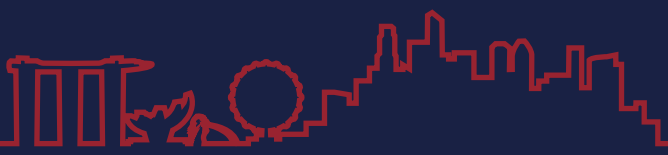
GETTING SMART



MAY 2016

CREATING THE FUTURE OF LEARNING:
SINGAPORE AMERICAN SCHOOL

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OVERVIEW: MEET SAS

A great school takes a "culture of excellence, possibility, and extraordinary care," said Dr. Chip Kimball, at Singapore American School (SAS).

"As we traveled the world visiting over 100 schools in seven countries we found many schools that had one of these cultures in place and some schools that had two of these cultures in place, but very few schools

OPEN DATE: **1956**
LOCATION: **Singapore**
GRADES SERVED: **Preschool-12**
FACULTY MEMBERS: **375**
STUDENT/FACULTY RATIO: **10.3:1**
STUDENTS SERVED: **3,943**

CAMPUS TOUR

exhibited excellence, possibility, and extraordinary care," said Kimball. "This is how SAS wants to distinguish itself. What makes us unique."

Founded 60 years ago, the nonprofit independent day school located about 30 minutes north of the bustling central business district. The school serves nearly 4,000 students on a 36 acre campus. It's the largest American school outside the U.S. and the largest single campus international school in the world.

Despite being a large school, SAS has learned to be nimble starting with the high school which, in the last two years, has developed a new graduate profile, improved teacher collaboration, and developed several student-centered options.

Students at SAS hold passports from around fifty countries, but two-thirds of them are U.S. citizens (government regulations prevent SAS from serving locals). While admissions are open, the school has a history of producing top performing graduates that attend the world's best universities—nearly all graduates attend four year universities, about 80 percent in the U.S.

The school serves families that live in Singapore long term and some that complete short assignments for multinational corporations. The 800 new students welcomed each year make it a more dynamic environment than most independent schools.

With a landmass about the size of New York City and two-thirds its population, Singapore is the world's only island state. Located a degree north of the equator, it's hot and humid every day.

Last year Singapore celebrated its 50th year of independence. The republic is a global hub for commerce and shipping with a stable and ethical (but authoritarian) government, no debt and low tax rates. Three quarters of the population are ethnic Chinese but English is the language of government and education.

HISTORY: A BIG SCHOOL ON THE MOVE

Dr. Kimball, arrived in Singapore in 2012 after a well regarded term as system head in Microsoft's backyard in Redmond, Washington. Dr. Kimball found four high performing but traditional schools sharing the Woodlands campus on the northern coast of Singapore. The primary, intermediate, middle, and high school schools operated independently. The board viewed the schools as successful but stalled. Test scores were good but they knew there was an opportunity to improve student preparation.

