

Success at the Core **The Impact of *SaC* Usage on Teachers and Students**

**Inverness Research
July 2011**

Success at the Core (SaC) is a web-based suite of materials, or a “toolkit,” designed for use by educators to advocate for and to help develop high quality classroom instruction.¹ The hallmark of the materials is the many very high quality videos showing the action of effective classroom instruction in multiple real-school contexts. Well designed materials surround the videos to support their use, including facilitation guides, self-assessments for teams, teacher commentaries, lesson materials, and ready access to the research connected to the effective practices. Following the completion of a successful year-long pilot of *SaC* in Washington State,² Education Development Center (EDC) commissioned Inverness Research³ to conduct a study of the impact of *SaC* usage on teachers and students. Conducted during the school year 2010-11, the Impact Study involved 12 teachers in 5 middle schools in Washington State. This report presents the summary findings and lessons learned from the study.

The design of the study and its role in the results

A straightforward proposition, which grew out of the results of the pilot study, guided the impact study: Teachers’ usage of *SaC* materials in their classrooms would bring about changes in their teaching practice that would in turn result in a positive impact on students. Added to this proposition was our knowledge that “context matters”: teachers enact their classroom practice within multiple layers of policy, organizational structures, values, and community dynamics

¹See www.successatthecore.com. The toolkit comprises 7 Leadership Development Modules and 24 Teacher Development Strategies; each Module and Strategy includes high quality videos of effective practice and surrounding materials to support usage.

²See the results on the Research page of the *SaC* site. http://www.successatthecore.com/about_research.aspx

³Inverness Research is an independent national education evaluation and research group. See www.inverness-research.org.

(McLaughlin and Talbert, 1993). Thus the study focused on usage and the context of usage, on teacher impact, and on student impact.

Two elements of the design played an important role in what we were able to learn:

Opening the “black box” of instructional improvement. The study was designed to be small-scale and in-depth, drawing from multiple types and sources of data. As such, it probed every corner of the proverbial “black box” of implementation to understand nuances of *SaC* usage and impact in multiple particular contexts. Unlike many larger-scale studies that identify statistical correlations but do not expose the dynamic causal connections between the intervention and the outcome, this study does the opposite: it traces each “link in the chain” between usage of *SaC* and its impacts. This design gives us confidence in attributing the student impacts that we observed to the usage of *SaC* that we observed.

Serving as the scaffold for teacher usage. Teachers volunteered for the study and many of them had enough familiarity with the *SaC* materials that they were enthusiastic about the opportunity to use and study them. Their principals were pleased that they were participating. We originally intended the study to be naturalistic, assuming (perhaps naively) that teachers would be able, independently or in the context of a school-based partnership or team, to integrate *SaC* usage into their work lives. Much to the contrary, we discovered that the myriad pressures on teachers’ time and attention drew them away from *SaC* usage rather than into it, and the participating teachers ended up using *SaC* on their own. The quite intensive demands of participating in the study served, inadvertently, as a scaffold that propelled teachers into *SaC* usage, sustained their use over the year, and compelled them to reflect on their use and its impact. This rather accidental fact serendipitously led to an important finding about *SaC* usage by teachers.

Summary results

The study produced three overall findings:

1. When teachers made effective use of the *SaC* materials⁴, they were able to make changes in their teaching such that, in the course of about six months, their new teaching strategies had multiple positive impacts on students. These impacts included increased student engagement, motivation, self-awareness of learning, confidence, affinity for the subject matter, learning of content concepts and skills, mastery of school learning targets, and learning of other process skills important to academic success.

2. The extent and nature of impact on students depended on the quality of usage of the *SaC* materials. Effective users of the materials applied, adapted, and combined *SaC* strategies purposefully, consistently, and skillfully and in ways that reflected the pedagogical techniques and principles of the strategies. The students of teachers who achieved less effective use—whose use was more occasional or less skillful—experienced some momentary affective benefits, including increased engagement and motivation, but did not show evidence of increased learning of concepts and skills.

⁴ With the exception of one teacher who used part of one Leadership Development Module, all teachers used materials from the Teacher Development Strategies. Twenty-two of the 24 TD Strategies were used overall.

3. The context conditions surrounding teachers were so “noisy” with competing pressures that teachers’ usage of the *SaC* materials depended on the availability of the supports provided (in these cases) by participation in the study. Absent the commitment to participate and the incentives and structures that participation brought, the teachers would not have found the time to become familiar with the website, select materials that fit their purposes, adapted them to their particular subject area needs, and reflected on, refined, and sustained their use.

