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Self-Efficacy, Stressors and Performance of Mathematics Faculty of Selected SUCs in Region 1

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ABSTRACT

Abstract: This study determined the level of self-efficacy, stressors, and teaching performance of the 94 Mathematics faculty members of the selected State Colleges and Universities in Region I. Results reveal that, generally, the mathematics faculty members of the different State Colleges and Universities in Region I have a very satisfactory teaching performance based on their latest performance rating. Moreover, the self-efficacy of mathematics faculty members from the four SUCs in Region I is high. They portrayed the highest level of efficacy on classroom management, efficacy on instructional strategies and on student engagement. The mathematics faculty in selected SUCs in Region I was moderately stressed. The main reason for their stress lies on their relationship with their students. Furthermore, it was also found out that respondents' self-efficacy on classroom management affect their teaching performance.

***Keywords**: Teaching Performance, Self-Efficacy, Stressors*

Introduction

In any academic organization, its goal is geared towards the attainment of academic excellence and quality education. The extent that this can be fulfilled would depend primarily on the workforces which are the teaching personnel. They constitute the oil that greases the factors of academic performance and educational undertaking as a whole.

It is true that many teachers succeed in being an effective teacher by continuously enhancing their performance and setting high goals. However, others cannot meet these expectations. The reasons behind this include teachers sensed of self-efficacy as a job-specific disposition, everyday stress brought about by loads of tasks in school and even at their home. Teachers' high level of self-efficacy is positively linked with personal coping resources, while stress is related with negative personality characteristics, including low levels of self-efficacy.

According to Bandura (1977), nearly all people can recognize goals they want to achieve and things they would like to change .However, most people also could understand that putting these plans into action is difficult. Some researchers have found out that an individual's self-efficacy plays a major part in achieving goals, tasks, and challenges.

In the classroom, teachers necessarily portray a high level of self- efficacy for effective teaching. Teacher efficacy is defined as a teacher's perception of his or her abilities to convey needed outcomes of student learning and commitment, even to those students who may be indifferent and demanding (Tschannen-Moran & Woolfolk Hoy, 2001). Many researches have focused on this construct and this contributed to some educational concerns. However, there remain some queries concerning the role of teachers-efficacy in teachers' lives.

Another mitigating factor that affects the performance of teachers is stress. Stress is an unavoidable attribute of life and work. It generalized non-specific reaction of the body to any requirement made on it.

Factors leading to stress are often related to the characteristics of being effective or highly qualified and the pressures related to achieving those goals (Grant, 2007), as well as increased accountability measures for teachers (Sorenson, 2007). But, those are not the only reasons that add stress of the teaching profession. According to the most recent Teacher Follow-up Survey, 32% of teachers who changed schools cited that "poor working conditions" played a roles for their decision, and over 37% of teachers who left the profession stated they were leaving to "pursue a job outside of teaching" (Cox, Parmer, Tourkin, Warner, & Lyter, 2007). Teaching is a very demanding career, and teachers are withdrawing from the profession at an alarming rate (Hanushek, 2007)

In the study of Gerving (2007), it was found out that poor student behavior is the main contributor to teacher stress, especially in secondary level teachers. Some reasons for teacher stress are the lack of administrative support (Lambert, O'Donnel, Kusherman, , & McCarthy, 2006) and the excessive number of tasks that are required for new teachers who have not gained successful task-management skills (Brown S. , 2005).The combination of many circumstances will result in nearly 50% of

teachers leaving the profession before they reach their sixth year of teaching (Ingersoll & Smith, 2004). However, teaching seems to be a permanent profession for teachers who are working in the academe. It is because when they entered the profession, they already have embraced the challenges ahead of them including stress that they can get from different kinds of students, endless paper works, everyday lesson planning and others.

Students need teachers who are competent and hardworking. On the other hand, teachers want to have students who behave well in class and expect them to learn. At present, it is observed that some students are enthusiastic to learn and eager to undertake new challenges but others seem uninterested or unmotivated. Some students display high level of confidence in their abilities, while others seem unsure of themselves. These trigger teachers to think of strategies to use to increase students' confidence to learn. To develop high educational achievement among students, it is essential that it should begin building stronger self-efficacy among them.

In summary, the study will investigate the relative effects of self-efficacy and stressors to teaching performance of the tertiary mathematics faculty members of selected SUCs in region 1.

The findings of the study could be used to provide an assessment of mathematics faculty members in the different state colleges and universities in Region I as a basis for plan of actions on how to increase self-efficacy, cope with stress, and improve teaching performance. Consequently, it will translate into higher levels of student achievement in their mathematics courses.

OBJECTIVES OF THE STUDY

The study determined the levels of self-efficacy, stressors, and teaching performance of the Mathematics faculty members of the selected State Universities and Colleges in Region I. These SUCs include University of Northern Philippines, Ilocos Sur Polytechnic State College, Don Mariano Marcos Memorial State University and Pangasinan State University.

Specifically, it sought to:

1. Describe the respondents in terms of personal , job-related and school-related characteristics;
2. Determine the level of self-efficacy in terms of instructional strategies, classroom management and students' engagement;
3. Determine the level of stress of respondents in terms of classroom management, teacher-student relationship, relationship with colleagues and supervisors and teaching strategies/techniques,
4. Describe the teaching performance of the mathematics faculty members in the selected SUC's in Region I; and
5. Determine if self-efficacy and stressors significantly influence their teaching performance.

MATERIALS AND METHODS

The descriptive method of research was used in the study to determine the profile, self-efficacy and stress levels of tertiary Mathematics teachers in Region I. A survey was administered to all Mathematics faculty members in selected state colleges and universities in Region I.

The research instruments used for this study consisted of four parts. Part I gathered information about the respondents' personal and job-related and school-related- characteristics. Part II gathered information about the school-related characteristics of the respondents, Part III sought about self- efficacy and Part IV was used to gather information on the stressors on Mathematics encountered by the respondents. Questionnaire on self-efficacy was adopted from the study used by Moran (2001) which is the Ohio State Teacher Efficacy Scale (OSTES) while the questionnaire on stress level was adopted from the study of Toledo (2013) with a reliability index of 0.872.