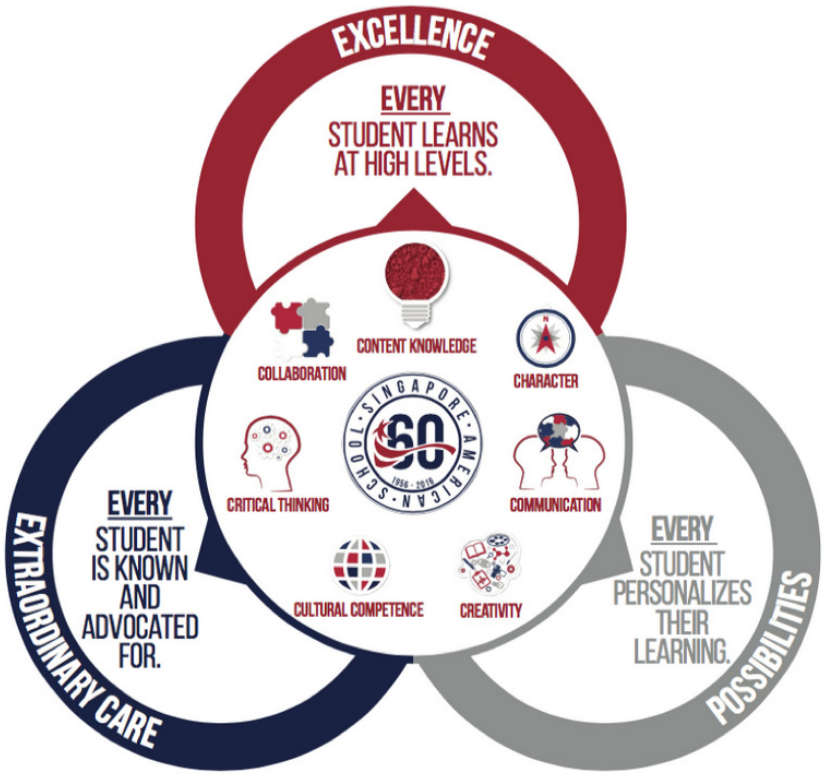
Before arriving at SAS, Dr. Kimball considered himself a global thinker—he hung out with Microsoft executives and frequently spoke nationally about globalization and its impact on students —but he worried that he hadn't experienced globalization extensively first hand. He wanted the opportunity to immerse in a global setting and see the new economy first hand. The opportunity to help create a next generation international school in Singapore arrived at the right time.

The first two years of the change process included difficult budget and personnel changes. The board allocated a half of a percent of the $135 million annual budget to innovation. Dr. Kimball created an Office of Innovation, part of a three year research and development process. The second and third year of the transformation included significant capacity building. The 2015-16 school year was a year many changes were implemented.

Leading strategic programs is Dr. Timothy Stuart, a Gates Millennium Scholars. Having grown up in Europe, Stuart's journey as an international educator started in Turkey and Switzerland. He worked at Northwest Indian College on the Lummi Reservation while completing his PhD and moved to the Navajo Reservation in New Mexico to serve as the high school principal of Rehoboth Christian School, a Gates Foundation grantee. In 2007 he became high school principal at Jakarta Intercultural School and three years later Stuart took the same post in Singapore at SAS and kickstarted the change process the year before Kimball arrived.

The most important investment turned out to be a commitment to visiting the best schools in the world. Over the last four years 85 SAS educators have visited more than 100 schools in seven countries. In addition to well known U.S. schools like High Tech High in San Diego and Avenues in New York (and many of our Schools Worth Visiting), the team found trips to Auckland, New Zealand most relevant given how coherent and progressive independent Stonefields School and Hobsonville Point Schools were. Kimball said about the trips, "It transformed our thinking." Stuart added, "It created what John Kotter would call of 'sense of urgency' for change."

VISION: A CULTURE OF EXCELLENCE, POSSIBILITY & CARE



"What is becoming increasingly clear as we look ahead is that order for students to be competitive in our ever-changing world, they need to be creative, innovative, flexible in their thinking, and they will need to mobilize their skills effectively," explains Dr. Kimball.

In addition to traveling the world, SAS brings top talent to campus for a reality check and to reduce isolation. The faculty appreciated Dr. Tony Wagner's "new survival skills" and adapted his 7Cs, among other sources, to create the SAS desired student learning outcomes; they include content knowledge, cultural competence, character, collaboration, communication, critical thinking, and creativity.

When Wagner visited SAS, he said, “I don’t remember ever having been to a school as old and established as this that is taking the ideas of educational research and development and innovation so seriously, so thoughtfully, and in such courageous and committed ways.”

Visits and visitors helped shape a new “culture of excellence, possibility, and care.” All three elements are visible in the classrooms of what is now operating much more as an integrated K-12 school. A summary of the recently adopted strategic plan is below.

