

College of Micronesia – FSM

Linkages between COMET Scores and Student Success for the Fall Semester 2008 New Student Cohort



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Introduction

The College of Micronesia – FSM administers each year an entrance test (COMET) to assist in determining who might be admitted into the college and at what level (degree, developmental education, certificate programs or non-admit). The entrance test consists of having potential college students writing an essay, measuring their reading comprehension and vocabulary (Gate McGinitie) and their mathematics ability. A combination of scores for the essay and reading comprehension are the primary factors for admission while mathematics score has been used for initial class placement of students.

The question often arises if the COMET is an accurate predictor of student success in college. However, often what is meant by student success is not defined. In this report, student success is represented by how students performed during their first semester in terms of academic standing and credits earned; retention rates from fall 2008 to fall 2009; and graduation rates.

The following report addresses the issue whether or not COMET is an accurate predictor of student success based on the fall semester 2008 new student cohort. The fall semester 2008 cohort was selected to allow inclusion of information on 3 year graduation rates for associate degree students (period from fall 2008 to summer 2011) as well as review of performance during their first semester in school (academic standing & credits earned), and retention rates from fall 2008 to fall 2009. Additionally, previous work had linked a substantial portion of the cohort's college performance data to their COMET scores.

Fall Semester 2008 New Student Cohort & Sample Size

For fall semester 2008 there were 855 new students out of a total student population of 2458.

Student Type	Total	Chuuk	Kosrae	National	Pohnpei	Yap
Continuing	1522	262	151	688	287	134
Conditional	1				1	
New	855	193	70	181	344	67
Returning	80	14	20	27	10	9
Total	2458	469	241	896	642	210

New students represented somewhat over one third of the total student population.

The sample size of students with COMET data is 78.2% of the total new student cohort.

Student Type	Total	Chuuk	Kosrae	National	Pohnpei	Yap
New w/COMET	669	121	44	153	305	46
New	855	193	70	181	344	67
Percent sample	78.2%	62.7%	62.9%	84.5%	88.7%	68.7%

The data presented is primarily based on distribution of students by degree type (AA – Associate of Arts, AAS – Associate of Applied Science, AS – Associate of Science, CA – Certificate, and UD – Undeclared) to allow comparison of like classes of students.

Table 1 - Fall 2008 New Students by Degree Type & Campus

Degree	Total	Chuuk	Kosrae	National	Pohnpei	Yap
AA	95		3	81	5	6
AAS	10		1	1	8	
AS	132	13	7	98	8	6
CA	617	180	59	1	323	54
UD	1					1
Total	855	193	70	181	344	67

The student sample size is 669 out of the overall 855 new students for fall 2008.

Table 2 - Fall 2008 New Student Sample by Degree type and Campus

Degree	Total	Chuuk	Kosrae	National	Pohnpei	Yap
AA	75		2	65	4	4
AAS	8		1	1	6	
AS	111	9	4	87	7	4
CA	475	112	37		288	38
Total	669	121	44	153	305	46

The sample represented 78.9% of associate of arts (AA) degree students, 80.0% of associate of applied science (AAS) students, 84.1% of associate of science (AS) student and 77.0% of certificate (CA) students.

Table 3 - Student Sample Size (%) by Degree Type and Campus

Degree	Total	Chuuk	Kosrae	National	Pohnpei	Yap
AA	78.9%	-	66.7%	80.2%	80.0%	66.7%
AAS	80.0%	-	100.0%	100.0%	75.0%	-
AS	84.1%	69.2%	57.1%	88.8%	87.5%	66.7%
CA	77.0%	62.2%	62.7%	0.0%	89.2%	70.4%
Total	78.2%	62.7%	62.9%	84.5%	88.7%	68.7%

Student Sample Performance on COMET

The following tables provides the student sample performance data on COMET for the essay, comprehension grade equivalent, math sum, and the overall COMET score as well as the distribution of the student scores in histograms.

The following tables provide the averages for student essays, reading comprehension (expressed as grade level equivalent (GE), mSum (total correct points scored on the mathematics component of COMET and the overall COMET score broken down by degree type (AA – Associate of Arts, AAS - Associate of Applied Science, AS – Associate of Science and CA – Certificate) Also included is standard deviation data for each of the data types.

Table 4 - Student Sample COMET Averages & Standard Deviation by Degree Type

Degree	AvgEssay	SDevEssay	AvgCGE	SDevCGE	AvgmSum	SDevmSum	AvgCOMET	SDevCOMET
AA	38.0	5.9	10.4	1.9	24.2	6.0	825.1	124.0
AAS	34.9	8.4	8.5	2.8	25.6	5.5	738.0	202.8
AS	38.7	5.5	10.3	1.9	22.3	5.3	806.1	108.2
CA	22.8	8.4	7.3	1.6	17.1	5.0	514.5	113.5

To give a picture of the distribution of students performance on COMET a set of histograms are provided.

