

**Dedicated to Improving
Science and Technology
Education through:**

- Teacher support
- Student employability
- Curriculum development
- Assessment
- Applied R&D
- Partnerships

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Assessment of Science and Technology Achievement Project (ASAP)

ASAP continues to be the lead project being undertaken by YSISTE. Twenty-two school boards are involved and now we have a contract from the Ministry of Education to prepare exemplars of student achievement in science and technology for the province. Michelle Marks (ASAP Project Officer) and Lisa Sougnyan (Exemplars Coordinator and YSISTE Program Coordinator) have been working intensively to complete final drafts of the tasks to be used for the Ministry Exemplars and these have now been sent out to the many teachers around Ontario who have agreed to use them in their classes during May and June. These exemplars will be analysed by teachers at the ASAP Summer Exemplars Workshop and selections will be made of the best examples of student work at each of the four achievement levels.

ASAP continues to reach teachers all over the province with its second and third series of workshops. These workshops provide teachers with hands-on experience of evaluating student work in science and technology using rubrics. They also have time for collaboration and sharing good practice, a factor that has consistently appeared as a very positive point on the evaluation forms. New workshops have now been planned for the next school year and additional workshop presenters will be trained to enable more teachers to receive them in all the partner Boards.

The ASAP tasks distributed on the CD-ROM last year continue to be reviewed and tested. At the request of many teachers, answers to the questions will be posted on the YSISTE web site soon. It is intended that the project will also generate a second edition of the ASAP CD-ROM to be published in two years time with new tasks that teachers have generated in their own classrooms and updated versions of the old tasks. Any teachers wishing to participate in the project should contact Michelle or Lisa at YSISTE or email ASAP@edu.yorku.ca.

International partnership forged with New Zealand Council for Education Research (NZCER)

In March this year Lisa Soughyan-Hayes travelled to Wellington, New Zealand to build an exciting partnership with NZCER. This organisation, closely linked with the New Zealand Ministry of Education develops Assessment Resource Banks (ARB's) for Science, Math and English. The visit focussed on the excellent field- testing and trialing systems that NZCER has in place to ensure the quality, reliability and validity of their assessment items. We are now developing our own systems to ensure the quality of the assessment items we are currently producing for ASAP (Assessment of Science and Technology Achievement Project). The partnership between the two organisations allows for the sharing of assessment resources and good practice to our mutual benefit. Chris Marston from NZCER paid a return visit to YSISTE in April. During his visit he gathered information on the MET exemplars project and the process for writing and reviewing ASAP Assessment tasks. He presented a seminar to visitors and staff and gave an informative and interesting talk on assessment in New Zealand.



Family of Schools Science and Technology Enrichment Project

This project is a collaborative effort between YSISTE and the Toronto District School Board. It brings together elementary teachers, high school students and grade 4 students for a unique and cutting-edge professional development experience. High school students work together with grade 4 students as teachers to deliver a series of learning experiences and a culminating assessment task in a grade 4 classroom. They have been specially trained to model the sign-down model of assessment. ASAP tasks have been used to provide the culminating experience and the whole process is being video taped to produce a professional development video to be used by the TDSB to model exemplary planning and assessment practices in science and technology. A celebration of the project will be held for participating teachers and students in April at Seneca @ York.



Westview Summer Science Project

This project will again provide placements for 12 high school students from Westview Secondary School. The students will be working for 6 weeks from July 3rd in a science/technology/laboratory environment. In addition to their work placement they will complete a comprehensive course dealing with career issues in science, such as gender issues and information on university courses and application procedures. As usual we have more students than we have placements and offers of a placement for a 'free' laboratory/research assistant would be welcomed! Call Lisa Soughyan-Hayes at 416 736 5269 for more information.



YSISTE Links with China

March 2000 also saw the development of new links between YSISTE and the People's Republic of China. Following the visit of Ms. Hu Jun to York's Faculty of Education for 4 months this winter, Graham Orpwood was invited to visit China in March. While there, he visited schools and research institutes in Beijing, Shanghai and Suzhou and signed a letter of intent to begin a five-year program of collaborative research and development with the China National Institute for Educational Research in Beijing. Areas of mutual interest include in-service teacher education in science and technology, "hands-on" activities relating to Science, Technology and Society, teachers' classroom assessment practices, and the concept of "quality" in science teaching. Professor Zhou of CNIER will pay YSISTE a return visit in Fall 2000 and opportunities to meet her and hear her speak about science education in China will be arranged.



Featured Article: I Believe I Can Fly.....

