

LMC MATH LAB USAGE STUDY
Fall 2005 and Fall 2006

Presentation to the LMC Developmental Education Committee
October 23, 2007
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Overview: In Spring 2007 the DE Committee began an evaluation of the DE Program's Goal 2

DE Program Goal 2: Effectively integrate instruction and academic support services: tutoring, labs, supplemental instruction, Reading and Writing Center, counseling services, assessment, and learning communities. Make recommendations based on systematic assessment of these services, and periodically report to the college community on their effectiveness.

In the course of discussions about tutoring and the possible need for a centralized location for tutoring and other student support services, questions arose about student usage of current lab services. Specifically, there were concerns about possible differences in lab usage by students of color. This study was undertaken in response to these concerns.

Gathering the data: We focused on the most heavily enrolled developmental math courses: Math 12 (Prelgebra), Math 25 (Elementary Algebra), and Math 30 (Intermediate Algebra), in addition to the most heavily enrolled transfer-level course, Math 34 (Statistics). The Math Lab Coordinator, Carol, facilitated the downloading of SARS data from FA 05 (the 1st semester we had SARS in the math lab) and FA 06. OIR provided information about ethnicity. Enrollment data was obtained from cognos. Because this study focuses on math lab usage at the main campus, enrollment "off site" was not included. Myra prepared the analysis and report. The report summarizes frequency of math lab usage by course, gender, and ethnicity for the four largest ethnic groups (African American, Filipino, Hispanic, White).

Context: Developmental Math classes make up about 75% of math course offerings.

For FA 06 DE students accounted for

- 80% of the total number of students using the lab (unduplicated head count) (907/1,131)
- 72% of the total lab hours (11,443.45/15,893.52)
- 72% of the total lab visits (9,367/12,951)

Research questions: What percentage of the students enrolled in Prealgebra, Elementary Algebra, Intermediate Algebra, or Statistics use the math lab at least once in the semester? What percentage are "moderate to heavy users", i.e. attend the lab 5 or more times? Does the percentage differ by ethnicity? By gender?

Math Lab Usage Study: Fall 2005 and Fall 2006
Math 12 Prealgebra

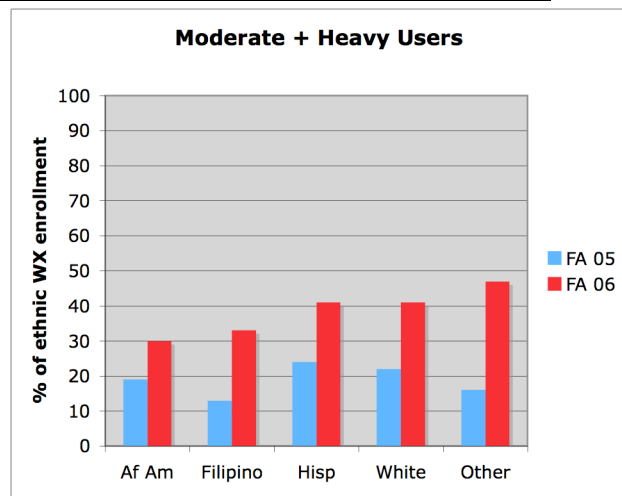
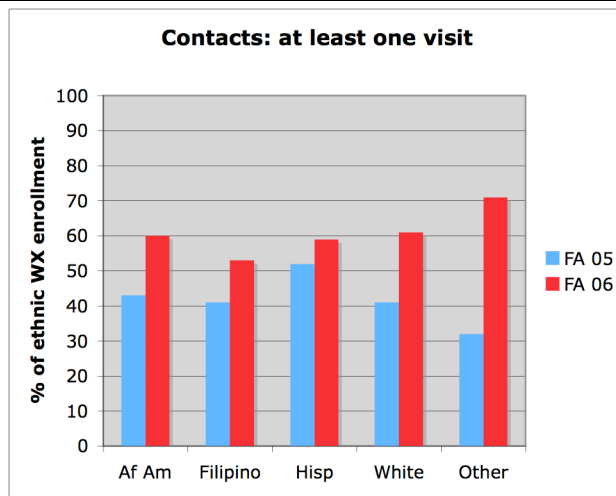
What percentage of Math 12 students use math lab services?

