Mathematics & Science Centre: Expanding for Student Success

High Level Design

VANIER
CÉGEP/COLLEGE

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Revisions

Version	Editor	Date
1.0a	Haritos Kavallos	Mar 17, 2013

Roadmap
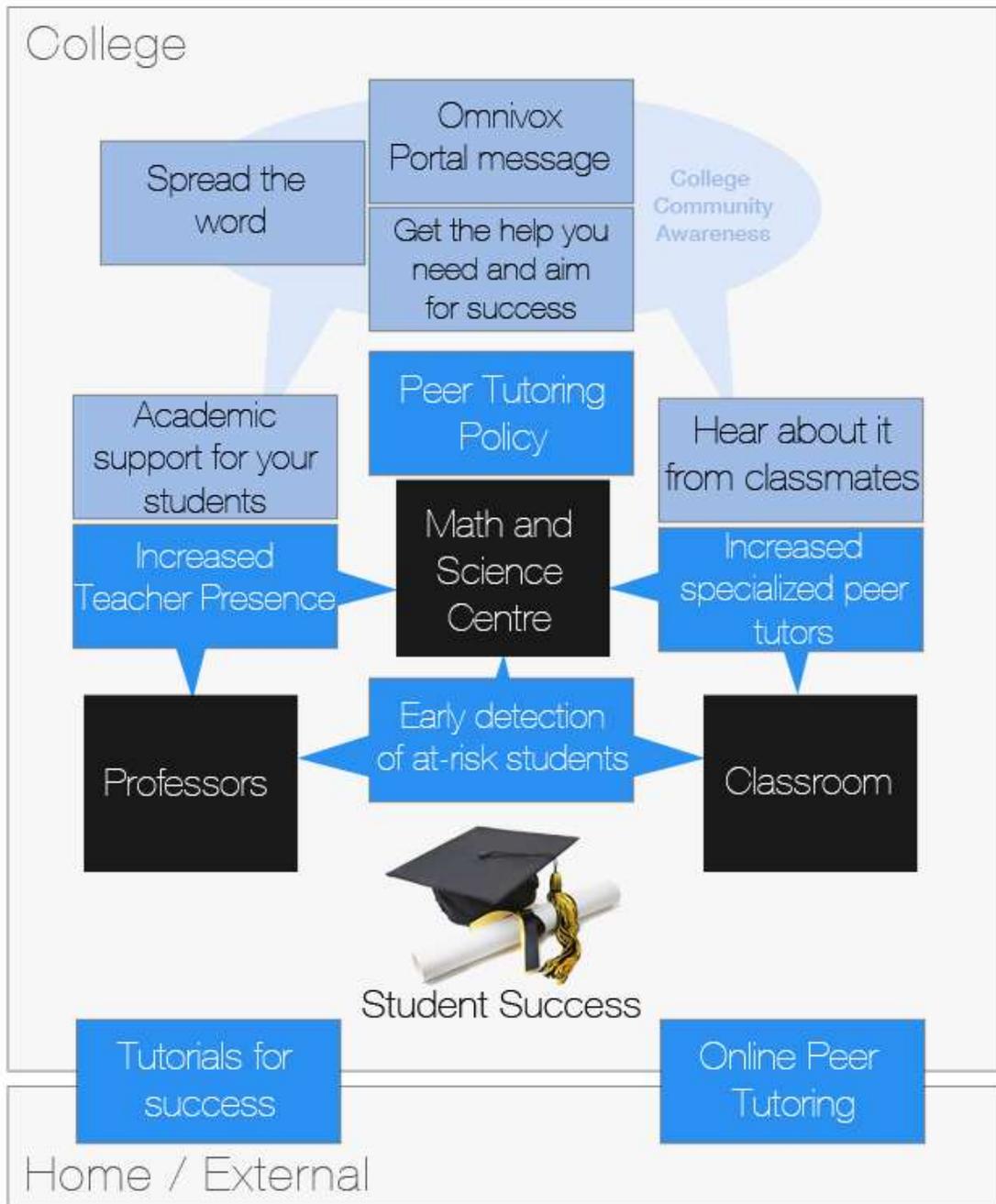
Legend:
Dark blue box → Expansion Campaign
Light blue box → Awareness Campaign

Recommendations

Primary Job - To expand the Mathematics & Science Centre's academic support service to include help for students in three-year career programs in order to ensure continued and increased student success rates.