With expanded opportunities for student directed learning—projects, makerspace, STEM labs, and coding—there has been a noticeable shift from a focus on content memorization to the development and demonstration of skills and dispositions over the last three years at SAS.

SAS STRATEGIC PLAN SUMMARY

STANDARDS -BASED APPROACH

Valid, reliable, fair assessments target unit outcomes and growth; evidence is gathered for each outcome area (7Cs); reporting and other systems support standards-based approach

HIGH IMPACT INSTRUCTIONAL PRACTICES

Regular inquiry, experiential and personalized learning focused on desired outcomes supported by structures and practices

PASTORAL CARE

Culture of extraordinary care supported by advisory, social emotional learning programs, effective transitions, and structures

SYSTEMS SUPPORTING LEARNING

With service excellence lens, P-12 departments collaborate for effective and integrated systems to support student learning

PROFESSIONAL LEARNING COMMUNITIES

Focus on learning, committed to improvement, collective answers, structures support intervention and collaboration

TRANSFORMATION: HIGH IMPACT LEARNING FROM PRE-K TO GRADUATION

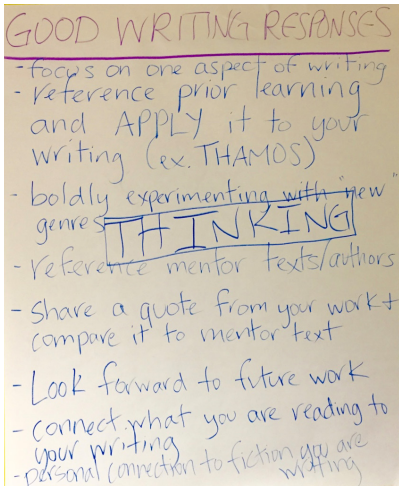
The following case study resulted from a March 2016 school visit and outlines the evidence of transformation of one large school from preschool to high school.

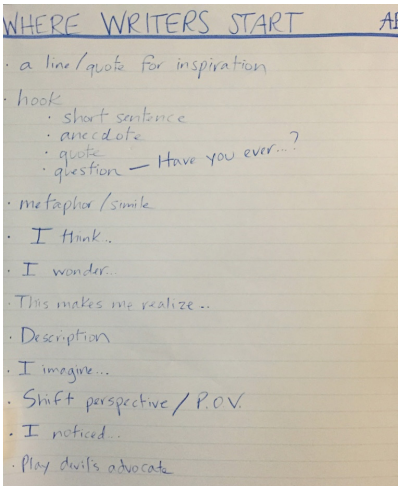
GENIUS INFUSED ELEMENTARY

After starting his teaching career in Colorado mountain towns, David Hoss decided to try a few years in Singapore. He never left, and 26 years later he is head of the 2000 student SAS (P-5) elementary school.

The play-based SAS preschool hub has 48 students, three teachers and four aids and in a Reggio Emilia inspired environment focused on symbolic language (pre-literacy and pre-numeracy).

The focus starting in kindergarten is to make them strong readers, writers, and mathematicians. The literacy program is based on Columbia Teachers College Reading and Writing Project. Elementary classrooms contain rich





leveled reading libraries. Student developed Anchor posters outline key writing concepts.

Teachers, with a maximum of 22 students, are supported by instructional aides. Students receive instruction in reading, writing, math, social studies, and science in their classrooms.

Each day students participate in art, music or physical education.

World language exposure—either Mandarin or Spanish—starts in preschool. K-1 students receive 30 minutes of language instruction per day, that increases to 45 min in grade two. Students join novice, intermediate or advanced language groups and use a proficiency based approach. There are 18 Mandarin teachers devoted to elementary grades. Students use their iPads to record stories and teachers provide feedback. This sophisticated approach is yielding high levels of fluency as student move into intermediate grades.

Elementary grade level teams review a subject each year. This year the fifth grade team focused on reading and as a result, saw a big gain in the percentage of students reading above grade level. Most grade levels have 13 classes so when a grade level team gets together, it means two dozen people in a large conference room.

