

News From Schools

Transitioning From Old School to New School

SMIC Private School, Shanghai
redesigns its middle school program

By Patrick M. Carroll

During the 2016–2017 school year, K–12 Principal Kelley Ridings first broached the idea of redesigning our school's middle school program. SMIC had just celebrated its 15th anniversary and the middle school program had gone largely unchanged since the school opened. This simple conversation ultimately led to what could only be described as a reimagining of middle school at SMIC.

Our middle school in 2016–2017 was most akin to an American-style junior high school. Students moved in groups and had no flexibility in their courses or in their schedules. One size fit all. However, by the beginning of the 2018–2019 school year, all of that was history.

We began the re-design process by looking at innovative middle school programs and by reviewing the research on current best practices in middle schools. For a research and philosophical base, we settled on the *This We Believe* middle school model as laid out by the Association for Middle Level Education (AMLE). For practical inspiration, a team of school leaders secured an invitation from International School of Beijing's (ISB) Middle School leaders, Jon Hill and Fred Schafer, to spend a few days with their Middle School Future's Academy.

When all was said and done, our Middle School Redesign Team—made up of school leaders, teachers, and parents—came up with an innovative and ambitious program

... continued on p. 34



Welcome to Shark Camp! SMIC students benefit from a week-long orientation to middle school (photo: SMIC).

Cairo American College Celebrates CACMUN's 40th

By Diana Shanaa

This October, Cairo American College celebrated the 40th anniversary of CACMUN. First established in 1978, CACMUN began as a one-day conference whose purpose was to prepare students for The Hague International Model United Nations (THIMUN) conference. After a successful start, it became an official THIMUN-affiliated conference that hosts local as well as international schools for a three-day conference.

For CACMUN's 40th anniversary, the Advancement Office connected with Barbara Johnson, who founded the first CACMUN conference, and was formerly a teach-

er, principal, and superintendent at the school. Barbara was excited to reconnect and had a few great memories and insights to share.

Barbara Johnson founded the CACMUN program in 1978 during her time in Egypt. "Starting in 1979, I took the students to The Hague for seven consecutive years. We won Best Delegation a lot," Barbara noted. "So many of those former students went into international relations and public service, which is so wonderful. We were shaping the leaders of the future," she added.

Barbara believes that one of the main reasons that CAC delegates always performed so well at the

... continued on p. 34

ISK Engineering Students Tackle Deforestation, With Camels!



Kenya's camels are one factor contributing to deforestation. ISK's STEM Engineering students wanted to know if these animals could be part of the solution and outfitted them with seedball dispersal gear (photo: ISK).

By Maciej Sudra
& Denzil Mackrory

Deforestation is a complex global problem. It is a leading factor in climate change and causes soil erosion and degradation, desertification, siltation of rivers and lakes, flooding, and loss of habitat for countless plants and animals. In developing countries such as Kenya, which rely heavily on wood fuel as the major energy source for cooking and heating, deforestation is widespread and replanting is a continual challenge.

In the last 50 years, Kenya has lost over half of its forest cover and continues to lose its remaining trees at an alarming rate; the Kenya Forest Service estimates that over 10,000 hectares of forest are lost each year. Millions of trees are being cut down due to illegal logging, uncontrolled grazing, and exploitation for charcoal. The charcoal trade has had particularly dire consequences in Kenya's arid north, where great swathes of the slow-growing indigenous trees have been cut down to meet the rising demand for charcoal.

Many of the people living in northern Kenya are nomadic pastoralists who keep goats and camels, both of which are well-adapted to the harsh living conditions. Unfortunately, while an important

source of livelihood, these livestock further damage the environment as they overgraze and eat the few germinating tree seedlings that do exist.

The design challenge posed to students taking the STEM Engineering course at the International School of Kenya (ISK) was to see if these animals, rather than contribute to the destruction of the environment, could be part of the solution and act as vehicles for "seedball" dispersal.

