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TEACHING PRACTICES: INPUT TO STUDENT PERFORMANCE IN THE NATIONAL ACHIEVEMENT TEST IN MATHEMATICS AMONG THE SECOND YEAR HIGH SCHOOL STUDENTS IN THE DIVISION OF ZAMBALES, PHILIPPINES

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ABSTRACT
The study aimed to find out the different teaching practices of the mathematics teachers of public secondary schools and the NAT performance in Mathematics II for the School Year 2011-2012. The descriptive research design was used. Data were gathered through the use of the questionnaire checklist. The respondents of the study were second year high school students of Zone II Division of Zambales. The data were analyze using the percentage, weighted mean, ANOVA, t-test and regression analysis. Findings showed that a typical student respondent is aged 14.009, a female, whose mother's and father's educational attainment was a college level, with a mean monthly family income of Php 14,300.32. The weighted MS (Mean Percentage Score) in NAT Mathematics is 42.85. The respondents perceived the teaching practice, professional development of teachers as often done; the planning and lesson preparation, lesson implementation, assessment of learning and classroom management was also often practiced. Significant difference on the perceptions of the respondents toward the teaching practices of mathematics teachers when grouped according to sex, educational attainment of mother and father and monthly family income was established. A significant relationship between teaching practices and NAT Performance in Mathematics II as to professional and classroom management while was found. Teachers to undertake professional enhancement, exposure and development like acting as lecturer, resource person and consultant is highly suggested.

KEYWORDS: Teaching Practices, Mathematics, Student Performance, National Achievement Test, School Students, Teachers

1. INTRODUCTION

The concept of best practices has been used for decades to improve various segments of the society. Business have applied it to improved products and increase products productivity. Public institutions have adopted the concept to meet their unique needs. Schools and universities are reviewing best practices to improved services and increase the quality of education. Educational institutions are mandated to provide quality, effective and efficient instructions. School members especially teachers are supposed to inculcate ideas and practices to have a valid and reliable source of education.

Mathematics is one of the most difficult and challenging subjects for most learners. This weakness needs attention through the help of teachers. The best teaching practices used can help learners to love and gain confidence towards learning of Mathematics subject is very significant. The low performance level in Mathematics of high school students is reflected in the National Achievement Test. Students would say that it is very difficult for them to deal with numbers and often they would say that it is also difficult how to understand the way their teachers teach.

Teachers use different strategies and techniques which are associated with the subject according to the needs and difficulties of the learner. Factors affecting the effectiveness of the teaching practices of a teacher are the age, highest educational attainment, length of teaching practices and others. Teaching practices are made possible with

the cooperation of the school administration, teachers, students, and other factors affecting the learning outcomes on teaching-learning process.

This study addressed the civic intellectual and character oriented people for curriculum change. It will discuss the current trends in method used in teaching mathematics and other further research on mathematics education.

Teachers and school leaders will inevitably need time for further exposure to what a particular entails before deciding to include it in their school's plans. The complexities involved in putting the knowledge loose on improving student achievement to work in classrooms must be recognized. Carrol's (2001) study stated that educators should regularly assess the teaching practices of teachers especially those who found to be significantly related to educational background and in-service training as aid in formulating new policies and standards in the curriculum; more opportunities should be offered to the teachers in mathematics by attending varied in-service training to develop their skills in teaching the subject; and be encouraged to pursue their master's degree or at least some units in graduate studies for professional growth.

The result of the study would help the teachers determine other effective teaching strategies to be used in teaching which reinforces learning. Such action would help enhance performance of fourth year high school students in the national high schools in Zone II Division of Zambales. It can help school administrators to appraise teaching methods and approaches measured by students' performance. For the educational planners, the result of this study would be basis in the review and enhancement of the curriculum and recommended a review of the faculty development program to enhance student learning. Moreover, it can be used in determining progress of the students while studying. The practice and techniques of the schools, which proved efficient, may be adopted in order to be provided with greater opportunities.

2.   THEORETICAL FRAMEWORK

Constructivist Learning Theory is multifaceted, but all of the interpretations have the element that the student is an active participant in their learning. Constructivism is derived from the work of Jean Piaget (1967), Lev Vygotsky (1978), John Dewey (1944), and many others who studied how learners acquire knowledge (Acikalin, 2006). To assert the constructivism method promotes in depth study of a topic and encourages active and social learning with application to life outside of the classroom (O'Connor, 2012).

A social constructivist classroom provides the students multiple methods from which the students can acquire new knowledge. Social studies educators must remember that the purpose of Social Studies is to create effective citizens and that these methods may require more behind the scenes time than the traditional methods (O'Connor, 2012). Mathematics need to use a variety of methods and procedures to assist each learners to achieve as optimally as possible. The key element here is that not every student learns in the same way, and it is the responsibility of the teacher to determine the best way that his or her students learn (Teague, 2010).