The respondents of the study were the 94 mathematics teachers of different SUCs in Region I. These include 41 math teachers from Pangasinan State University; 24 math teachers from Don Mariano Marcos Memorial State University; 18 from Ilocos Sur Polytechnic State College and 11 from University of Northern Philippines.

The statistical tools used to analyze the data gathered in the study were frequency count and percentages, mean, and multiple linear regressions. The frequency count and percentage are used to describe the profile of the respondents. Mean was used to describe the level of self-efficacy, level of stress and teaching performance of the respondents. And lastly, the multiple linear regression was used to determine which among the independent variables significantly influence the dependent variables.

RESULTS AND DISCUSSION

Personal Profile of the Respondents

The personal profile of the Mathematics faculty members is presented in Table 1.

Table 1
Profile of the Respondents in terms of Selected Variables

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	f	%	f	%	f	%	f	%	f	%
Age										
20-29	22	53.66	14	58.33	2	11.11	5	45.45	43	45.74
30-39	11	26.83	9	37.50	8	44.44	3	27.27	31	32.98
40-49	5	12.20	1	4.17	5	27.78	1	9.09	12	12.77
50 and above	3	7.32	-	-	3	16.67	2	18.18	8	8.51
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Sex										
Male	20	48.78	9	37.50	7	38.89	7	63.64	43	45.74
Female	21	51.22	15	62.50	11	61.11	4	36.36	51	54.26
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Family size										
3 children & below	33	80.49	19	79.17	15	83.33	7	63.64	74	78.72
4 children & above	8	19.51	5	20.83	3	16.67	4	36.36	20	21.28
Total	41	100.00	24	100.00	18	100.00	11	100.00	74	78.72
Civil status										
Single	25	60.98	14	58.33	5	27.78	4	36.36	48	51.06
Married	16	39.02	10	41.67	13	72.22	6	54.55	45	47.87
Widowed	-	-	-	-	-	-	1	9.09	1	1.06
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Religion										
Catholic	34	82.93	14	58.33	13	72.22	10	90.91	71	75.53
Non catholic	7	17.07	10	41.67	5	27.78	1	9.09	23	24.47
Total	41	100.00	24	100.00	18	100.00	11	100.00	18	100.00

On Age. As a whole, there were 43 or 45.74% out of the total 94 Mathematics faculty members whose ages range is from 20 to 29 years old. It can also be noted in the table that among the four selected SUCs, PSU has the greatest number of young Mathematics faculty members.

On Sex. As a whole, there are more female than male mathematics faculty members. Fifty-one were female while 43 were male. Similarly, there were more female than male mathematics faculty members in the three SUCs namely PSU, DMMMSU, and ISPSC. However, there were more male mathematics faculty members than female mathematics faculty members in UNP.

On Family Size. As a whole, the great majority (74 or 78.72%) of the respondents belong to a family with three children or below while few (20 or 21.28%) belong to a family with 4children or above .Majority of the math teachers in each of the SUCs also belong to a family with 3 children or above.

On Civil Status. As a whole, there are more single (48 or 51.06%) than married respondents (45 or 47.87%). A Similar result of distribution is found out in PSU and DMMMSU where there are more single than married faculty. On the other hand, there were more married than single math faculty in ISPSC and UNP.

On Religion. As a whole, a majority (71 or 75.53%) of the Mathematics faculty members were Roman Catholics. Moreover, there are 23 or 24.47% who are non-Catholic. They were members of Iglesia ni Cristo, Jehova's Witness, Born Again Christians, and others.

On Job- Related Profile

The job-related profile of the respondents is presented in Table 2.

Table 2
Job – Related Profile of the Respondents

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	f	%	f	%	f	%	f	%	f	%
Educational attainment										
Bachelor degree	9	21.95	1	4.17	-	-	-	-	10	10.64
Bachelor degree w/ master's units	15	36.59	15	62.50	4	22.22	2	18.18	36	38.30
Master's degree	7	17.07	1	4.17	6	33.33	2	18.18	16	17.02
Master's degree with doctoral units	5	12.20	6	25.00	3	16.67	7	63.64	21	22.34
Doctor's degree	5	12.20	1	4.17	5	27.78	-	-	11	11.70
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Teaching experience										
5 years and below	25	60.98	13	54.17	5	27.78	4	36.36	47	50.00
6-10 years	4	9.76	3	12.50	4	22.22	3	27.27	14	14.89
11-15 years	4	9.76	7	29.17	2	11.11	2	18.18	15	15.96
16-20 years	3	7.32	-	-	3	16.67	-	-	6	6.38
21-25 years	3	7.32	-	-	1	5.56	-	-	4	4.26
26 years & above	2	4.88	1	4.17	3	16.67	2	18.18	8	8.51
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Work assignment										
Purely teaching	23	56.10	5	20.83	8	44.44	8	72.73	44	46.81
With other assignment	18	43.90	19	79.17	10	55.56	3	27.27	50	53.19
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Employment status										
Part time	-	-	-	-	2	11.11	2	18.18	4	4.26
Contractual	25	60.98	10	41.67	1	5.56	-	-	36	38.30
Temporary	1	2.44	8	33.33	1	5.56	-	-	10	10.64
Permanent	15	36.59	6	25.00	14	77.78	9	81.82	44	46.81
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Position										
Instructor	32	78.05	18	75.00	10	55.56	6	54.55	66	70.21
Assistant professor	7	17.07	5	20.83	5	27.78	4	36.36	21	22.34
Associate professor	2	4.88	-	-	3	16.67	1	9.09	6	6.38
Professor	-	-	1	4.17	-	-	-	-	1	1.06
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
Salary										
Hourly rate	-	-	-	-	3	16.67	2	18.18	5	5.32
12	31	75.61	18	75.00	6	33.33	5	45.45	60	63.83
13	-	-	-	-	1	5.56	2	18.18	3	3.19
14	2	4.88	2	8.33	1	5.56	-	-	5	5.32
15	1	2.44	3	12.50	1	5.56	1	9.09	6	6.38
16	1	2.44	-	-	1	5.56	-	-	2	2.13
17	2	4.88	-	-	4	22.22	-	-	6	6.38
18	3	7.32	-	-	-	-	-	-	3	3.19
20	1	2.44	-	-	-	-	-	-	1	1.06

23		-	-	-	-	1	5.56	-	-	1	1.06
24		-	-	-	-	-	-	1	9.09	1	1.06
29		-	-	1	4.17	-	-	-	-	1	1.06
	Total	41	100.00	24	100.00	18	100.0	11	100.00	94	100.00

On Educational Attainment. As a whole, great number of Mathematics faculty members (36 or 38.30%) has Bachelors' Degree with Master's units. There are also a great number (21 or 22.34%) of Mathematics faculty members who have Master's degree with doctoral units. Furthermore, there are few Doctoral degree holders among the respondents (11 or 11.70%).