A new Genius Hour provides elementary students with the opportunity to pursue passion projects. Students spend 90 minutes each week on a topic they want to learn about." Jonathan, a fifth grader (pictured above) who recently moved to Singapore from Seattle, coded a game in Scratch. Other students made animated movies, or crafted instruments.

The library is an active learning space (above) equipped with a Zspace virtual reality station.

Science class (on the right) focuses on learning through experimentation. There is a elementary maker room for recess and lunch time projects.

Each two year grade span (i.e., K-1, 2-3, 4-5) is supported by a librarian and instructional coach. There is a technology specialist supporting the 13 classrooms per grade.

A HOMEBASE IN THE MIDDLE

A new middle school administrative team is led by principal Lauren Mehrbach who, after launching her career as an international teacher in Venezuela, taught English and was as a high school administrator at SAS for a dozen years. After serving as a principal in Tunisia, Mehrbach returned to SAS in 2014.

The 950 middle school students are generous at accepting the many newcomers that join their ranks each year. One thing that helps create a safe and supportive culture is a daily “home base” advisory meeting. A dozen students meet with their advisor for 20 minutes each morning. The home base curriculum focuses on social emotional learning. Middle grade advisors work in support teams of nine.

“Self actualizing requires a safe place,” said Mehrbach. “We want to make sure every student is known and cared for.”

The middle school is broken into three teams (sides), A, B and C to make a big school feel small. Each is supported by a set of teachers. During the third week of school, the entire school in their respective teams take a trip to regional destination (often nearby Malaysia or Indonesia).

A 1:1 laptop program was implemented in 2013-14. One benefit is expanded writing across the curriculum. Eighth graders blog reflections about performing arts, social studies, and science.

Last year the middle school grades adopted a standards-based grading protocol and record results in the PowerSchool gradebook. The shift uncovered a wide variety of how student work was assessed and how grades were reported. Assessments are correlated with Measures of Academic Progress (MAP) from NWEA in grades three through nine. The faculty commitment to collaborating in professional learning communities has been key to moving toward consistent expectations, assessments, and grading.

The Physical Education program focuses on movement patterns. Students use video to reflect on their performance. Across the curriculum, SAS is developing approaches to digital cataloging work, "We want it to be learning journey," said Mehrbach. Like many schools, SAS leaders are searching for ways to better mark the student journey without adding more complexity.

A CATALYST FOR HIGH SCHOOL REINVENTION

In terms of Advanced Placement (AP) courses offered and passing rates, SAS is one of the top high schools in the world. SAS offers around thirty AP courses each year. Most students participate in the program--86 percent of 2014 graduates took at least one AP exam and most students take multiple exams. To boost attractiveness to top colleges, racking up AP credits became a central focus for many SAS students, and some took 15 or more AP classes in their last three years.

As part of the research phase of the change process, the SAS team interviewed 100 college admissions officers and asked about AP. "We heard colleges say that what they were looking for in students was evidence of deep intellectual exploration in an area of interest or passion," said Stuart.

They heard consistently about a point of diminishing returns—after passing a half a dozen AP tests, it's obvious that a student has mastered college level content. Concerns were also expressed about the historical focus of content over critical thinking in many AP courses (College Board has redesigned some AP courses to improve readiness). As a result, SAS students will be limited to seven AP classes (beginning with the graduating class of 2021) and, as a replacement, complement, or extension, are encouraged to take one of 10 Advanced Topic (AT) courses (available by 2019-20) developed by SAS faculty in conjunction with professional and university experts (see next page exhibit). Like AP courses, students get a GPA bump for taking an AT course.