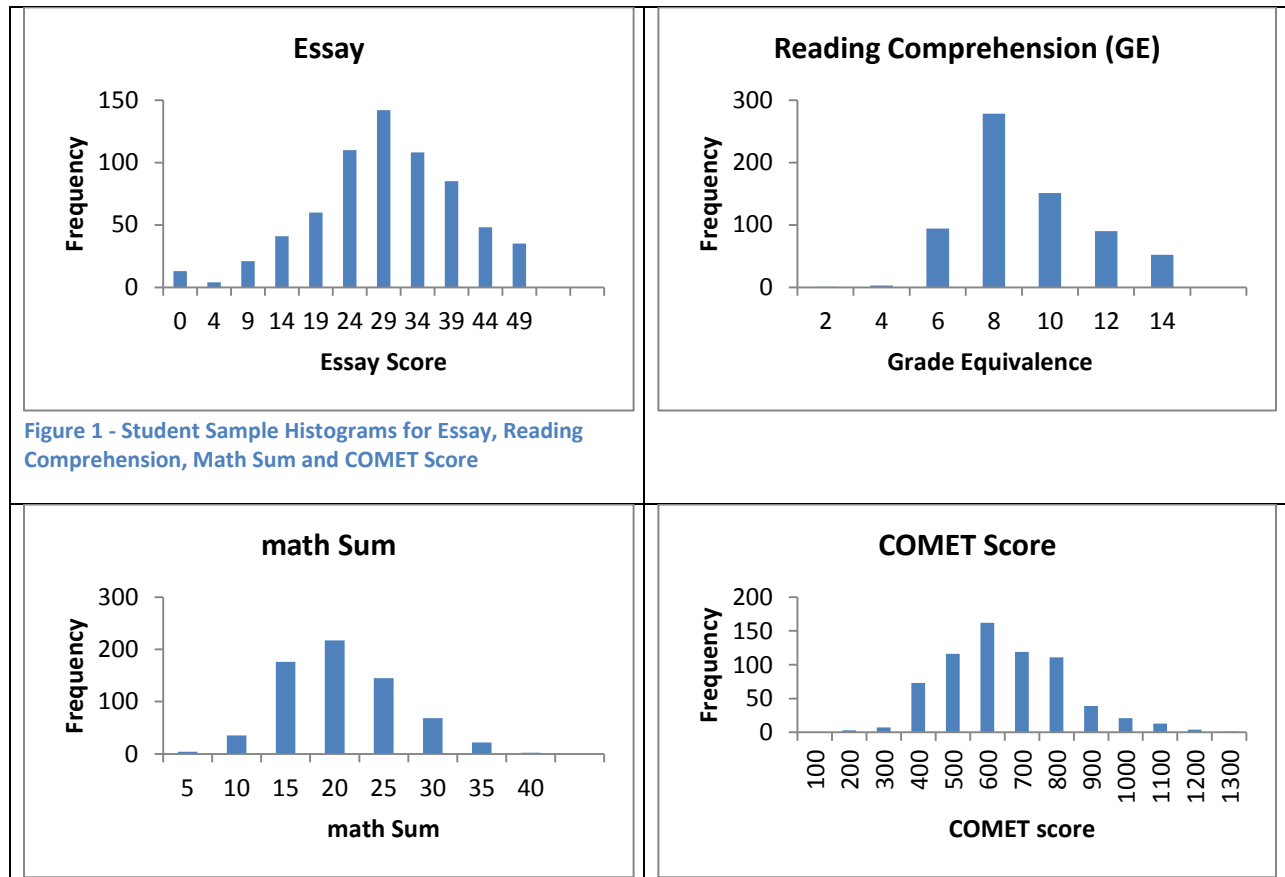


Figure 1 - Student Sample Histograms for Essay, Reading Comprehension, Math Sum and COMET Score

Some assumptions in this review regarding the impact of COMET on predicting student success:

- Generally higher COMET scores on essay, reading comprehension (GE), math sum and average COMET scores will increase likelihood of student success.

- If COMET scores are directly related to student success there should similarity between student success for AA and AS programs.

Comparison Data

This report addresses possible linkages between the COMET and student success in the areas of 1) academic standing in fall 2008 (Good Standing (GS) GPA of 2.00 or higher, Academic Program (AP) GPA less than 2.00 and Continued Probation (CP), 2) credits earned in fall 2008 (12 or more credits), 3) retention of students in fall 2009, and 4) three (150%) year graduate rate.

