

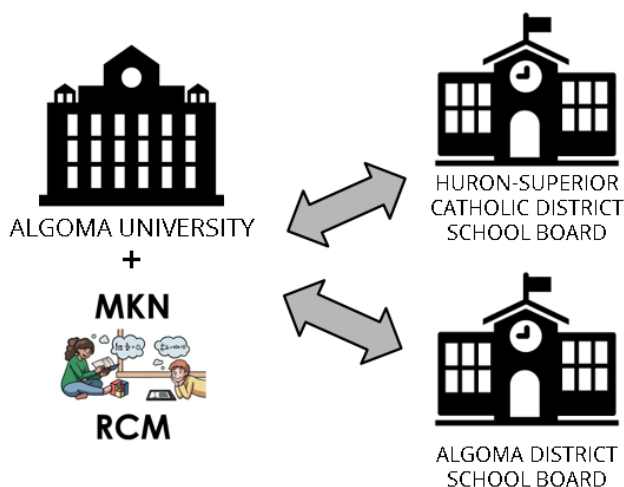
Results of the Algoma Connect Program (ACP)

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This program was developed by Algoma University in partnership with Algoma District School Board and the Huron Superior Catholic District School Board. In May and June, tutoring was offered to Grade 12 students from these two boards regardless if they were accepted to Algoma University. During July and August, we opened invitation to other secondary school students, as well as to Algoma University students. Each student tutor received 10 hours of training on how to work with school students, how to help with mathematics online, and how to be a tutoring team member. Each student tutor worked for 120 hours on activities directly related to tutoring school students (direct contact + preparation + consultation with a Coordinator of the program). A retired secondary school teacher with extensive experience in developing online programs helped develop the May-June program (outlining the topics and activities, training the student tutors, developing the resources, and being available to support the program).

BUILDING THE PROGRAM Making Connections



A TEAM APPROACH

Algoma University and the Mathematics Knowledge Network leveraged the long-standing relationship between Algoma University and the two local school Boards to meet important needs.

This program was coordinated by an ACP Stakeholder Team, led by several Algoma U. administrators and representatives of related departments (e.g., IT, Communications, Experiential Learning), the school boards' Superintendents, the secondary school mathematics Lead Teacher, and Martinovic (MKN). Throughout the summer (since May), we met weekly to discuss the program, plan, brainstorm, and resolve issues.

BUILDING THE PROGRAM Infrastructure



ACP TUTORS



CLOUD-BASED COMPUTING



TRAINING



ALGOMA UNIVERSITY STUDENT SUCCESS

SETTING UP FOR SUCCESS

Algoma University hired senior students as tutors for the ACP. These tutors represent a diverse, talented group ready to improve learning for Grade 11 and 12 Mathematics students.

The tutors were trained in online pedagogy and building relationships to create a safe, rich virtual learning space.

During planning, we paid attention to the following Qualities in a Successful Tutoring Program (Curry, 2016):

- Clear Purpose and Mission
- Staff Development
- Quality Program Management
- Strategic Plan for Participant (Tutors and Tutees) Recruitment
- Effective Management of Tutee Enrollment
- Consistent Attendance and Retention of Tutees
- Quality Tutor Supervision
- Required Ongoing Tutor Training and Orientation
- Effective Student Intervention
- Frequent and Consistent Tutoring
- Well-Structured and Well-Planned Tutoring Sessions
- Positive Tutor-Tutee Relationships
- Strong Partnership between Schools and Tutoring Programs. (p. 137)

THE ACP IN ACTION What does it Look Like?

STUDENT QUESTION
How did they make this diagram???

1. A ship leaves port A and must reach port B, which is located 1000 miles from A in S70°E direction. In order to avoid a hurricane, the ship started by sailing 600 miles in N40°E direction, reaching point C.

Figure 3.3.12
How far is the ship from the destination port B? In what direction must the ship sail to point B in order to reach its destination?

2. A tornado was spotted 10 miles north-east of town A, and is moving in the S70°E direction at 40 miles per hour. Suppose town B is located 30 miles east of A.

Figure 3.3.13
How close will be the tornado from town B in half an hour? (Here north-east means of course the N45°E direction.)

STUDENT QUESTION

"I am having trouble understanding domain and range. I get the idea when the domain and range is all Real numbers, but I don't get when there are restrictions???"

ACTIVE LEARNING

Tutoring sessions were truly a rich, interactive learning experience... and messy as Mathematics needs to be!



To additionally assess aspects of the ACP, we surveyed the tutors. Eight out of nine tutors responded to the survey. They were asked about 10 questions about the overall experience and skills obtained through the ACP.

Here is the summary of some of their responses. Please note that they completed the survey in the last week of August, since the organizers wanted to capture their overall experience, including training, tutoring, project marketing, development of resources, and leadership.

When asked to describe and evaluate the training they received and if/how it related to their future occupational or personal benefits, one tutor wrote:

We had great training sessions. I used everything we learnt like the virtual notebook and most importantly is that my students liked the virtual tutoring a lot. No one had difficulties navigating on the notebook, and sometimes I would make copies of the notebook and see that the students are editing the notes! I strongly believe that I will use the techniques I learnt here in the future as it improved my teaching skills especially during this pandemic where everything is online.

