Word Generation* presented in this section comes from the study that meets WWC standards (Kim et al., 2018) and from correspondence with the developer.

- **Goal:** *Word Generation* aims to improve students' reading comprehension by building students' vocabulary, academic language, and perspective-taking skills through classroom discussion and debate.

- **Target population:** *Word Generation* can be used for students in grades 4 to 8. WordGen Weekly, SciGen, and SoGen are used with students in grades 6–8. WordGen Elementary is used with students in grades 4 and 5.

- **Method of delivery:** WordGen Weekly and WordGen Elementary are supplemental interdisciplinary units that are integrated into English language arts, science, social studies, and mathematics instruction. SciGen and SoGen units can be used in place of the regular curriculum or as a supplement. Each unit includes additional activities for other content areas to provide cross-disciplinary reinforcement of academic vocabulary.

- **Frequency and duration of service:** WordGen Weekly consists of three series of 24 weekly units, with each series designed to be used over one academic year. Series and units within series can be used in any order. Each unit within the series includes five target vocabulary words and

> **Comparison group:** In the study that contributes to this intervention report, students in the comparison group were taught using a wide range of instructional practices and standard programs that sought to improve vocabulary. These programs were highly variable across schools in the comparison group.

five connected activities that typically last from 15 to 20 minutes and take place during regular English language arts, science, social studies, and math instruction.

WordGen Elementary consists of an introductory unit (one week) and 12 additional units (two weeks each) for each grade level (4 and 5). Each two-week unit includes daily 40- to 50-minute lessons. Schools can choose to implement some or all of the units across the school year.

SciGen and *SoGen* each offer six discipline-specific units for each grade level (6–8). Each unit is one week in length and includes daily 40- to 50-minute lessons in science or social studies plus 15- to 20-minute supplementary activities that can be integrated into English language arts, mathematics and science (for *SoGen*) or social studies (for *SciGen*) instruction. Schools can choose to implement some or all of the units across the school year.

- **Intervention components:** *Word Generation* includes several key components and features, as described in Table 2. The four different *Word Generation* programs can be implemented separately or together.

Table 2. Components of *Word Generation*

Core component	Description
***Word Generation* units**	Each *Word Generation* unit is organized around a high-interest topic that aims to engage students' interest—for example, "Should the school day be lengthened?" or "Should the government impose a mandatory year of service after high school?" Students read or listen to multiple points of view on a topic at the beginning of the week, learn target vocabulary words relevant to that topic, prepare and debate the topic, and finally write an argumentative piece on the topic, all using the target vocabulary words. Instruction prioritizes student participation and teamwork to improve other important skills such as academic language and perspective-taking.
Cross-discipline activities	Each *Word Generation* unit includes complementary activities across disciplines (English language arts, math, science, and social studies) to provide students with multiple opportunities to reinforce vocabulary learning and to use academic language in a variety of academic contexts.

What Does *Word Generation* Cost?

This preliminary list of costs is not designed to be exhaustive; rather, it provides educators an overview of the major resources needed to implement *Word Generation*. The program costs described below are based on the information available as of April 2019.

- **Equipment and materials costs:** The student materials and teacher resources for implementing *Word Generation* can be downloaded for free and then printed and distributed for noncommercial purposes from the program's website (wordgen.serpmedia.org). As an option, students can access digital materials for *Word Generation* on tablets. There is no cost to download these materials or to access videos and other resources for teachers on vocabulary development and classroom discourse. School districts can purchase printed copies from a print-on-demand company linked to the program's website.

- **Personnel costs:** *Word Generation* can be adopted without professional learning support from the developer, Strategic Education Research Partnership (SERP). However, SERP does offer professional development upon request to improve implementation fidelity. Trainings range from one to three days in duration. Costs range from $3,000 to $12,000 (excluding travel and materials).

- **Facilities costs:** The program is delivered in a classroom setting during regular class time.

- **Costs paid by students or parents:** None.

- **In-kind supports:** No information is available.