Written by Simone Gravesande

Simone Gravesande teaches Grade 7 at Gordon Graydon Senior Public School in Brampton

When I was approached by my principal to be a host teacher, my mind immediately took me back to when I was a teacher candidate...the anticipation, the nervousness, self-inflicted pressure to do the best possible job, the latter having a lot to do with the dreaded evaluation that would make or break your career as a teacher (or so I thought)!

I recalled a specific experience I had as a teacher candidate with a teacher who was admittedly one of the best teachers I've ever seen. She knew everything about everything and did everything perfectly. How could I "a little hot shot" (as the staff at her school endearingly nicknamed me) in Teacher's College measure up? The part I remember is that despite her obvious proficiency and experience, I was totally uncomfortable in her classroom. Her role as my host teacher was to criticize, rather than analyze; to demand rather than advise; to make me feel dejected, not reflective. She taught me about the kind of host teacher that I wanted to be; I knew that I wanted to be the opposite kind of host teacher than she had shown me. My principal ended our conversation by saying, "You would be a good example for beginning teachers". His statement has guided my endeavours with teacher candidates this year.

I view my role as a host teacher as one of mentorship. Albert Schweitzer, a noted medical missionary believed, "Example is not the main thing in influencing others...it is the only thing"¹. One of the best ways for students to learn is by example. The same holds true for teacher candidates. Examples of good teaching practices speak volumes to candidates who are willing to be reflective, and to analyze what works in the classroom and why. That has also meant that I've had to be more open about my own reflections of my practice. It has been a challenge for me to share my successes and failures with someone else who sees them first hand, and I've had to be willing to admit and discuss the reasons behind these-this is something that can be a challenge to do. Having teacher candidates has reminded me how important it is as an educator to take stock of what you do. It can be so easy to get caught up in the events of the day, (especially with students of the middle school age) that we let opportunities for introspection slip away. Hosting teacher candidates has been a frequent reminder that improving teaching practices comes from taking a critical look at what we do each day, listening to yourself and to your students. It requires

making adjustments based on what happens on a day-to-day basis in order to encourage and motivate students to achieve success. That is what I've tried to instill in our teacher candidates this year. Becoming a good teacher is a process, one that continues throughout your career. Learning how to assess your successes and learning from your disappointments is a skill that once learned is valuable to you as a teacher.

What has been most valuable about the experience of hosting teacher candidates is the interdependency that has developed and from which my students have benefited. This is best illustrated by the example of geese. You see, science has discovered why they fly that way:

“Research has revealed that as each bird flaps its wings, it creates an uplift for the bird immediately behind it. By flying in a “V” formation, the whole flock adds at least 71% greater flying range than if each bird flew on its own. Whenever a goose falls out of formation, it suddenly feels the drag and resistance of trying to go it alone. It quickly gets back into formation to take advantage of the lifting power of the bird immediately in front. When the lead goose gets tired, he rotates back in the “V” and another goose flies the point. The geese honk from behind to encourage those up front to keep up their speed. And finally, when a goose gets sick, or is wounded by gunfire and falls out, two other geese fall out of formation and follow it down to help and protect it. They stay with the goose until it is either able to fly again or dead, and then they launch out on their own or with another formation to catch up with their group”.ⁱⁱ

The host teacher-teacher candidate partnership is much like that of geese in their “V” formation. At times as the host teacher, it has been necessary for me to take the lead; at other times, I've had to fall out and let the candidate take the point. In some instances, we've both moved back and let our students pull up front; still at other times, we've had to abandon our plans, re-think and reflect before we rejoined the formation with a new strategy. And yes, everyone has done a lot of “honking”! What I have gained as a host teacher is the knowledge that people who share a common vision for the success of students in a classroom get where they are going more quickly and easily because they are travelling on one another's momentum. My candidates have helped me as much as I have helped them, and that alliance has benefited the students, the candidates and me.

ⁱ John Maxwell, *“Developing the Leaders Around You”* (Vancouver: Thomas Nelson, 1995).

ⁱⁱ Tom Worsham, “Are you a Goose?” *The Arizona Surveyor*, 1992.

YSISTE plans for the future

How will we be teaching science in 5 or 10 years from now? How will we be delivering professional development for teachers or new curriculum materials for the classroom? These are some of the questions that we at YSISTE have been challenged to look at as York and Seneca plan their new “Technology Enhanced Learning” building announced by the Ontario government as part of its new Superbuild program of expansion of post-secondary education facilities. While YSISTE is still very new, we realise that the world around us is changing even faster than much of education and we need to be forward thinkers if we are to continue to fulfill our mission. So if you have thoughts about where science and technology education will need to be in 2010, join us in developing this vision for the future! Email your thoughts to Graham Orpwood or Laurel Schollen.

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We've launched our new web site? Visit us at www.ysiste.com to find out about our programs, projects and useful links. We welcome your comments.