Main Performance Objectives

Objective I	Students will determine whether or not they require academic support within the early in a given semester.
Objective II	These students will recognize and seek academic support and follow through with the recommended remediation as needed.
Objective III	Students will achieve academic success and transition from new student to a Cégep graduate within the expected time-to-completion.

Expansion Campaign

The proposed recommendations of this campaign will focus specifically on expanding the Mathematics & Science Centre's (MSC) services in order to accomplish the primary job and meet the performance outlined performance objectives.

Recommendation Title	Tutorials for Success			
Recommendation Type	Instructional	Objectives Covered		
Targeted Performers	Students			
Form	Interactive e-learning	I	II	III
Medium	Computer-based			
Overview	Online tutorials designed to interactively explain challenging topics in courses that have historically been difficult for a large percentage of students.			
Goal	Fill a resource and knowledge gap for students.			
Description				

Interactive online tutorials accessible either through the College computers or from the comfort of a student's home will be created for courses that include a high amount of challenging topics. These tutorials will cover core topics per course and will include interactive exercises that will allow performers to receive both formative and summative feedback in order to test their knowledge at different stages of learning.

Problem addressed by this recommendation: This recommendation addresses the need for more academic resources for students in career programs. Furthermore, it can be used as one medium to help fill a performance gap in skills and knowledge.

Recommendation Title	Early detection of at-risk students			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Professors, MSC Professionals, Students			
Form	Formal feedback	I	II	III
Medium	Print / Electronic copy			
Overview	Form that a professor fills out and submits to the MSC Professionals that recommends a specific at-risk student for remediation. MSC Professional provides feedback to the professor concerning the student and their progress with remediation.			
Goal	Identify at-risk students and create a feedback loop between relevant performers.			

Description

An electronic form would be developed that will allow a professor to easily communicate with the MSC professionals about which students are at-risk and would benefit most from remediation. The form would include information such as: student's name, student's ID number, professor's name, course name, and a comment area for a more detailed description that gives further insight about what the student is struggling with. The MSC would be responsible for reaching out to the student, arranging a meeting, and positioning the student for future success by recommending the most suitable academic support type. MSC Professionals would communicate back to the various professors with information on how flagged students were assisted.

Problem addressed by this recommendation: This recommendation addresses a performance gap in information and feedback flow between professors, at-risk students and the MSC. By implementing this recommendation, students in need of help are less likely to be missed and will have access to all the right information to obtain academic help early during the semester.

Recommendation Title	**Increase teacher presence in the MSC**			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Professors, Students			
Form	Semi-formal review, Q&A	I	II	III
Medium	In person			
Overview	Professors from various departments will allocate part of their required office hours load to be present in the MSC and ready to assist students.			
Goal	Fill a resource and knowledge gap for students.			
Description				

The MSC will work with career program department coordinators to arrange for professors to be put on a rotating schedule where they would be asked to complete part of their office hours in the Centre. Professors will be asked to check in with one of the MSC professionals during the start of their shift and will be required to be present at one of the teacher tables for the entirety of their shift.

Problem addressed by this recommendation: The presence of professors in the MSC can be motivating to both the students, and peer tutors who sometimes need help understanding a concept themselves before feeling comfortable enough to explain that same concept to a student. Furthermore, this recommendation adds a layer of resources to the environment for performers who are looking to fill a skills and knowledge gap.

Recommendation Title	**Increase specialized Peer Tutors**			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Peer Tutors, Students			
Form	Informal review, Q&A	**I**	**II**	**III**
Medium	In person			
Overview	Recruit students from different career programs who are in high academic standing and demonstrate good communication and active listening skills.			
Goal	Fill a resource and knowledge gap for students.			