Among the four SUCs, PSU and ISPSC both have five mathematics faculty members with doctoral degree. DMMMSU have one but none in UNP. However, PSU has several (9 or 21.95%) mathematics faculty members who are Bachelor's degree holders and are not currently enrolled for a Master's degree.

On Teaching Experience. Half of all the respondents (47 or 50%) have been teaching Math subjects for five years and below. As observed in the table, the longest teaching experience is 26 years and above.

Looking at the teaching experiences of respondents in each of the SUCs, PSU has the highest number of Mathematics faculty members who has been teaching for 5 years and below. Similar findings can be observed in the other three SUCs.

On Work Assignment. It can be gleaned from the table that there are more mathematics faculty members who handle other assignments (50 or 53.19%) than faculty members who are purely in teaching (44 or 46.81%).

DMMMSU and ISPSC also have more mathematics faculty members with another assignments or designations. On the other hand, PSU and UNP have more mathematics faculty members who are purely teaching.

On Employment Status. A great number (44 or 46.81%) of the respondents have permanent positions in their schools. However, there is a large number (36 or 38.30%) of respondents who are contractual. Part time status also exists in the region, particularly in ISPSC and UNP where there were both of the school have two mathematics faculty members who are extending teaching services as part timers. Furthermore, it can be observed that PSU and DMMMSU have many mathematics faculty members whose status of employments is contractual.

On Position. Majority (66 or 70.21%) of the mathematics faculty members have a position of Instructor followed by Assistant Professors (21 or 22.34%). It can also be noted that there is one mathematics faculty member who is a Professor.

On Salary Grade. The position of the respondents and their length of service determine their salary grades. Since there are many of the respondents who handle contractual positions, majority (60 or 63.83%) of the respondents have a salary grade 12. It should be noted that there are 3 respondents in ISPSC while 2 respondents in UNP who do not actually earn a salary based on salary grade but instead earn their salary based on hourly rate.

Table 3 presents the profile of the math faculty in terms of subjects handled and number of preparations.

Table 3
Job – Related Profile of the Respondents Regarding Subjects Taught and Number of Preparations

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	f	%	f	%	f	%	f	%	f	%
Subjects Taught										
Basic Math subjects	5	12.20	7	29.17	2	11.11	3	27.27	17	18.09
Major Subjects	5	12.20	3	12.50	1	5.56	1	9.09	10	10.64
Both Basic and Major Math Subjects	31	75.61	14	58.33	15	83.33	7	63.64	67	71.28
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00
No. of Preparations										
1-2 preps	2	4.88	4	16.67	1	5.56	2	18.18	9	9.57
3-4 preps	25	60.98	14	58.33	12	66.67	6	54.55	57	60.64

5 or more preps	14	34.15	6	25.00	5	27.78	3	27.27	28	29.79
Total	41	100.00	24	100.00	18	100.00	11	100.00	94	100.00

On Subjects Handled. As a whole, majority (67 or 71.28%) of the mathematics faculty members handle both basic and major math subjects. This shows that mathematics faculty members handle varied math subjects which allow them to master not only the basic subjects but also the major math subjects.

On the Number of Preparations. As a whole, the majority (51 or 60%) of the respondents handle 3 – 4 preparations. However, it can be observed that there is a great number (26 or 30.59%) of respondents who handle 5 or more preparations.

School-Related Profile

Table 4 presents the profile of the SUCs in terms of Class Size

Table 4
Profile of the School Regarding Class Size

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	f	%	f	%	f	%	f	%	f	%
Class Size										
25 and below	3	7.32	4	16.67	-	-	-	-	7	7.45
30	6	14.63	7	29.17	2	11.11	1	9.09	16	17.02
35	5	12.20	5	20.83	4	22.22	2	18.18	16	17.02
40	10	24.39	5	20.83	5	27.78	5	45.45	25	26.60
45	8	19.51	1	4.17	7	38.89	3	27.27	19	20.21
50 and above	9	19.51	2	8.33		-	-	-	11	10.64
Total	41	100.00	24	100.00	9	100.00	11	100.00	94	100.00

On Class Size. It revealed in the table above that 25 or 26.60% of the respondents claimed their average class size is 40 students.

Examining the class sizes in each of the SUCs, PSU, and DMMMSU compared to ISPSC and UNP are handling smaller class sizes (25 and below) and greatest class sizes (50 and above)

Table 5 below presents the adequacy of instructional materials in the SUCs.

Table 5
Adequacy of Instructional Materials as Perceived by the Mathematics Faculty Members of Selected SUCs in Region I

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
Instructional Materials										
1. Calculators	2.05	A	2.42	VA	2.17	A	2.36	VA	**2.20**	**A**
2. LCD Projectors	2.05	A	2.08	A	1.89	A	1.91	A	**2.01**	**A**
3. Computers	1.76	A	2.33	VA	1.67	A	2.00	A	**1.91**	**A**
4. Basic Textbooks	1.49	I	1.63	A	1.06	I	1.73	A	**1.47**	**I**
5. Supplementary Material/Other reference books	1.73	A	2.17	A	1.67	A	1.55	A	**1.81**	**A**
6. Course of Study/PSSLC	1.02	I	1.13	I	0.50	N	0.73	N	**0.91**	**I**
7. Workbooks	0.93	I	1.08	I	1.17	I	0.64	N	**0.98**	**I**
8. Measuring Devices/Instruments	1.10	I	1.13	I	1.39	I	1.18	I	**1.17**	**I**
9. Mathematics Bulletin board/Mathematics Corner	0.93	I	0.96	I	1.33	I	1.00	I	**1.02**	**I**
10. Prototype Lesson Plans	1.71	A	1.96	A	1.94	A	1.45	I	**1.79**	**A**
11. Graphing Board	1.37	I	1.33	I	1.56	A	1.09	I	**1.36**	**I**
12. Dice	1.49	I	1.96	A	1.22	I	0.91	I	**1.49**	**I**