Seedballs are tree and grass seeds coated in a protective "ball" of chardust (dust made from charcoal). The biochar coating of the balls helps to prevent the seeds within from being eaten by predators, such as livestock, birds, rodents, and insects, as well as protecting them from the extremes of temperature until the rains arrive.

Once soaked, the seedball helps retain and prolong a moist environment around the seed to encourage germination. An average camel can comfortably carry over 200kgs, which represents over 90,000 seedballs. What's more, if a partnership is established with the local community, they work for free!

In areas where there are few roads and rains are unpredictable, could freely roaming tree-planting camels help reforest Northern Ke-

nya? Students in the STEM Engineering course at ISK were determined to find out just that.

Following the design cycle, students started by researching camel behavior, geographic tree distribution, tree seed germination, as well as doing market research and gathering data on seedballs to inform their designs. Based on this research, students created different digital and physical prototypes that they used for testing purposes. Some designs employed arduino-controlled electric motors and servos to release the seedballs, while others focused on purely mechanical solutions, relying on the natural rocking movement of the camel to distribute the seeds.

To aid in the prototyping process, students built a metal camel on wheels to simulate the movement of a real animal. After a month of design iteration, the students were ready to test their designs on a real camel. Amid much hilarity, a camel was brought to school and students were able to test their various prototypes with the camel and finalize their designs before the actual field trial in a conservancy in northern Kenya.

Soysambu Conservancy in the great rift valley is a 48,000-acre wildlife conservancy and cattle ranch on the shores of Lake El-

... continued on p. 35

Thought Club: A Grassroots Model of Professional Development

By Justine Hitchcock

Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes, and having fun. Thought Club is all these things, and it is the sum of its parts. Thought Club models risk taking while growing and benefiting from the creativity it has inspired. It breaks the regular rules of professional development, providing a prototype model of grassroots collegial learning.

What is Thought Club?

Our Thought Club model applies design thinking to professional development by being flexible enough to shift and change as needed. The intent is to develop teachers as thinkers, the rationale being that in order to effectively facilitate thinking in students, teachers must understand their own thought processes. We want to create a school environment and culture in which teachers can be creative with their teaching in strategic and effective ways.

We began with Thought Club's "Blue Skies" weekly meeting, where teachers are given the time and space to share daily experiences, successes, and worries with their colleagues. This is focused conversation, facilitated in such a way as to turn thoughts into ques-

tions that push our thinking forward through curiosity.

Sound too easy? This simple model has already made a significant impact on school culture and elevated thinking in our classrooms. Counterintuitively, all Thought Club meetings are voluntary, require no long-term commitment, and are held after school. They always begin with a round of "What's on Your Mind?" where teachers take turns answering this question in whichever way they interpret it. The role of all other participants is to actively listen.

Once the round is complete, we pick out common themes that participants want to discuss further. The facilitator's role during this time is to push the discussion through questions that promote deeper thinking, challenge generalizations or assumptions, and model beautiful questions* that will move teaching forward. The conversation is recorded, and all meeting minutes are shared immediately after the meeting with all Thought Club members, whether or not they were present at the meeting.

In an effort to model ideal teaching practices, Thought Club includes an online component that differentiates for different levels of interest and need. People interested but unsure are invited to "lurk"



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and be a part of our discussions via Google Classrooms. This is a deliberate effort to create multiple entry points for staff to take part in this learning, and it works.

Members are now beginning to offer samples of their practices, pose questions for consideration by others, and share professional readings and insights. The most active members in the online community are not necessarily those who regularly attend meetings, showing that the two forums serve different needs. It also functions as an easy archive of discussions and ideas while reaching a wider audience than meetings alone permit.

So what? How has this made a difference?

In the initial months of Thought Club, it was not unusual for sharing to take a negative tone, as people tried to offload stress that had accumulated over the week. However, in time, as the "club" feeling became more collegial, that tone shifted. Now, discussions celebrate successes in the classroom, or raise professional questions and concerns in more proactive, problem-solving type of approach.

