

Cultivating Learning and
Positive Change

**A Final Report for the Evaluation of the
Northpoint Horizons™ Content Academic
Vocabulary System™ Program**

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Magnolia Consulting, LLC

3171 Courthouse Road
Louisa, Virginia 23093

phone 540.967.5540
fax 540.967.5541
info@magnoliaconsulting.org
www.magnoliaconsulting.org

INTRODUCTION

Developing a strong vocabulary is a significant predictor of students' academic success. Students need solid academic vocabularies for basic reading skills, and they need a strong content-area vocabulary to learn content-area material presented in their classrooms and textbooks (Baker, Simmons, & Kame'enui, 1995). Providing instruction in vocabulary is particularly important for English language learners (ELLs), because these students often have a difficult time understanding the vocabulary in their content-area texts. Marzano and Pickering (2005) argue that providing explicit instruction in academic vocabulary, along with the opportunity to practice and reinforce vocabulary concepts, is one of the most important things a teacher can do to ensure that students will develop the academic background knowledge that is critical to understanding content-area material.

Northpoint Horizons™ has responded to the research that indicates how systematic, direct instruction, as well as hands-on practice and reinforcement of content academic vocabulary contributes to academic success through the development of the *Content Academic Vocabulary System (CAVS™)*. The purpose of the *CAVS* program is to help students develop the critical skills and strategies for successfully acquiring content academic vocabulary. The *CAVS* program is comprised of K–2 and 3–5 math components and K–2 and 3–5 science components and involves a 5-step process. These steps involve: 1) building background for content academic vocabulary, 2) modeling and involving students in hands-on learning activities, 3) providing systematic instruction for content academic vocabulary, 4) providing practice and reinforcement of content academic vocabulary, and 5) assessing and reinforcing students' learning.

Northpoint Horizons recognizes the importance of establishing the effectiveness of educational materials in increasing student learning. Therefore, they contracted with Magnolia Consulting, LLC, an external, independent consulting firm specializing in educational research and evaluation, to conduct an independent efficacy study of its *CAVS* materials.

STUDY DESIGN & METHODS

Magnolia Consulting conducted a quasi-experimental preliminary study of the *CAVS* program for a six-week period at the end of the 2007–2008 school year. Evaluators conducted the study with four teachers and 82 students across the first, second, fourth, and fifth grades. The purpose of the study was to measure teachers' implementation and perceptions of the *CAVS* program and to assess the program's effectiveness at increasing students' content-area academic vocabulary.

Key Evaluation Questions:

- 1. How do teachers implement the Content Academic Vocabulary System program?***
- 2. What are teachers' perceptions of the quality and utility of the Content Academic Vocabulary System program?***
- 3. Do students who participate in the Content Academic Vocabulary System program demonstrate significant learning gains in vocabulary during the study period?***

Evaluators utilized a number of data collection methods including a pre/post vocabulary assessment (i.e., vocabulary subtests of the IDEA Proficiency Test (IPT)), assessments embedded within the *CAVS* program, two online teacher surveys, classroom observations, and teacher interviews. Magnolia adhered to specific procedures and methods to carry out the study effectively and efficiently and to ensure that teachers followed the implementation guidelines developed for the study.

CONTENT ACADEMIC VOCABULARY SYSTEM PROGRAM IMPLEMENTATION

The findings from teacher surveys, interviews, and classroom observations suggest that during the study period, teachers implemented the *CAVS* program appropriately. On average, teachers implemented the program at least four days per week for at least 25 to 30 minutes per day, and they completed anywhere from four to six lessons, which was appropriate for the duration of the study. In addition, teachers utilized all of the core materials and covered all components of the lessons.

Key Finding
The *CAVS*
program is user-
friendly and
easy to
implement in
the classroom.

Responses on teacher surveys, as well as findings from classroom observations and teacher surveys, indicate that teachers found the *CAVS* program easy to implement in the classroom. Teachers thought the Teacher's Guide was clear and easy to follow, which contributed to the ease of implementation.

**TEACHERS' PERCEPTIONS OF THE *CONTENT*
ACADEMIC VOCABULARY SYSTEM PROGRAM**

Teacher Quote:
"The CAVS program enabled my students to experience the concepts prescribed with more enthusiasm since it provided hands-on activities, audio learning systems, and a variety of illustrations that helped students understand and obtain knowledge in the science area. Students were highly motivated and enjoyed the activities."

