



Positively Impacting Student Achievement

Studying the Effects of Library Resources in the Classroom

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About the Pilot Project

Located in Washington DC, McKinley Technology High School is a Science, Technology, Engineering and Math magnet school within the District of Columbia Public School System and it offers a rich program designed specifically to prepare students for the challenges of an ever-changing global market. The Cengage Learning team selected McKinley Tech for this efficacy study because the administrators at McKinley are faced with the same challenges and experiencing the same pressures as their peers across the country as they attempt to integrate technology into their classrooms. While the school has a range of different technologies in place at the school, prior to the McKinley/Gale pilot the faculty had not fully leveraged digital resources as a core strategy within instruction. The teachers also did not have access to tools that were similar to the Gale resources. The McKinley school environment, therefore, provided a fertile environment for evaluating the impact of digital content on both students' academic success and teacher productivity. The Cengage Learning team was also interested in exploring the use of their rich digital content when introduced through teachers as

an instructional tool in the classroom, rather than as a library resource as it has been traditionally. McKinley's focus on technology-based classroom instruction met this requirement as well.

During the pilot period of the spring semester 2011, five teachers and 187 students participated in the evaluation process. The teachers and students had access to the Gale resources through both laptop computers in the classroom as well as library computers. Throughout the semester, teachers introduced Gale resources into the classroom through a variety of strategies (Table 1). Teachers used Gale resources to introduce lessons by using images, podcasts or videos. Articles from Gale were printed and read by the students as a precursor to classroom discussions, and teachers assigned students research projects that required the use of Gale resources, thus enabling the students to develop stronger research and information literacy skills. Despite some school-based technology challenges, the majority of teachers typically used Gale resources within every 3 to 4 lessons.

TABLE 1

Teachers used Gale resources to support instruction in a variety of ways in their classroom:	# of teachers
Introduce a lesson	5 of 5
Activate students' prior knowledge	4 of 5
Facilitate a class project	4 of 5
Differentiate instruction	4 of 5
Assign student research	3 of 5
Support homework assignments	3 of 5
Facilitate a class discussion	3 of 5
Illustrate a new concept	2 of 5
Provide background context	2 of 5

The report documents key findings from the efficacy study and the resulting analysis of the data collected during the spring 2011 pilot program. The study examined the impact of the use of the Gale resources

on student outcomes and teacher effectiveness, and the results of the analysis are being shared to provide new insights into the value of integrating digital content within 21st century classrooms.

Key Pilot Findings

“Gale resources give teachers the opportunity to create real-time learning. The resources, combined with tools such as Facebook and Twitter, provide an immediacy that brings students to a place where they have an interest in learning. Teachers are also excited about real-time learning because the Gale resources provide opportunities for students to delve into contemporary issues around the world.” – Principal David Pinder (2011)

The results from the first year of the *McKinley/Gale* pilot represent critical findings in the ongoing national quest to better understand the value of digital content as a tool to increase student achievement and teacher effectiveness. The findings provide important research into the impact of digital content in increasing student motivation and skill development, and increasing the effectiveness of teachers in a variety of discipline content areas. Several of the key findings from this first year of the pilot project directly address the teachers' value proposition regarding the Gale resources, the impact of the Gale resources on teachers' productivity, and the usage by the teachers of the Gale resources to specifically help their students develop key 21st century skills. However, the most significant finding from this first year evaluation is the impact of the use of the Gale resources on student outcomes.

Increased use of the Gale resources by the McKinley Tech high school students in the study resulted in greater student motivation for learning, stronger skills development in several 21st century skill categories, an increase in student confidence in their research skills, and more positive student efficacy regarding their future. Also noteworthy is the significant difference in student achievement metrics for students in pilot classes versus non-pilot classes.