Student Sample Academic Standing in fall 2008

High portions (45.5%) of new students were on academic probation (less than 2.0 GPA) at the end of fall semester 2008. The highest level was 49.5% of certificate students, but all degree levels could be considered high at 37.8%, 33.3% and 25.0%.

Table 5- Student Sample Academic Standing Fall 2008

Degree	GS	AP	Sample	%AP
AA	50	25	75	33.3%
AAS	6	2	8	25.0%
AS	69	42	111	37.8%
CA	240	235	475	49.5%
Total	365	304	669	45.4%

Table 6 shows academic standing along with COMET data for fall 2008. Students who were on academic probation show somewhat lower scores than those in good standing. There are cases, such as for certificate students, where the average students in good standing had a lower essay score than those on probation. What perhaps is most striking in these data are the vast differences in the average GPA of students in good standing and those on probation.

Table 6 - Student Sample Fall 2008 Academic Standing with COMET Data

Degree	standing	Students	AvgGPA	AvgEssay	AvgCGE	AvgMsum	AvgCOMET
AA	AP	33.3%	0.95	37.4	10.6	23.0	823.2
AA	GS	66.7%	2.92	38.4	10.3	24.9	826.0
AAS	AP	25.0%	0.41	33.5	6.5	22.0	639.7
AAS	GS	75.0%	3.40	35.3	9.2	26.8	770.8
AS	AP	37.8%	0.81	38.0	10.4	20.7	793.8
AS	GS	62.2%	2.93	39.1	10.2	23.2	813.5
CA	AP	49.5%	0.99	23.3	7.2	16.0	507.8
CA	GS	50.5%	2.73	22.3	7.5	18.0	521.1

Student Sample Credits Earned Fall 2008

Tables 7 & 8 address credits earned for the student sample and related COMET data. Table 7 has data on students who earned 12 or more credits while table 8 provides data for students earning less than 12 credits. These data are critical in the sense that it is difficult for students to graduate, and certainly to graduate in a timely fashion, if they earn less than 12 credits each semester. As with academic standing, difference are seen across COMET data between those earning 12+ credits and those earning less than 12 credits.

Comparing the associate degrees grouping for those who earned 12 or more credits versus the group earning less than 12 credits we see a fairly great difference in the average COMET scores. However, for certification students the reverse is true. The group that earned 12 or more credits had lower average COMET scores and essay results – the group however did see higher math sum scores for the 12 and above credits group.

Table 7 - Student Sample Earned 12 or more Credits Fall 2008 with COMET Data

Degree	Students	AvgGPA	AvgCredEarned	AvgEssary	AvgCGE	AvgMsum	AvgCOMET
AA	37	3.05	13.5	38.6	10.7	26.4	850.7
AAS	6	3.40	13.1	35.3	9.2	26.8	770.8
AS	54	3.03	13.0	39.1	10.1	23.5	814.3
CA	194	2.63	13.3	21.8	7.2	17.7	506.5

Table 8 - Student Sample Earned less than 12 Credits Fall 2008 with COMET Data

Degree	Students	AvgGPA	AvgCredEarned	AvgEssary	AvgCGE	AvgMsum	AvgCOMET
AA	38	1.49	6.4	37.4	10.2	22.1	800.1
AAS	2	0.41	2.0	33.5	6.5	22.0	639.7
AS	57	1.27	5.0	38.2	10.5	21.1	798.2
CA	281	1.34	6.1	23.5	7.4	16.6	520.1

Student Sample Retention in Fall 2009

Retention data is presented in tables 9, 10, & 11. The overall sample retention rate was 61.4%, but varied from a low of 49.7% for certificate students to 100.0% for AAS student.

Table 9 - Student Sample Retention Data Fall 2009

Degree	Total	Chuuk	Kosrae	National	Pohnpei	Yap
AA	72	2	1	63	5	1
AAS	8		1		7	
AS	95	9	6	67	9	4
CA	236	52	19		148	17

Total	411	63	27	130	169	22
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Table 10 - Student Sample Retention Rates by Degree Fall 2009

degree	Total	Chuuk	Kosrae	National	Pohnpei	Yap
AA	96.0%	-	50.0%	96.9%	125.0%	25.0%
AAS	100.0%	-	100.0%	0.0%	116.7%	-
AS	85.6%	100.0%	150.0%	77.0%	128.6%	100.0%
CA	49.7%	46.4%	51.4%	-	51.4%	44.7%
Total	61.4%	52.1%	61.4%	85.0%	55.4%	47.8%

Table 11 provides detail on students retained in fall 2009 from the student sample. A few notes; while the sample is small for AAS students, by fall 2009 all students were retained and in good standing. Additionally, on average students had accumulated 43.2 credits which place them on a graduation track within 3years. As the average COMET data for AAS degree students is lower than for AA and AS students other factors are impacting the performance of students. Perhaps surprisingly, the mSum is the only consistent COMET indicator that is higher for students in good standing across the different data sets.