Lessons learned about the context of teacher usage of *SaC*

The study revealed that the normal, everyday contexts within which teachers work function in a subtle but powerful way, like a tide, to steer them toward a textbook-based, accountability-based practice rather than toward the kind of student-centered, active-learning oriented practice that *SaC* promotes (and that research supports). Beyond the daily demands of managing 5 groups of students and serving on myriad committees, the participating teachers were involved in multiple and often-changing reform efforts that occupied scarce professional development time, and in compliance with organizational expectations, many were focused more on curriculum pacing guides than on student learning to plan their instruction. Further and more subtly, suffusing the atmosphere of their workplaces—whether in a small high-performing school or a large low-performing school—was the loud “surround sound” of accountability and its pressure to prepare for standardized tests.

With this context as a backdrop, using *SaC* effectively meant shifting the fundamental relationship dynamics in the classroom by strengthening the teacher-student relationship and conceptualizing the purpose of instruction as bringing students into close relationship with authentic ideas and processes of the disciplines.⁵ This is a way of saying that *Success at the Core* does what its name implies: invites teachers to enrich “the core” dynamics of the instructional process. To achieve this, teachers require a set of supportive conditions to put the time and intellectual effort into examining and trying out strategies such that they strengthen the teacher-student-discipline relationships at the heart of instruction. In the case of this study, the supports included motivation and incentive, as well as regular opportunities for planning (setting intention), reflecting on use, and analyzing results of use, within a supportive research-partner relationship.

Lessons learned about teacher usage of *SaC* in the classroom

Of the eleven teachers who were able to complete the study⁶, four were able to become effective users of *SaC* and three became moderate users. By effective users, we mean they used, adapted, and combined *SaC* strategies purposefully, consistently, and skillfully and in ways that reflected the pedagogical techniques and principles of the strategies. By moderate users, we mean they used strategies more sporadically and/or less skillfully, but still to some modest positive effect for their students. Four teachers, while they explored and experimented, became very minimal users.

The study revealed that some ways of using the website and materials were more productive than other ways. All of the participants needed about a month early on to familiarize themselves with what the website had to offer, and then to sample a strategy or two in an exploratory way. The more

⁵ We often use a “relationship triangle” to portray the teacher-student-discipline dynamics in the classroom, drawn from Hawkins (1974). Many others have used this same triangle, including Richard Elmore, whose work forms part of the basis of *SaC*, and McLaughlin and Talbot (1993).

⁶ One dropped out in the spring after struggling to find the time to integrate usage of *SaC* into his practice.

effective teachers then entered a period of several weeks of purposeful, focused, and consistent use of one or two core strategies that seemed to work well and be a good match for their goals or problems of teaching. These teachers reflected on their use of the strategies, making adjustments and adaptations to become more skillful at them and to further contextualize the strategy for their units of study and students. The teachers then stayed with these strategies, developing consistency of use. As the year went on they sometimes added another strategy to the core set that was working for them. They focused their attention primarily on their usage of the strategies and on their students, returning to the *SaC* site rarely and with a specific question in mind. In contrast, the teachers who had difficulty settling on a strategy or two, but instead kept scanning the website and sampling additional strategies were, for a number of reasons, ultimately less effective in their usage. The lesson was that after the initial period of exploration, it was purposeful, focused, consistent, and reflective usage of carefully chosen strategies that made the positive impacts.

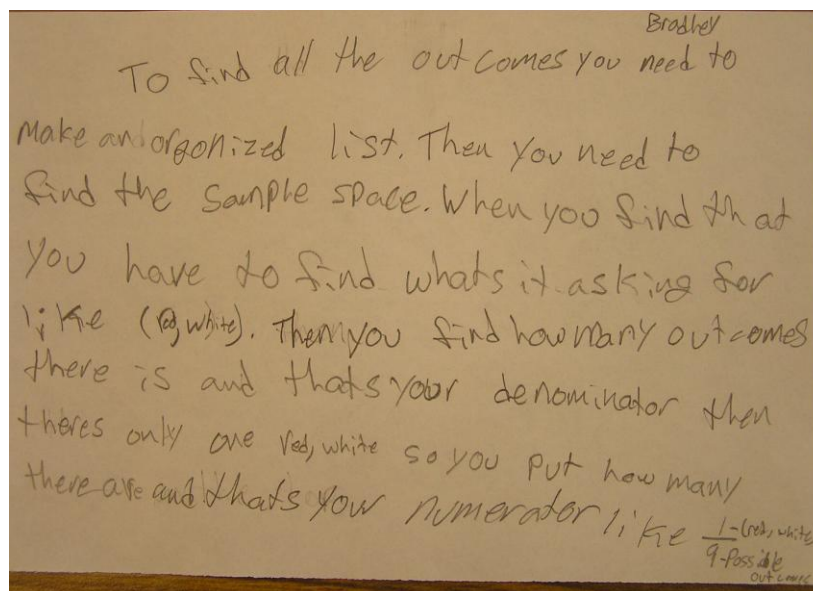
One teacher, for example, after experimenting with a few strategies that did not “stick,” decided to focus solely on facilitating learning through inquiry in his 8th grade algebra class. He chose the strategies Posing a Challenge and Promoting Inquiry; the latter required that he adapt the strategy from the Language Arts example shown on the video to his math curriculum. This teacher sustained this purpose and focus through the rest of the year. Once he had mastered what the *SaC* website offered in the area of inquiry, he focused on its application in his classroom, making decisions about exactly how to design the inquiry experience to fit his students and the concept he wanted them to inquire into, and documenting his students’ responses. He found that inquiry lessons in small group context engaged and motivated students who had been struggling as well as those who were already high achievers, and that inquiry created new opportunities for students to grapple with concepts in ways that increased both their confidence and comprehension of core concepts.