Unduplicated head counts			
	Contacts (at least one visit)	Moderate + Heavy Users (five or more visits)	WX enrollment for main campus
FA 05	110	52	244
FA 06	145	92	234

Visited at least once: FA 05: 45% (110/244) FA 06: 62% (145/234)
 Visited 5 or more times: FA 05: 21% (52/244) FA 06: 40% (92/234)

What percentage of each ethnic group of Math 12 students use math lab services?

Unduplicated head counts						
	Contacts (at least one visit)		Moderate + Heavy Users (five or more visits)		WX enrollment for main campus	
	FA 05	FA 06	FA 05	FA 06	FA 05	FA 06
African American	23	30	10	15	53	50
Filipino	7	8	3	5	17	15
Hispanic	39	47	18	32	75	79
White	30	45	16	30	74	73
Other	8	12	4	8	25	17
TOTALS (OIR)	107	142	51	89	244	234
TOTALS (SARS)	110	145	52	92	Enrollment counts from cognos	



Math Lab Usage Study: Fall 2005 and Fall 2006
Math 25 Elementary Algebra

What percentage of Math 25 students use math lab services?

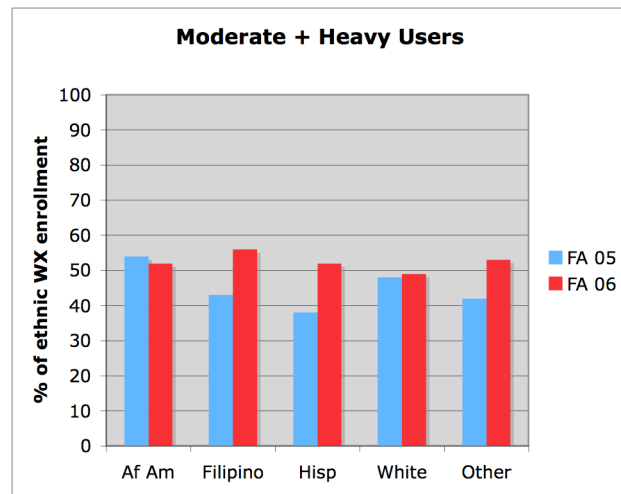
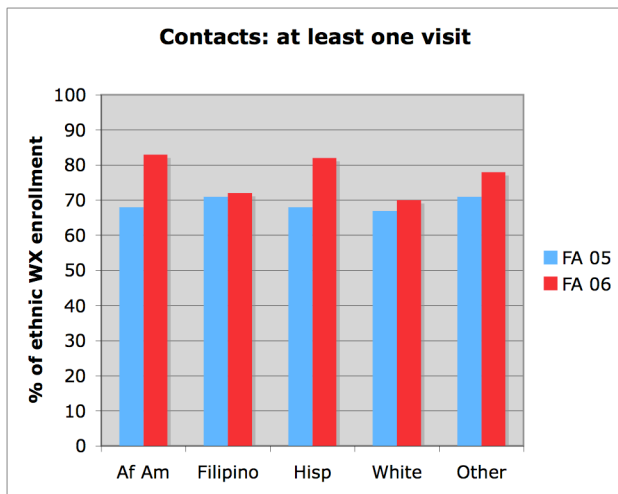
Unduplicated head counts			
	Contacts (at least one visit)	Moderate + Heavy Users (five or more visits)	WX enrollment for main campus
FA 05	168	110	239
FA 06	216	144	279

Visited at least once: FA 05: 70% (168/239) FA 06: 77% (216/279)

Visited 5 or more times: FA 05: 46% (110/239) FA 06: 52% (144/279)

What percentage of each ethnic group of Math 25 students use math lab services?

Unduplicated head counts						
	Contacts (at least one visit)		Moderate + Heavy Users (five or more visits)		WX enrollment for main campus	
	FA 05	FA 06	FA 05	FA 06	FA 05	FA 06
African American	25	40	20	25	37	48
Filipino	15	13	9	10	21	18
Hispanic	41	71	23	45	60	87
White	60	63	43	44	90	90
Other	22	28	13	19	31	36
TOTALS (OIR)	163	215	108	143	239	279
TOTALS (SARS)	168	216	110	144	Enrollment counts from cognos	