- **Sources of funding:** School districts or schools usually purchase materials and/or professional development for *Word Generation*.

Research Summary

The WWC identified nine studies that investigated the effectiveness of *Word Generation* for English learners (Figure 1):

- One study meets WWC group design standards without reservations.

- Four studies do not meet WWC group design standards.

- Four studies are ineligible for review.

The WWC reviews findings on the intervention's effects for English learners on eligible outcome domains from studies that meet standards, either with or without reservations. Based on this review, the WWC generates an effectiveness rating, which summarizes how the intervention impacts, or changes, a particular outcome domain. The WWC reports additional supplemental findings, such as those the study

authors reported on non-English learners, on the WWC website (https://whatworks.ed.gov). These supplemental findings and findings from studies that either do not meet WWC standards or are ineligible for review do not contribute to the effectiveness ratings.

The one study of *Word Generation* that meets WWC group design standards reported findings on English language proficiency and reading comprehension. No other findings in the study met WWC group design standards within any outcome domain included in the English Learners topic area.[4] Citations for the nine studies reviewed for this report are listed in the References section, which begins on page 9. Citations for the four studies that are ineligible for review and the reasons the WWC determined they were ineligible are also listed in the References section.

Figure 1. Effectiveness ratings for *Word Generation*

1 study meet WWC standards without reservations

0 studies meets WWC standards with reservations

4 studies do not meet WWC standards

4 studies are ineligible for review

Contribute to effectiveness ratings   *Do not contribute to effectiveness ratings*

Word Generation has **no discernible effects** on English language proficiency

One study that meets WWC group design standards without reservations contributes findings to the English language proficiency domain. The WWC determined one study showed evidence of an indeterminate effect of *Word Generation* on English language proficiency (Kim et al., 2018).

Word Generation has **no discernible effects** on reading comprehension

One study that meets WWC group design standards without reservations contributes findings to the reading comprehension domain. The WWC determined one study showed evidence of an indeterminate effect of *Word Generation* on reading comprehension (Kim et al., 2018).

Main Findings

Table 3 shows the findings from the one *Word Generation* study that meets WWC standards. The table includes WWC calculations of the mean difference, effect size, and performance of the intervention group relative to the comparison group. Based on findings from the one study that meets WWC standards, the effectiveness rating for English language proficiency is no discernible effects. These findings are based on 241 English learners. The effectiveness rating for reading comprehension is no discernible effects. These findings are based on 241 English learners.

Table 3. Findings by outcome domain from the one study of *Word Generation* that meets WWC Standards

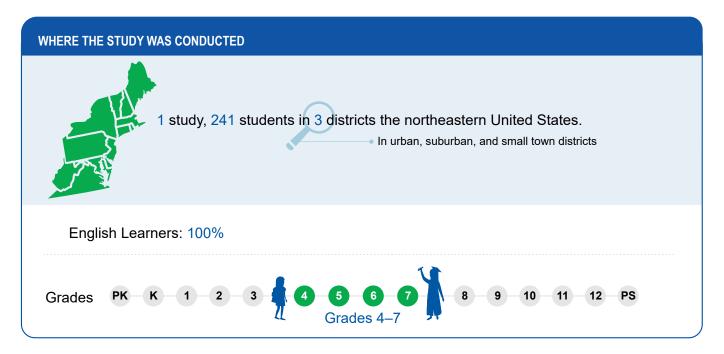| Measure (study)	Study sample	Sample size	Mean (standard deviation)		WWC calculations			
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	*p*-value
Core Academic Language Skills-Instruments (CALS-I; Kim et al., 2018)[a]	4th- to 7th-grade students	241	0.11 (0.73)	-0.07 (0.87)	0.18	0.22	+9	.53
Outcome average for English language proficiency from one study						**0.22**	**9**	
Global Integrated Scenario-based Assessments (GISA; Kim et al., 2018)[a]	4th- to 7th-grade students	241	938.94 (49.38)	937.7 (56.20)	1.24	0.02	+1	.95
Outcome average for reading comprehension from one study						**0.02**	**1**	