Another teacher began with the *SaC* strategies Reviewing Homework and Checking for Understanding so as to promote student self-assessment in his 7th grade math class, which was a major goal that he articulated for himself. After each use, he reflected on the student response and how well the strategy supported their learning. He continued using these strategies until they became embedded as new classroom routine, and as a result, his students became engaged in and quite skillful at focused and productive dialogue about mathematics concepts and problem solving, which increased their confidence. Later, the teacher added the *SaC* strategy Building Content Vocabulary because vocabulary development was a school goal that he wanted to support. The teacher adapted the strategy to include a writing component, again because writing development was a school goal. The usage of these strategies and his adaptations of them provided this teacher with a valuable tool for formative assessment and also raised his awareness of writing as a mode of learning in a content area.

To demonstrate this strategy in use, we display a sample of writing by a student in this classroom following a lesson on probability. Students were asked to write a paragraph describing how to list all the possible outcomes when doing an experiment with 5 events. The teacher put the expectations on the board – indent, use complete sentences, use an example, and use the vocabulary *sample space*, *outcome*, and *event*. From the writing sample below, the teacher could assess how the student drew from prior learning (use of “organized list” from an earlier lesson), where the student’s thinking is clear (the example and explanation of denominator and numerator), where it is not yet perfectly clear (explanation of sample space), and the care with which the student has written (making corrections, following conventions, using transitions). The teacher notes that this student started

out as a reluctant writer who had not written more than a single sentence on demand, even in his language arts class—and that he was able to produce this writing in 5 minutes after some experience with this strategy. The teacher also noted at the end of the school year that this low-performing math student gained 19 points on the Measurement of Academic Progress (MAP) test,⁷ well beyond the average gain of 6.

Figure 1. Sample of Student Work: Building Content Vocabulary through Writing



Lessons learned about the impact of *SaC* usage on teachers

We discovered that usage of *SaC* strategies has potential to launch a positive feedback cycle for teachers in which initial usage produces changes in student response and learning opportunity, and these immediate benefits for students motivate further usage. Continued usage and reflection on students' new learning experiences—for example, increased engagement and enjoyment, heightened motivation, a conceptual breakthrough in the subject area, greater confidence—can ultimately lead teachers to shift expectations for students and even re-conceptualize what they want to accomplish, and can accomplish, in the classroom. For some teachers, experiencing this positive feedback cycle meant that usage of *SaC* materials enabled them to actualize visions of the student-centered teacher they aspired to be but had not yet become. The teachers who became the more effective users made deep shifts in their thinking and classroom practice as a result of their experiences using *SaC*—shifts that we and they believe bode well for a lasting impact on their teaching.

