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VIRTUAL INSTRUCTION IN MATHEMATICS, SCIENCE, AND ENGLISH OF SELECTED PUBLIC ELEMENTARY SCHOOLS IN FOUR DISTRICTS, LIPA CITY: BASIS FOR A PROPOSED SET OF SUPPLEMENTARY VIRTUAL INSTRUCTIONAL MATERIALS

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Abstract *:* The main objective of this research is to evaluate and analyze the academic performance and the Grade VI pupils of selected public elementary schools in District 4, Division of Lipa City in Mathematics, Science, and English as a basis for a Proposed Set of Virtual Supplementary Instructional Strategies. The subjects on the study are the Grade VI pupils enrolled from the school year 2017-2018 of the twelve (12) selected elementary schools in the DCS of Lipa City: three (3) schools (big, medium and small schools) representing the North, East, South, and West District of Lipa City. Three (3) groups of represents were chosen purposively. They are the school principals, teachers; and parents of students enrolled in Grade VI. The study reveals that the schools under study, on the average, performed satisfactorily based on access and efficiency in terms of the not-enrolled rate and drop-out rate; and in terms of cohort survival rate, but very satisfactory in completion rate has a verbal interpretation of weak correlation, hence, the null hypothesis of no significant relationship is accepted at 0.05 alpha level. Generally, the Grade VI pupils performed satisfactorily based on the National Achievement Tests (NATs) in Mathematics, Science and English covering the school years 2013-2014 to 2015-2016. No significant relationship exists between the school performance in terms of access and efficiency; and in the area of the academic performance in the National Achievement Tests (NATs) in Mathematics, Science and English. The Proposed Strategic Sets of Virtual Supplementary Materials in the form of reading and practice exercises for the use of Grade VI pupils will help and enhance both administrators and teachers in the implementation of the K-to12 in the teaching of Mathematics, Science, and English, if both are used by competent teachers and supported by administrators. As further manifested in the study, the performance of the Grade VI pupils in Mathematics, Science and English has improved after using the proposed supplementary instructional materials. The Proposed Virtual Supplementary Instructional Materials was highly perceived by both the school administrators and teachers not only bridging but also to enhance the implementation of the K-to-12 curriculum. If implemented, in these elementary schools, the same will help improve knowledge and skills of the pupils in the study of Mathematics, Science and English since they will not only help improve the difficult areas in the study of subjects, but will also offer specific plans of actions and instructional strategies using virtual supplementary instructional tools coupled with competency skills to be undertaken by joint initiatives of school administrators and teachers of the schools.

Index Terms **– Academic Performance, Curriculum Implementation, Instructions, Virtual Instructional Materials, Mathematics, Science, English**

Introduction

The K-to-12 educational system is designed to share the advantages of the educational system found in other countries. This means that for educators who are looking for ways to bolster the educational process in their own school system, can utilize the knowledge if school systems around the world.

This process in examining educational system around the world looks at a number of factors that demonstrate the advantages and disadvantages of each system. In addition, there are informative articles that provide insight into educational system around the world.

Demonstrating the advantages of the K-to-12 educational system is straightforward as solution to different issues that face school system around the world may be just around the corner. All too often, practices that have been in place for decades may offer

potential solutions for other educational system that have never discovered or implemented such practices (K-to-12) like: (DepEd, K-to-12, http://.basiceducation.blogspot.com). [1]

1. Share Knowledge: The K-to-12 websites compare the educational systems in different countries that provide the enlightenment into how a school system can be improved. Quite often, these comparisons highlight simple, yet, powerful means id advancing educational progress without incurring a large financial burden.

2. Point Out Potential Issues: While the highlights of educational system are pointed out, so are the negative issues that they face as well. Such information can be used to avoid similar situation in school system and help allocate the time spent more wisely. The K-to-12 educational system is based in sharing all knowledge, including ideas that did not work, as important to all school system.

3. Provide Answers: For school system, teachers, and administrators looking for answers in solving their current issues, this educational system is here to provide multiple examples from around the world. Even if the particular issues facing a school system are not answered directly, ideas can spring forward from different examples that can lead to solutions.

In the case of the Philippine education system, the introduction of K to 12 in the Enhanced Basic Education Curriculum is under the administration of President Benigno C. Aquino, III. In the framework of humanizing the curriculum that is accustomed to the call times, results to the implementation of Republic Act No. 10533 in 2013,[2] to be used both the public and private school system of the Philippines. It is the realization of the objectives of the basic education to produce people who are competent and proficient enough to race under the current international standards in terms of knowledge and skills that are needed in the 21st century.

Specifically, this research offers references on how selected elementary schools in District 4 of Lipa City, Batangas Province, make the curriculum contents of the K-12 Curriculum most responsive to be retained or improved suitable for the new K-to-12. Presently, the RBEC curriculum is said to be congested that it needs to decongest in manner that is appropriate to clientele of the new K to 12 Curriculum. This is taking into consideration the implementation of the new educational scheme that purposively prepares the youth for the challenged of the global market.

For instance, science education aims to develop scientific literacy among learners, that will prepare them to be informed and be participative citizens who are able to make judgements and decisions regarding applications od scientific knowledge that may have social, health or environmental impacts.

In this regard, the science curriculum recognizes the place of science and technology in everyday human affairs. It is on the grades in science and technology, in the social, economic, personal and ethical aspects of life. The science curriculum promotes a strong link between science and technology, including indigenous technology, thus preserving the country's cultural heritage (DepEd).