Notes: For mean difference and effect size values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). An indicator of the effect of the intervention, the improvement index can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention. For example, an improvement index of +9 means that the expected percentile rank of the average comparison group student would increase by 9 points if the student received *Word Generation*. A positive improvement index does not necessarily mean the estimated effect is statistically significant. Some statistics may not sum as expected due to rounding.

a Kim et. al. (2018) did not require any corrections for multiple comparisons nor difference-in-differences adjustments. The p-values presented here were calculated by the WWC, because the p-values reported in the study did not account for the clustered assignment of students to conditions by school. This report presents the unadjusted means provided in the original study because the adjusted means came from models that used an endogenous covariate. The study is characterized as having indeterminate effects on English language proficiency and reading comprehension because the mean effect reported is not statistically significant. For more information, please refer to the WWC Procedures Handbook, version 4.0, page 22.

In What Context Was *Word Generation* Studied?

The following section provides information on the setting of the one study of *Word Generation* that meets WWC standards, and a description of the participants in the research. This information can help educators understand the context in which the study of *Word Generation* was conducted, and determine whether the program might be suitable for their setting.

WHERE THE STUDY WAS CONDUCTED

1 study, 241 students in 3 districts the northeastern United States.

In urban, suburban, and small town districts

English Learners: 100%

Grades PK K 1 2 3 4 5 6 7 8 9 10 11 12 PS

Grades 4–7

Details of Each Study that Meets WWC Standards

This section presents details for the one study of *Word Generation* that meets WWC standards. These details include the full study reference, findings description, findings summary, and description of study characteristics. A summary of domain findings for the study is presented below, followed by a description of the study characteristics. These study-level details include contextual information around the study setting, methods, sample, intervention group, comparison group, outcomes, and implementation details. For additional information, readers should refer to the original study.

Research details for Kim et al. (2018)

Kim H. Y., Hsin, L. B., Snow C. E. (2018). Reducing academic inequalities for English language learners: variation in experimental effects of *Word Generation* in high-poverty schools. *International Journal of Bilingual Education and Bilingualism*.

Findings from Kim et al. (2018) show evidence of an indeterminate effect of *Word Generation* in the English language proficiency and reading comprehension domains (Table 4). These findings are based on one outcome measure in each domain, each including 241 English learners. Two citations contributed findings and context to the review of Kim et al. (2018), including the primary citation above. The full list of citations reviewed for this report is in the References section, which begins on page 9.

Table 4. Summary of findings from Kim et al. (2018)

Outcome domain	Sample size	Meets WWC Group Design Standards Without Reservations		
		Study findings		
		Average effect size	Improvement index	Statistically significant
English language proficiency	8 schools, 241 students	+0.22	9	No
Reading comprehension	8 schools, 241 students	+0.02	1	No

Table 5. Description of study characteristics for Kim et al. (2018)

WWC evidence rating	Meets WWC Group Design Standards Without Reservations. This is a cluster randomized controlled trial (RCT) with low cluster-level attrition and individual-level nonresponse. For more information on how the WWC assigns study ratings, please see the *WWC Procedures and Standards Handbooks* (version 4.0) and WWC Standards Briefs, available on the WWC website.
Setting	The study sample included nine K–8 and one elementary–middle school pair, which was considered to be a single school. Of the 10 schools, the analysis that meets WWC standards included 8. The 10 schools were in three school districts located in the northeast region of the United States. One district was located in a city, another in a suburban community, and the last in a small town. Nine of the schools served students in grades K–8, and the other one was an elementary–middle school pair, in which the elementary school was a feeder school for the middle school.
Methods	The study used a cluster-level RCT design. The researchers created five pairs of schools from within the same district that had similar characteristics, including size, percentage of language-minority students, percentage of students receiving free and reduced-price lunch, and student proficiency on state tests. The study regarded the feeder elementary school and middle school to be a single school. The schools in each matched pair were then randomly assigned to an intervention or comparison group. The analytic sample includes students who entered schools after random assignment, but this review did not consider these joiners to pose a risk of bias, as it is unlikely that a school's assigned condition influenced whether students enrolled in the school. *Word Generation* is a supplementary program, and likely to be unfamiliar to parents at the time the study was conducted.

