

# A PROPOSED INSTRUMENT TO MEASURE EFFICIENCY OF PUBLIC SECONDARY SCHOOLS

*LYN M. ESGUERRA*  
Researcher

*Master of Arts in Education*  
*Major in Educational Management*  
*February 2012*

*Grace C. Sadac, Ph.D*  
Adviser

## **Abstract**

*This is a descriptive study that aimed to propose an instrument to measure efficiency of public secondary schools. Specifically, it sought to (1) identify definitions of school efficiency based on the literature reviewed and existing instruments that measure the school system's efficiency; (2) construct items which may form part of the instrument to measure efficiency of public school; (3) determine the soundness of the preliminary draft of the instrument based on the experts' assessment and results of item analysis; and (4) prepare the final draft with calculated reliability and construct validity.*

*The study was anchored on process perspective to measure school efficiency, which was primarily based on existing assessment instruments to evaluate the school's characteristics, quality of excellence and level of performance.*

*A Table of Specifications (TOS) was prepared to serve as a guide in writing the items of the proposed instruments consisting of seven (7) components and 50-item behavioral indicators. The initial draft underwent content validation by experts prior to the pilot testing among 300 respondents who all came from one national secondary school with a student population of over 9,000. These respondents were 100 teaching and non-teaching staff randomly selected from the different departments, 100 students from the Special Science Class, Special Section for the Arts and first bracket sections of the third year and fourth year levels and their respective parents (one parent for each of the 100 students).*

*Results of Factor Analysis and internal consistency evaluation through Cronbach's Alpha reduced the original seven domains into five namely: (1) School Leadership; (2) Instructional Leadership; (3) School Management; (4) Human Resource Management; and (5) Creating a Student-Centered Learning Environment.*

*Of the 50 original indicators, two (2) items were discarded as a result of factor analysis and 37 others loaded and remained under their respective original dimensions. Meanwhile, one (1) item though loaded in its predetermined dimension also loaded highly in another dimension where it appeared better suited after review of the context. Finally, 10 items were transferred to other suitable dimensions after factor analysis.*

*The study concluded that the proposed instrument to measure efficiency of public secondary schools is internally consistent; it has structural and construct validity and the final form may now be used by school managers in evaluating schools' efficiency.*

---

**Keywords:** instrument development, efficiency of public secondary schools, measures of school efficiency

## INTRODUCTION

Education plays a vital role in the development and growth of countries. It executes the development of knowledge, skills, and training necessary for people to lead productive lives, thus enabling them to contribute to national development. This makes the delivery of quality education critical to sustaining a nation's progress and competitiveness (Asian Institute of Management, 2002).

Continuous improvement in education can happen if there is really a systematic and a logical way of evaluating school's policies, strategies and processes. Evaluation is the heart of every improvement effort because this provides a sound basis for changes in policies, strategies and direction for greater accountability, organizational efficiency, quality development, control, assurance and monitoring of schools was stressed in Grauwe and Naidoo (2002).

Ncube (2004) pointed-out that quality education is meeting customer satisfaction requirements, but customer requirements shift with the place and time and it is necessary that the organization commits itself to continuous improvement to meet the changing requirements of customers. Information must flow in both top-down and bottom-up path to ensure there is an improvement in all aspects of the school specifically the goals and objectives, processes, and resources. Customers like employees, parents, students can also feed information that can promote continuous improvement. Quality is not only attributed to material inputs, rather it is how human resource is able and willing to deliver the quality by putting systems and procedures into operation and ensuring that those systems are efficiently and effectively operationalized.

The school, next to the family, as described by the Asian Institute of Management (2002) is the closest institution directly involved in educating individuals, hence, is expected to provide students quality educational services in terms of curriculum, teaching-learning environment, and support amenities. Equity of schooling emphasizes the importance of providing equal opportunities of education for all. Efficiency focuses on delivering good quality of education by maximizing the use of limited resources.

School evaluation is an important task of education officials; however, in most cases, the evaluation process is more focused on the teachers and students rather than on the school as a whole. Yin-Cheong (1990) reported that great progress has been made in the evaluation of students and teachers. On the contrary, school evaluation remains rather a problematic area. It is universally recognized that evaluation in education is necessary for quality improvement.