RELEVANT LEARNING OPTIONS: ADVANCED TOPIC COURSES

After defining desired student outcomes, the SAS Center of Innovation developed criteria for Advanced Topic (AT) courses had three objectives:

1. *Create the opportunity to take collegiate level courses that were project-based and interdisciplinary.*
2. *Redefine what it meant to be "smart" at SAS and not be bound by the College board's definition of intelligence. By filling the high level course gap, create the opportunity to challenge themselves at highest level (e.g., offering "AT Exercise Physiology" as a part of Physical Education).*
3. *Provide the opportunity to go beyond AP courses. Giving students options to go farther and deeper based on their interests and passions is a major tenet of the R&D recommendations (e.g., beyond AP Chinese offer Chinese Literature and Philosophy course taught in Chinese).*

AT Development Criteria include:

- *Relevant content, skills, and application*
- *Competency-based rigor (content, skills, and application)*
- *Desired student learning outcome development (21st Century Skills)*
- *Depth over breadth*
- *Focus on production*
- *Real world applications*
- *External validation (where possible)*

Courses developed and in development include:

Current Courses

AT Performing Arts
AT Kinesiology
AT English Writing Seminar
AT Tropical Ecology
AT Chinese Language/History
AT Data Analytics
*AT Design Thinking**
*AT Research and Composition**

Courses in Development

AT Entrepreneurship
AT Applied Science/Engineering
AT Spanish Immersion
AT Problem Analysis/ Economics
AT Math Application
AT Computer Science
AT Literary Studies

There are several self-directed learning options in the high school. AP Research allows students to conduct and explore a topic and submit and defend a 5,000 word paper. Students can earn an AP Capstone Diploma by successfully completing AP Seminar, AP Research Exams, and four additional AP Exams.

Catalyst, a self-directed and personalized senior research project, was piloted last year and is a graduation requirement for the class of 2018. Students have used the opportunity to study topics such as Kawasaki disease (with a published journal article), the intersection of quantified self and the Internet of Things, analysis of big data sets in neuroscience, and the psychology of wealth.

Quest is a full year option for seniors starting in 2016-17 that includes a sequence of interdisciplinary projects. “Quest is our attempt to build the school of the future, today,” said Stuart. “It is the culmination of all of our research over the last four years. Ironically, it is creating a Reggio-inspired learning environment for grade 12 students,” added Stuart.

High school principal Dr. Darin Fahrney, served as principal of a large suburban high school outside of Milwaukee before joining SAS as deputy principal. His doctoral research focused on how to build systems of intervention to ensure that all students learn at high levels.

Fahrney was attracted to the international perspective central to the school’s mission and reflected in academic offerings, service opportunities, and extracurricular activities. “Our vision is to provide everyone the opportunity to explore interest and pursue passions in new and flexible ways,” said Fahrney. (See 2016-17 course catalog.)

SAS students participate in a week long “Interim Semester” every year. Experiences beyond the traditional classroom, with every high school faculty member and student participating in one of 60 trips to 28 countries, focusing on either global studies, service, or eco adventure. At least one of the four Interim Semester trips must be devoted to service. High school students lead 60 service clubs—most are original to the school, some are chapters of international aid organizations. (See leaders of the Executive Service Council below.)

To guide students through their high school years and ensure that students have at least one adult that knows them well, this year the division implemented

Watch this video to learn more about the change process and Catalyst projects.

Watch Zane and Jesse’s video about their microfinance project addressing a fundamental health issue for women in India.

an advisory program, which was the result of 18 months of planning and capacity building. Every SAS high school student belongs to a small advisory group, and has an advisor who mentors them, helps them track their progress, set goals, discuss and solve learning issues, and build on their capacities to take responsibility for their learning.

HIGH IMPACT LEARNING

New Zealander Treena Casey leads the Office of Learning. Before joining SAS in 2011, Casey provided curriculum leadership in international schools in China and Thailand.