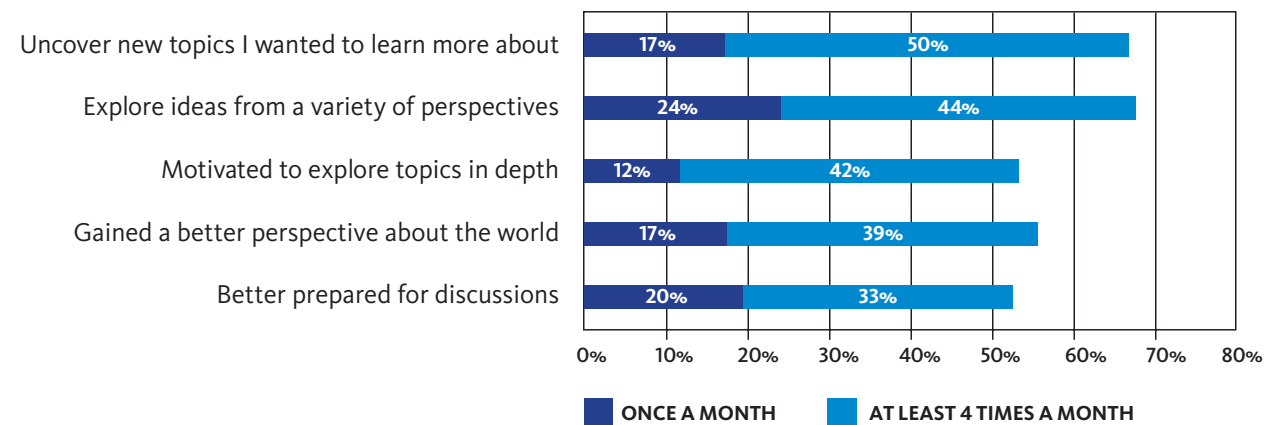
Within the semester, students accessed several key collections including Biography in Context, Global Issues in Context, GREENR, Opposing Views in Context, Science in Context, US History in Context and World History in Context. By the end of the pilot period, the use of Gale resources by the students (measured by the number of retrievals and time spent online) had increased significantly. The resource with the most significant increase in use was GREENR: Global Reference on the Environment, Energy and Natural Resources. Used in the Environmental Science class, downloads from this resource increased 878% and time online increased 264% over the course of the semester. Approximately one-quarter of the students reported using the Gale resources at least once a week and showed a preference for Global Issues in Context (40 percent), and both U. S. History and World History in Context (33 percent). As a result of increased use of the resources, students reported a greater degree of comfort in using the resources. Students stated that they liked using Gale resources because they were easy to use, credible, relevant, and the topics are interesting. Students noted that the topics they searched for could be easily found within the Gale resources. “It's as if someone took the time to write relevant topics that we would be entering into the search engine,” shared one student. Students also appreciated the citation tool because they often struggle with writing the proper citation and the tool made it easier for them to complete this task.

One-third of the students that used Gale resources more than once a week reported they gained a better perspective about the world and explored ideas through a variety of perspectives. Students realized greater benefits the more they used Gale resources; students who used the resources more than once a

week were seven times more likely than their peers who didn't use Gale to report they were more motivated to explore topics in depth and six times more likely to uncover new topics they wanted to learn about (Figure 1).

FIGURE 1

Students Recognize that Gale provides an environment for them to explore new ideas

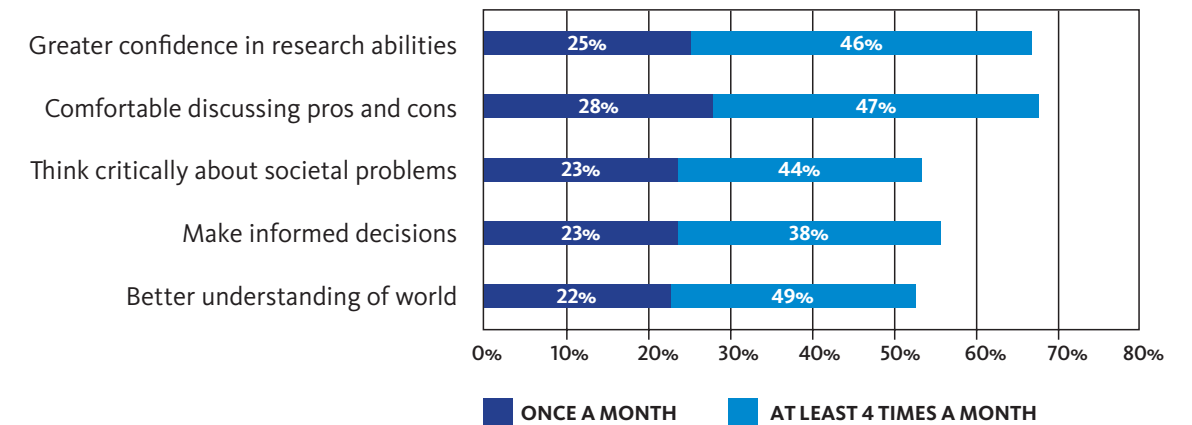


Students said they would recommend Gale resources to their friends and also suggested that faculty introduce incoming freshman to Gale resources and teach them how to use the resources to support their learning. One student's advice to incoming freshman was, "I would tell them to Gale It, not Google It." Almost one-half of the students agree they would like their teacher to use Gale resources more often and 44 percent would recommend that all of their teachers use Gale resources.

By the end of the semester, two-thirds of the students in the pilot project report greater confidence in their ability to express their ideas. As illustrated in Figure 2, more than one-half of the students expressed confidence in their ability to express their creativity, work with others, and in their knowledge of current events.