According to Grauwe and Naidoo (2004), the primary reason why schools deteriorate is because of the weak evaluation mechanism that is being used to evaluate a school's performance. School evaluation is an essential component of the decision-making process in education. Ideally, this entails a systematic process of collecting and analyzing data which are correlated and are in consonance with the school's vision, mission, objectives and goals. This process involves an in-depth analysis of the school's internal and external environment that has an impact on learning outcomes. Internal assessment includes an analysis of the school's human, physical and fiscal resources, curriculum resources to leadership, teaching-learning process, and standards and assessment of outcomes. External assessment includes the

analysis of macro-economic, micro-economic and sector analysis factors that affect the school performance.

Furthermore, according to Grauwe and Naidoo (2004), the recent trends in school autonomy and decentralization made it attractive for schools to evaluate their own performance and to determine if they meet or even exceed national standards. The granting of autonomy to schools that meet or exceed national standards has prompted equally greater demand for accountability at the school level and for evaluation procedures. Schools take accountability for school improvement for better learning outcomes. Evaluation has to be focused on the way a teacher interacts with the learners and how learners are actively engaged in the learning process. Such interactions are greatly influenced by the leadership of the principal, the relationship with parents, the support received from other teachers and other school stakeholders and the overall climate of the school. Thus, a growing number of countries are developing mechanisms and tools to evaluate and assess the quality and performance of the school as an institutional unit in terms of school efficiency and school management.

Soteriou, Karahanna, Papanastasiou and Diakourakis (1998) stated that an education system may be called efficient when it attains the maximum level of results for a minimum level of investment, where investments and results in this context are evaluated, aggregated, measured and marked. Chapman (2002) cited that efficiency in its simplest terms, means achieving the desired goals of education at lower costs or achieving more goals without increasing costs. He further argued that in reality, achieving the aforementioned goals is not that simple. Understanding efficiency requires four major parts—inputs, process, outputs, and outcomes. He pointed out that management and efficiency in education talk about the effectiveness and efficiency of a program because if a program is efficient, it already asserts its effectiveness. A program cannot be efficient unless it is effective. Efficiency is about how to allocate resources to achieve desired goals, it is a process for making the possible use of available resources to achieve public ends. There is efficiency when educational wastage is avoided, that is providing the most effective utilization of all human, organizational, and financial resources to the best possible learning outcomes. It is a means to utilize the minimum inputs to obtain a quantity and quality of outputs or efficiency is simply “doing things right” as stated in Amaral (2011).

Furthermore, Asian Network of Training and Research Institutions in Educational Planning Report (2000) asserts that efficiency is the attainment of one’s target, better yet, it has surpassed one’s target at a reasonable cost preferably below the target budgetary requirements or allocation. To achieve school efficiency, sound school management is a prerequisite. Efficient schools are those which are well-managed which is evident when an interaction among stakeholders is mutually reinforcing so that teachers are happy to teach, parents are willing to send their children in school, and children enjoy the learning process. These definitions indicate four dimensions of efficiency, namely: focus on outcomes, favorable internal management, cost effectiveness, and equity.

From among the various definitions of school efficiency, the position taken in this study is the conceptualization of Abagi and Odipo (1997) of the term school efficiency or educational efficiency as a “process perspective” as opposed to “outcome perspective”, that there is a need to go beyond the issue of “at what cost” is a school meeting its objectives. It is emphasized that in education, efficiency has to be pegged to how a system of education operates to meet the objectives called “holistic operation”.

The cross-analysis study in efficiency of education by Abagi and Odipo (1997) indicates that emphasis was made on the manipulation and the operations of inputs, outputs which price are easy to determine. The structural processes, learning time management, school management practices, classroom management, and teacher-pupil relationships, for which prices are difficult to determine have not been given much attention.

Previous studies conducted and survey-instruments administered in relation to school efficiency were used as bases in the underlying category and construct under study. The first of which is the Assessment of School-Based Management Practices (2009), a key component of Basic Education Sector Reform Agenda of the Department of Education which aims to decentralize education management- a strategy that is expected to improve operating efficiency and upgrade education quality. Second, is the Project Sterling Silver, which is a project for the reform of Philippine secondary schools through a peer accreditation system. The aforementioned project is a joint undertaking of Ford Foundation, the Department of Education and the Philippine Association of Public Secondary School Administrators, and the University of Asia and the Pacific. This is a self-survey instrument which seeks to elicit the assessment of various areas and sub-areas of the school administered by the accrediting team. It is the improvement toward higher levels of effectiveness and excellence. And third is the National Competency-Based Standards in pursuant to DepEd Order No. 32, s. 2010 which mandates the NCBS-SH pursuant to the implementation of R.A Act 9155 Governance of Basic Education Act, which emphasizes decentralization of school governance and the operationalization of a Basic Sector Reform agenda which focus on the continuous school improvement through active involvement of stakeholders.