Math Lab Usage Study: Fall 2005 and Fall 2006
Math 30 Intermediate Algebra

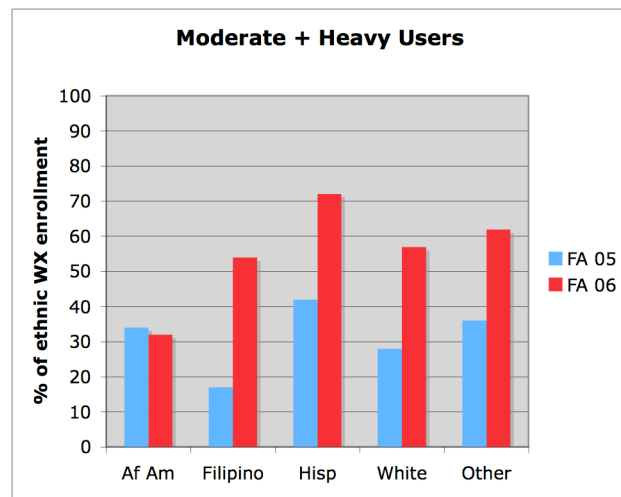
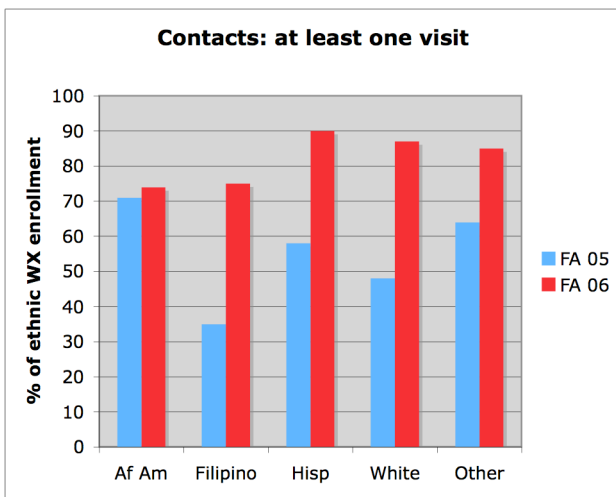
What percentage of Math 30 students use math lab services?

Unduplicated head counts			
	Contacts (at least one visit)	Moderate + Heavy Users (five or more visits)	WX enrollment for main campus
FA 05	145	85	248
FA 06	205	141	238

Visited at least once: FA 05: 58% (145/248) FA 06: 86% (205/238)
 Visited 5 or more times: FA 05: 34% (85/248) FA 06: 59% (141/238)

What percentage of each ethnic group of Math 30 students use math lab services?

Unduplicated head counts						
	Contacts (at least one visit)		Moderate + Heavy Users (five or more visits)		WX enrollment for main campus	
	FA 05	FA 06	FA 05	FA 06	FA 05	FA 06
African American	25	23	12	10	35	31
Filipino	8	18	4	13	23	24
Hispanic	36	53	26	42	62	59
White	41	67	24	44	86	77
Other	27	40	15	29	42	47
TOTALS (OIR)	137	201	81	138	248	238
TOTALS (SARS)	145	205	85	141	Enrollment counts from cognos	



Math Lab Usage Study: Fall 2005 and Fall 2006
Math 34 Statistics

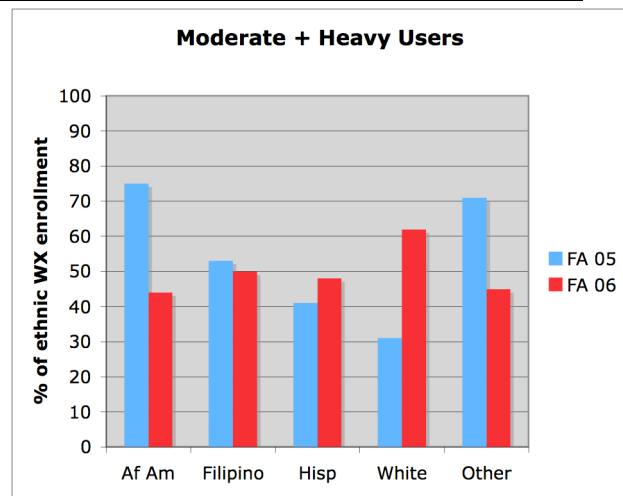
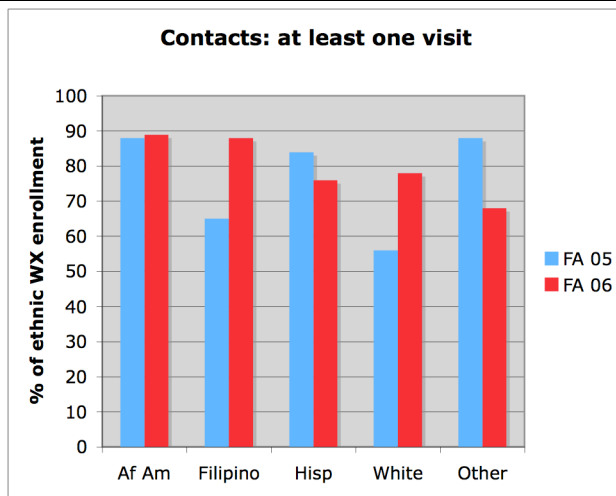
What percentage of Math 34 students use math lab services?