Table 11 - Student Sample Retention Data Fall 2009 Expanded with COMET Data

degr ee	stand ing	Stude nts	AvgTer mGPA	AvgCum GPA	AvgTermC redits	AvgCumC redits	AvgEs say	AvgC GE	AvgmS UM	AvgCO MET
AA	AP	6	0.98	1.85	4.3	19.3	33.0	9.4	23.1	717.0
AA	AS	8	0.81	1.28	4.3	16.1	34.1	11.5	22.8	809.1
AA	CP	3	0.00	1.72	0.0	19.3	33.7	9.2	23.3	745.5
AA	GS	55	2.42	2.74	10.3	37.1	35.5	10.0	24.0	778.1
AAS	GS	8	3.07	2.92	13.5	43.2	32.4	9.1	25.8	726.7
AS	AP	6	0.81	1.61	5.7	24.3	35.7	10.5	20.3	763.3
AS	AS	10	0.80	1.23	3.7	14.5	38.8	10.3	21.0	794.2
AS	CP	3	1.36	1.58	5.0	25.0	38.0	10.1	22.3	789.5
AS	GS	76	2.41	2.71	9.6	34.2	36.4	9.8	23.3	777.4
CA	AP	28	0.99	1.74	5.5	24.2	21.9	6.7	16.8	492.2
CA	AS	39	1.31	1.56	4.9	22.1	23.0	7.5	16.4	509.0
CA	CP	26	1.24	1.51	6.1	21.0	21.4	7.2	15.9	485.0
CA	GS	143	2.31	2.60	8.6	33.1	22.8	7.5	18.1	524.3

Student Sample Graduation Rates

Table 14 provides data on 3 year graduation rates by degree type. By reviewing degree types, 87.5% of AAS students graduated, 33.3% of AA students, 20.7% of AS students and 4.05 of certificate students. If only associate degree student data is reviewed, the overall associate's graduation rate is 28.4%.

A small number of students (3 AA & 4 AS) did graduate within 100% or two years for associate degrees with significantly higher essay scores in the 45 range. No certificate students graduated in 1 year (100% of time for certificate programs).

For 3 year graduation rates, COMET data does seem to be more indicative of success. Table 13 provided evidence that higher average math sums and overall COMET average do relate to success graduating in a 3 year period.

Table 12 - Student Sample 3 Year (150%) Graduates by Academic Year

Degree	AY	Count	AvgEssay	AvgCGE	AvgMsum	AvgCOMET
AA	AY2009/10	3	45.3	10.7	31.0	920.3
AA	AY2010/11	22	38.5	10.8	26.5	855.9
AAS	AY2010/11	7	32.9	9.2	26.6	742.3
AS	AY2009/10	4	45.3	11.0	25.9	960.8
AS	AY2010/11	19	36.9	10.2	24.8	796.1
CA	AY2009/10	8	26.8	7.7	17.8	580.9
CA	AY2010/11	11	20.5	8.1	20.4	544.3
Total		74				

Table 13 - Student Sample Graduate Summary Data

Degree	Students	AvgEssay	AvgCGE	AvgMsum	AvgCOMET
AA	25	39.3	10.8	27.0	863.6
AAS	7	32.9	9.2	26.6	742.3
AS	23	38.3	10.3	25.0	824.8
CA	19	23.1	7.9	19.3	559.7

Table 14 - Student Sample 3 Year Graduation Rates

Degree	Students
AA	33.3%
AAS	87.5%
AS	20.7%
CA	4.0%

Summary and Recommendations

The COMET results for new students in fall semester 2008 do give some indications that higher COMET scores across the essay, reading comprehension (GE), math sum and average COMET scores are most predictive in terms of 3 year graduation rates.

Associate's degree data is more revealing however, in terms of success. While AAS students were more likely to have better academic standing, retention and graduation rates their COMET scores were generally lower than for AA and AS students. Additionally, while the AA and AS

COMET scores were similar, AA students had higher success rates – especially graduation rates. As might be expected, other factors such as advising, course offerings, tutoring, and counseling may be impacting success.

COMET results are much less predictive for certificate students.

Basic recommendations:

- Additional new student cohorts should be tracked to see if similar trends are present.
- Data needs to be collected in fall semester 2012 regarding advising, tutoring and counseling of new students to assess their impact on student's success.
- Student focus groups should be conducted in fall semester 2012 to generate data regarding student perceptions on what contributes to and what hinders success in college.
- Improved methods for tracking of students transferring to other institutions of higher education should be in place by fall semester 2012 to assist in adjusting student success data.