In this way, the opening part of Thought Club meetings act as a temperature check to gauge school culture and morale, as the open-ended structure has become a safe place for people to be heard.

As conversations shifted from "downloading" to inquiry, a more positive language of bonding began to emerge. The discourse of the group changed from that of negative venting to one of shared problems and a collective will to bring change.

We also saw an unexpected effect from sharing meeting minutes. These became a springboard for further conversations by those who hadn't attended, creating a domino effect. Minutes provided a model of motivated learners and used "water cooler conversations" to spread new expectations about the way we talk with one another as colleagues.

Now what? How has Thought Club developed?

After analyzing feedback, it became evident that some members were now ready for greater structure and focus than the "Blue Skies" format provided. This gave rise to "Thought Club In Focus." Each fortnight, In Focus members are given an online assignment, which consists of student activities/lessons focused on a particular area of thinking (currently "creativity"). Teachers then bring sample student responses to meetings, where we use a Visible Thinking routine to analyze and discuss student work. This provides a venue for teachers to collectively reflect on their practice, using evidence from their own classrooms, and keeps discussions directly focused on student impact.

Where this will lead us, we cannot yet tell you. That is the beauty of Thought Club. We are learning to embrace the greyness and unpredictability of creativity. We are inventing, experimenting, growing, taking risks, breaking rules, and making mistakes together. And boy, is it fun! ●

**A More Beautiful Question: The Power of Inquiry to Spark Breakthrough Ideas, by Warren Berger*

Tackling Deforestation With Camels

... continued from p. 27

ementaita. Due to its proximity to large settlements, the ranch suffers badly from illegal logging for firewood and charcoal. Every year, as part of ISK's intercultural trip program, a group of Grade 10 students do a three-day trek with camels through Soysambu, learning about the local culture and environment.

This year, in addition to the usual load, the camels carried the final versions of the seedball dispensers designed by the students. The camels spent three days planting indigenous acacia seedballs along a pre-planned path.

We look forward to coming back to Soysambu next year to evaluate the impact the seedballs have had and hopefully test out the next versions of camel seedball dispensers.

On the back of this project, Red Bull Amaphiko, a global program that champions social entrepreneurs driving positive change in their corner of the world, has made a short video about the project and supported its further development with the purchase of

150 kgs of seedballs—that's over 60,000 seedballs!

Furthermore, two other wildlife conservancies that also have camel herds have been in touch about the possibility of replicating the project on a larger scale, and with slightly different design specifications, since the camels in their conservancies are free-roaming.

This project, which has taken learning beyond the walls of the classroom, is a prime example of how the posing of engineering design tasks enables students to be authentically engaged in experiential learning to solve real-world problems—in this case, deforestation.

Engineering design tasks such as this provide natural opportunities to integrate science, mathematics, and technology. Students integrate their knowledge when applying it to a problem-solving task, giving their knowledge relevance. They appreciate that knowledge is not siloed into disciplines but rather integrated across fields and applicable to real-world problems. What matters most is effectively solving the problem, not determining where the knowledge comes from.

Engineering design tasks also afford students the opportunity to personalize their learning. Students can choose at what level of depth they wish to investigate/

research the problem to inform their designs. They can work to their strengths to come up with design solutions while still being challenged to work out of their comfort zones when necessary, as required by their designs.

Providing mentorship is key to keeping students on the path toward bringing their ideas and designs to fruition. In this task, different students have shown proficiency in a wide range of standards from Next Generation Science Standards (NGSS), Common Core, and Technology Literacy curricula.

In field testing the camel seedball dispenser designs, we also encountered opportunities to improve our cultural proficiency. Students were required to work with end users during field testing—in this case, Rendille nomadic herdersmen from northern Kenya. Without the human experience of talking to and learning from people of other cultures, the designs would not have been successful.

Going forward, we look forward to more opportunities for authentic learning using engineering design. The planet is our inspiration, and its problems are opportunities to develop solutions, one engineering design task at a time. ●

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