Under the K-to-12 science curriculum, this provides learners with a repertoire of competencies important in the world of work and in a knowledge-based society. It envisions the development of scientifically, technologically, and environmental literate and productive members of society who are critical problem solvers, responsible stewards of nature, innovative and creative communicators. This curriculum is designed around the three domain of learning science: understanding and applying scientific knowledge in local setting as well as global context whenever possible, performing scientific processes and skills; and developing and demonstrating scientific attitudes and values. The acquisition of these domains is facilitated using the following approaches: multi/interdisciplinary approach, science-technology-society approach, contextual learning, and problem/issue-based on educational pedagogy, namely: constructivism, social cognition learning model, learning style theory, and brain-based learning.

In another area, Mathematics subjects pervades life at any age, in any circumstances. Thus, its value goes beyond the classroom and the school. Mathematics, as a school subject, therefore, must be learned education level in K to 12 such as Critical Thinking and Problem Solving. It adopts the definition of critical thinking.

Critical thinking is the intellectually discipled process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief action.

There are five content areas in the curriculum, as adopted from the framework prepared Numbers and Number Sense.[3] Measurement, Geometry, Patterns and Algebra, and Probability and Statistics also need the mastery of the specific skills and processes which should be developed, like: Knowing and Understanding; Estimating, Computing and Solving, Visualizing and Modeling; Representing and Communicating; Conjecturing, Reasoning Providing and Decision-making, and Applying and Connecting.

The following values and attitudes are to be honed as well: Accuracy, Creativity, Objectivity, Perseverance, and Productivity. These are recognized as the appropriate tools needed in teaching Mathematics. These include: manipulative objects, measuring devices, calculators and computers, Smart phones and tablet PC's, and the Internet.

Finally, in comparison to the science syllabus, which includes fewer topics in the science syllabi of countries with achievement in the Third International Mathematics and Science Study (TIMSS). The national mean score in Science was only 48.7% in the 1997 National Secondary Achievement (NSAT). This indicated that these are more difficult subjects for the students, and for which additional contact time may be needed and innovative teaching techniques should be advised.

The main factors which can be cited to account for the low performance in Science of the Filipino students include the lack of science culture and deficiencies regarding the school curriculum, the teaching learning process, instructional materials, and teacher training. One of the roots of the unsatisfactory achievements of the students is the congested curriculum. The elementary curriculum in the Philippines is overcrowded.

Theoretical Framework

Parse's Theory[4] on human becoming is an alternative to the traditional education theory as it focuses on the lived experience of people as they interact with each other and their environment on the journey through time.

The concepts of coconstitution, coexistence and situated freedom are drawn form this school of thought. These concepts are based on the works of Heidegger. Merlau-Ponty and Sartre (in Fawcett).[5] Parse, a practitioner of Tai Chi, may have also have been influenced by eastern thought in the formulation of her theory. Parse uses the prefix co in many of her words to signify the relationship of humans with the universe.

For Parse, humans can never be separated form their relationship with the universe. These relationships include all the interactions as human, have encountered with others and environments. Almost it seems the application of the theory starts from the time students start their bachelor's program and exhibiting evidence of excellent competencies. Performance may elect to be exempted and proceeded to advance programs.

Parse has published numerous adaptions of her theory clarifying wording and terminology over the years. Five components to describing contemporary knowledge have been identified: metaparadigm, philosophies, conceptual models, theories, and empirical indicators. These components comprise the unique disciplinary knowledge, the knowledge that separates one discipline form other disciplines.

Another basic tenet is human subjectivity. This means" viewing human beings not as things or objectives, but as beings that are unitary and as being that are a mystery of being with nonbeing. Human beings live what was, is, and will be in the now moments of their intersubjective relationships with universe". "Every person, although inseparable from the world and from others, crafts a unique relationship with universe. Human beings have a personal relationship with the universe that is open to new possibilities and directions. The personal relationship is the persons becoming and becoming complex, multilayered, and full of explicit-implicit meaning".

Parse also explains that her work has evolved from a theory of education into a school of thought. The school of thought encompasses the theory along with the research and practice methodologies that have been developed around the theory. "Parse has identified four essential philosophies about her theory: the human-universe mutual process, the co-constitution of health, the multidimensional meanings the indivisible human gives to being and becoming, and the human's freedom in each situation to choose alternative ways of becoming. These philosophies and concepts are reflected in the concepts of the Theory of Human Becoming.

In like manner, the Theory of Human Becoming as shown in Figure 1 has three principles that are further divided into thirteen unidimensional concepts:

Principle 1: Structuring. Structuring meaning multidimensionally is cocreating reality through the languaging of valuing and imaging. "This principle means that people coparticipate in creating what is real for them through self-expression in living their values in a chosen way.

Principle 2: Rythmicity. "Cocreating rhythmical patterns of relating is living the paradoxical unity of revealing-concealing and enabling-limiting while connecting-separating." This principle means that the unity of life encompasses apparent opposites in rhythmic patterns of relating. It means that in living moment-to-moment one shows and does not show self as opportunities and limitations emerge in moving with and apart from others."

Principle 3: Transcendence. "Cotranscending with the possibles is powering unique ways of originating in the process of transforming." This principle means that moving beyond the "now" moment id forging a unique personal path for oneself in the midst of ambiguity and continuous change".