13. Board Protractors	2.20	A	2.46	VA	1.83	A	1.91	I	**2.16**	**A**
14. Puzzles	2.27	VA	2.50	VA	1.72	A	2.45	VA	**2.24**	**A**
15. Board Compass	2.27	VA	2.75	VA	2.11	A	1.73	A	**2.30**	**VA**
16. Graphing calculators	1.12	I	1.63	A	0.72	N	0.64	N	**1.12**	**I**
17. Geo board	1.15	I	1.38	I	1.11	I	0.82	I	**1.16**	**I**
18. TEEPS and SCOPE Corner	1.24	I	1.50	I	1.17	I	0.91	I	**1.26**	**I**
19. Mathematics Magazines	1.73	A	1.63	A	1.06	I	1.64	A	**1.56**	**A**
20. Flash Cards	0.98	I	1.38	I	0.72	N	0.45	N	**0.97**	**I**

Legend: Very Adequate (VA) Adequate (A) Inadequate (I) None (N)

It can be seen in the table that the only instructional material that is very adequate is the Board Compass ($\bar{x} = 2.30$)

Moreover, calculators, LCD Projectors, computers, supplementary materials/other reference books, prototype lesson plans, board protractors, puzzles and mathematics magazines are considered as adequate instructional materials in the different SUCs in Region I as perceived by the mathematics faculty members.

On the other hand, instructional materials like basic textbooks, course of study, workbooks, measuring devices, mathematics bulletin boards, graphing board, dice, graphing calculators, geoboard, TEEPS and SCOPE corner, and flashcards are inadequately available.

Considering each of the SUCs, both ISPSC and UNP have no course of study/PSSLC, Graphing calculator and flash cards. Moreover, respondents from UNP also posted that there are no available math workbooks that can be used as a teaching material.

Teaching Strategies Used

Table 6 presents the different teaching strategies that the mathematics faculty members in the selected SUCs are implementing in their classrooms. In the study, there were 54 teaching strategies enumerated, but the table only presents the top 10 teaching strategies commonly utilized by the respondents.

As seen in the table, 85 or 90.42% of the respondents use Direct Instruction as the most common strategy in teaching. This shows that teaching mathematics is mostly done with a face to face instruction with their students.

Table 6
School- Related Profile Regarding Teaching Strategies of Respondents

	PSU (n=41)		DMMMSU (n=24)		ISPSC (n=18)		UNP (n=11)		As a Whole (N=94)	
	f	Rank	F	Rank	f	Rank	f	Rank	f	Rank
Teaching Strategies										
Direct Instruction	39 (95.12%)	1	21 (87.5%)	1.5	17 (94.4%)	1	8 972.3%)	4	**85 (90.42%)**	**1**
Cooperative Learning	36 (87.8%)	2	20 (83.3%)	3	12 (66.67%)	2	11 (100%)	1	**79 (84.04%)**	**2**
Lecture Demonstration	30 (73.17%)	3	21 (87.5%)	1.5	11 (61.11%)	3	10 (90.9%)	2.5	**72 (76.6%)**	**3**
Peer Tutoring	27 (65.85%)	4	19 (79.17%)	4.5	10 (55.56%)	5	5 (45.45%)	5	**61 (64.89%)**	**4**
Problem Based learning	22 (53.66%)	7	18 (75%)	6	9 (50%)	7	10 (90.9%)	2.5	**59 (62.77%)**	**5**
Venn Diagram	26 (63.41%)	5	19 (79.17%)	4	10 (55.56%)	4	2 (18.18%)	9	**57 (60.64%)**	**6**
Modular Approach	23 (56.09%)	6	11 (45.83%)	14	7 (38.89%)	10.5	4 (36.36%)	6	**45 (47.87%)**	**7**
Use of DLP Projector & Powerpoint	20 (48.78%)	8	13 (54.17%)	9	7 (38.89%)	10.5	1 (9.09%)	18	**41 (43.62%)**	**8**
Reporting	15 (36.59%)	11.5	12 (50%)	12.5	10 (55.56%)	5	2 (18.18%)	11.5	**39 (41.5%)**	**9**
Project-Based Learning	17 (41.46%)	9	13 (54.17%)	9	6 (33.33%)	13	2 (18.18%)	11.5	**38 (40.43%)**	**10**

The second most common teaching strategy in math teaching is Cooperative Learning in which the teachers allow students to learn better by working with other students in pairs or groups through varied activities which enhance their learning.

Many of the respondents are also using Lecture Demonstration in teaching math subjects as the third most commonly used teaching strategy. This teaching strategy is used primarily for emphasizing the need to study particular lessons.

Other most common teaching strategies which the mathematics faculty members employ are Peer Tutoring, Problem Based Learning, Venn Diagram, Modular Approach, use of DLP Projector and PowerPoint, Reporting, Project-based Learning, Partner work, Inquiry based Approach Concept mapping, use of varied computer programs and Predict-observe-explain.

Furthermore, it can be observed in the table that PSU, DMMMSU, and ISPSC are more into direct instruction while in UNP it is more on Cooperative Learning.

Teaching Performance Rating of Respondents

Figure 2 presents the performance rating of the mathematics faculty members by SUCs and as a whole.

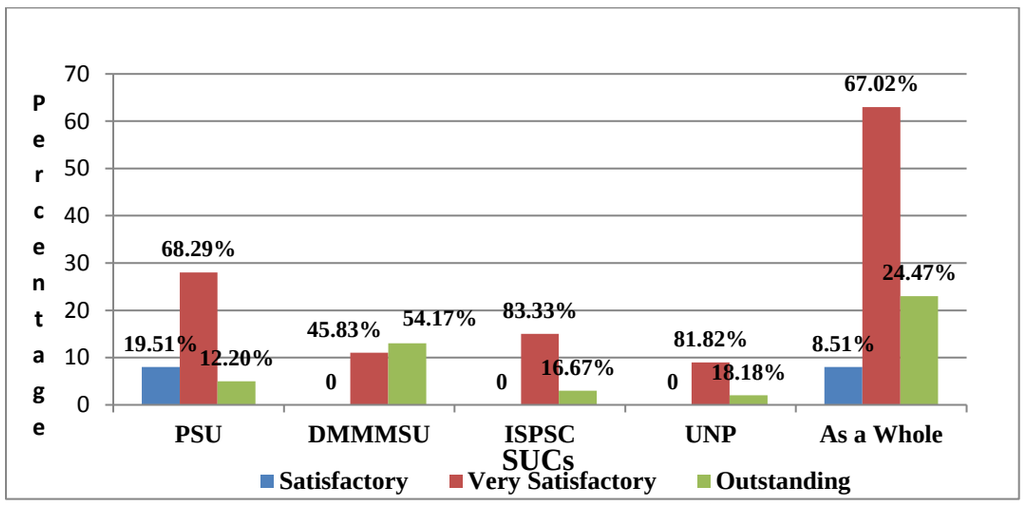

Figure 2. Teaching Performance of Respondents during the 2nd semester, S.Y. 2015-2016