Description
The MSC currently employs peer tutors that have a strong academic background in pre-university mathematics, physics, chemistry, and/or biology. If the Centre is to successfully cater to students in career programs, peer tutors need to be recruited from within those programs. Potential tutors studying in various career programs will be sought out with the help of the Registrar's Office who will compile a list of students that fall into the category of high academic standing. MSC Professionals will then personally reach out to each of them and formally invite them to a scheduled interview based on availabilities. **Problem addressed by this recommendation:** This recommendation addresses the individual need for academic support resources for students in career programs. Specifically, implementing this recommendation will assist struggling students to fill a skills and knowledge gap.

Recommendation Title	**Online Peer Tutoring**			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Peer Tutors, Students			
Form	e-learning / e-tutoring	**I**	**II**	**III**
Medium	Computer-based			
Overview	Web-based virtual classroom environment that will allow students and peer tutors to meet outside of the College's hours of operation.			
Goal	Fill a resource and knowledge gap for students.			

Description

The virtual classroom will allow students to connect real-time with peer tutors during the Centre's off-hours. Several willing tutors will be trained and asked to attend to students virtually where they will be able to explain concepts through the use of: videoconferencing tools, a two-way interactive whiteboard, instant messaging, and more. Students will have the opportunity to schedule a virtual appointment with a tutor, enter a virtual classroom with other students, or virtually meet as needed.

Problem addressed by this recommendation: Although this is a cost heavy recommendation, it can successfully meet the need for increased knowledge in performers and resources while also accommodating performers who are too constrained on time to seek peer tutoring during the typical 10am to 4pm hours of operation. This recommendation can also help motivate students to dedicate more effort to their assignments since they will have the opportunity to seek help from peers remotely in the event that they come across a concept that they do not fully understand.

Recommendation Title	**MSC Peer Tutoring Policy**			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	MSC Professionals, Peer Tutors, Students			
Form	Official policy	I	II	III
Medium	Print / Electronic copy			
Overview	Alter the MSC peer tutoring policy to increase the number of free private tutoring hours for students who have been flagged as at-risk.			
Goal	Ensure that students who have been flagged as at-risk have priority access to peer tutoring.			

Description

Students who have been flagged as being at-risk by either a professor or through the mid-term assessment process can be presented with the option to visit the MSC for help if appropriate. Academic support however is never forced; thus, students who actively seek help after being flagged are genuinely motivated to improve. The current peer tutoring policy limits all students to a maximum of 10 free hours of private (one-on-one) tutoring per semester. The proposed change would be to include a clause that would increase the number of free private tutoring hours for flagged students since in most cases, 10 hours is not enough.

Problem addressed by this recommendation: This recommendation seeks to prioritize the peer tutoring resource to students who are: flagged as at-risk and who are motivated to improve academically.

Awareness Campaign

The proposed recommendations of this campaign will focus on promoting and informing the Vanier College Community of the existing and new services that will be offered by the Mathematics & Science Centre (MSC).

Recommendation Title	Get the help you need and aim for success			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Students			
Form	Formal e-mail	I	II	III
Medium	Computer-based			
Overview	A MIO (internal email system used by students) sent off at the beginning of each semester to inform all students of the academic support available through the MSC and encourage students to visit the Centre.			
Goal	Inform students of academic support available through the MSC.			
Description				

At the start of the semester, MSC Professionals will write a MIO that would go out to students in career programs. The focus of the message will be to make the targeted students aware that the Centre has expanded in such a way that it can now assist them, even in their specialized career program courses. The message will finally end by welcoming students to visit the Centre at least once to become familiar with the area – the hope being that if they visit once, they will remember to visit a second time if they do end up requiring academic support.

Problem addressed by this recommendation: Reaching out to students directly and informing them of the academic support available to them is important as it addresses the need for information at the environmental level. It is especially important for students who are new to the College and might not otherwise be aware of where and how to seek academic help.

Recommendation Title	Academic support for your students			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Professors			
Form	Formal e-mail	**I**	**II**	**III**
Medium	Computer-based			
Overview	An e-mail message sent off at the beginning of each semester to inform professors of the different types of academic support available for their students.			
Goal	Inform professors of the new changes and additions to the MSC academic support service.			