At follow-up, the eight schools in the analytic sample included 310 English learners, 138 in the intervention group and 172 in the comparison group.

For both outcome measures, the sample loss of schools after random assignment (attrition) was within the acceptable threshold for the review: overall attrition was 20%, and differential attrition was 0 percentage points. The nonresponse of English learners within the remaining schools at follow-up was also within the acceptable threshold for the review: overall nonresponse was 22% and differential nonresponse was 7 percentage points. |
| **Study sample** | The authors described two of the three districts in the study as serving an ethnically diverse and low-income population and the third district as serving a primarily white and low- to middle-income population. The sample includes students in grades 4–7. The schools in the study included between 11% to 14% English learners. The 241 students that contributed outcomes to the findings in Table 4 were all English learners. |
| **Intervention group** | Students in this study received the following *Word Generation* programs. Students in 4th and 5th grades received *WordGen Elementary* (12 two-week units with daily 40- to 50-minute lessons). Students in 6th and 7th grades received *SciGen* and *SoGen* (six one-week units with daily 45-minute lessons for each *SciGen* and *SoGen*). Students in 6th and 7th grade also received 12 one-week units with daily 20-minute lessons of *WordGen Weekly*. This implementation differs from the developer's current description of *WordGen Weekly*, which suggests using 24 units across a school year.

Students in grades 5–7 when outcomes were measured who were present in the same school during the previous school year received two years of the intervention (63% of students received two years of the intervention). Students in grades 5–7 who enrolled in the schools only during the year when outcomes were measured and all grade 4 students received just one year of the intervention (37% of students received one year of the intervention). |

Comparison group	Students in the comparison schools received instruction to improve vocabulary development through a wide range of programs and strategies, but the study did not collect detailed information on them.
Outcomes and measurement	Study authors reported findings on two outcome measures that are eligible for review under the English Learners topic area: the Core Academic Language Skills Instruments (CALS-I) and the Global Integrated Scenario-based Assessments (GISA). These outcome measures were reviewed under the English language proficiency and reading comprehension domains, respectively. Both outcomes are measured in the spring of 2014 after the intervention had been offered in the intervention schools for nearly two school years.
	The study also reports findings separately for non-English learners on two eligible outcomes, CALS-I and GISA, for the first and second years of implementation. These supplemental findings are reported on the WWC website (https://whatworks.ed.gov). The supplemental findings do not factor into the intervention's rating of effectiveness.
	The study also reports findings for English learner students on the CALS-I and GISA outcomes for the first year of implementation. These findings do not meet WWC group design standards because they are based on a cluster RCT with high levels of overall and differential nonresponse of students and the students in the schools at follow-up are not representative of the clusters. In addition, the study reports findings for English learner students on a *Word Generation* vocabulary measure for the first and second years of implementation. These findings do not meet WWC group design standards because the WWC determined this measure to be overaligned with the intervention. The study also reports findings on students' social perspective articulation and positioning. These findings were not eligible for review under the English Learners protocol (version 4.0).
Additional implementation details	Teachers in the intervention group were invited to a three-day summer institute at which they learned about the *Word Generation* curriculum and underlying principles. Not all teachers could attend the summer training, but no information is provided on what percentage attended. The training was repeated before the start of Year 2. *Word Generation* coaches supported implementation by responding to teacher queries, modelling lessons, and organizing school learning groups. However, the study reported that teachers received varying amounts of coaching.