Casey's team provides curriculum leadership and student support services. Five instructional coaches and about 50 learning support specialists support the 375 faculty. A senior member of the team owns each element of the strategic plan: PLCs, standards-based approach, high impact instruction, pastoral care, and systems supporting learning. At the heart of the strategic plan is the shift from content-focused, teacher-led instruction to skills-based student-centered learning.

The transformation included libraries. "We created a vision centered around a hub concept of information, innovation and impact on students–a Center of Innovation," said Bob Helmer, high school librarian. "We renovated our newly rethought space and transformed some areas of the old library footprint into a design lab, guided study lab, multimedia studio and makerspace," added Helmer.

HIGH IMPACT INSTRUCTIONAL PRACTICES 1.0

Teachers implement high-impact pedagogical practices that explicitly target the desired student learning outcomes to a deeper learning and shift the focus from teacher to student, resulting in actively engaged learners. When students actively pose and solve problems, work collaboratively in a community of peers, experience real-world applications of knowledge, and reflect on their learning processes, learning is deeper and more complex.

HIGH IMPACT INSTRUCTIONAL PRACTICES 2.0

Students shape high-impact learning experiences that deepen their learning and shift the focus from the teacher to themselves, resulting in the ability to demonstrate cultural competence and strong character while utilizing content knowledge to be critical and creative thinkers as well as effective collaborators and communicators. Engagement in high-impact practices will allow students to take ownership in their learning, resulting in exceptional thinkers prepared for their future.

PROFESSIONAL LEARNING COMMUNITIES 1.0

Teachers actively engage in effective professional learning communities whose members work interdependently to achieve common student-learning goals for which members are mutually accountable. We believe every child has value and can learn at high levels. PLCs guarantee a common, viable curriculum where teams take collective responsibility for all students' learning, and ensure that faculty work collaboratively to leverage their expertise and analyze evidence of learning to improve their own practice and maximize each child's learning and growth.

PROFESSIONAL LEARNING COMMUNITIES 2.0

Students and teachers actively engage in effective PLCs to achieve common student-learning goals for which members are mutually accountable. Students own their own learning process by asking and answering the four critical PLC questions for themselves (see below). Every child has value and can learn at high levels. PLCs guarantee a common, viable curriculum where teachers and students take collective responsibility for student learning, and ensure that faculty and students work collaboratively to leverage their expertise and analyze evidence of learning to improve their own instructional and learning strategies and maximize their learning and growth.

Central to the SAS transformation is the use of professional learning communities (PLC) as popularized by author Rick DuFour. SAS is a model PLC school in all divisions. Teachers collaborate in PLCs to set learning targets, refine academic offerings, and develop common assessments. PLCs focus on collective learning for all students and teachers through cycles of inquiry. PLCs answer the following questions:

- What is it that we want students to know and do?
- How will we know when they know and can do it?
- What do we do when students don't get it?
- What do we do if students have already gotten it?

Teachers are currently the ones asking and answering PLC questions. The SAS strategic plan focuses on building student agency and inviting them to co-curate their own learning—to become part of next generation PLCs.

PLCs have been a critical vehicle for SAS faculty to discuss, synthesize, and incorporate innovations observed on school visits and discussed in the R&D phase. The next phase of PLC will encourage students ask the questions:

- What do I want to know and be able to do?
- How will I demonstrate that I have learned it?
- What will I do when I am stuck and I am no longer learning?
- What will I do when I already know it?

GLOBAL EDUCATORS

About three-quarters of the SAS faculty members are from North America. About the same percentage hold master's or doctorate degrees. International educators are well paid—a good salary, generous health and travel benefits, a housing subsidy, and long vacations. They are able to save a good portion of their salary.

For younger educators, teaching internationally creates a new sense of freedom and an opportunity to see the world. Once a teacher has been teaching internationally for a while, the experience can create an uneasy sense of what Kimball called "unrootedness." For the first few years many rent out their house assuming they'll return. When they don't, some sell their primary residence and may purchase a vacation home to visit during the long summer break and a link back to a place to call home. Tim Stuart said some international teachers finally become "citizens of the world," like his kids who claim to be from "everywhere and nowhere."