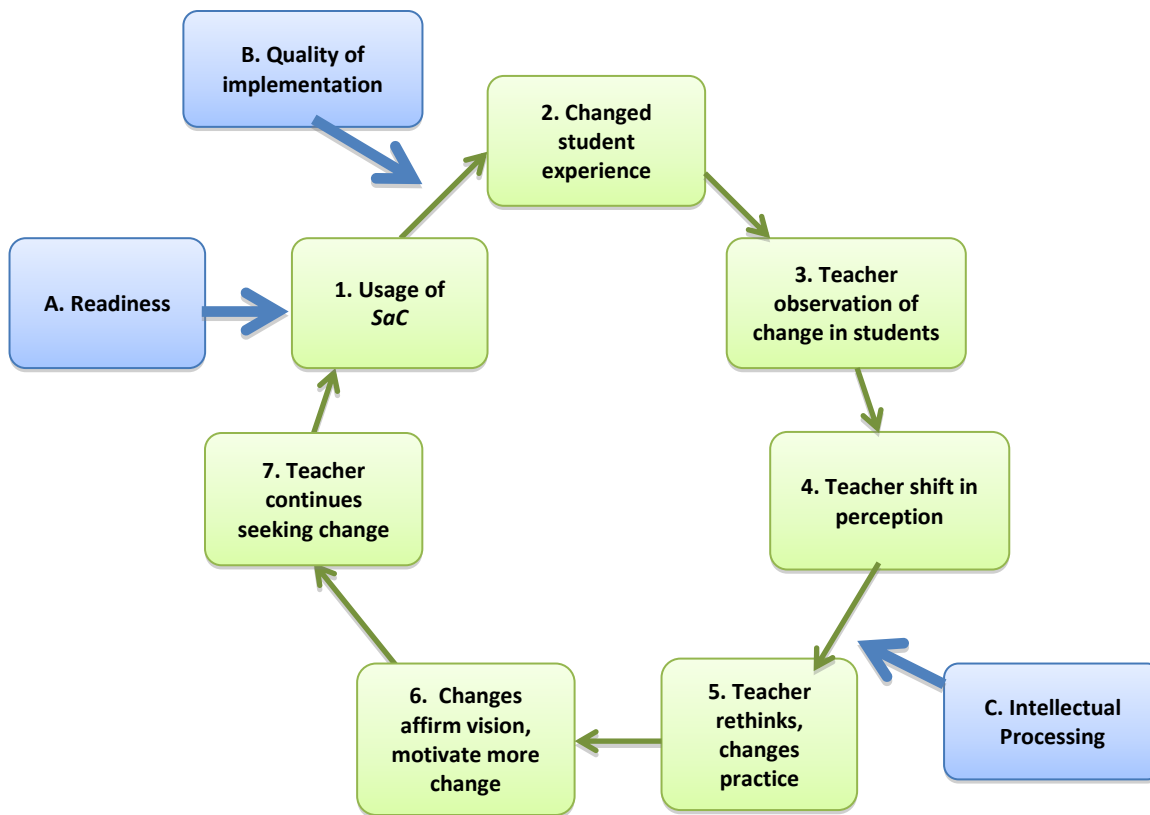
One teacher, for example, found that the *SaC* strategy Hands-On Learning created an important new learning opportunity for her algebra students. She observed that some students who had struggled with core mathematical concepts, such as a balanced equation, were able to deeply grasp

⁷ Measurement of Academic Progress (MAP) is a product of Northwest Evaluation Association (NWEA), a non-profit organization headquartered in Portland, Oregon. Districts can contract with NWEA for assessment services. MAP has become a popular assessment tool for districts because of the fast turn-around and usability of results. <http://www.nwea.org/products-services/computer-based-adaptive-assessments/map>.

them when they worked with manipulatives. This motivated the teacher to move further away from explaining concepts to students and giving them problem-solving “tricks” and shortcuts, and to move toward more hands-on learning and having students formulate the concepts and problem-solving rules they were learning in their own words. As she saw her students’ engagement, motivation, confidence, and comprehension increase, she became aware that her role as a teacher was not to move students through the pacing guide, but rather to increase her students’ affinity with and comprehension of mathematics. This deep shift in her perspective did not mean she began ignoring standards; rather, it meant that she addressed standards by focusing her attention on connecting students more directly, deeply, and joyfully with mathematics. This teacher also used the *SaC* strategies Reviewing Homework, Checking for Understanding, Connecting Content to Students’ Lives, and Cooperative Learning, drawing from them to enhance and sustain the new student-centered learning environment she was creating in her classroom.

Not all teachers were able to move through this positive feedback cycle, see powerful results for students, and shift their thinking and practice in substantive ways. We observed three factors that could impede teachers at different points in the cycle. First, a teacher’s initial selection and use of a *SaC* strategy could be impeded by the absence of what we termed *readiness capacity*, consisting of such elements as confidence with content and class management, formulation of purpose, or a grasp of the key qualities of the *SaC* strategies. Second, a teacher’s initial *quality of implementation* might be such that the strategy does not elicit the positive response among students, thus thwarting the positive feedback to the teacher about the strategy’s potential. Those teachers with readiness capacity and quality of implementation were able to use *SaC* to some positive effect. However, to make deeper shifts in their approaches to teaching—the kinds of shifts that ultimately impact student learning—there is a third capacity that is needed, which we refer to as *intellectual processing capacity*. This capacity includes critical self-reflection, the ability to analyze and understand pedagogical design, and the ability to envision alternative classroom relationships or realities. The diagram on the following page displays this positive feedback cycle and barriers to progress through it.

An important lesson from this finding is that to use *SaC* effectively enough to have a positive, potentially lasting impact on teaching requires a degree of knowledge, skill, and effort. *SaC* is an extraordinarily high quality tool, with strong relevance and flexibility, and with real potential for usability. But ultimately it is the users who must interpret what they see in the materials, and make it fit into and work in their particular context (in all its complexity)—and that requires intentional design and all the skills that design demands.