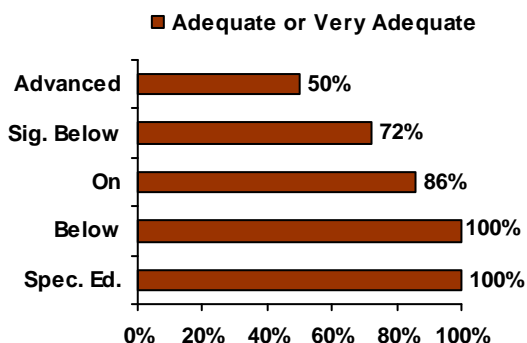
All participating teachers agreed that the pace of the CAVS program was appropriate, and teachers concurred that there was an appropriate amount of material to cover with the CAVS program. Teachers appreciated the variety of materials that came with the

CAVS program, as well as the hands-on nature of materials. Several teachers noted that they were particularly pleased that their students seemed to enjoy the assessment components of the program. Most of the participating teachers agreed that the CAVS program aligned at least somewhat well with their regular classroom instruction, and one teacher indicated that the program provided good ideas for

Key Finding
The CAVS program is appropriate for a variety of students in different educational settings.

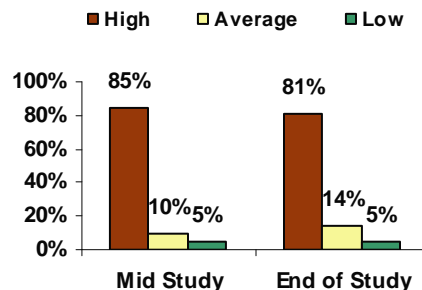
activities to use during regular classroom instruction. Teachers with newcomer students, inclusion students, and dual-language students indicated that the program was *adequate* or *very adequate* in meeting students' needs.

As indicated in the following figure, teachers varied in their perceptions of the adequacy of CAVS materials for students of differing ability levels. Overall, teachers indicated that the CAVS materials were best suited for special education and below-level students, and teachers indicated that the materials were less adequate for advanced-level students, which might reflect their stronger academic vocabularies.



Average adequacy of materials across student ability

Overall, students were very engaged in the CAVS program materials, as evidenced by teachers' responses to the mid- and end-of-study surveys as well as classroom observations (see figure below). Teachers indicated that their students found the lessons interesting and fun.



Average perceptions of student engagement in the CAVS program.

Not only did teachers and students enjoy the program, but also all teachers reported that the program was either *very effective* or *somewhat effective* at increasing students' content academic vocabulary. No teachers reported that the program was ineffective. Several teachers attributed student learning in content areas at least somewhat to the CAVS program. Overall, findings indicate that teachers generally perceived the CAVS program very positively.

Key Finding
The CAVS program provides engaging, hands-on learning opportunities through a variety of useful materials.

Three of the teachers plan to use the program in their classrooms next year, and the fourth teacher plans to use at least some of the program components next year. Teachers look forward to implementing the program at the beginning of the school year and for a longer period. One teacher asked if the program was available in other content areas (such as reading and social studies) and indicated that this type of program is important because vocabulary is what separates high achievers from low achievers.

Teacher Quote:
"...vocabulary is what separates the high achievers from the low achievers."

Teacher Quote:

“The use of concrete materials has helped my students acquire more science vocabulary, and they are using these words in other subjects. They relate them and continue their use in different contexts.”

Overall, teachers were pleased with the program and offered a few recommendations for improvement:

- More materials to accelerate advanced students with strong academic vocabularies
- Additional Radius™ machines and cards so the Radius groups can be smaller
- Resolving technology issues with the Radius¹
- Modify assessments to include more pictures and reduce the cutting and pasting for older students

Key Finding:

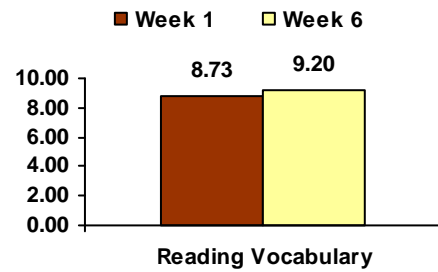
Overall, participants perceived the program to be of high quality and utility and would recommend the program to others.

EFFECTIVENESS OF THE CAVS PROGRAM AT INCREASING STUDENT LEARNING

Overall, the CAVS program was effective at increasing students’ vocabulary for the first-, fourth-, and fifth-grade participants, as evidenced by pre- and posttest administrations of the IPT. The next two figures display these results. As a group, second-grade students demonstrated very small decreases from pretest to posttest, but it is important to note that only a few students in the group actually demonstrated decreases, and most of the students demonstrated gains or stable scores.