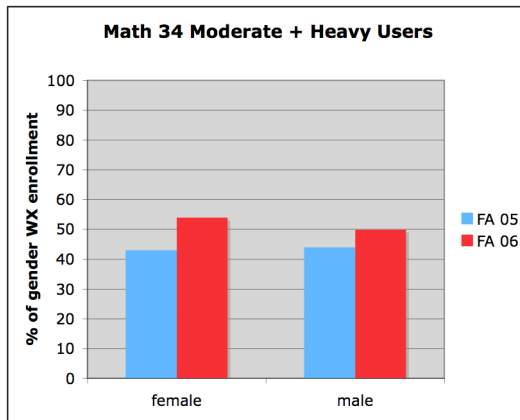
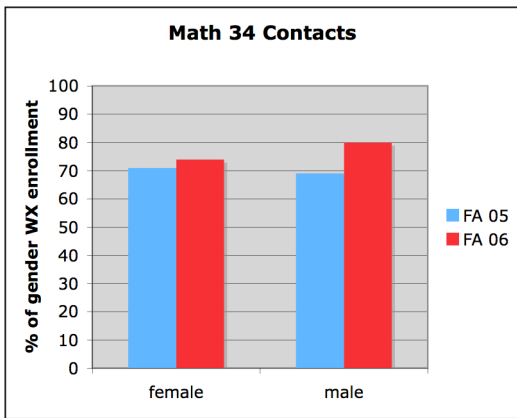
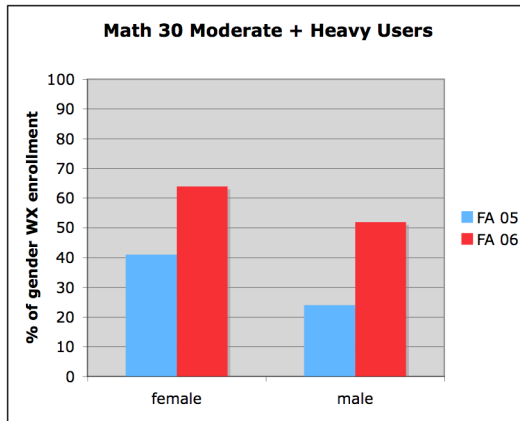
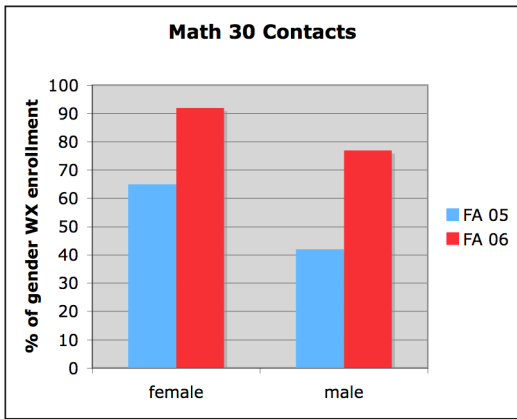
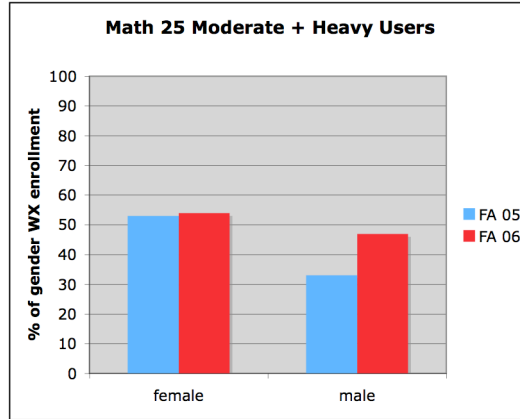
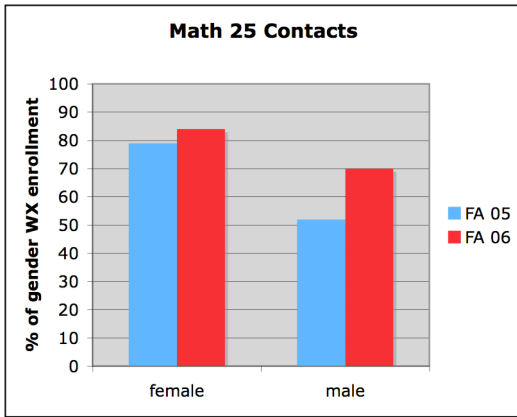
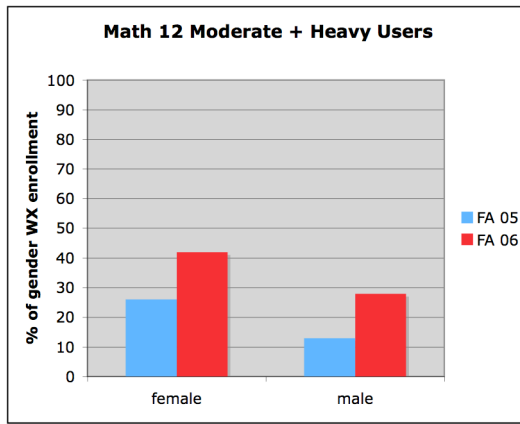
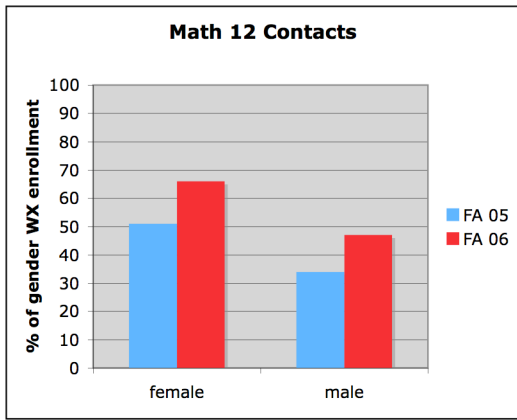
Unduplicated head counts			
	Contacts (at least one visit)	Moderate + Heavy Users (five or more visits)	WX enrollment for main campus
FA 05	95	60	131
FA 06	108	72	135