Figure 2. Positive Feedback Cycle of *SaC* Usage and Impact on Teaching

Lessons learned about the impact of *SaC* usage on students

It is important to remember that *SaC* is a tool intended for usage by a very wide range of users and to be used in multiple ways to serve instructional improvement. Its flexibility is a hallmark feature. This design in service of idiosyncratic, user-directed implementation meant that an evaluation study anchored to standardized outcome measures would be both inappropriate and uninformative. Thus we did not pre-define what impacts we expected usage of *SaC* to have on students. Rather, during the course of the prior pilot study and the first months of this study, we identified 8 potential areas of student impact that usage of *SaC* could produce, and we explored the extent to which these actually occurred:

1. **Engagement**—in classroom activity, in participating in their own learning, in subject matter
2. **Motivation**—wanting to learn, to do well, to succeed
3. **Self-awareness of learning**—self-assessing their own growth as learners, knowing about their own learning processes and how they learn best
4. **Confidence**—gaining self-esteem, being more willing to take risks in participation and inquiry
5. **Affinity for the subject**—liking the subject better, fearing or disliking it less, developing a closer relationship with it
6. **Learning of subject concepts and skills**—discipline-rich learning
7. **Mastery of school learning targets**—mastering the knowledge and skills identified as standards-based or as school priorities

8. **Learning of process skills**—collaborating with peers, being able to dialogue and question, being able to explain thinking orally and in writing, being able to think critically and work to pursue an inquiry, being creative

We collected data from several sources to gain multiple perspectives on student impact. Data included artifacts of student work that teachers collected, other data that teachers collected (e.g., attendance, homework turn-in rates, students' journal entries and surveys), teachers' reflections on student work products and classroom activity, researcher observations of the classrooms (with student focus groups in some), and surveys of all students, including ratings with written explanations and responses to open-ended questions. The artifacts and other data that teachers collected, in consultation with our research team, varied depending upon the strategies they were using and their goals for student impact.

The study produced two major findings related to student impact:

1. Effective usage of *SaC* strategies produced observable student impacts in the eight domains listed above, all of which are important to student persistence and success. We saw that the more student-centered instruction that effective *SaC* usage promotes launches a positive feedback cycle for students, where increased engagement and participation in different kinds of learning opportunities increase their success in class activity and their learning, which boosts their confidence, which continues to motivate them and, when teachers' usage is effective and consistent, ultimately leads to better learning. Observing students experience *SaC* strategies reveals that they have a desire, and the capacity, to engage actively in their own learning when their teachers shift the focus of instruction toward challenging students to think critically and creatively as they encounter discipline concepts and skills.
2. Different qualities of usage produced different degrees of impact on teachers and, in turn, on students. Importantly, impact on student learning of content and skills becomes observable only when teachers achieve a quality of usage that begins to resemble that of the teachers whose classrooms form the basis of the *SaC* materials. We found impacts on affective areas of engagement, motivation, and confidence for some students of teachers who achieved moderate usage, as well as for students of the teachers who were much more effective. In fact, it is these immediate impacts that contribute to the positive feedback cycle that motivates teachers to continue use. However, in the classrooms of less effective teachers, the impacts in these areas were momentary, rather than more pervasive, as they were in the effective teachers' classrooms. We did not see evidence that occasional or superficial use, with momentary affective impacts for some students, led to impacts on learning of concepts and skills.

Below we offer detail that will help clarify these promising findings and what produces them. First we profile an effective teacher, showing how usage of *SaC* materials, impact on the teacher, and impact on the students unfolded in a language arts classroom. Below that, we share results of the student survey, which provided students with an opportunity to explain their experiences of *SaC* strategies.

Profile of teacher usage and student impact in language arts

In a 7th grade language arts classroom, the teacher combined usage of a *SaC* Leadership Development (LD) Module with several Teacher Development (TD) Strategies. Having been a

member of the school leadership team that piloted the LD Module Using Data Effectively, she saw that the use of “data walls” from that module could serve her in the classroom by helping her and her students keep track of their growth in writing skills over the year. She used the data walls to chart her students’ progress along several key dimensions:

- students’ holistic progress in organization, content and style in essay writing
- students’ progress in correct convention use in their own writing
- students’ ability to quickly edit someone else’s text for correct spelling and grade-level conventions
- homework completion rate in a daily curriculum meant to focus on analyzing text for writing techniques and convention use.

The data walls gave her a picture of her students that she didn’t have before, and she found they were not performing as well as a group as she thought they were: “Often in my teaching, everything goes great. But these last several weeks have been serious speed bumps. Seeing clearly that student performance is decreasing and then trying to trouble-shoot it has been humbling to say the least. These data charts are really grounding me in what my students can and cannot yet do. Because they include every student and are anonymous, I do not make assumptions.”