The performance rating of the respondents was based from their latest total classroom evaluation which was during the second semester, S.Y. 2015 – 2016.

As shown in the graph, as a whole, 67.02% of the respondents obtained a Very Satisfactory performance rating while 24.47% obtained an outstanding performance rating. This indicates that each math faculty is performing well in their teaching profession.

Examining further the four universities, none of the respondents in DMMMSU, ISPSC, and UNP obtained a Satisfactory rating However, there are 19.51% of the respondents in PSU obtained satisfactory performance rating. Moreover, in DMMMSU, there are more math faculty who obtained Outstanding than those whose performance is very satisfactory.

Level of Self - Efficacy of the Respondents

Table 7-10 presents the level of self - efficacy of Mathematics Faculty members from the four selected SUCs in Region I.

On Self - Efficacy for Instructional Strategies

Table 7 presents the level of Self-Efficacy of respondents for Instructional Strategies

Table 7
Level of Self Efficacy of the Mathematics Teachers Regarding Efficacy for Instructional Strategies

Items	PSU		DMMMSU		ISPSC		UNP		As a Whole	
Factor 1. Efficacy for Instructional Strategies	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	x	DR
1. I can use different Instructional Strategies	3.95	QB	4.04	QB	3.94	QB	3.64	QB	3.94	QB

2. I can provide alternative explanation to students questions	4.20	QB	4.08	QB	4.33	GD	4.09	QB	4.18	QB
3. I can craft good questions for students	4.12	QB	4.21	QB	4.11	QB	4.09	QB	4.14	QB
4. I can implement alternative strategies in the classroom	3.98	QB	4.04	QB	3.94	QB	3.55	QB	3.94	QB
5.I can respond to difficult questions	4.29	GD	4.25	GD	4.17	QB	4.09	QB	4.23	GD
6.I can adjust lesson to the level of Students	4.10	QB	4.29	GD	4.22	GD	4.09	QB	4.17	QB
7. I can gauge student comprehension	3.83	QB	4.13	QB	4.22	GD	3.82	QB	3.98	QB
8. I can provide appropriate challenges for capable students	4.00	QB	4.04	QB	4.00	QB	4.00	QB	4.01	QB
Overall	4.06	High	4.14	High	4.12	High	3.92	High	4.07	High

Legend:			
	4.21 – 5.00	A Great Deal (GD)	Outstanding
	3.41 – 4.20	Quite a Bit (QB)	Very High
	2.61 – 3.40	Some Influence (SI)	High
	1.81 – 2.60	Very Little Influence (VLI)	Low
	0.00 – 1.80	Nothing (N)	Very Low

The respondents have a ***High*** level of self-efficacy on implementing instructional strategies where they rated themselves with an overall mean of 4.07. The results suggest that the mathematics faculty members regard themselves capable in using different instructional strategies in their teaching.

Furthermore, when the items were taken singly, the item "I can respond to difficult questions" obtained the highest mean rating of 4.23. The respondents believed that said item has "a great deal" along instructional strategies. This means that the mathematics faculty members have high regard in dealing with the queries of their students.

On the other hand, items "I can implement alternative strategies in the classroom" and "I can use different instructional strategies" obtained the lowest mean rating of 3.94 which means "quite a bit influence". This means that the respondents have their own strategy in teaching.

On Self-Efficacy for Classroom Management

The level of Efficacy of the respondents for Classroom Management is shown in Table 8. As shown in the table, there are 8 items which describe how teachers manage their classroom.

Table 8
Level of Self Efficacy of the Mathematics Teachers Regarding Efficacy for Classroom Management

Items on Efficacy for Classroom Management	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
1.I can control disruptive behaviour in the classroom	3.93	QB	4.17	QB	4.28	GD	3.91	QB	4.05	QB
2. I can get students to follow classroom rules.	4.07	QB	4.25	QB	4.39	GD	4.18	QB	4.19	QB
3. I can calm a student who is disruptive or noisy student.	4.00	QB	4.29	GD	4.44	GD	3.91	QB	4.15	QB
4. I can well establish a classroom management system with each group of students.	4.02	QB	4.13	QB	4.17	QB	4.27	GD	4.11	QB
5. I can withhold a problem student in	3.95	QB	4.33	GD	4.11	QB	4.45	GD	4.14	QB

ruining an entire lesson.										
6. I can properly respond to defiant students.	3.95	QB	4.17	QB	3.94	QB	4.09	QB	4.02	QB
7.I can make a clear expectation about a student behavior	4.02	QB	4.21	GD	4.06	QB	4.18	QB	4.10	QB
8. I can well establish a routines to keep activities running smoothly	3.93	QB	4.25	GD	4.17	QB	3.91	QB	4.05	QB
Overall	3.99	High	4.23	Very High	4.20	High	4.11	High	4.10	High

Legend:			
	4.21 – 5.00	A Great Deal (GD)	Outstanding
	3.41 – 4.20	Quite a Bit (QB)	Very High
	2.61 – 3.40	Some Influence (SI)	High
	1.81 – 2.60	Very Little Influence (VLI)	Low
	0.00 – 1.80	Nothing (N)	Very Low

Going over the table, the combined assessments of the mathematics faculty members fall at a "high" ($\bar{x} = 4.10$) level of self-efficacy on classroom management.

From among the eight items which have a "quite a bit influence" relative to efficacy on classroom management, the item "I can get students to follow classroom rules" got the highest mean rating of 4.19. This means that the respondents have their own approach to implement rules in their classroom.