PARENTS

Admissions Director Mona Stuart occasionally receives a visit from a preschool parent seeking the foolproof path to Harvard. She also deals with anxious spouses of multinational executives that unexpectedly land in Singapore with a child or two and find themselves in need of a new school.

Parents hire SAS to prepare their son or daughter—at a price of about $25,000 U.S. per year-- to gain admissions to one of the world's leading universities. While preparing for careers and citizenship may be the broader goal, the prerequisite of a loaded transcript and top test scores are near term imperative for most parents. The talented and driven students are often more competitive than their parents.

SAS has a track record of academic success that appeals to parents. In addition to keeping their academic goalposts relevant, SAS provides parenting supports and workshops on timely topics such as managing screen time, managing social media risks, and college planning.

CONCLUSION

School systems quickly create sedimentary layers of policies and practices that form a legacy which can be enormously powerful in positive as well as negative ways--often simultaneously. As an academically successful school--one of the best AP schools in the world-- SAS has sent generations of students off to the finest universities in the world. This history of success had, until about five years ago, caused SAS to stall--to operate in ways that were familiar but increasingly less relevant to the idea economy.

Kickstarted by high school innovations five years ago, a thoughtful board pushed for a new kind of superintendent, one familiar with best practices of high performing systems and the new economy. Chip Kimball found an innovation partner in high school principal Tim Stuart. They used school visits to inspire a talented but isolated faculty. Exposure to the best schools in the world and a new group of critical friends resulted in updated student learning expectations. Professional learning communities created collaboration routines that broke down barriers and hosted tough conversations. New tools created new learning opportunities. There is a new spirit at SAS, one that embraces the job to be done but with relevant outcomes, one that values execution and innovation, one that embraces a culture of possibility.

SAS is charting the path forward for international schools with a new graduate profile and learning experiences designed to prepare young people for careers and citizenship. The R&D undertaking at high capacity schools like SAS is a critical leadership role for the sector, particularly during the historical shift from print to digital, from content-centric to skills-based learning, from teacher-centric instruction to learner-centered experiences, and from time bound schedules to competency-based progressions.

In this new sector leadership role, there are 10 features worth noting about SAS:

1. **Rigorous preparation:** SAS leadership understands the 'job to be done' with a commitment to continuously reexamining how that is defined and measured, "culture of excellence."
2. **Commitment to R&D:** A standing innovation fund sponsors school visits and pilots projects that powers the school's forward lean. Professional learning communities help navigate the tension between improvement and innovation.
3. **Agency:** To boost student ownership and student-directed learning, SAS has introduced Reggio-inspired early learning, Genius Hour in elementary, TriTime, STEM Lab and active science in middle school, Catalyst course and the Quest program in high school.

4. **Deeper learning:** Capping maximum AP courses and introducing more challenging interdisciplinary and project-based Advanced Topics courses is a bold move signaling a commitment to relevant preparation and depth over breadth.
5. **Public presentations:** students blog, publish and present across the curriculum.
6. **Pastoral care:** To personalize a large school and accommodate all the newcomers, SAS uses an advisory program to make sure every student is known and cared for.
7. **Ethic of service:** SAS encourages student leadership when it comes to community service and supports a variety of ways for students to make a difference.
8. **Global competency:** A commitment to dual language fluency starts in preschool. Daily language exposure is complemented by an international focus across the curriculum.
9. **Technology integration:** Better than 1:1 technology access powers anywhere anytime learning.
10. **Teacher collaboration:** All of this is accomplished by a talented faculty committed to working together in professional learning communities.

The new SAS strategy clearly describes learning 2.0. The blueprint of site visits and teacher collaboration is a formula that any school can follow to create their own future. School visits proved transformational for the SAS faculty. A culture of excellence, possibility and care makes SAS an inspiring school worth visiting.