Instructional practices are often classified into two types – teacher-directed or constructivist - depending on whether it is the teacher (direct instructional practices) or the student (constructivist teaching practices) that plays a pivotal role in the learning process. With respect to constructivist versus direct instructional practices, it has been suggested that a variety of teaching practices that combine self-regulated child-initiated activities with teacher-directed adult-led activities seem to be the most effective and adequate approach for effective classroom learning (Creemers, et al., 2013). Nevertheless, certain teaching practices seem to be more effective than others for particular learning domains, educational levels and specific student sub-populations.

3.   OBJECTIVES OF THE STUDY

This study aimed to find out the effects of teaching practices of teachers to the performance of the second year high school students among selected high schools in Zone II Division of Zambales.
Specifically, it aims to answer the following questions;
1. What is the profile of the respondents in terms of age, sex, educational attainment of parents and monthly family income?
2. What is the level of performance in the National Achievement Test in Mathematics among the second year high school students among selected high schools in Zone II Division of Zambales for the school year 2011-2012?

3. How are the teaching practices of the Mathematics Teachers described by the second year high school students in the aspects: Professional Development, Planning and Preparation of Lesson, Lesson Implementation, Assessment of Learning; and Classroom Management?
4. Is there a significant difference on the teaching practices of the second year high school teachers as described by the student-respondents when group according to profile variables?
5. Is there a significant relationship between perceived teaching practices and performance in National Achievement Test in Mathematics of the second year high school students?

4. MATERIALS AND METHODS

This study was made use of the descriptive method of research. According to Kerlinger as cited by Aquino (1997), this method is the best because the nature of the research is documentary analysis, where facts, figures and data were already existing information. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening (Driscoll, 2011). Gall, Gall & Borg (2003) cited that the survey research typically employs questionnaires and interviews in order to determine opinions, attitudes, preferences, and perceptions of the interest to the researcher. A questionnaire-checklist was used by the researcher to gather data for this study. The first part of the questionnaire is the personal information about the respondents and the second part of the questionnaire contained the perceptions of the respondents on the teaching practices of the second year Mathematics teachers in Zone I, Division of Zambales.

The study was conducted in Zone II Division of Zambales, specifically Rofulo M. Landa National High School, Amungan National High School, Zambales National High School, Jesus Magsaysay National High School, Botolan National High School, Beneg High School and Panan National High School. The subject of this study were 313 second year high school students from mentions schools.

The face validity of the survey instrument were provided and a dry-run was conducted. Researchers asked the permission of the schools division superintendent as well as the permission of the principals of the selected high schools where the survey was conducted. The researcher directly approached the mathematics teachers and asked for their cooperation to make this study successful. The teachers administered the questionnaire to the second year high school student-respondents and they were given one week to study and accomplish the questionnaire. The questionnaire was later retrieved from the teachers.

The data that was generated was subjected to the following statistical techniques. Percentage and frequency counts of responses that were obtained to describe the teaching practices were identified. Ranking was used to reinforce the description. The mean was used to categorize age and number of years in service and identified the teaching method practices extensively. Standard deviation was used to determine the variability of the teaching method used. The relationship between teaching practices and some selected variables was tested using test of association for every item of the Likert rating scale.

5. RESULTS AND DISCUSSION

Table 1
Frequency, Percentage and Mean Distribution of Student-Respondents' Profile

Age	Frequency	Percentage
16	7	2.24
15	74	23.64
14	172	54.95
13	60	19.17
Total	**313**	**100.00**
Mean Age of the Respondents: 14.09 years old		
Total	**313**	**100.00**
Sex	**Frequency**	**Percentage**
Male	138	44.09
Female	175	55.91
Total	**313**	**100.00**
Highest Educational Attainment -Mother	**Frequency**	**Percentage**

Doctoral Degree	1	0.32
With Doctoral Units	3	0.96
Master's Degree	31	9.90
Bachelor's Degree	83	26.52
College Level	143	45.69
High School Graduate	46	14.70
High School Level	3	0.96
Elementary Graduate	3	0.96
Total	**313**	**100.00**
Highest Educational Attainment - Father	**Frequency**	**Percentage**
Doctoral Degree	2	0.64
With Doctoral Units	4	1.28
Master's Degree	21	6.71
Bachelor's Degree	83	26.52
College Level	133	42.49
High School Graduate	53	16.93
High School Level	16	5.11
Elementary Graduate	1	0.32
Total	**313**	**100.00**
Monthly Family Income (Php)	**Frequency**	**Percentage**
30,000 – above	6	1.92
25,000 – 29,000	20	6.39
20,000 – 24,000	65	20.77
15,000 – 19,000	43	13.74
10,000 – 14,000	87	27.80
5,000 – 9 000	71	22.68
Below 5, 000	21	6.71
Total	**313**	**100.00**
Mean Monthly Family Income of the Student-Respondents: Php 14,300.32		