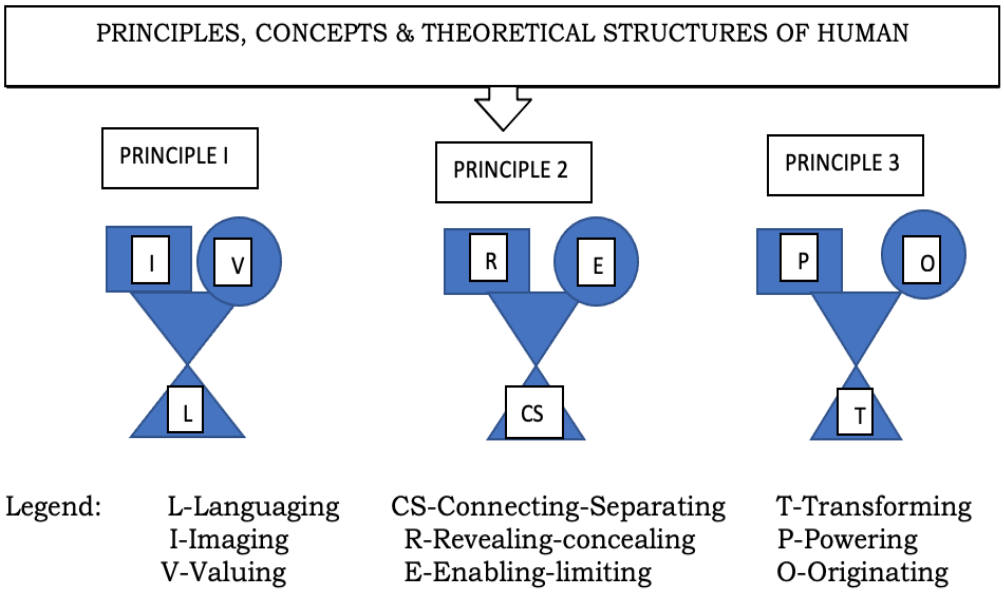

Figure 1. Relationship of Principles, Concepts and Theoretical Structures of the Human Becoming Theory (2015)

This theory is also considered since it focuses on the three principle each contains three concepts: Principle 1 - Imaging, valuing, and languaging; Principle 2 - revealing-concepts, enabling -limiting, and connecting-separating; and Principle 3 - powering, originating and transforming which dimensional concepts also serve as input to the study.

Conceptual Framework

In the framework of humanizing the curriculum that is accustomed to the call of the times, this research evaluates performance of public elementary school pupils in Mathematics, Science, and English under K-to-12 curriculum and BEC curriculum used by both the public and the private school system of the Philippines in the elementary level today. Its strengths and weaknesses in terms of the promising generation and concept of globalization; and towards the realization of the aim of education to produce people who are competent and proficient enough to race under the current international standards and in terms of knowledge and skills that are needed in the 21st century. In addition, using the systems approach, the Input-Process-Output Model is adopted.

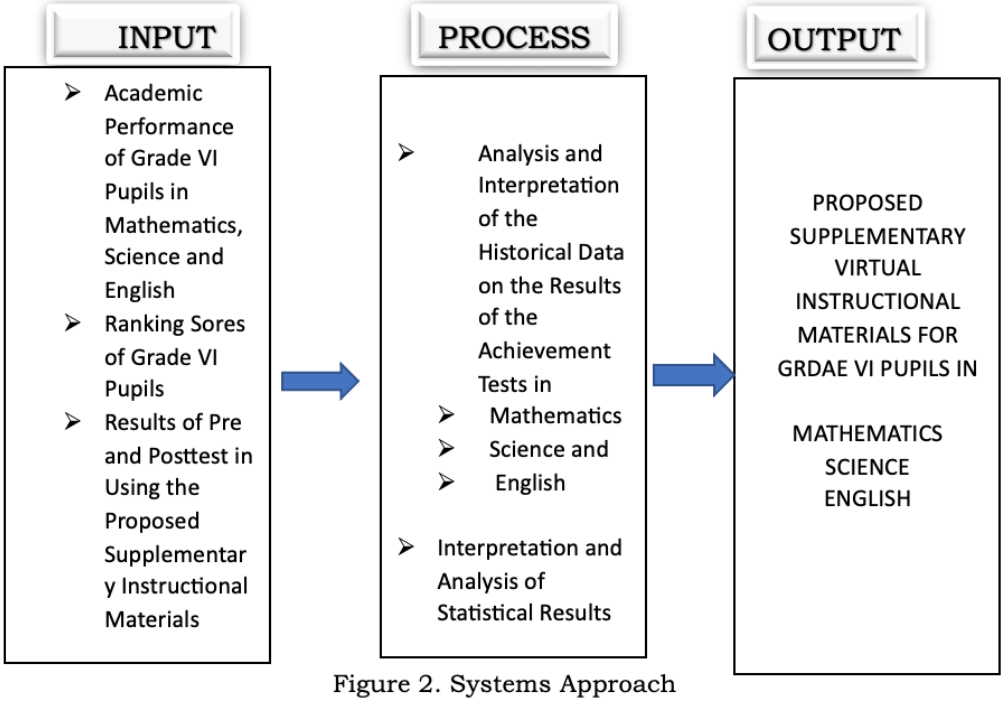

Figure 2. Systems Approach

Using the Input-Process-Output Model

From the Input, as illustrated in Figure 2, the researcher assesses and analyzes the academic performance of the Grade VI pupils of selected public elementary schools in District 4, Lipa City Division Schools, in Science, Mathematics, and English; their ranking scores in Science, Mathematics, and English; the proposed set of enhanced virtual instructional materials in Science, Mathematics, and English; and the pupils' performance in the pre- and posttests before and after using the proposed instructional materials.

The Process analyzed the research procedures and interventions were utilized to arrive at the desired OUTPUT of the study – The Validated Proposed Set of Virtual Instructional Materials in Science, Mathematics, and English.

Statement of the Problem

The main objective of this research is to evaluate and analyze the academic performance and the Grade VI pupils of selected public elementary schools in District 4, Division of Lipa City in Mathematics, Science, and English as a basis for a Proposed Set of Virtual Supplementary Instructional Strategies.