The photos below show a data chart for content, organization, and style for two time periods, February on the left and March on the right.⁸ The teacher noticed that, from February to March, the tallied scores were not moving out of the “2” range (below standard) and into the “4” range (exceeds standard) as she had expected. In the top row (first period), several more students received scores of “4” in March; however, there was not much movement from “2” to “3.” And in second period (bottom row), there is even less movement toward higher scores from one month to the next.

Figure 3. Sample of Two Data Charts
February March



⁸The 75% and 80% appearing in the “4” columns are the student-stated goals for the proportion of scores they want to see in the “4” range. Each sticky note represents one student’s paper; they are anonymous.

The teachers' realization that progress toward high scores was less than expected compelled her to look deeply at her instruction and what she needed to do to help her students to perform better. That in turn caused her to turn back to the *SaC* Teacher Development strategies to find tools to help address this, most notably various ways to scaffold instruction. The teacher made significant shifts in her practice based on the data charts and her emphasis on scaffolding instruction. For example, she decided to assign fewer writing assignments than she has in the past, and to put more focus on lessons that would strengthen areas of weakness. She reports: "In the past, I was doing an essay every ten days or so and now, I am doing an essay every two to three weeks. I feel like [data walls] is making me more receptive to what sort of instruction they need as opposed to just more practice in writing all of the time, without the instruction to help them not just do more of the same thing." In other words, she has shifted from *assigning* writing to *teaching* writing. Midway through the year, she reported, "That is how the materials are working for me just now—forcing some realization, but also providing materials for growth. I would not have been focusing on these particular skills if I didn't have that data in front of me."

At the end of the year, the teacher credited her usage of *SaC* with an unprecedented leap in scores on the MAP test, which students take each spring. She found that her class made a gain of 5 points over the year, from a class score of 216 a year ago to 221 this spring. To put this in context, she noted that the national average for her grade level this spring is 217, and that 222 is the 90% percentile score nationally. As further context, the teacher explained that her own class the previous spring had scored 219 and the class the spring before that had scored 217. The teacher linked usage of *SaC* to this improvement in scores this way: "You expect kids' scores on this test to go up maybe one to three points. Our class average went up 5 points! I was using the data walls specifically to try to do better on these tests. They [the data walls] were such an easy way to look at my class as a whole—what they were learning and what they weren't. The only whole class pattern I usually get is the state test, and I usually don't get that until after they [students] are gone. With the data walls, I could immediately connect where the kids were with whatever we were learning."

Student reports of their experiences

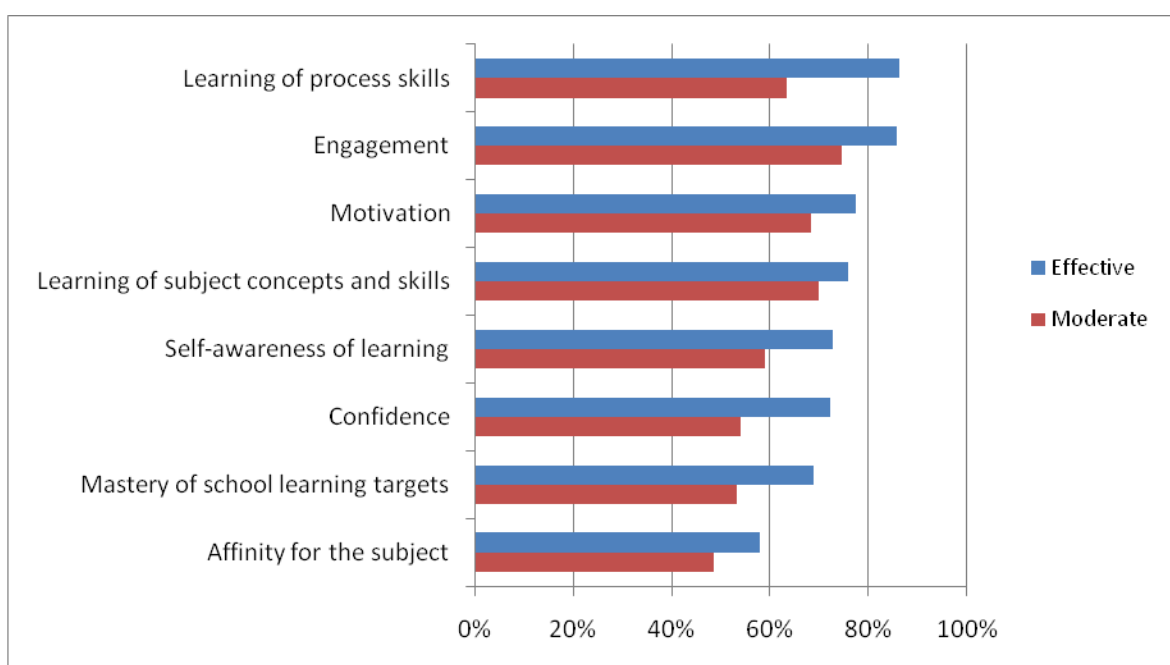
We asked all students in the study to rate the degree to which they experienced each of the eight types of impact as a result of their teachers' use of the *SaC* strategies, to explain their ratings, and to offer other comments in open-ended questions. The graph below shows the results, with blue bars show the ratings of students of teachers who were effective users and red bars the ratings of teachers who were moderate users.⁹ For each of the impacts, the bars show combined student ratings of 3 ("somewhat true") and 4 ("very true") on a four-point scale (1 = "not true" and 2 = "slightly true"). The eight impacts are rank-ordered from top-to-bottom based on how often students rated these as somewhat or very true.