Table 1 shows that the age brackets of the student-respondents vary. The age range is between thirteen (13) to sixteen (16) years old. The mean age was 14.09 years old. This means that the respondents are in their right age for their second year high school level. Table 3 shows that more than half of the student-respondents are females (175 or 55.91). This implies that there are more females than males who have reached the second year level of the study. Considering the fact that most families in Zambales depend their daily living in fishing and agriculture, some males have to dropout from school so as to help their parents to augment their family income.

As for the highest educational attainment of the respondent's mothers and fathers, most (143 or 45.69% and 133 or 42.29% respectively) had reached the college level and the upper echelon of education in the Philippines followed by 83 (26.52%) parents who are bachelor's degree holders. According to the students their parents only obtained a college level of education. They said that their mothers were forced to stop studying due to financial problems, while other students revealed that their mothers got married before they finished college and they stopped to take care of their babies. In the study of Dela Cruz (2000) as cited by Philippine Statistics Authority (2013), it was mentioned that those parents who had reached college tend to be more concerned with their children's study habit and performance. These parents want their children to be like them or to be better than them so as to have better lives. They are those who are also capable of guiding and helping their children in their assignments, school works, projects, and curricular activities. They also serve as inspiration and motivation for their children to learn and to study hard.

The average monthly family income is Php14,300.32. It is evident that in Zone II, most families are engaged into fishing, farming, domestic errands, making native delicacies, and other daily jobs. Their income is even seasonal and there is a less chance for them to save for their future needs. The report or the National Economic Development Authority (NEDA), 2010 cited that many Filipino families live in poverty line, particularly those that are living in the countryside and far flung areas.

Level of the Performance in the National Achievement Test in Mathematics
Table 2
Performance in the National Achievement Test in Mathematics

Name of High School	Frequency	Mean Percentage Score (MPS) in Mathematics	Rank
Panan National HS	13	77.68	1
Beneg HS	10	44.08	4
Botolan Comm. HS	55	50.05	2
Zambales National HS	128	47.14	3
Amungan National HS	34	32.60	5
J. Magsaysay HS	25	22.04	7
Rofulo Landa HS	48	31.56	6
Total	**313**		
Weighted MPS in Mathematics: 42.85			

Table 2 presents the mean percentage score (MPS) in the national Achievement Test in Mathematics per selected public secondary schools in Zone II, Division of Zambales for SY 2011-2012. In Botolan District, Panan National High School scored a MPS of 77.68 percent, Beneg High School scored 44.08 percent, and Botolan Community High School earned 50.05 percent. In Iba District, Zambales National High School scored 47.14 percent, Amungan National High School scored 32.60 percent, and Jesus Magsaysay High School scored 22.04 percent. In Palauig District, Rofulo Landa High School scored 31.56 percent.

Among the seven (7) high schools for this study, only Panan National High School scored higher that the seventy five (75) passing MPS. The other six (6) schools did not perform well. The weighted MPS in Mathematics is 42.85 which is described as poor considering that the passing MPS is 75. This implies that these public secondary schools have to develop action plan to be integrated in the teaching and learning of mathematics to the students. Teachers have to motivate their students to enjoy and apply Mathematics in their lives rather than to fear this exciting field of study. In an experimental study conducted by the researchers from the University of the Philippines in 2008, they observed that student behavior towards Mathematics can be modified by adapting classrooms conditions. Students can be made to exhibit higher level of mastery and competitive goals in Mathematics by exposing them to classes that focus on mastery and competitive goal modifications (Joaquin, et al, 2008).

Perception on the Teaching Practices in Mathematics
Professional Development

Table 3
Perception of the Student-Respondents about the Professional Development of Teachers as a Teaching Practice in Mathematics

	Items	Mean	Verbal Description
1	Attends seminars, colloquium, conference, and trainings related to specific area of specialization.	4.24	Always
2	Subscribes to journals, magazines, and other reading materials of new edition.	4.06	Oftentimes
3	Utilizes ICT resources to enhance teaching-learning process.	4.07	Oftentimes
4	Prepares instructional materials to facilitate learning of students.	3.91	Oftentimes
5	Updates lectures notes through the use of ICT and researches published.	3.87	Oftentimes
6	Acts as resource person or lecturer in the field of Mathematics.	3.81	Oftentimes
7	Participates actively in scientific inquiry of teaching.	3.89	Oftentimes
8	Joins organizations related to the area of specialization.	3.88	Oftentimes
9	Seeks higher level of education or continuing studies.	3.90	Oftentimes
10	Continuously updates knowledge to enhance mastery of subject matter.	3.88	Oftentimes
11	Attends staff meetings to discuss new teaching strategies.	3.94	Oftentimes