Specifically, the researcher sought answers to the following problems:

1. How did the selected public elementary schools in the four (4) Districts, Division of City Schools of Lipa City perform in the following education indicators covering the schoolyear 2013-2016:
   1.1 access, and
   1.2 efficiency?
2. What are the ranking scores of the Grade VI pupils in the National Achievements Test (NATs) in Mathematics, Science, and English covering the schoolyear 2013-2016?
3. What relationship exists between access and efficiency performance of the schools and the academic performance in the rank scores of Grade VI pupils in Mathematics, Science, and English under the BEC based-curriculum?
4. Based n the findings of the surveys, what supplementary instructional materials may be offered to prepare the Grade VI pupils to the L-to-12 curriculum in the teaching of Mathematics, Science, and English?
5. How will the Proposed Virtual Supplementary Instructional Materials enhance the implementation of the K-to-12 curriculum in the following areas of instructional strategies:
   5.1 planning;
   5.2 delegation of work;
   5.3 participation in classroom activities;
   5.4 instructional qualities of teachers;
   5.5 motivation; and
   5.6 communication?
6. What significant difference exists between the academic performance of the Grade VI pupils in the pre- and posttests before and after using the Proposed Supplementary Virtual Instructional Materials?

Hypotheses

The study is guided by the following hypothesis in the null form:

1. No significant relationship exists between access and efficiency school performance; and the academic performance in the rank scores of the Grade VI pupils in the National Achievement Test (NATs) in:
   1.1 Mathematics;
   1.2 Science; and
   1.3 English.
2. No significant relationship exists between academic performance based n rank scores in NAT in Mathematics, Science, and English for the schoolyear 2017-2018.

3. No significant difference exists between the pre- and posttests performance of the Grade VI pupils before and after using the Proposed Sets of Virtual Supplementary Instructional Materials.

Significance of the Study

Mathematics, Science and English subjects are purposely needed to the extent which they support and contribute to the purpose of basic education requirement and in nurturing the task of human development. Thus, pupils become well knowledgeable, upright and reasonably productive members of their community and the society, as a whole. Science, Mathematics, and English subjects pursued, prepare students for intelligent participation in the affairs of the society.

For the part years, administrators, researchers, and policy makers have tried to identify different factors that affect the earning of students by studying the curriculum in Science, Mathematics, and English.

The researcher therefore addresses the study to the various sectors in the fields of Science, Mathematics and English. Educators who are concerned with and involved in teaching primary pupils are also the major concern of the study.

In particular the study will also contribute to the following:

The Department of Education (DepEd) Policy Makers. They are responsible in keeping educational reforms on the front line of the national agenda and face with a rising tide of questions on the relevance of the K-to-12 curriculum. The questions focused attention on the lack of uniform criteria for comparing the performance of schools and school districts. The accountability of schools results will become a major theme at both the national and regional levels, and more that, a few efforts will begin to devise new ways of measuring student achievements. The result of which will be the basis of decision making on the proper course of action in terms of facilities and resources, training, and budget to be given to the Department of Education.

Critical Thinking. It is intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief action.

Curriculum Planners. The results of the study will help in the utilization of Virtual Instructional Materials, help in gauging and diagnosing the Objectives, Missions and Visions in Science, Mathematics, and English, in primary level education.

The School Administrators. In conjunction with their continuous effort to plan so as to improve instruction, this study has a big role in the implementation of K-to-12 curriculum, This will serve as the basis on the training prospective of teachers in Mathematics, Science, and English so that they can do more with efficiency.

The Parents. They will have better understanding on the career path that their children must undertake. The understanding effect of K-to-12 curriculum will minimize problems on career choice and enhance sympathetic bonding among parents and children.

Pupils and Students. They will be able get sufficient instructional time to do subject-related tasks which make them more prepared and well-trained on the subject areas. On the other hand, if the traditional system would be used, students would continually get low achievement scores. For instance, international test results revealed that they often come at the tail end in the exams compared to other countries.

Other Educational Researchers. The results of the study may provide other educators and researchers with baseline information and data which may serve as basic input for further investigation and studies.

Scope and Limitations of the Study

The following are the scope and limitations of the study:

Setting

The study was conducted in selected public elementary schools in District. 4. DIVISION OF CITY SCHOOLS OF LIPA CUTY, PROVNCE OF BATANGAS.

Subjects

The subjects on the study are the Grade VI pupils enrolled from the school year 2017-2018 of the twelve (12) selected elementary schools in the DCS of Lipa City: three (3) schools (big, medium and small schools) representing the North, East, South, and West District of Lipa City.

The Respondents

Three (3) groups of represents were chosen purposively. They are the school principals, teachers; and parents of students enrolled in Grade VI.

Time Frame

The school tear 2017-2018 is the academic period covered by the study.

Definition Terms

The following term are defined operationally and conceptually:

Achievement Test. It refers to the examination at the star of school year.

Diagnostic Test. It is the examination at that start of the school year.

Enhanced K-to-12 Curriculum - with Science, Mathematics, and English Curriculum. This refers to Grade VI Enhances Restructures Basic Education Curriculum with basic subjects in Science, Mathematics, and English.

Human Subjectivity. It means viewing human beings not as things or objects, but as beings that are unitary and as being that are a mystery of being with nonbeing. Human beings live what was, is, and will be in the now moments of their intersubjective relationship with the universe

Restructures Basic Education Curriculum. There are five learning areas: Filipino, English, Science, Mathematics, and Makabayan. In specific terms, the learners' linguistic literacy and fluency shall be developed in Filipino and English; scientific and technological literacy in Science and Technology; numeracy in Mathematics; socio-cultural and politico economic literacy in Makabayan Filipino is the medium of instruction for Makabayan, and English as the medium of instruction for Science and Mathematics.