Description

Students facing academic troubles are most likely to first visit their professors for help. As such, it is important for professors to be aware of the academic support services that are in place for their students. At the start of the semester, MSC Professionals will write an e-mail that explains that the services have been expanded to cater to students in career programs. The e-mail will also include information on how professors can work with the MSC in order to help identify at-risk students early and ensure that they get the proper type of remediation sooner than later.

Problem addressed by this recommendation: In order to create an environment that allows performers to obtain the required information when needed, it is important for all stakeholders to have access to such information. By explicitly extending the information about new academic support services to professors, students have yet another avenue that can encourage them to seek help, thus minimizing the chances that students would be left unaware.

Recommendation Title	Hear about it from your classmates			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Peer Tutors, Students			
Form	Lecture, Q&A	**I**	**II**	**III**
Medium	In person			
Overview	Current peer tutors will be scheduled to visit classrooms in order to inform students of the academic support services available through the MSC and how it can benefit students who are looking for remediation or enrichment.			
Goal	Encourage students to visit the MSC for remedial or enrichment purposes.			

Description
Peer tutors already under the employment of the MSC will be selected to work on an awareness campaign with MSC Professionals that will take on the form of short 5-10 minute class visits. The focus will be to visit career program classes (*especially classes that cover first or second semester courses since they historically observe the highest levels of attrition*) and informally let students know that the MSC has expanded its academic support services, and briefly outline how help can be obtained. Visiting tutors will also describe their personal experiences at the Centre as well as the benefits of seeking remediation or enrichment. Each visit will end with a Question and Answer period. **Problem addressed by this recommendation:** This recommendation will tackle two identified performance issues: (i) for some performers, the outlined benefits will motivate them as they will seek to visit the MSC with the hopes of finding help, enriching their learning experience outside the boundaries of the classroom, or making friends; students are also more likely to be motivated by experiences shared by their peers as opposed to experiences shared by a staff or faculty member. (ii) Information will be more readily available to students who might have otherwise not been aware that academic support exists for them – even if it had not previously (as is the case for career programs).

Recommendation Title	**Omnivox Portal Message**			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Students			
Form	Website	**I**	**II**	**III**
Medium	Computer-based			
Overview	An incentivizing message recommending remediation will display on the portal home page of a student who is at-risk in courses that the MSC can offer academic support for.			
Goal	Encourage at-risk students to seek academic support.			

Description
The Omnivox Portal is every Vanier College student's online hub and is used for anything from course registration to communication with teachers and classmates. Upon login, students are sometimes directed to read important messages from the College before continuing to other functions. For students studying in career programs or pre-university science programs, a similar message can be added to their portal if they have been flagged as being at-risk during the mid-term assessment process. Specifically, the message would remind the student of the course(s) they are at-risk in and briefly provide information on how the MSC can help them improve. **Problem addressed by this recommendation:** This recommendation aims to tackle the environmental factor that information is not readily available to students concerning academic support services. By specifically targeting students who are at-risk in one or more math, science or tech. related courses, this recommendation would provide an incentive by briefly outlining how academic support can make the difference between a pass and a fail.

Recommendation Title	Spread the word			
Recommendation Type	Non-Instructional	Objectives Covered		
Targeted Performers	Staff & Faculty, Students			
Form	Advertisement	I	II	III
Medium	Print			
Overview	Promotional and informative material in the form of posters and brochures assembled and disseminated to the Vanier College community in order to spread awareness of the academic support available through the MSC.			
Goal	Inform the Vanier College community of academic support available through the MSC.			

Description

The MSC currently uses a portion of their budget to print promotional and informative materials at the start of every semester. These materials are plastered in key locations around the College as advertisement. This recommendation proposes to continue with this strategy and at the same time, create new posters that make mention of the MSC's new offerings for students in career programs. These posters would be primarily put up on departmental bulletin boards specific to the various career programs.

An information brochure would also be assembled, printed and distributed through various mediums across the College. The brochure would briefly describe the different types of academic support services available through the MSC, where the highlight would be on the newer services. Information on why and when students should consider visiting the MSC will also be provided.

Problem addressed by this recommendation: This recommendation aims to tackle the environmental factor that information is not readily available to students concerning academic support services. By placing posters and brochures in key locations that are likely to attract student traffic, the environment is being modified to educate unaware students that help is available.