References

Study that meets WWC group design standards

Kim, H. Y., Hsin, L. B., & Snow, C. E. (2018). Reducing academic inequalities for English language learners: Variation in experimental effects of *Word Generation* in high-poverty schools. *International Journal of Bilingual Education and Bilingualism.*

Additional source:

Jones S. M., Kim, J., LaRusso, M., Kim, H. Y., Selman, R., Uccelli, P., Barnes, S., Donovan, S., & Snow, C. E. (2019). Experimental effects of *Word Generation* on vocabulary, academic language, and perspective taking in high poverty middle schools. *Journal of Research on Educational Effectiveness*, 12(3), 448-483. Retrieved from https://eric.ed.gov/?id=EJ1229049

Studies that do not meet WWC group design standards

Hwang J. K., Lawrence, J. F., Mo, E., & Snow, C. E. (2015). Differential effects of a systematic vocabulary intervention on adolescent language minority students with varying levels of English proficiency. *International Journal of Bilingualism*, 19(3), 314–332. The study does not meet WWC group design standards because the outcomes contain content or materials provided to subjects in one study condition, but not the other.

Additional sources:

Hwang, J. K. (2015). *Adolescent language minority students' vocabulary growth: Exploring heterogeneity with multilevel analysis.* (Doctoral dissertation). Retrieved from https://escholarship.org/uc/item/0105g4kv.

Mancilla-Martinez, J. (2010). Word meanings matter: Cultivating English vocabulary knowledge in fifth-grade Spanish-speaking language minority learners. *TESOL Quarterly*, 669–699. Retrieved from https://eric.ed.gov/?id=EJ912187. This study does not meet WWC standards because the measures of effectiveness cannot be attributed solely to the intervention.

Mokhtari, K., & Velten, J. (2015). Strengthening academic vocabulary with Word Generation helps sixth-grade students improve reading comprehension. *Middle Grades Research Journal*, 10(3), 23–42. Retrieved from https://eric.ed.gov/?id=EJ1144330. This study does not meet WWC standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups do not satisfy the baseline equivalence requirement.

Snow, C. E., Lawrence, J. F., & White, C. (2009). Generating knowledge of academic language among urban middle school students. *Journal of Research on Educational Effectiveness*, 2, 325–344. Retrieved from https://eric.ed.gov/?id=EJ866980. The study does not meet WWC group design standards because the outcomes contain content or materials provided to subjects in one study condition, but not the other.

Additional sources:

Lawrence, J. F, Capotosto, L., Branum-Martin, L., White, C., & Snow, C. E. (2012). Language proficiency, home-language status, and English vocabulary development: A longitudinal follow-up of the *Word Generation* program. *Bilingualism: Language and Cognition*, 15(3), 437–451. Retrieved from https://eric.ed.gov/?id=EJ969132.

Lawrence, J. F., Rolland, R. G., Branum-Martin, L., & Snow, C. E. (2014). Generating vocabulary knowledge for at-risk middle school readers: Contrasting program effects and growth trajectories. *Journal of Education for Students Placed at Risk*, 19(2), 76–97. Retrieved from https://eric.ed.gov/?id=EJ1045000.

Snow, C. E., & Lawrence J. F. (2011). Word Generation *in Boston Public Schools: Natural history of a literacy intervention. The Senior Urban Education Research Fellowship Series. Volume III*. Washington, DC: Council of the Great City Schools, 1-48. Retrieved from https://eric.ed.gov/?id=ED518090.

Studies that are ineligible for review using the English Learners Protocol

LaRusso, M. D., Donovan, S., & Snow, C. (2016). Implementation challenges for Tier One and Tier Two school-based programs for early adolescents. *New Directions for Child & Adolescent Development, 2016*(154), 11–30. Retrieved from https://eric.ed.gov/?id=EJ1122142. The study is ineligible for review because it does not include an outcome eligible for review under the English Learners review protocol (Version 4.0).

Lawrence, J. F., Crosson, A. C., Paré-Blagoev, E. J., & Snow, C. E. (2015). *Word Generation* randomized trial: Discussion mediates the impact of program treatment on academic word learning. *American Educational Research Journal*, 52(4), 750–786. Retrieved from https://eric.ed.gov/?id=EJ1068318. This study is ineligible for review because it does not include sample members specified by the English Learners review protocol (Version 4.0).