Notably, with the exception of "like the subject more," more than half of students in all 7 classrooms say they experienced these results because of the *SaC* strategies. Differences in mean

⁹The ratings shown are from 186 students. We do not include ratings of students in the classrooms of very minimal users (an additional 103 students) because the multiple data sources, including students' explanations of their ratings, did not triangulate sufficiently to give us confidence in them. The lack of triangulation is explained by the presence of very minimal actual usage of *SaC* strategies.

ratings between the effective and moderate groups are statistically significant at $p < .05$ for engagement, self-awareness of learning, mastery of school learning targets, and learning of process skills. The students' reports are quite consistent with our observations and analyses of artifacts and other data with the exception of learning subject concepts and skills. While we observed that improved learning occurred in the more effective users' classrooms, the students in all classrooms reported this in the same proportions. Our interpretation of this result is that the students in less effective users' classrooms were experiencing enough difference of learning experience and opportunity while their teachers were using *SaC* strategies that they felt they were learning more. This makes sense to us in that the students were reporting on learning in the moment, and the teachers and we were more focused on improvements that could be seen in student work over time.

Figure 4. Student Ratings of Impact They Experienced as a Result of *SaC* Strategies



Below we summarize themes in the students' written comments to open-ended questions and explanations of their ratings. Their comments suggest that students have both a desire and capacity to respond positively to a shift in the focus of instruction toward more active, student-centered learning.

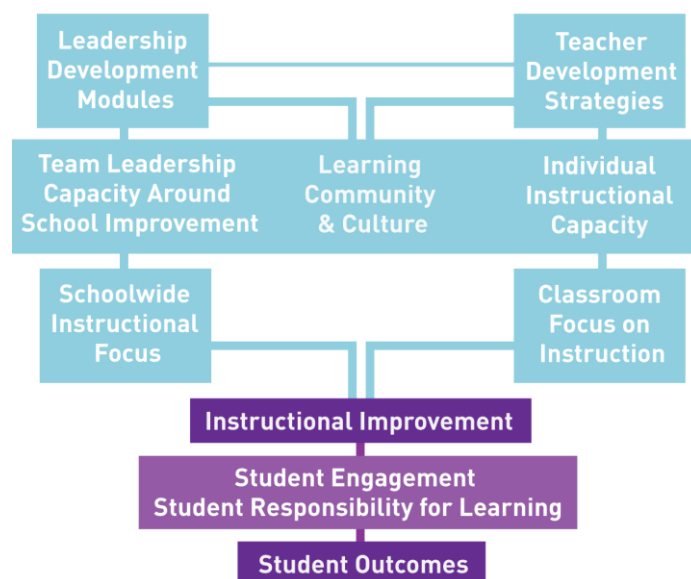
- Many students said they learned to work in groups more effectively. They report that working in groups increases both their enjoyment of learning and their ability to better learn subject matter concepts and skills.
- Most students said they gained some insight into how they learn best—and different individuals learn best in different ways, for example, through talking about their thinking, or through hands-on activity, or by listening to their peers' ideas and strategies, or when they understand the real-world connection to a concept they are learning.
- Students say the *SaC* strategies offer them chances to explore multiple approaches to a problem or concept and to show their thinking in a variety of ways, and that this helps them grasp the content better.

- Most students feel more motivated to participate in class when they and other students are asking questions and finding solutions to problems. Many also feel more motivated to work hard and complete their work when they are accountable to their group and when the work in groups is central to the learning.
- Student comments show that when their teachers ask them frequently to let them know how well they are grasping the concepts of a lesson, they gain more confidence in self-assessing their learning, and they begin taking more responsibility for making sure they have chances to re-visit a concept that is hard for them.
- Students say that when they enjoy learning more and are stimulated by new classroom activities, they participate more and believe they learn the subject better. They say that class activity tied closely to textbook exercises and questions feels routine and dull, and they value the chance to address ideas and share their thinking in more creative and individual ways.