On the other hand, the item "I can properly respond to defiant students" got the lowest mean of 4.02. This suggests that the faculty members have a minimal control as regard to how they will properly respond to a disobedient student.

Further, when the respondents where group by school, only the mathematics faculty of DMMMSU assessed their self-efficacy on classroom management at a "Very high" level.

On Efficacy for Student Engagement

Efficacy for Student Engagement is shown in Table 9.

Table 9
Level of Self Efficacy of the Mathematics Teachers Regarding Efficacy for Student Engagement

Items	PSU		DMMMSU		PSU		UNP		As a Whole	
Efficacy for Student Engagement	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
1.I can make students believe they can do well in schoolwork	3.95	QB	4.17	QB	4.39	GD	4.00	QB	4.10	QB
2. I can help students value learning	4.07	QB	4.21	GD	4.33	GD	4.09	QB	4.16	QB
3. I can motivate students who show low interest in schoolwork	4.12	QB	4.08	QB	4.28	GD	4.18	QB	4.15	QB
4. I can assist families in helping their children do well in school	3.44	QB	3.83	QB	4.06	QB	3.45	QB	3.66	QB
5.I can improve the understanding of a student who is failing	3.66	QB	4.04	QB	4.11	QB	4.09	QB	3.89	QB
6. I can help my students think critically	3.98	QB	4.21	GD	4.17	QB	4.27	GD	4.11	QB
7. I can foster student creativity	3.90	QB	4.13	QB	4.22	GD	4.00	QB	4.03	QB

8. I can get through to the most difficult students		3.78	QB	4.00	QB	4.06	QB	4.00	QB	3.91	QB
Overall		3.87	High	4.08	High	4.20	High	4.01	High	4.00	High
Legend:	4.21 – 5.00	A Great Deal (GD)				Outstanding					
	3.41 – 4.20	Quite a Bit (QB)				Very High					
	2.61 – 3.40	Some Influence (SI)				High					
	1.81 – 2.60	Very Little Influence (VLI)				Low					
	0.00 – 1.80	Nothing (N)				Very Low					

As a whole, the level of efficacy on student engagement of the mathematics faculty members of selected SUCs in the region is "high" ($\bar{x} = 4.0$). A similar outcome can be obtained when the respondents were grouped according to their respective institutions.

Further, all the eight items have "a quite a bit influenced". "I can help students' value learning" got the highest mean rating of 4.16. This result suggests that the faculty members are doing their best to assist and motivate the students to do well in their studies.

Meanwhile, item "I can assists families in helping their children do well in school" obtained the lowest rating ($\bar{x} = 3.66$.). This finding implies that the faculty members have a little involvement with regards to how the family members especially the parents monitor the progress of their children. This is because in the tertiary level monitoring is done by the guidance counsellors.

Self Efficacy of the Mathematics Faculty

Summarizing the results, Table 10 presents the level of self-efficacy of the mathematics faculty regarding the three factors as a whole.

Table 10
Summary of the Level of Self Efficacy of the Mathematics Faculty

	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
Factor 1. Efficacy for Instructional Strategies	4.06	High	4.14	High	4.12	High	3.92	High	4.07	High
Factor 2. Efficacy for Classroom Management	3.99	High	4.23	Very High	4.20	High	4.11	High	4.10	High
Factor 3. Efficacy for Student Engagement	3.87	High	4.08	High	4.20	High	4.01	High	4.00	High
Overall	3.97	High	4.15	High	4.17	High	4.01	High	4.06	High

As shown in the table, the overall level of self-efficacy of the Mathematics faculty members of the four selected SUCs in Region I is interpreted as "high" as evidenced by the mean rating of 4.06. The table further depicts that, among the three factors considered, the respondents posted highest self-efficacy on classroom management while lowest on student engagement. This suggests that the mathematics faculty members should not only supervise their student learning but they should be involved in improving their students well-being as a whole.

Level of Stress among the Mathematics Teachers

Table 11-15 presents the level of stress among the mathematics faculty members of selected SUCs in Region I.

Level of Stress on Classroom Management

Table 11 presents the level of stress of the Mathematics faculty members of selected SUCs in Region I along classroom management

Table 11
Level of Stress of Respondents in terms of Classroom Management

Stressors / Classroom Management	PSU $\bar{x}$	PSU DR	DMMMSU $\bar{x}$	DMMMSU DR	ISPSC $\bar{x}$	ISPSC DR	UNP $\bar{x}$	UNP DR	As a whole $\bar{x}$	As a whole DR
1. Activities are not well facilitated with a large number of students.	2.07	SO	1.92	SO	2.06	SO	2.09	SO	2.03	SO
2. I feel I cannot manage too crowded class,	1.71	SO	1.67	SO	1.67	SO	2.18	SO	1.74	SO
3. I do not feel comfortable in an inconvenient work environment.	2.00	SO	1.75	SO	1.89	SO	2.18	SO	1.94	SO
4. I feel bad and irritated in a poorly ventilated room.	2.29	SO	1.88	SO	1.89	SO	2.36	AE	2.14	SO
5. I am disturbed with the noise of students	2.24	SO	2.04	SO	1.83	SO	2.27	SO	2.11	SO
6. Untidy classroom does not inspire me.	2.07	SO	1.92	SO	1.67	SO	2.00	SO	1.95	SO
Overall Mean	2.06	MS	1.86	MS	1.84	MS	2.18	MS	1.98	MS

Legend:

1.0 – 1.66	(SE) Seldom	(LS) Low
1.67 – 2.33	(SO) Sometimes	(MS) Moderate
2.34 – 3.00	(AE) Always	(HS) High

As seen in Table 11, the level of stress of the respondents as regards to classroom management as a whole is interpreted as "moderate' with a mean rating of 1.98. The result is similar when the respondents are grouped by school.

Moreover, the table shows that all items were evaluated at "sometimes" level by the respondents. Among these items, the item "I feel bad and irritated in a poorly ventilated room" obtained the highest rating of 2.14. This result also is reflected in the assessment of the respondents in one of the university considered in the study where the faculty members rated this item as "always". This means that the faculty members is bothered by poor ventilation and conditions if their classrooms.