Visited at least once: FA 05: 73% (95/131) FA 06: 80% (108/135)
 Visited 5 or more times: FA 05: 46% (60/131) FA 06: 53% (72/135)

What percentage of each ethnic group of Math 34 students use math lab services?

Unduplicated head counts						
	Contacts (at least one visit)		Moderate + Heavy Users (five or more visits)		WX enrollment for main campus	
	FA 05	FA 06	FA 05	FA 06	FA 05	FA 06
African American	7	8	6	4	8	9
Filipino	11	14	9	8	17	16
Hispanic	31	22	15	14	37	29
White	29	39	16	31	52	50
Other	15	21	12	14	17	31
TOTALS (OIR)	93	104	58	71	131	135
TOTALS (SARS)	95	108	60	72	Enrollment counts from cognos	





Analysis of the data by the Developmental Education Committee on October 23, 2007:

- The higher the level of the math class, the higher the level of lab usage
- All ethnic groups used the math lab; there did not seem to be avoidance of the lab by any particular ethnic group
- In the developmental courses (Math 12, 25, 30) a much larger percentage of females used the lab than males.
- DE students comprised 80% of lab usage – anecdotal evidence suggests that the lab was used predominantly by transfer level students a decade ago
- In general, lab usage increased significantly in Fall 06 over Fall 05- do we know why?

Analysis of the data by the Math Department on November 14, 2007:

In addition to the above observations, the math faculty noted that there were some discrepancies by ethnicity in the moderate to heavy users of the lab. For example, in Math 12 roughly 60% of African-Americans, Hispanics, and Whites made at least one visit to the lab. But only half of the African-Americans who visited the lab at least once became moderate to heavy users, compared with about 2/3rds of the Hispanics and Whites. One hypothesis is that lab attendance is impacted by students withdrawing from their math classes (if African American have higher withdrawal rates, then they would also have lower rates of math lab usage.)

Questions to explore further:

- Is lab usage decreased by the option to use computer-assisted instruction in lieu of lab attendance?
- What factors contribute to students becoming (or not becoming) moderate to heavy users of the lab?
- What is the connection between lab attendance and success in the course?

Next steps:

The DE Math Committee will coordinate a survey of in SP 08 to determine why students who attend the lab initially do not become moderate to heavy users of the lab.