In Grade 1 and 2, simple scientific concepts and skills are taken up in English and Makabayan. Science begins as the pupils are taught to observe, monitor, and describe, their interaction with their immediate environment. Science from grade 3-6 includes basic health concepts; and thus, include the nomenclature in Science and Health.

Rubric. It is typically an evaluation tool or a se of guidelines used to promote the consistent application of learning expectations, the consistent application of learning expectations, learning objectives or learning standards in the classroom, or to measure their attainment against a consistentcriteria.

Science in K-to-12 Curriculum. It refers to basic science concepts and application of science-inquiry skills. The skills to be enhances are exhibiting scientific attitudes and values to solve problems critically, innovating beneficial, products, protecting the environment and conserving resources improving the integrity and wellness of people, making informed decisions, and engaging in discussions of relevant issues that involves science, technology, and environment.

Theory of Human Becoming. This focuses on the lived experience of people as they interact with each other and their environment on the journey through time.

Research Method Used

This study utilized a combination of descriptive and normative method. The descriptive technique is used to learn the who, what, when, where, and even the how of a study which maybe simple and complex and concerns a univariate question or hypotheses in which one seeks about, or states something about (Cooper and Schindler, 2008).[39]

Since the study analyzes an existing situation and answers the w/h questions, descriptive technique was also used.

Research Locale

The researcher has twelve (12) selected public elementary schools in District 4, Division of City Schools of Lipa City in Batangas.

Respondents of the Study and Sampling Procedures

The groups of respondents were from each of the two (2) elementary schools with big, and medium schools each in four (4) districts of Lipa City or with a total of 8 schools. From these schools, the school principals/supervisor/heads;

[39]Cooper, Donald and Pamela Schindler (2016). Research Method (12th Ed.) McGraw Hill, USA and elementary teachers were the identified groups of respondents.

Table 1 presents the distribution of the group of respondents representing their respective schools.

The researcher has eight (8) elementary schools for the setting of her study in District 4, Division of Lipa City. These schools are classified as big, and medium schools. Each district in the Division was represented by two (2) classified school in each of the four (4) districts or a total of eight (8) elementary schools.

These four (4) districts represent the North District where the big school: Inusluban-Marawoy Elementary School has 2 school administrators, and 17 from 32 or 56.67 percent teacher respondents. Another medium school is the Bugtongnapulo Elementary School also with 2 school administrators and 12 from 20 or 60 percent participation. With a population of 54, 33 or 61.11 percent participation is generated.

From the South District, the big small respondents are Sen. Claro M. Recto Memorial Elementary School with 2 and 14 or a total of 16 respondents while from the medium school, the Bolbok Elementary School, 2 and 6 or a total of 8 responded to the surveys.

In the East District, there is a total of 30 from 52 or 57.69 percent participation from Gaudencio Lontoc Intergrated School with 2 and 15 or 17 (53.12 percent) responses; and from Pinagkawitan Elementary School, another 2 and 10 or a total of 12 or 54.54 percent were retrieved.

Finally, from the West District, a total of 2 school administrators each from Padre Valerio Malabanan Memorial School and Tambo Elementary School was retrieved a total of 19 teachers participated in these schools.

In total, from a population of 16 school administrators, 100 percent responded; and from 160 teachers, 94 or 58.75 percent participated. There is a total of 110 or 62.86 percent participation in the study.

Table 1
Groups of Multi-Level Sampling of the Groups of Respondents

DISTRICT ELEMENTARY SCHOOLS	P	p	% Retrieval
➢ **North District**	**54**	**33**	**61.11**
• Big: Inosluban Marawoy Elem. School			
-School Administrators	2	2	100.00
-Teachers	30	17	56.67
Total	32	19	59.37
• Medium: Bugtongnapulo Elem. School			
-School Administrators	2	2	100.00
-Teachers	20	12	60.00
Total	22	14	63.64
➢ **South District**			
• Big: Sen. Claro M. Recto Memorial Elem. School	**33**	**24**	**72.73**
-School Administrators	2	2	100.00
-Teachers	20	14	70.00
Elem.	22	16	72.73
• Medium: Bolbok Elem. School			
-School Administrators	2	2	100.00
-Teachers	10	6	60.00
Total	12	8	66.67
➢ **East District**			
• Big: Gaudencio Lontoc Integrated School	**52**	**30**	**57.69**
-School Administrators	2	2	100.00
-Teachers	30	15	53.33
Total	32	17	53.12
• Medium: Pinagkawitan Elem. School			
-School Administrators	2	2	100.00
-Teachers	20	10	50.00
Total	22	12	54.54
➢ **West District**			
• Big: Padre Valerio Malabanan Memorial	**32**	**23**	**71.87**
-School Administrators	2	2	100.00
-Teachers	20	13	65.00
Total	22	15	68.18
• Medium: Tambo Elem. School			
-School Administrators	2	2	100.00
-Teachers	10	6	60.00
Total	12	8	66.67
School Administrators	16	16	100.00
Teachers	160	94	58.75
GRAND TOTAL	175	110	62.86

The demographic profile of these groups of respondents shows that on;

1. Gender

The 3-school administrator (or 18.75 percent) school are male while 143 or 81.25 percent are female or a total of 16 administrators. While of the total 94 teachers, 83 (88.30 percent) are female vs. 11 (11.70 percent) are male. This is reported in table 2.