Meanwhile, the item "I feel I cannot manage too crowded class" obtained the lowest mean rating of 1.74. This implies that the respondents were unconcerned already with the number of student they have in their classes. The findings contradict the study of Rojas which emphasized that class sizes is a contributor to stress.

Level of Stress on Teacher-Student Relationship

Table 12 presents the level of stress among the Mathematics Faculty members along Student-Teacher relationship.

Table 12
Level of Stress of the Mathematics Faculty Regarding
Teacher-Student Relationship

Teacher-Student Relationship	PSU $\bar{x}$	PSU DR	DMMMSU $\bar{x}$	DMMMSU DR	ISPSC $\bar{x}$	ISPSC DR	UNP $\bar{x}$	UNP DR	As A Whole $\bar{x}$	As A Whole DR
1. I am bothered by parents' comments about my teaching	1.24	SE	1.13	SE	1.56	SO	1.27	SE	1.28	SE

	mathematics.										
2.	No effort and support of parents to mathematics activities.	1.51	SE	1.38	SE	1.78	SO	1.45	SE	1.52	SE
3.	Lack of motivation to learn mathematics discourages me.	1.66	SE	1.63	SE	1.83	SO	1.73	SO	1.69	SO
4.	Students' misbehavior in class annoys me.	1.90	SO	1.88	SO	1.83	SO	1.91	SO	1.88	SO
5.	Lack of openness in my class does not make me effective.	1.63	SE	1.75	SO	1.83	SO	1.82	SO	1.72	SO
6.	Lack of students' participation in problem solving dismays me.	1.85	SO	1.88	SO	2.06	SO	1.91	SO	1.90	SO
7.	Failing grades or low performance of my students makes me worried of my teaching.	1.90	SO	1.92	SO	2.00	SO	2.00	SO	1.94	SO
	Overall Mean	1.67	MS	1.65	LS	1.84	MS	1.73	MS	1.71	MS

Legend:

1.0 – 1.66	(SE) Seldom	(LS) Low
1.67 – 2.33	(SO) Sometimes	(MS) Moderate
2.34 – 3.00	(AE) Always	(HS) High

As a whole, there was a "moderate" level of stress of the mathematics faculty members in Region I ($\bar{x} = 1.71$).

Along teacher-student relationship, the mathematics faculty of selected SUCs in Region I revealed that they "seldom" experienced "bothered by parent's comments" ($\bar{x} = 1.28$) and "no support and effort of parents to mathematics activities" ($\bar{x}$ = 1.52). This two items where seldom experienced by the respondents because tertiary faculty in general seldom talk to the parents of their students.

Meanwhile, there are five items assessed by the respondents as "sometimes" encountered. The item "Failing grades or low performance of my students makes me worried of my teaching" obtained the highest mean rating of 1.94. The findings imply that the faculty is saddened when their students fail and have low performance. Also, this concerned them because this may possibly reflect that there strategies in teaching the subject is ineffective.

Among the for SUCs, only the faculty members of DMMMSU experienced "low" level of stress relative to teacher-student relationship."

Level of Stress on Relationship with Colleagues and Supervisors

Table 13 presents the level of stress of the Mathematics faculty with regards to Relationship with Colleagues and Supervisors.

Table 13
Level of Stress among the Mathematics Teachers in terms of Relationship with Colleagues and Supervisors

Relationship with Colleagues and Supervisors	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
1. Competition among colleagues challenges me.	1.61	SE	1.54	SE	1.78	SO	2.09	SO	1.71	SO
2. Being observed and evaluated by colleagues, students and supervisors make me tremble.	1.46	SE	1.29	SE	1.67	SO	1.82	SO	1.50	SE

3. Conflicts among colleagues discourage me.	1.51	SE	1.29	SE	1.72	SO	1.82	SO	1.53	SE
4. Inadequate support of colleagues or no mentoring.	1.41	SE	1.17	SE	1.39	SE	1.64	SE	1.37	SE
5. Lack of openness makes me feel uneasy.	1.51	SE	1.21	SE	1.44	SE	1.64	SE	1.44	SE
Overall Mean	1.50	LS	1.30	LS	1.60	LS	1.80	MS	1.51	LS

Legend:

1.0 – 1.66	(SE) Seldom	(LS) Low
1.67 – 2.33	(SO) Sometimes	(MS) Moderate
2.34 – 3.00	(AE) Always	(HS) High

Among the five item indicators of stress along relationship with colleagues and supervisors, only item "Competition among colleagues challenges me" was "sometimes" ($\bar{x} = 1.71$) experienced by the mathematics faculty members in the region. Apparently, the above findings are common to any organization because people tend to compare their achievements with the achievement of other people.

By SUC, the mathematics faculty of PSU, DMMMSU and ISPSC claimed that they have "low" level of stress along relationship with colleagues and supervisors as indicated by their overall mean of 1.50, 1.30 and 1.60 respectively. A "moderate" level of stress in this area has been experienced by the mathematics faculty of UNP.

As a whole, there is a "low" level ($\bar{x}$= 1.51) of stress of mathematics faculty members of selected SUCs in Region I particularly on relationship with colleague's and supervisors.

Level of Stress on Relationship with Teaching Strategies and Techniques

Table 14 presents the level of stress of the mathematics faculty members of selected SUCs in Region I with regards to Teaching Strategies and Techniques

Table 14
Level of Stress among the Mathematics Teachers Regarding Teaching Strategies and Techniques

Teaching Strategies and Techniques	PSU		DMMMSU		ISPSC		UNP		As A Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
1. Lack of instructional materials and teaching resources makes me lazy.	1.54	SE	1.29	SE	1.44	SE	1.91	SO	1.50	SE
2. Frequent changes in teaching make me feel ineffective.	1.61	SE	1.38	SE	1.56	SE	1.64	SE	1.54	SE
3. Too many teaching strategies confuse me.	1.49	SE	1.42	SE	1.56	SE	1.64	SE	1.48	SE
4. Varied year levels of teaching assignment makes it difficult for me.	1.44	SE	1.21	SE	1.56	SE	1.55	SE	1.41	SE
5. Different strategies are not easy to use and fit the ability of students	1.61	SE	1.58	SE	1.56	SE	1.64	SE	1.60	SE
Overall mean	1.54	LS	1.38	LS	1.54	LS	1.68	MS	1.54	LS

Legend:

1.0 – 1.66	(SE) Seldom	(LS) Low
1.67 – 2.33	(SO) Sometimes	(MS) Moderate
2.34 – 3.00	(AE) Always	(HS) High

On Teaching Strategies and Techniques

As seen in the table, all the five indicators along the level of stress in terms of teaching strategies and techniques were assesses as "seldom" experienced by the mathematics faculty as a whole. As a result, the mathematics faculty of the selected SUCs have a "low" level of stress along this area. This finding implies that the faculty members have already adjusted to varied demands of their profession. They can implement and practice different strategies and techniques to improve their way of teaching.