Lawrence, J. F., Francis, D., Paré-Blagoev, J., & Snow, C. E. (2017). The poor get richer: Heterogeneity in the efficacy of a school-level intervention for academic language. *Journal of Research on Educational Effectiveness*, 10(4), 767–793. Retrieved from http://eric.ed.gov/?id=EJ1159795. This study is ineligible for review because it does not include sample members with characteristics specified by the English Learners review protocol (Version 4.0).

Lawrence, J. F., Hagen, A. M., Hwang, J. K., Lin, G., & Lervåg, A. (2019). Academic vocabulary and reading comprehension: Exploring the relationships across measures of vocabulary knowledge. Reading and Writing 32(2), 285–306. Retrieved from http://eric.ed.gov/?id=EJ1205697. The study is ineligible for review because it does not use a study design eligible for review under the WWC's group design standards, regression discontinuity design standards, or pilot single-case design standards, as described in the WWC Standards Handbook (Version 4.0).

Lawrence, J. F., White, C., & Snow, C. E. (2011). Improving reading across subject areas with Word Generation. CREATE Brief. Center for Research on the Educational Achievement and Teaching of English Language Learners, 1-6. Retrieved from https://eric.ed.gov/?id=ED549153. The study is ineligible for review because it does not use a study design eligible for review under the WWC's group design standards, regression discontinuity design standards, or pilot single-case design standards, as described in the WWC Standards Handbook (Version 4.0).

Lawrence, J. F., White, C., Snow, C. E. (2010). The words students need. Educational Leadership, 68(2), 23-26. Retrieved from https://eric.ed.gov/?id=EJ913776. The study is ineligible for review because it does not use a study design eligible for review under the WWC's group design standards, regression discontinuity design standards, or pilot single-case design standards, as described in the WWC Standards Handbook (Version 4.0).

Lin, A. R., Lawrence, J. F., & Snow, C. E. (2015). Teaching urban youth about controversial issues: Pathways to becoming active and informed citizens. *Citizenship, Social and Economics Education, 14*(2), 103–119. Retrieved from https://eric.ed.gov/?id=EJ1077474. The study is ineligible for review because it does not include an outcome eligible for review under the English Learners review protocol (Version 4.0).

Lin, A. R., Lawrence, J. F., Snow, C. E., & Taylor, K. S. (2016). Assessing adolescents' communicative self-efficacy to discuss controversial issues: Findings from a randomized study of the *Word Generation* program. *Theory and Research in Social Education, 44*(3), 316–343. Retrieved from https://eric.ed.gov/?id=EJ1111613. The study is ineligible for review because it does not include an outcome eligible for review under the English Learners review protocol (Version 4.0).

Endnotes

[1] Snow, C. E., & Uccelli, P. (2009). The challenge of academic language. In D. R. Olson & N. Torrance (Eds.), The Cambridge handbook of literacy (pp. 112–133). Cambridge: Cambridge University Press. https://www.cambridge.org/core/books/cambridge-handbook-of-literacy

[2] The descriptive information for this intervention comes from the overview on the developer's website (https://wordgen.serpmedia.org/overview.html). The WWC requests developers review the intervention description sections for accuracy from their perspective. The WWC provided the developer with the intervention description in April 2019 and the WWC incorporated feedback from the developer. Further verification of the accuracy of the descriptive information for this intervention is beyond the scope of this review.

[3] The literature search reflects documents publicly available by February 2020. Reviews of the studies in this report used the standards from the *WWC Procedures and Standards Handbook* (version 4.0) and the English Learners review protocol (version 4.0). The evidence presented in this report is based on available research. Findings and conclusions could change as new research becomes available.

[4] The effects of Word Generation are not known for other outcome domains within the English Learners topic area, including alphabetics, reading fluency, general literacy achievement, writing conventions, writing productivity, writing quality, mathematics achievement, science achievement, and social studies achievement.

Recommended Citation