Table 2
Gender Profile of the Respondents

GENDER	N=16 School Admin.		N=94 Teachers		N=110 Total	
	f	%	f	%	f	%
Male	3	18.75	11	11.70	14	12.73
Female	13	81.25	83	88.30	96	87.27
TOTAL	16	100.00	94	100.00	110	100.00

2. Civil Status

Table 3 on the civil status profile, of the 16 school administrators, ten (10) (62.50 Percent) were married. Of the 94 elementary teachers, more than the majority of them, 81 (86.17 percent) were married while 11 (11.70 percent) were still single and 2 (2.13 percent were widow.

Table 3
Civil Status of the Respondents

CIVIL STATUS	N=16 School Admin		N=94 Teachers		N=110 Total	
	f	%	f	%	f	%
Single	6	37.50	11	11.70	17	15.45
married	10	62.50	81	86.17	91	82.73
Widow/er	0	0.00	2	2.13	2	1.82
TOTAL	16	100.00	94	100.00	110	100.00

2. Age Range

A perusal of Table 4 shows that close to the greater number of them with 6 (37.50 percent) of the school administrators were between 41-45 years old, while the younger ones with 1(6.25 percent each was under the 36-40 years old. The oldest of them with 2 (12.50 percent) each was nearing the retirement age (50-55 years old and above).

Meanwhile ,among the 94 teachers, the plurality of them were from 31-35 years old (29 or 30.85 percent), 26-30 years (24 or 25.53 percent), 41-45 years old (12 or 12.77 percent), and 46-50 years old (4 or 4.25 percent), There were also 2 (2.13 percent) whose age was below 25 years old and the youngest and newest in the school while there was also 1 (1.06 percent) each who was the oldest (51-55 to 56 years and above old).

Table 4
Age Range of the Respondents

AGE RANGE	N=16 School Admin		N=94 Teacher		N=110 Total	
	f	%	f	%	f	%
25 and below years old	0	0.00	2	2.13	2	1.82
26-30 years old	0	0.00	24	25.53	24	21.82
31-35 years old	0	0.00	29	30.85	29	26.36
36-40 years old	1	6.25	21	22.34	22	20.00
41-45 years old	6	37.50	12	12.77	18	16.36
46-50 years old	5	31.25	4	4.25	9	8.18
51-55 years old	2	12.50	1	1.06	3	2.73
56 years old and above	2	12.00	1	1.01	3	2.73
TOTAL	16	100.00	94	100.00	110	100.00

5. Highest Educational Attainment

Table 5 reports on the educational qualification o the groups of respondents.

From the 16 school administrators, more than the majority of them (9 or 56.25 percent) have units in the master's program while (1 or 6.26 percent) has units in the doctoral degree.

Table 5
Highest Educational Attainment of the Respondents

HIGHEST EDUCATIONAL ATTAINMENT	N=16 School Admin.		N=94 Teachers		N=110 Total	
	f	%	f	%	f	%
Bachelor's /Degree	0	0.00	50	53.19	50	45.45
With Master's Units	9	56.25	28	29.79	37	33.64
Master's Degree	5	31.25	15	15.96	20	18.18
With Doctoral Units	1	6.25	1	1.06	2	1.82
Doctoral Degree	1	6.25	0	0.00	1	0.91
TOTAL	16	100.00	94		110	100.00

On the part of the 94 teachers, 50 (53.79 percent) of them were able to meet the minimum requirement of their present position, bachelors degree, while 28 (29.79 percent) already have units in the master's program; and only 15 (15.96 percent) were able to finish their master's degree. Only one (1) (1.06 percent) has ventured pursuing a postgraduate course.

6. Present Position, etc.

Table 6 enumerates the profile information of the groups of respondents with regard to their present position, field of specialization and subjects tough by the teachers.

On the present position of the school administrators, of the sixteen (16) four (4) of them were OIC (25 percent). Principal II and Principal III with 3 and 2 (18.75 and 12.50 percent), while majority of them with seven (7) (43.75 percent) was Principal I. Ten (10) (62.50 percent) of them majored in education, while 6 (37.50 percent) were educational management major in their Bachelor's Degree.

On the part of the 94 teachers, more than the majority of them (52 or 55.32 percent) are Teacher 1 while 5 (5.32 percent) were Master Teacher II and 2 (2.13 percent) were Master Teacher I holders. There were also 5 (5.32 percent) who were Teacher III holders and 30 (31.91 percent) holding Teacher II position

The Plurality of these teachers majored in elementary education (56 or 36.36 percent) while 15 (9.74 percent) each of them majored in general elementary, educational management. Filipino, and TLE field of study. There were only 3 (1.95 percent) whose major was English.

Table 6
Present Position, Field of Specialization, and Subjects Taught

RESPONDENTS	F	%
ADMINISTRATORS		
PRESENT POSITION		
• OIC	4	25.00
• Principal I	7	43.75
• Principal II	3	18.75
• Principal III	2	12.50
Total	16	100.00
MAJOR OF SPECIALIZATION		
• Educational Management	6	37.50
• Elementary Education	10	62.50
Total	16	100.00
TEACHERS		
PRESENT POSTION		
• Master Teacher I	2	2.13
• Master Teacher II	5	5.32
• Teacher I	52	55.32
• Teacher II	30	31.11
• Teacher III	5	5.32
Total	94	100.00
MAJOR SPECIALIZATION		
• BEED	56	36.36
• General	15	9.74
• Elementary	45	29.22
• English	3	1.95
• Educational Management	25	16.23
• Filipino	5	3.26
• TLE	5	3.25
Total	154	100.00
SUBJECT TAUGHT		
• Elementary Education	65	57.02
• Educational Management	39	34.21
• TLE	10	8.77
Total	114	100.00

*Multiple Responses

Finally, there were 25 (16.23 percent) who majored in Educational Management; 45 (29.22 percent) who were Elementary Education major; and 10 (8.77 percent) whose major was in TLE and were teaching these subjects in the tertiary level.