FIGURE 2

Students express greater confidence in their ability to discuss issues



Students that used the Gale resources more frequently expressed even stronger statements about those skills. Students also have a greater understanding of current events and are more comfortable expressing their ideas and creativity. They are confident in their ability to formulate and express their opinions and in their ability to solve problems. As explained by one student, "I now know more than I did before. Now, I can express different views and not be biased when in conversation." Students also expressed confidence in their ability to work in groups as a leader or team member. When asked to assess their students' level of comfort with these same 21st century skills, more than one-half of the teachers concurred with the students' self-assessment of their skills.

During the pilot period students realized a variety of benefits from accessing Gale resources which provided access to a wealth of information and empowered them to develop proficiency in 21st century skills. As a result of developing these skills and using Gale resources at least four times a month, students also demonstrated a greater propensity to take responsibility for their own learning (44 percent). They were more motivated

to learn (35 percent), wanted to learn more about the subjects being studied (49 percent) and participated in class discussions more often (45 percent). Students self-reported better grades (51 percent) and believed that they were better prepared for college and the future global workplace (39 percent). As one student enthusiastically exclaimed, "I feel stronger in my ability to learn."

In addition to the teachers' qualitative assessments of their students' enhanced performance after using the Gale resources, and the students' self-assessments of the effect of the resources on their learning environment, quantitative student achievement data was also examined to gain greater insights into the impact of the pilot. One of those measures examined was the results from McKinley Tech's Extended Constructed Response (ECR) project assessments. The goal of the ECR project is to assess student mastery of content, proficiency in literacy, and students' ability to connect content to relevant, applicable life situations. At the end of the school year, the McKinley Tech administration selected pre-approved ECR writing prompt questions to be administered to students for each teacher and class. The performance of the students in the

McKinley/Gale pilot classes was then compared with the overall school scores and the scores within their subject area (Table 2). The overall ECR score is based on a scale of 0-3 (0 = below basic, 3 = advanced). Of special note, the school wide average for the ECR assessment for the 2010-11 school year was 2.1, while the average score for the students within the

McKinley/Gale pilot was 2.7. While there are many factors that can contribute to the student achievement results, the administration and the teachers at McKinley strongly believe that the inclusion of the Gale resources in these classrooms contributed to the students' overall academic success.

TABLE 2

Comparison of ECR Performance	Subject Area Average ECR Score	McKinley/Gale Pilot Average ECR Score
Science	2	2.8
Biotechnology	2.4	2.7
English	2	2.6
Social Studies	2.1	2.75

Final Thoughts

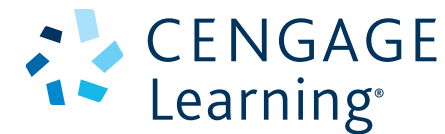
The first year findings from the *McKinley/Gale* pilot clearly illustrate that digital content and specifically, Gale resources, can play a significant role within classroom instruction. As evidenced with the McKinley Tech students, the integration of the Gale resources into lesson plans, research projects and classroom discussions on a regular basis has a direct impact on increasing student motivation for learning, developing student confidence and skills as 21st century learners, and improving student proficiency in key areas. Additionally, the use of the resources within the classroom setting also helps to enhance the effectiveness and productivity of the teacher. These findings provide valuable insights that can help schools and districts nationwide as they explore how to tap into 21st century learning tools such as the Gale resources to drive greater student achievement, teacher effectiveness and overall school productivity.



About Project Tomorrow

Project Tomorrow®, the national education nonprofit organization dedicated to empowering student voices in

education discussions, prepared this program evaluation for Cengage Learning. Project Tomorrow® has 15 years experience in the K-12 education sector and regularly provides consulting and research support to school districts, government agencies, business and higher education about key trends in K-12 science, math and technology education. The annual Speak Up National Research Project is a national initiative of Project Tomorrow. Learn more at www.tomorrow.org.



About Cengage Learning

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About McKinley Technology High School

McKinley Technology High School is one of five specialized secondary schools in the district. It is the Science, Technology, Engineering and Mathematics (STEM) high school

for the district offering a comprehensive school experience and specialized instruction opportunities in biotechnology, engineering, information technology and mass media technology. McKinley's STEM curriculum, state of the art technology and emphasis on critical thinking and problem solving make it particularly desirable for students interested in the math and science fields.

To learn more about this study, contact:

Diane Sweetwood

Market Research Manager || Cengage Learning
Farmington Hills MI
(o) 248.699.8026
(m) 248.613-1155
(e) diane.sweetwood@cengage.com

gale.cengage.com