This tutor tutored 4 students, 2 of which they tutored at least once a week for the entire period, which was a success in itself. Some students were asked by their teachers to sign up with this program, while any student who read the information sent by the board or announced by Algoma University, could also join the program.

Sometimes, the tutors could use their native (such as Arabic) language with their tutees to better explain the work and to encourage them more. That was an outcome that we did not anticipate in designing the program.

When asked if this program affected their own academic development, the tutors mentioned getting higher grades, "because ... I was always reviewing and reusing the same information regularly." One tutor mentioned,

[Learning] a lot about different areas of mathematics, in fact i finished the whole series of BBC Earth about "was mathematics invented or discovered" which was really interesting and of course i have developed new insights in the mathematical world. To add, i also learned about the history of mathematics.

Other, personal development benefits were, becoming more social, better communicator, "opened up more to people I haven't met before," and increasing "comfort level with Technology and online resources." One tutor explained it as,

Being slightly on the introverted side, the tutoring experience has helped me become more open to voice out my ideas, progress and striking up a conversation.

Other tutors too reflected on the whole experience, where "I got to learn about the whole new perspective on marketing and development of the program from the ground-up..... I'm quite amazed by how much I have learned here about managing process that goes on backstage, given that I have no prior experience or background in business or project management." This is because as part of tutor training, they participated in developing all the marketing materials and program resources. In that

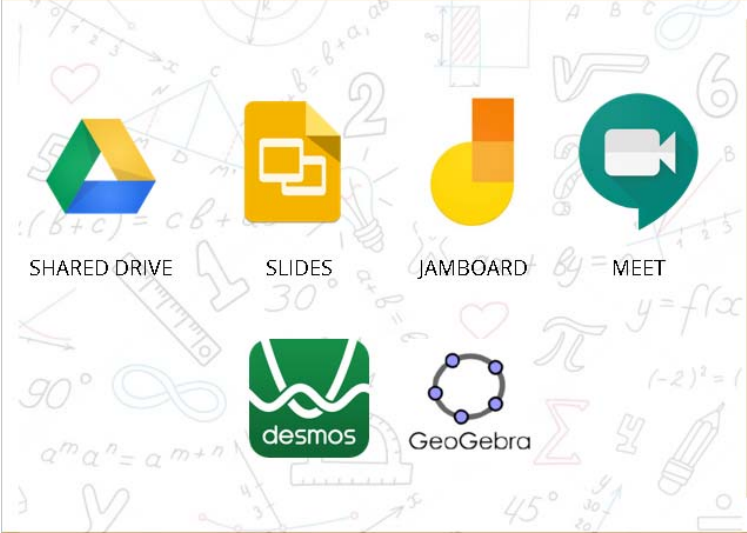
process, they worked with staff from Algoma Communications Department, IT, and Experiential Learning Team.

Other tutors mentioned areas in which they personally and academically developed through the program:

Yes, this actually helped me to get a step ahead towards the future approach. I want a career in hospital administration, which requires patience, curiosity to learn, easy grasping, good communication skills and other qualities which ACP taught me.

The skills that I developed during this entire Algoma Connect Program were punctuality, dedication for teaching, curiosity about learning, usage of friendly apps, making good relations with the co-tutors, respect and love for all and good listening ability.This tag of "ACP tutor" makes me a better person to get known for the public, gains all respect, showers all contentment and bestows me praiseworthy pride!

THE ACP IN ACTION A Collaborative Space



STUDENT-DIRECTED LEARNING

ACP tutors leveraged several collaborative tools working alongside students in real-time.

Student ownership of the learning was key as these tools allowed for student demonstration of learning using audio, exploration, and an online whiteboard for 'writing' mathematics.

We also asked tutors if they experienced some surprising outcomes of the program, to which one tutor enthusiastically responded with, "for sure being a tutor in an ACP program helped me to realize the struggle and efforts my teachers are doing for us for our best results....Thanks to all my Teachers." Another tutor described a different outcome:

My younger sibling has always been a bit of a struggler in terms of academics. I was never able to understand their difficulties with the courses. However, my perspective has changed since I have started with the ACP. I am now helping them with the same approach and in the same way I tutor with the ACP program and have been quite successful in easing out the pressure.

One of the survey questions was, "Would you tutor again? Why or why not?" All tutors responded positively:

Of course I would. Teaching has always been my dream. Tutoring at this moment will help me gain more Canadian experience, improve my English, enlarge my network, as well as reviewing what I know, regularly. ... I can confidently say that my online teaching skills developed a lot, thanks to the ACP!

I hope that I will be able to for this specific program. Over the course of the summer, I had developed a sense of ownership with the program as I was one of the founding tutors. Additionally, the ACP is a very modern version of employment and I feel that there is still a lot for myself to learn from. My favorite aspect of tutoring in this program is that it gives me a second opportunity to learn and be good at the math that I had previously struggled with ten years ago.

The program is now fully developed and tested. Algoma University is determined to continue with it in the new school year, opening it to all Grade 9-12 students.

Note: Visuals are from Imre et al.'s (2020) virtual presentation at the Seoul National University (SNU) Webinar Series 1.

Reference

Curry, J.J. (2016). A Qualitative Study of Peer Tutoring Developmental Mathematics at the University Level. Unpublished Doctoral Dissertation at Kent State University College of Education, Health, and Human Services.

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