Data Gathering Procedures

Two (2) sets of survey questionnaire were formulated based on th.e specific questions raised in the study. Unstructured interviews and observations were also be conducted by the researcher.

In addition, in the process of modification and validation procedure, sets of questions were drafted and after their compilation, they were finalized, edited and submitted to her adviser and experts for comments and suggestions for improvement. After these, suggestions/recommendations were noted and considered; the sets of instruments were again improved, edited for corrections, and once more finalized for approval.

Once the researcher was able to get the approval of her adviser, the sets of instruments were pre-tested for reliability, effectiveness and validity where the researcher personally conducted the dry run in one (1) elementary school in the North District of Lipa City.

Moreover, clear instructions/directions of what to do with the list of questions also was provided. Each questionnaire also has cover letter cordially and courteously composed, neatly organized and encoded containing the required parts of the letter request.

Through judgmental validation, the sets of survey instruments were put in final form and administered personally to the groups of respondents.

Data Gathering Instruments

Two (2) major sets of instruments were designed and developed purposely to gather the much-needed data of the study.

Part A. The Personal Profile of the Groups of Respondents of Selected Public Elementary Schools in the Four Districts of Lipa City, Batangas.

This instrument generated data on the demographic and individual characteristics of the respondents in terms of gender, civil status, age range, highest educational attainment, present position, and length of service in present position.

Part II. Assessments of the School Administrators and Teacher on the Utilization of Enhanced Virtual Instructional Materials offered to improve teaching the new K+12 Education Curriculum in Science, Mathematics, and English.

This section includes the two (2) major areas: learners' academic performance and achievement tests in Science, Mathematics, and English subjects.

Part III. Proposed Enhanced Virtual Instructional Materials offered to Prepare Pupils to the Challenges of the K-to-12 Curriculum.

Statistical Treatment of Data

All the data collected from the surveys were culled and summarized in tabular form and treated using arithmetical and statistical tool, which include:

1. Percentage. This tool is used to get the frequency of distribution to an item and relevance of the data. It was used in determining the quantitative information about the personal data of the groups of respondents.

2. Weighted mean. This tool is utilized primarily for qualitative analysis to determine the responses that are typical to the respondents as a group. This tool was used in Specific Problem No. 2 and 4, respectively. The formula is:

$$X = \frac{\Sigma x_1}{n}$$

x = is the mean

Σ = Summation of all responses of respondents in a certain item

n = total number of respondents of the study

3.Chi-square test (X^2_r). statistical too is used for sample data to test hypotheses about the assessments of the groups of respondents of the shapes and proportions of the population in each category. Each sample is expressed as a set of observe frequencies (d_0 values), and the null hypothesis (Ho) is used to generate a set of expected frequencies (f_e values).

$$x^2 = \Sigma \frac{(f_o - f_e)2}{}$$

where:

x^2 = Chi-squire

f_o = observed frequencies

f_e = expected frequencies

4. T-test. This statistics serves as a posthoc used to test significant difference between variances, in this case, the assessment of the three (3) groups of respondents in selected Public Elementary Schools in four (4) Districts of Lipa City.

Summary

The study is conducted to assess the academic performance of Grade VI pupils of eight (8) selected public elementary schools in the four (4) Districts, Division of Lipa City, Batangas so that a Proposed Virtual Supplementary Materials in Mathematics, Science, and English may be proposed to enhance the implementation of the K-to-12 curriculum.

The study is descriptive and qualitative in nature where 16 school administrators and 94 elementary teachers or a total of 110 from the eight (8) selected elementary schools in the four (4) districts in the Division of Lipa City of Batangas, participated and responded to the study. Using a combination of purposive-convenience procedure, participants were also chosen after they were classified using sets of indicators in terms of their se, age, educational qualification, and present position; and finally, from these groups respondents, the Grade VI pupils of the schools were also the subject of the study.

Sets of validated-survey questionnaire complemented by interviews and observations were also used to generate the data in the study.

From the summarized and computed data, the following are the highlights of the findings of the study.

1. The Grade VI pupils of the eight (8) selected public elementary schools based on the result of the National Achievement Test (NAT), school access in the area of not enrolled rate and drop-out rate registered satisfactory responses; and based on efficiency in terms of cohort survival rate and completion rate reflected very satisfactory and satisfactory performance.

2. The academic performance based on historical data covering the three (3) school years, from 2013-2014, to 2015-2016, National Achievement Tests (NATs) in Mathematics satisfactory performance last school year 2013-2014, however, the preceding and following years registered decreased percentage performance of 2.59 (2014-2015), and 3.15 (2015-2016), respectively.

Similarly, the same trend was found in Science since percentage of decreased performance from 0.73 (2013-2014), to 0.06 (2015-2016). Likewise, the performance of the pupils in English registered highest percentage decreased from 2014-2015 (4.42), to 2013-2014 (0.22).

The overall performance of the Grade VI pupils reflected decreased in all the subjects covered in Mathematics (1.75); Science (0.18); and English (3.56).

As regards the significant relationship between the rank scores of the Grade VI pupils in NATs in Mathematics, Science, and English, the application of r equally results to computed r=0.1169 which value is in the non-rejection region, therefore, accept the null Ho because there is weak correlation between variances.

3. No significant relationship exists between access and efficiency performance of the schools; and the academic performance of the Grade VI pupils in National Achievement Test (NATs) covering the three (3) school years, from (2013-2016) since the computed r results to r=0.0198 which has a verbal interpretation of weak correlation, hence, the null hypothesis of no significant relationship is accepted at o.05 alpha level.