First-grade students showed meaningful gains on the IPT Reading Vocabulary subtest corresponding to a medium effect size of $d = 0.42$, which translates to an increase of 16 percentile points within the first six weeks of program exposure. Although this gain was not statistically significant due to the small sample, it was meaningful.

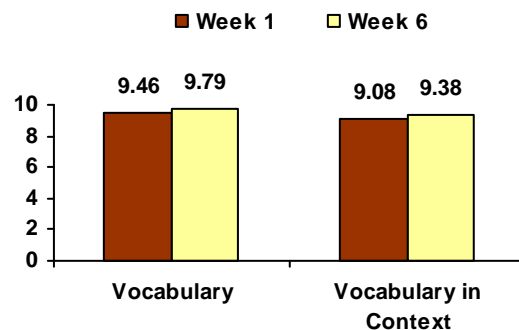
¹ Since the conclusion of the study, Northpoint Horizons has been working to resolve the technology issues with the Radius machines to ensure that they will work properly in the future.



IPT Reading Vocabulary pre/post gains for first-grade students.

Although as a group, second-grade students who participated in the CAVS Math program demonstrated slight declines in the IPT Vocabulary and Vocabulary in Context subtests, the effect sizes were quite small ($d = -0.10$ and $d = -0.07$) and corresponded to decreases of only four and two percentile points, respectively. Furthermore, only a few students in this group actually showed decreases over the six-week period, and in most cases, those students’ pretest scores were quite high².

Finally, results indicate that the IPT Vocabulary gains for fourth- and fifth-grade students participating in the CAVS program were statistically significant ($p = 0.10$), corresponding to a small but meaningful effect size of 0.25 and an increase of 10 percentile points. Fourth- and fifth-grade students participating in the CAVS program also showed significant gains during the six-week period on the Vocabulary in Context subtest ($p = 0.03$), corresponding to a small but meaningful effect size of 0.28 and a gain of 11 percentile points. These gains are particularly impressive because they occurred over a short period of approximately six weeks at the end of the school year.



IPT Vocabulary and Vocabulary in Context pre/post gains for fourth- and fifth-grade students.

² Out of the 11 second-grade students, only a few students demonstrated decreases, and with the exception of one student, these students’ pretest scores were quite high (i.e., a 9 or 10 out of a possible 10), so even with decreases, their posttest scores were still fairly high. It is also important to note that many students in this group demonstrated gains from pretest to posttest.

future research to examine program effects over a longer period and with a larger sample.

Key Finding

The notable gains made by first-, fourth-, and fifth-grade students are especially impressive because they occurred over such a short period and at the end of the school year.

Examinations of embedded assessments revealed that overall, students mastered the content-area academic vocabulary to which they were exposed while participating in the *CAVS* program.

SUMMARY AND CONCLUSIONS

The findings from teacher surveys, interviews, and classroom observations indicate that overall, teachers implemented the *CAVS* program appropriately. Teachers appreciated the amount of materials, the variety of materials, and the ease of their use and reported no major implementation difficulties. Teachers especially liked the hands-on nature of the program and indicated that the program aligned well with their regular classroom instruction. In addition, teachers agreed that the *CAVS* program met the needs of their newcomer, inclusion, and dual-language students. Overall, students were very engaged in the *CAVS* materials, and teachers generally perceived the materials as *very effective* or *somewhat effective* at increasing content-area academic vocabulary.

Teachers also provided some constructive feedback regarding specific components of the program, such as the level of vocabulary, issues with the Radius machine, and assessments.

In particular, as a group, first-grade students who participated in the *CAVS* Science program, fifth-grade students who participated in the *CAVS* Science program, and fourth- and fifth-grade students who participated in the *CAVS* Math program demonstrated notable gains in

vocabulary over the study period. These gains are particularly impressive because they occurred over a short period of approximately six weeks. Furthermore, examination of the embedded assessment data revealed that an overwhelming majority of students mastered the content-area

academic vocabulary to which they were exposed while participating in the *CAVS* program.

Because this was a preliminary study conducted over a short period with a small sample, it will be important for

Key Finding
*An overwhelming majority of students mastered the content-area academic vocabulary to which they were exposed while participating in the *CAVS* program.*