

Math Learning Center

The Math Learning Center (MLC) provides tutoring and supplemental instruction programs for all of our math courses, ranging from Basic Mathematics to Calculus, Differential Equations and Linear Algebra. The MLC also provides limited peer and faculty tutoring for all of Ohlone's Physics courses (including the trigonometry-based and calculus-based Physics) and in Engineering courses. The MLC also provides in-class peer tutors to all self-paced Basic Mathematics, Algebra I, Algebra II and Intermediate Algebra courses on both campuses.

On the Fremont campus, the MLC is located in a two-room facility in Hyman Hall and is open 65 hours during the week (days and evenings) and an additional 4 hours on Saturdays. One room is a quiet study area and in the other room the students can work in groups. Twenty-five personal computers are available for lab work and research. The computers are loaded with math computational software such as Maple, Matlab and Mathematica, and there are also some tutorial programs designed for specific math courses.

The MLC provides drop-in tutoring for all Math, Physics & Engineering courses. The drop-in hours are staffed by Math, Physics & Engineering full-time faculty, some adjunct instructors, the full-time MLC Coordinator, the half -time MLC Instructional Assistant, and peer tutors.

The MLC specifically supports the Basic Skills students with one-on-one tutoring support and the Math Homework Club. To get scheduled individual tutoring, the students need to contact the MLC Coordinator to match a tutor for them. The MLC Coordinator runs the Math Homework Club for Basic Skills students during specific hours during the day. This ensures consistent and reliable help for students. Students from basic skills classes get one-on-one tutoring or group tutoring during the Math Homework Club. In addition to homework help, the MLC Coordinator provides additional instruction to understand the math concepts and other helpful math study skills like time management, test taking strategies and how to reduce math anxiety. Also, the MLC Coordinator works with their instructors and provides periodic updates to the instructors regarding students' progress.

The MLC also provides other course -specific supplemental instruction programs like the Embedded Tutor Program and LAPSI. The Embedded Tutor Program targets Basic Skills students, whereas LAPSI supports other higher level Math courses. In these programs, the embedded tutors and LAPSI leaders attend the class twice a week and conduct 2 to 3 out-of-class group study sessions in which students compare notes, discuss readings and concepts, work on homework problems, work on handouts, review lecture materials, develop learning and study skills and predict test items. The embedded tutors are also available to tutor students individually.

All of the MLC tutors and LAPSI leaders are encouraged to enroll in EDUC 191A and EDUC 191 B, which train them to be effective tutors. By successfully completing the courses, the tutors earn College Reading and Learning Association (CRLA) Level I & Level II Certification and get pay increases.

On the Newark campus, the MLC is a space shared with the English Learning Center. The math tutoring services available are limited to only those faculty who hold office hours there (currently giving a total of about 15 hours a week). Additional staffing is not possible due to funding limitations.

Survey:

In Fall 2008, the MLC Coordinator Suba Marti and faculty member Rob Smedfjeld formed a subcommittee to assess and improve the MLC services available to Ohlone students. They developed a student learning outcome that would describe the goals of the MLC and, at the same time, could be applied to other parts of the Math program overall:

"Students will be part of a community and environment which fosters improvement and success in Math."

They decided to do a survey in the classrooms to determine students' awareness of the MLC and its services, the extent to which students are using those services, and their satisfaction with the services. The questions on the survey were written with the new student learning outcome in mind.

Toward the end of the Fall semester, they surveyed class sections in each of the three Program levels: 3 sections of Math 151 (Algebra I), 4 sections of Math 159 (Statistics), and 4 sections of Math 101 A (Calculus I). In selecting the sections to survey, attempts were made to include evening sections and sections at Newark.

The surveys revealed the following:

1. The MLC itself is not meeting and reaching the needs of the Basic Skills students as compared to the other academic levels. 78% of the Algebra I students said they had never gone to the MLC during that semester, as compared to 46% in Statistics and 29% in Calculus I who had never gone.
2. Students have diverse needs in going to the MLC. The students who had been to the MLC at least once were asked to select their main reasons for going. While the most common choice was "to get help with math" (74% chose this), other common choices included "to have a place to study" (55%), "to use a solutions manual" (38%), and "to use computers to do math assignments" (19%). (Note that students had the option of selecting more than one answer.)
3. The MLC's primary services seem to be rated positively overall by our students. Of the students who came to the MLC, 78% of them rated their experience getting help with math as "fair" to "excellent." (16% said they had no experience, indicating that they had gone to the MLC for other reasons.) In rating the MLC serving as a place to study, 81% of the students who came to the MLC rated it as "fair" to "excellent." (14% said they had no experience.) This seems to indicate that the two-room design of the MLC (with one room for group work and one for quiet study) is effective in meeting students' needs. It is worth noting that, for each of the services/characteristics rated, the percentage of "poor" ratings was never higher than 6%.
4. Students want more availability of services at the Newark campus. Although there were no specific questions on the survey regarding the MLC services at Newark, half of the Newark students that wrote comments on the survey specifically referenced wanting more comparable MLC services there.