4. From the gathered and analyzed data, the researcher offers sets of Proposed Strategic Virtual Supplementary Instructional Materials in Mathematics, Science, and English to enhance the implementation of the K-to-12 curriculum. These virtual instructional tools which come in the form of reading and practice exercises are proposed. These serve as reinforcement strategies with the objective of the pupils' gaining more knowledge and skills in basic education subjects, at least, required by the grade level and will influence the implementation of the new education curriculum.

They are designed and developed as functional and instructional tools to specifically help the learners gained skills in computation, logical reasoning, and systematic problem solving ability in Mathematics; demonstrate understanding of matters, living things and their environment; force, motion and energy; and earth and space in Science; and finally, enhance the communicative competence of pupils in reading, writing, listening, and speaking habits in English.

4.1 Based on the application of t-test to determine if significant difference exists between the pre and posttests performance of the Grade VI pupils before and after using the Proposed Sets of Virtual Instructional Tools, the results of t=10.669 which value exceeds the critical t=2.920, hence, reject the null hypothesis of no significant difference.

The Proposed Sets of Virtual Supplementary Instructional Materials are developed based on the identified academic weaknesses, sets of pre and posttest were also designed and developed, then, administered the pre-test to the Grade VI pupils for three (3) months.

The results of the pre-test proved to help enhance the Mathematics, Science, and English knowledge and skills of the subjects since their performance had improved from poor rating of 68.74, to satisfactory 82.19 performance.

5. The school administrators and teachers strongly and mutually agreed that the Sets of Virtual Supplementary Instructional will serve as bridging tools in Mathematics, Science and English and will enhance the implementation of the K-to-12 curriculum as proof of the obtained composite mean of 3.66 where the highest was in planning (X=3.72) and the least in rank was in communication (X=3.55) respectively.

Conclusions

From the findings of the study, the researcher arrived at the following conclusions:

1. The schools under study, on the average, performed satisfactorily

based on access and efficiency in terms of the not-enrolled rate and drop-out rate; and in terms of cohort survival rate, but very satisfactory in completion rate has a verbal interpretation of weak correlation, hence, the null hypothesis of no significant relationship is accepted at 0.05 alpha level.

2. Generally, the Grade VI pupils performed satisfactorily based on the National Achievement Tests (NATs) in Mathematics, Science and English covering the school years 2013-2014 to 2015-2016.

3. No significant relationship exists between the school performance in terms of access and efficiency; and in the area of the academic performance in the National Achievement Tests (NATs) in Mathematics, Science and English.

4. The Proposed Strategic Sets of Virtual Supplementary Materials in the form of reading and practice exercises for the use of Grade VI pupils will help and enhance both administrators and teachers in the implementation of the K-to12 in the teaching of Mathematics, Science, and English, if both are used by competent teachers and supported by administrators.

As further manifested in the study, the performance of the Grade VI pupils in Mathematics, Science and English has improved after using the proposed supplementary instructional materials.

3. The Proposed Virtual Supplementary Instructional Materials was highly perceived by both the school administrators and teachers not only bridging but also to enhance the implementation of the K-to-12 curriculum. If implemented, in these elementary schools, the same will help improve knowledge and skills of the pupils in the study of Mathematics, Science and English since they will not only help improve the difficult areas in the study of subjects, but will also offer specific plans of actions and instructional strategies using virtual supplementary instructional tools coupled with competency skills to be undertaken by joint initiatives of school administrators and teachers of the schools.

Recommendations

From the conclusions drawn, the researcher offers the following:

1. Teachers of Mathematics, Science, and English subjects should offer both more meaningful learning experiences using different virtual instructional tools and methodologies, especially in problem-solving and critical thinking than merely classroom instruction to help pupils gain more knowledge and skills in the study of the basic education subjects.

2. Since the Proposed Sets of Virtual Supplementary Instructional Materials will serve as reinforcement and enriching tools, it is recommended for the use of Grade VI pupils in the schools because of the following reasons:

2.1 it is content-based focusing on the weaknesses and gaps mostly experienced by the pupils in Mathematics, Science, and English;

2.2 its goals are both toward pupils enhancing their interest and skills in the study of the subjects; and

2.3 reading and practice exercises in the proposed tools provide for a lot of opportunities for the pupils to get actively involved in the activities both in class and during independent studies.

3. Both school administrators and teachers should further explore the possibility of teamwork, not only in helping pupils in Mathematics, Science, and English, but also in other areas of academic discipline, to further their basic literacy skills.

4. Since the teacher factor is found to have the greatest influence in the acquisition of knowledge and skills, then, teachers should concentrate more in instruction spending more time in teaching the subjects using variety of virtual instructional materials and methodology to make their classes more interesting and challenging. Avoid giving unnecessary exams and tasks that eat up precious classroom minutes; instead concentrate on content and set enough time for problem solving and interactive and creative learning.

5. There should be a continuous joint effort and networking between the teachers and school administrators, to better implement the proposed instructional intervention measures as these will help lay the foundation for better school administrators and instruction. In addition, the school should adopt the Proposed Strategic Sets of Virtual Supplementary Instructional Tools in Mathematics, Science, and English since this will serve as an important supplementary instructional tools in implementing the K-to-12 curriculum.

The following should also be considered:

5.1 The problems met are very different from the old curriculum;

5.2 The content is very different (spiraling is only one of the new things today);

5.3 The methods of delivery are different (the use of virtual, new technology, like computer, has changed everything);

5.4 The physical environment has changed (more structures, facilities, etc. because of increased population); and

5.5 Student body has changed (learners today are techno savvy, unlike teachers who are mostly digital immigrants or even digital aliens).

6. Other researchers can also replicate this study using other grade levels and other subject matter as well as other setting.

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