12	Integrates values in lesson and allows internalization by the students.	3.92	Oftentimes
13	Observes strictly the Code of Ethics of the Profession and the Code of Ethical Standards for Government officials and employees.	3.93	Oftentimes
14	Involves self in the mentoring/coaching as part of school program.	3.82	Oftentimes
15	Engages in informal dialogues with colleagues on how to improve teaching.	3.77	Oftentimes
	Overall Weighted Mean	**3.77**	**Oftentimes**

Shown in Table 3 is how the student-respondents described their teachers practice Professional Development in teaching Mathematics. It can be observed that the interval on the mean among the fifteen (150 items is very minimal. Item no.1 "Attends seminars, colloquiums, conferences, and trainings related to specific area of specialization." Has the highest mean of 4.24 described as Always. It is followed by item no.3 "Utilizes ICT resources to enhance teaching-learning process." With a mean of 4.07 described as Often. The least is item no.15 "Engages in informal dialogues with colleagues on how to improve teaching." with a mean of 3.77 described as Oftentimes. The Overall Weighted Mean for Professional Development is 3.77 described as Oftentimes with a standard deviation of 0.76. This implies that the student-respondents are Oftentimes aware that their teachers practice professional developments which include journal subscription, value integration, membership to organizations, mastery of subject matter, preparation of instructional materials, observance of code of ethics, search for new teaching strategies, and scientific inquiry of teaching.

Teachers must continue to hone personally their knowledge, skills, and talents in teaching Mathematics to uplift the level of Mathematical learning of their students with the support of the administration. They must view learning to teach as a lifelong process and that passion in teaching is a compelling force (Corpuz & Salandanan, 2007).

Planning and Lesson Preparation

Table 4
Perception of the Student-Respondents about the Planning and Lesson Preparation
of Teachers as a Teaching Practice in Mathematics

	Items	Mean	Verbal Description
1	Selects lesson based on the PELC.	4.16	Oftentimes
2	Formulates objectives based on the needs of the students.	4.09	Oftentimes
3	Qualifies objectives that are achievable.	4.00	Oftentimes
4	Identifies subject matter that are interesting to students.	3.99	Oftentimes
5	Develops students awareness on current issues related to the subject matter.	3.89	Oftentimes
6	Utilizes updated materials as source of subject matter.	3.84	Oftentimes
7	Integrates creativity of activities that students will undertake.	3.83	Oftentimes
8	Prepares lesson that will develop higher order thinking skills.	3.90	Oftentimes
9	Observes the use of sequencing of subject matter for more improvement of student's knowledge.	3.91	Oftentimes
10	Correlates new lessons to the previous one.	3.85	Oftentimes
11	Includes all parts of the lesson	3.94	Oftentimes
12	Project today's lessons to tomorrow's situation.	3.82	Oftentimes
13	Considers individual differences in selecting topics.	3.73	Oftentimes
14	Jibes activities with the objectives.	3.81	Oftentimes
15	Uses PELC as basis in preparing lessons.	3.76	Oftentimes
	Overall Weighted Mean	3.90	Oftentimes

Presented on Table 4 is how the student-respondents described their teachers practice Lesson Preparation in teaching Mathematics. Item no.1 "Selects lesson based on the PELC." has the highest mean of 4.16 described as Oftentimes. It is followed by item no.2 "Formulates objectives based on the needs of the students." with a mean of 4.09. The least is item no.13 "Considers individual differences in selecting topics." with a mean of 3.73 described as Oftentimes. All of the fifteen (15) items are described as Oftentimes with an Overall Weighted Mean of 3.90 and standard deviation of 0.75. It is evident that students are Oftentimes aware their teachers practice lesson preparation in making subject matters interesting, develop awareness and higher order thinking skills, utilize updated resources, integrate creativity of activities, correlate new lessons to the previous one, and qualify objectives that are achievable. Teachers should focus in the mastery of the students and consider individual differences.