Math 365:

The student attendance records for the MLC are recorded, via Timekeeper, in the Math 365 course. The XWFR reports from Datatel reveal the following levels of FTES:

	Spring	Summer	Fall
Year	Math 365/ Math Total	Math 365/ Math Total	Math 365/ Math Total
2005	120/338	21.2/148.53	88.4/351
2006	72.93/338	21.2/128	80.58/346
2007	62.0/336	0.53/ 149	54.58/352
2008	125.93/392	17.6/125.61	189.16/296.31

As can be seen from the above data, recorded FTES is higher now than it has been in the past four years. Part of this increase can be attributed to concerted efforts by MLC staff to have students more consistently log into Timekeeper. But, based on anecdotal observations within the MLC, we also feel that usage itself has risen. The changes in leadership in the MLC and new staff bringing in LAPSI and the Embedded Tutor Program back to the MLC have contributed to the increased usage. Also, as tutoring facilities are so limited at the Newark Campus, some students from the Newark Campus are going to Fremont to get help.

Suggestions and recommendations to improve MLC services:

1. Basic Skills:

As we can see from our survey, 78% of the Basic Skills students have never used the MLC. The MLC services should be integrated directly into the Basic Skills curriculum as part of the new innovative programs developed for Basic Skills students. With this in mind, the MLC Coordinator should be involved in decision-making and planning for college-wide Basic Skills efforts. Additionally, MLC services could be expanded to include more academic support programs such as lab courses, workshops for Math placement tests, prerequisite skills review for Algebra students and workshops on Math study skills.

2. Tutor training:

Every semester the MLC employs an average of 30 student tutors. As stated earlier, the student tutors are encouraged to enroll in EDUC 191 A & EDUC 191 B, the half-unit tutor training courses. Currently, these courses are taught by a faculty member, and the focus is on training the tutors in basic tutoring techniques and not on the content area they will be tutoring in. The MLC Coordinator supervises the tutors but is not currently involved in the EDUC courses. This creates a disconnect for the tutors when the person responsible for supervising them is not involved in how they are trained, other than observing them in the MLC and giving them feedback there. While recognizing that the teaching of courses is the responsibility of faculty, it is necessary to directly involve the MLC Coordinator in the tutor training to ensure consistency of expectations and to ensure that the tutors are meeting the needs specific to the MLC. It would also be beneficial to have regular training meetings and workshops for the tutors in order to ensure that quality is maintained, and to find some means of ensuring that all tutors (not just those that choose to sign up for the EDUC courses) receive training.

3. Professional Development training for MLC Staff:

To further improve the MLC services, the MLC Coordinator and other staff should have professional development opportunities to better train and manage the tutors. Resources should also be made available to allow for training on the design of innovative academic support programs to help Basic Skills students.

4. Staff requirements:

Currently, the MLC is staffed by one full time Coordinator and one part time evening Instructional Assistant. With the increased FTES, the need for the expansion of tutoring services at the Newark campus, and the additional supplemental instruction programs like LAPSI and the Embedded Tutor Program, additional staff need to be hired. Given the recommendations above with regard to a need for the MLC Coordinator's involvement in Basic Skills initiatives and tutor training, and given the nature of how work is divided among faculty and classified staff, it might be best to pursue a model where a faculty member and a classified staff member share in the coordination of the MLC or, alternatively, return to a model where the MLC Coordinator roll is held by a faculty member that will then have the ability to represent the curricular needs of the MLC, and additionally having an Instructional Assistant position in the daytime.

As more math classes are offered at the Newark campus, the demand for tutoring there will increase even more. Since it is not possible to schedule student tutors to work there unless they are being supervised, the lack of an Instructional Assistant (trained in math) at the Newark campus is preventing the students there from receiving the help they need. In general, the division of available services between the two campuses had been a common concern at Ohlone during the design of the new Newark campus, and it seems as though that concern has been largely ignored now that the campus is open. As with other services, the lack of MLC staff at Newark needs some resolution.