The significance of this study

The Impact Study, as we noted earlier in the report, examined the following proposition: that teachers' usage of *SaC* materials in the real-world contexts of their classrooms would bring about changes in their teaching practice that would in turn result in a positive impact on their students. This proposition is as ambitious as it is straightforward given that the study occurred within the timeframe of just one academic year, and given that *SaC* is a flexible, user-directed tool to enhance school improvement effort and does not, in and of itself, represent a comprehensive or uniform intervention. With respect to the *SaC* theory of action that was developed from the evaluation of the pilot, this study focused on the strengthening of individual instructional capacity—the right-hand side of the model portrayed below.

Figure 4. Theory of Action of *SaC* Usage and Impact¹⁰



¹⁰ See a fuller discussion of the theory of action at http://www.successatthecore.com/about_theory_of_action.aspx.

The results both affirm and elaborate this aspect of the *SaC* theory of action by documenting the impact on students that stems from the instructional improvement that usage of *SaC* materials can promote.¹¹ When conditions are supportive and teachers have capacity to implement *SaC* strategies, their usage of *SaC* can initiate a positive cycle of instructional improvement that has potential to generate positive impacts for students. In the short timeframe of the study, the student impacts that we most frequently observed in the classrooms of teachers who achieved moderate or effective usage were improvements in engagement, motivation, and confidence brought about by the changes in students' learning experiences and opportunities that were created by usage of the *SaC* strategies. These are important student impacts in that they are necessary precursors to deeper and more lasting learning outcomes. In the four classrooms where teachers achieved effective usage of *SaC* strategies—e.g., usage that was very skillful, purposeful, and consistent—the teachers and we could observe impacts on students' learning of subject concepts and skills and learning of more general skills important to academic success.

These findings have an important implication about the quality and potential of *SaC* as a resource for instructional improvement. They affirm that *SaC* does, in fact, present strategies that can “work”—that can have the intended and desirable impacts on teachers and on students. They also remind us that for the strategies to fulfill their potential of changing learning outcomes, they need to be used consistently and at a level of quality that is close to the way they are portrayed on the website.

Further development and research

SaC is a very high quality resource for teachers, providing them with real-school images of effective teaching in video format, along with helpful surrounding materials. For teachers with capacity and support for quality implementation and reflective processing, *SaC* can help teachers actualize visions of themselves as designers of student-centered classrooms where students engage discipline concepts and skills in rigorous and active ways. Such potentially powerful tools for educators are scarce. We encourage *SaC* to strengthen support for usage by developing a “user’s manual,” particularly for the Teacher Development materials. Given the powerful contextual pressures that can impede *SaC* usage, such a guide could provide supportive scaffolding. The manual would include suggestions for navigating through various components of the website to help users identify resources to meet their needs and interests, as well as outlines of the core components of strategies, making them more easily interpretable and adaptable to other subject areas. We also believe *SaC* Teacher Development strategies would be enriched if they included video examples from more than one subject area. While some teachers may be able and willing to do the work of translating strategies from the subject area shown in the video to the subject that they teach, we believe based on both the pilot and this study that many more teachers would be able to understand and use the strategies if they were portrayed in multiple subject areas. These additional materials will be vitally important to teachers working in isolation, and we believe they will also be helpful to others—

¹¹ With regard to the left-hand side of the diagram, because the participants' broader school communities did not sustain usage of the *SaC* materials for leadership and teaching development during this Impact Study, we do not know whether such usage would have created the conditions necessary to support these teachers in their usage to the extent they would have had an impact on students.

teachers working more collaboratively, as well as coaches, school and district professional development providers, and others that the Use Studies¹² have shown to make use of *SaC*.

The Impact Study also generates questions for further research that would be of value both to *SaC* and the field. Video is a format for professional development that is here to stay. The *SaC* videos are especially high in quality. We think the processes of teacher sense-making—how teachers analyze the pedagogy they see in videos, then interpret and translate it into strategies for their own specific teaching contexts, then reflect on their own usage and its effects—are only partially understood and certainly not adequately appreciated. The design knowledge that effective teachers bring to this process is tacit and, we believe, comprises highly specialized professional knowledge. This study exposed just the tip of the iceberg of this knowledge, and further research would bring it to fuller articulation and therefore make it more available to other teachers and those whose role is to support teachers.

References

- Hawkins, D. 1973. “I, Thou, and It”: Essay in *The informed vision: Essays on learning and human nature*. Reprinted in 2002 by Algora Press: <http://www.algora.com/main.html>
- McLaughlin, M.W., and Talbert, J.E. 1993. *Contexts that matter for teaching and learning: Strategic opportunities for meeting the nation’s education goals*. Stanford University, Palo Alto, CA: Center for Research on the Context of Secondary Schooling (CRC).

¹² See the results of *SaC* Use Studies at http://www.successatthecore.com/about_research.aspx