Lesson Implementation

Table 5
Perception of the Student-Respondents about the Lesson Implementation
Of Teachers as a Teaching Practice in Mathematics

	Items	Mean	Verbal Description
1	Establishes an atmosphere of students' readiness.	4.07	Oftentimes
2	Motivates students to perform intrinsically and extrinsically.	4.02	Oftentimes
3	Displays mastery of subject matter.	4.01	Oftentimes
4	Gives the class detracted instructions and explanations.	3.92	Oftentimes
5	Check students' understanding through question.	3.85	Oftentimes
6	Provides explicit instructions and practice for drills, exercises, and activities.	3.87	Oftentimes
7	Select strategies suitable to the subject matter and learner.	3.91	Oftentimes
8	Uses sensory channels and movements to gain longer attention of the learners.	3.88	Oftentimes
9	Teaches student on how to learn.	3.95	Oftentimes
10	Engages students in both independent study and cooperative learning.	3.90	Oftentimes
11	Includes kinesthetic activities.	3.89	Oftentimes
12	Provides direct face to face instruction to students.	3.83	Oftentimes
13	Presents new materials and activities.	3.82	Oftentimes
14	Begins the lesson with a short statement of goals.	3.86	Oftentimes
15	Integrates more learning exercises for independent learning	3.84	Oftentimes
	Overall Weighted Mean	3.91	Oftentimes

Table 5 presents the perceptions of the student-respondents towards teachers' practices in Lesson Implementation in teaching Mathematics Item no.1 "Establishes an atmosphere of students' readiness." has the highest mean of 4.07 described as Oftentimes. It is followed by item no.2 "Motivates students to perform intrinsically and extrinsically." with a mean of 4.02. The least is item no.13 "Presents new materials and activities." with a mean of 3.82 described as Oftentimes. All of the fifteen (15) items are described as Oftentimes with an Overall Weighted Mean of 3.91 and standard deviation of 0.75. Students are often aware their teachers practice lesson implementation which focuses on goals, motivation, mastery of subject matter, sensory learning, understanding through inquiry, drills and kinesthetic activities, learning exercises for independent learning, cooperative learning, and use of new materials and activities.

Teachers have to identify well their goals, inculcate the importance of mathematics, and utilize all resources to motivate their students to study harder. They have to apply strategies for teaching Mathematics in accordance to the objectives or goals of the learning process which are classified into three: (1.) knowledge and skill goals, (2.)

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understanding goals, and (3.) problem solving goals (Corpuz, 2006). Basic skills and knowledge compose a large part of mathematical learning. Skills need to be perfected and maintained through systematic drill; and concepts and relationships must be reviewed and applied at frequently recurring intervals. Knowledge and skill goals require automatic responses which could be achieved through repetition or practice. Understanding goals can be achieved through authority teaching, interactions and discussions, discovery, laboratory, and teacher-controlled presentations. Problem solving goals can be achieved through mathematical activities such as generalization, abstraction, concept building, and critical thinking goals (Corpuz, 2006).

Assessment of Learning

Table 6
Perception of the Student-Respondents about the Assessment of Learning as
Teaching Practice in Mathematics

	Items	Mean	Verbal Description
1	Provides systematic feedback and corrections.	4.06	Oftentimes
2	Jibes assessment with objectives.	3.88	Oftentimes
3	Provides a high level of active practices for all students.	3.92	Oftentimes
4	Uses feedback as basis in identifying students' needs.	3.98	Oftentimes
5	Informs the parents of the students' performance.	3.96	Oftentimes
6	Identifies the kind of assessment related to lessons.	3.85	Oftentimes
7	Develops rubrics to measure students' skills.	3.81	Oftentimes
8	Utilizes multiple sensory abilities of the learners in evaluating them.	3.89	Oftentimes
9	Uses various assessment styles.	3.90	Oftentimes
10	Constructs test item correctly.	3.93	Oftentimes
11	Considers multiple intelligence in constructing test items.	3.83	Oftentimes
12	Constructs test that measures what it intends to measure.	3.80	Oftentimes
13	Uses appropriate language in constructing test items.	3.84	Oftentimes
14	Considers time element in identifying test items.	3.87	Oftentimes
15	Uses tests results in identifying succeeding activities.	3.86	Oftentimes
	Overall Weighted Mean	**3.89**	**Oftentimes**

Table 6 presents how the student-respondents described their teachers' practices in Assessment of Learning in teaching Mathematics Item no.1 "Provides systematic feedback and corrections." has the highest mean of 4.06 described as Oftentimes. It is followed by item no.4 "Uses feedback as basis in identifying student's needs." with a mean of 3.98. The least is item no.12 "Constructs test that measures what it intends to measure." with a mean of 3.80 described as Oftentimes. All the fifteen (15) items are described as Oftentimes with an Overall Weighted Mean of 3.89 and standard deviation of 0.75.

Students are often aware their teachers practice assessment of learning. These include developing rubrics, use of various assessment styles, consider multiple intelligences, appropriate language in test constructions, inform parents of students' performance, time element in making tests, and results as basis for succeeding activities. Assessment of learning is an integral part of the teaching-learning process. It has to be built into the process with the objective of making students to understand that the purpose of assessment is to check learning. The results of the assessment must be fed back to the learners to complete the cycle of teaching-learning process.