Further, a "low" level of stress on teaching strategies and techniques were experienced by the mathematics faculty of PSU ($\bar{x} = 1.54$), DMMMSU ($\bar{x} = 1.38$) and ISPSC ($\bar{x} = 1.54$) while UNP ($\bar{x} = 1.78$) experienced "moderate" level of stress on teaching strategies and techniques.

Level of Stress among the Mathematics Faculty

As a summary, table 15 presents the overall mean rating of the level of stress among the respondents.

Table 15
Summary of the Level of Stress among the Mathematics Faculty

Stressors	PSU		DMMMSU		ISPSC		UNP		As a Whole	
	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR	$\bar{x}$	DR
Classroom Management	2.07	MS	1.86	MS	1.83	MS	2.18	MS	1.98	MS
Teacher-Student Relationship	1.67	MS	1.65	LS	1.84	MS	1.73	MS	1.71	MS
Relationship with Colleagues and Supervisors	1.50	LS	1.30	LS	1.60	LS	1.80	MS	1.51	LS
Teaching Strategies and Techniques	1.54	LS	1.38	LS	1.54	LS	1.68	MS	1.54	LS
Overall mean	1.70	MS	1.55	LS	1.70	MS	1.85	MS	1.70	MS

Legend: **(**LS) Low Stressed (MS) Moderately Stressed (HS) Highly Stressed

The overall level of stress of mathematics faculty members of the four SUCs in Region I is at "moderate" level ($\bar{x}) = 1.70$. Moreover, when taken by component, the respondents have experienced "moderate" level of stress along "classroom management" ($\bar{x} = 1.98$) and "teacher –student relationship" ($\bar{x} = 1.71$) while along "relationship with colleagues and supervisors" ($\bar{x} = 1.51$) and "teaching strategies and techniques" ($\bar{x} = 1.54$) were assessed as "low" level. This findings imply that the main cause of stress of the mathematics faculty come from their class. This is because of the nature of the profession of the respondents.

Also depicted in the table that, only the mathematics faculty of DMMMSU experienced a "low" level of stress. This implies that there profession as a teacher has a minimal effect on them.

Effect of Self-Efficacy and Stressors to Teaching Performance of Math Teachers

The results of the multiple linear regression analysis of the level of self-efficacy and level of stress of the mathematics faculty and their teaching performance are presented in Table 16.

Table 16
Multiple Linear Regression Analysis of the Level of Self-Efficacy and Level of Stress of the Mathematics Faculty on Teaching Performance

Factors	Beta	t-value	t-prob
Self-Efficacy	-.001	-.010	p>0.05
Efficacy on Instructional Strategies	-.269	-1.821	p>0.05
Efficacy on Classroom Management	.314	3.017*	**p<0.05**
Efficacy on Student Engagement	.030	.272	p>0.05
Stressors	.001	.012	p>0.05
Classroom Management	.170	1.567	p>0.05
Teacher-Student Relationship	-.001	-.010	p>0.05
Relationship to Colleagues and Supervisors	-.269	-1.821	p>0.05
Teaching Strategies and techniques	-.002	-.019	p>0.05

Mult R = 0.314

R Sq = 0.099
F-ration = 9.103*
F-prob = 0.003 (p<0.05)

It can be seen in the table that the level of self-efficacy and the level of stress of the mathematics faculty significantly influenced their teaching performance (F-ratio = 9.103; F-prob = 0.003 (p<0.05)).

Further, the aforesaid variables can explain 9.9 percent of the variance on the teaching performance of the mathematics faculty (RSq = .099). The remaining 90.1 percent of the variance could be explained by other factors not included like educational qualification, performance indicators like performance in research, extension, etc.

When the independent variables were taken singly, it can be noted that efficacy on classroom management came out as a significant predictor of teaching performance (t-prob <0.05). The findings imply that faculty members who have higher efficacy on classroom management produce a positive effect on teaching performance. In the same vein, Pajares (1996), Thompson (1997) discloses that performance have proven related to perceived self-efficacies.

Lastly, as a result of the multiple linear regression, it can be suggested that teaching performance can be predicted using this regression model $\hat{y} = 2.837 + .314x$ where x is the efficacy of the faculty member in classroom management.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the mathematics faculty if the four selected State Universities and Colleges in Region I are in their mid 20s, dominated by female, single, Roman Catholic and pursuing post graduate courses. Most of them have a family size of 3 and below, teaching basic and major subjects for five years and below with an average of 3-4 preparations, permanent and holding an instructor position and handling an administrative position.

Considering some school related variables, it revealed that most of the faculty are handling on an average of 40 students in a class and using direct mode of instruction. There were adequate teaching materials such as LCD projectors, calculators, computers, books and reference materials, lesson plans and mathematics bulletin boards. On the other hand, there are inadequate teaching materials in SUCs of Region I such as graphing calculators, board protractors, and mathematics magazines. The faculty of the different State Colleges and Universities in Region I have a very satisfactory performance rating. The self-efficacy of mathematics faculty member from the four SUCs in Region I is high. The respondents portrayed the highest level of efficacy on classroom management. The math faculty was moderately stressed particularly, on their relationship with their students. Lastly, the best predictor of teaching performance is self-efficacy on classroom management.

As recommendations, the administrators should design professional development program to enhance further the self-efficacy of their faculty members and a program on stress management for teachers. This will serve as an avenue to enhance their personal accomplishments. Though the faculty members obtained a "very satisfactory" rating, there is still a need to improve their instructional competencies. In line with this, the school administrators should improve and acquire more teaching materials to lessen the burden of the teachers to provide such and to facilitate the delivery of teaching-learning process. Further conduct of studies by widening the scope of the study is advice to further verify whether the variables included are interrelated.

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