Teachers must consider the learners, their learning styles, and multiple intelligences to come up with a variety of ways in assessing learning. Assessment tool should match with performance objectives. Other than written and performance tests, product assessments in written and physical forms can be used. Pre-teaching assessments such as written pre-test, know what you learned (KWL) technique, or simply asking the students some questions to diagnose their knowledge and skills are very useful (Corpuz & Salandanan, 2007). Teachers must involves the parents in the process. Parents are interested in the progress of their children in school. They like to know how their children are doing in school and how they can help their children learn. Transparency in the academic performance of each student will surely promote a good learning environment for the teacher, the student, the parents, the school, and the community.

Classroom Management

Table 7
Perception of the Student-Respondents about the Classroom Management
Of Teachers as a Teaching Practice in Mathematics

	Items	Mean	Verbal Description
1	Allows appropriate seating arrangements.	4.28	Always
2	Establishes class rules and procedures.	4.09	Oftentimes
3	Maintains momentum during the lesson.	4.03	Oftentimes
4	Establishes a safe nonthreatening environment.	3.92	Oftentimes
5	Creates a climate of interdependence.	3.90	Oftentimes
6	Allows an orderly manner in entering and leaving the room.	3.85	Oftentimes
7	Schedules activities with corresponding time allotment ahead of time.	3.93	Oftentimes
8	Maintains classroom cleanliness.	3.96	Oftentimes
9	Establishes classroom routines.	3.98	Oftentimes
10	Establishes classroom control/discipline.	4.00	Oftentimes
11	Keeps records of daily attendance and student's progress.	4.02	Oftentimes
12	Organizes learning activities.	4.07	Oftentimes
13	Starts the lesson right away.	3.95	Oftentimes
14	Stops the lesson for a while and scolds the students when they misbehave.	3.88	Oftentimes
15	Creates a classroom toward leadership with responsibility.	3.94	Oftentimes
	Overall Weighted Mean	**3.99**	**Oftentimes**

Table 7 shows how he student-respondents described their teachers practice Classroom Management in teaching Mathematics. Item no.1 "Allows appropriate seating arrangements." has the highest mean of 4.28 described as Always. It is followed by item no.2 "Establishes class rules and procedures." with a mean of 4.09 described as Oftentimes. The least is item no.6 "Allows an orderly manner in entering and leaving the room." with a mean of 3.85 described as Oftentimes. The Overall Weighted Mean for Classroom Management is 3.99 described as Oftentimes with a standard deviation of 0.76.

Students are often aware their teachers practice classroom management. This is based on their observance inside their respected classrooms as implemented by their teachers such as the practice of seating arrangements, class rules and procedures, checking of daily attendance, classroom cleanliness and routines, maintaining a safe and nonthreatening environment, classroom control and discipline, and promoting leadership through classroom responsibility.

The school is the second home of the students. During school days, they consume most of their daytime inside a classroom. Other than the teacher and the learner, the learning environment is very vital for effective and efficient teaching-learning process. An enhanced environment for learning will further motivate the students to participate in classroom activities and be able to learn and enjoy the process.

The learning environment is the place where teaching and learning can take place in the most effective and productive manner. Teachers have to consider the arrangement of furniture, the physical condition of the classroom, the classroom proceedings, and interactions. They should always consider the physical features of the classroom which include space, location, lightning, ventilation, order, tidiness and noise level which influence the teaching-learning process.

Teachers should be able to develop an environment which encourages students to be active, promotes individual's discovery of the personal meaning of idea, recognizes student's right to make mistakes, a place where they are respected and accepted, and encourages them to trust themselves as well as in external sources (Pine & Horne, 1990).

Significant Difference on the Teaching Practices as Perceive by the Second Year High School Students when Respondents are Grouped According to Profile Variables

Table 8
Analysis of Variance (ANOVA) on Significant Difference on the Perceptions
of the Student- Respondents to the Teaching Practices in terms of Profile Variables

Source of Variation	Sum of Square	df	Mean Square	$F_{computed}$	P -value	$F_{critical}$	Decision /Interpretation
Age Between Groups Within Groups Total	0.6386 39.3270 39.9656	3 309 312	0.2129 0.1273	1.6726	0.1729	2.6338	**Accept Ho** **Not Significant**
Sex Between Groups Within Groups Total	0.5489 39.4167 39.9656	1 311 312	0.5489 0.1267	4.3306	0.0383	3.8715	**Reject Ho** **Significant**
Education of Mother Between Groups Within Groups Total	3.7745 36.2217 39.9962	7 305 312	0.5392 0.1188	4.5403	7.8E-5	2.0397	**Reject Ho** **Highly Significant**
Education of Father Between Groups Within Groups Total	4.9375 35.0587 39.9962	7 305 312	0.7054 0.1149	6.1364	1E-06	2.0397	**Reject Ho** **Highly Significant**
Monthly Family Income Between Groups Within Groups Total	3.6074 36.3582 39.9656	6 306 312	0.6012 0.1188	5.0601	5.7E-5	2.1283	**Reject Ho** **Highly Significant**

Significant at $F_{computed} > F_{critical}$ & p-value < 0.0500

Table 8 shows the effect of age on the perceptions of the students when grouped according to age. It shows that the $F_{computed}$ is 1.6726 while $F_{critical}$ is 2.6338, $F_{computed} < F_{critical}$. The p-value is 0.1729, p-value $> \alpha$ (0.1729 > 0.05). The decision is to accept the null hypothesis (Ho) and reject the alternative hypothesis (Ha). There is "no significant difference" in the perceptions of the 2nd year high school students when they are grouped according to age. This means that age is not a predictor variable in determining the effects of teaching practices to their performance in National Achievement Test in Mathematics. Their perceptions are the same even if they differ in age. The age bracket is 13-16 years old.

When sex was used as a variable, the $F_{computed}$ is 4.3306 while $F_{critical}$ is 3.8715, $F_{computed} > F_{critical}$. The p-value is 0.0383, p-value $< \alpha$ (0.0383 < 0.05). The decision is to reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha). There exists a "significant difference" in the perceptions of the 2nd year high school students when they are grouped according to sex. This means that sex is a predictor variable in determining the effects of teaching practices to their performance in National Achievement Test in Mathematics. In the 2003 Trends in International Science and Mathematics Study (TIMSS) Philippine Report published by the Science Education Institute, girls were "significantly better" than boys.

When the educational attainment of mother was used as a variable, the $F_{computed}$ is 4.5403 while $F_{critical}$ is 2.0397, $F_{computed} > F_{critical}$. The p-value is 7.8E-05, p-value $< \alpha$ (7.8E-05 < 0.05). The decision is to reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha). There exists a "highly significant difference" in the perceptions of the 2nd year high school students when they are grouped according to educational attainment of mother. This means that mother's educational attainment is a predictor variable in determining the effects of teaching practices to their performance in National Achievement Test in Mathematics. The fact that teachers are considered the

second parents of the students, they highly regarded them like their mothers who assist them in their studies and homework and in doing other related activities in Mathematics.

When education attainment of father was used as variable, the $F_{computed}$ computed is 6.1364 while   is 2.0397, $F_{computed} > F_{critical}$. The p-value is 1E-06, p-value $< \alpha$ (1E-06 < 0.05). The decision is to reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha). There exists a "highly significant difference" in the perceptions of the 2nd year high school students when they are grouped according to educational attainment of father. This means that father's educational attainment is a predictor variable in determining the effects of teaching practices to their performance in National Achievement Test in Mathematics. Proper guidance and motivation given by their fathers are also experienced from their teachers. Their parents serve as inspiration for them to learn and study harder.

When monthly family income was used as variable, the $F_{computed}$ computed is 5.0601 while $F_{critical}$ is 2.1283, $F_{computed} > F_{critical}$. The p-value is 5.7E-05, p-value $< \alpha$ (5.7E-05 < 0.05). The decision is to reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha). There exists a "highly significant difference" in the perceptions of the 2nd year high school students when they are grouped according to monthly family income. This means that monthly family income is a predictor variable in determining the effects of teaching practices to their performance in National Achievement Test in Mathematics. This can be attributed to the capability of the family to financially support the schooling and needs of the students.

Significant Relationship between the Predictor Variables of Teaching Practices and the Performance in the National Achievement Test in Mathematics

Table 9
T-test Between the Predictor Variables of Teaching Practices and
The Performance in the National Achievement Test in Mathematics

Variables	t-test at 0.05 Level of Significance (2-tailed)		p-value	df	Decision/ Interpretation
	t-computed	t-critical			
Professional Development	2.1873	1.9638	0.0295	624	**Reject Ho Significant**
Lesson Preparation	1.4528	1.9638	0.1473	624	**Accept Ho Not Significant**
Lesson Implementation	0.9714	1.9638	0.3321	624	**Accept Ho Not Significant**
Assessment of Learning	1.0215	1.9638	0.3078	624	**Accept Ho Not Significant**
Classroom Management	3.3490	1.9638	0.0009	624	**Accept Ho Significant**

Table 9 shows that for the professional development variable, t-computed > t-critical (2.1873 >1.960) and p-value < 0.05 level of significance (0.0295 < 0.05), thus reject Ho. There exists a "significant relationship" between professional development of teachers and the NAT performance in Mathematics II. Teachers should continue to learn and seek more knowledge to improve their craft. Continues education should be a requirement. Computer technology and the use of internet for research should also be integrated in teaching Mathematics. For the lesson preparation variable, t-computed < t-critical (1.4528 < 1.960) and p-value > 0.05 level of significance (0.1473 > 0.05), thus accept Ho. There is "no significant relationship" between lesson preparation of teachers and the NAT performance in Mathematics II. This can be attributed to the predesigned lessons based on the PELC. For the lesson implementation variable, t-computed < t-critical (0.9714 < 1.960) and p-value > 0.05 level of significance (0.3321 > 0.05), thus accept Ho. There is "no significant relationship" between lesson implementation of teachers and the NAT performance in Mathematics II. For the assessment of learning variable, t-computed < t-critical (1.0215 < 1.960) and p-value > 0.05 level of significance (0.3078 > 0.05), thus accept Ho. There is "no significant relationship" between assessment of learning of teachers and the NAT performance in Mathematics II. For the classroom management variable, t-computed > t-critical (3.3490 >1.960) and p-value < 0.05 level of significance (0.0009 < 0.05), thus reject Ho. There exists a "significant relationship" between classroom management of teachers and the NAT performance in Mathematics II. The learning environment is a product of a physical,

psychological as well as social atmosphere created by the interaction between teacher and the learners and among the learners themselves. Teachers should be able to create and maintain a learning environment that facilitates learning (Corpuz & Salandanan, 2007).

Thus, there exists a significant relationship between teaching practices and NAT performance in Mathematics as to professional development and classroom management while no significant relationship existed between lesson preparation, lesson implementation, and assessment of learning with the NAT performance in Mathematics of second year high school students of Zone II, Division of Zambales.

Table 10
T-test between Teaching Practices and Performance in the National
Achievement Test in Mathematics

Particulars	Value
Pearson r	0.2086
R Squared	0.0435
Descriptive Rating	Low Correlation
$t_{computed}$	5.3268
$t_{critical}$ at 0.05 level of significance	1.9638
Degrees of freedom	624
Decision	Significant; Reject Ho, Accept Ha; $t_{computed} > t_{critical}$

Table 10 shows that there exist a low positive correlation between the teaching practices and the performance in NAT in Mathematics at r = 0.2086. Using t-test at a 0.05 level of significance, the $t_{computed}$ resulted (5.3268) which was greater than the $t_{critical}$ (1.9638) at 624 total degrees of freedom, thus Ho is rejected. There exist a "significant relationship" between teaching practices and the performance in Mathematics II in Zone II, Division of Zambales for SY 2011-2012. In the teaching-learning process, the principal elements are the teachers, the learners, and the conductive learning environment are very important to make learning effective. Only when a positive relationship exists among them and learning occur with precision and predictability. The teacher is the prime mover while the learners are the key participants in a favorable environment that facilitates learning. All three have to be considered for the process to be successful. Teachers are expected to do their very best in teaching, show passion in their profession, and should be able to facilitate learning among the young. According to the students, their teachers contribute to the development of the three domains which include the cognitive, psychomotor and affective.

6. CONCLUSIONS
Based on the findings that surfaced in the study the following conclusions were derived:
1. A typical respondent is aged 14.09 years, a female whose mother's educational attainment was in college level and the father also reached college, with a mean monthly family income of Php 14, 300.32.
2. The weighted MPS (Mean Percentage Score) in NAT Mathematics is 42.85.
3. The respondents perceive the professional development of teachers as a teaching practice as often done, lesson preparation often practiced, lesson implementation as often practiced, likewise with assessment of learning and classroom management as often practiced.
4. There was no significant difference on the perceptions of the respondents to the teaching practices of mathematics teachers when grouped according to age, but there were significant differences in their perceptions when grouped according to sex, educational attainment of mother and father and monthly family income.
5. There was a significant relationship between the teaching practices and NAT performance in Mathematics II as to professional development and classroom management while no significant relationship existed in lesson preparation, lesson implementation and assessment of learning with NAT performance in Mathematics II. There exists a "low positive correlation" between the teaching practices and the performance in NAT in Mathematics II at r = 0.2086 which is "significant" where $t_{computed}$ (5.3268) is greater than the $t_{critical}$ (1.9638) at 624 degrees of freedom.

7. RECOMMENDATIONS

After the analysis of the data, the following recommendations are given.

1. Educational administrators need to encourage teachers to enhance professional exposure and development like acting lecturer, resource person and consultant.
2. Teachers have to consider individual differences in the selection of lessons or topics for discussion.
3. Teachers are encourage to utilize a variety of ways in presenting lessons and utilize other authentic assessment techniques in evaluating student performance.
4. Students may identify their strengths and weaknesses through the teachers to enhance a particular learning style.
5. Researchers may conduct another parallel study maybe conducted to validate the findings of this study.

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