The above mentioned assessment tools did not only concentrate on using conventional statistical models such as Production-Function Model- Inputs Vs. Outputs to measure efficiency levels, but had utilized process perspective to analyze basic school processes and measure school or education efficiency.

These surveys were made and used to identify the components and indicators of the evaluation instrument to measure the efficiency of the public secondary school system, namely: School Leadership, Instructional Leadership, Creating a Student-Centered Learning Climate, Human Resource Management, School-Parent-Community Partnership, School Management and Operations, Personal and Professional Attributes and Interpersonal Effectiveness.

Evaluating School Efficiency serves three different purposes as viewed by Grauwe and Naidoo (2004) namely: to comply with administrative demands; to fulfill accountability purposes; and to lead to pedagogical and managerial improvement.

The three key mechanisms that comprise most school evaluation strategies are the examination and test system; comprehensive external school reviews (through the inspection system, for instance); and school self-evaluation.

Experts posit that ineffective evaluation procedures are more expensive than effective ones (Pangilinan, 2006). Thus, finding the right instrument is a challenge so as not to waste fiscal resources. A research instrument must be assessed prior to use for both validity and reliability.

Ridley (2005) stated that validity refers to the degree that an instrument actually measures what it is designed or intended to measure which was also supported in Miller (n.d.), as he defined validity as the extent to which an instrument measures what it purports to measure. Furthermore, Golafshani (2003) pointed out that validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. Lastly, Knupfer and McLellan (2001) contended that validity as the ability of data to reflect the underlying attribute of interest.

In Miller (n.d.), there are four types of validity, namely: content validity, face validity, criterion-related validity (or predictive validity), and construct validity. It is asserted that content validity pertains to the degree to which the instrument fully assesses or measures the construct of interest. The development of a content valid instrument is typically achieved in terms of items, readability, clarity and comprehensiveness. Face validity is a component of content validity and is established when an individual reviewing the instrument concludes that it measures the characteristics or trait of interest. While, criterion-related validity is assessed when one is interested in determining the relationships of scores on a test to a specific criterion. Construct validity is the degree to which an instrument measures the trait or theoretical construct that it is intended to measure. Construct validity, although time-intensive process is necessary to ensure accuracy and validity of the survey instrument.

A systematic approach to establishing validity as well as reliability of an instrument is required. Jose (2006) defines reliability, as a consistency of scores obtained by the same test on different occasions; she also described reliability, as the extent to which a test is dependable, self-consistent, and stable. Miller (n.d.) identified reliability, as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. In short, he said it is the stability or consistency of scores over time or across raters. And according to him there are three aspects of reliability, namely: equivalence, stability, and internal consistency.

Golafshani (2003) differentiated reliability from validity of research instruments in quantitative research. When results are consistent over time, when there is an accurate representation of the population of the study, and if the results of a study can be reproduced under the same methodology, a research instrument is said to be reliable. On the other hand, validity is determined when the means of measurement are accurate and that they measure what they are supposed to measure.

School evaluation is an essential tool toward improving school efficiency. The impetus to improve school performance is attributed to accountability and quality improvement.

In the Philippines, there are varied metrics on how schools are evaluated. The primary indicator of a school's performance is the result of the assessment tests administered by the National Education Research and Testing Center. A school is said to be performing if it gets a mean percentage score higher than other schools in the Division, Regional and National even if the score is way behind the 75% minimum level of proficiency. Another metric that is being used to evaluate schools based on the dimensions of School Based Management (SBM). For the performance based bonus, schools are ranked based on the dropout rate, liquidation of MOOE and NAT results. Experts believe that there is really a need to design an evaluation that is more holistic which attends to accountability issues. Moreover, the results of examinations must also be further validated by an extensive internal and external assessment of schools.

Results of the evaluation can be utilized as a strategic approach to quality assurance; this will serve as a basis in developing the capacity of the school to design and deliver programs, projects, and activities, initiate and conduct educational change that will raise higher learning outcomes which may eventually meet international standard.

This study was founded on the concepts of school efficiency, which was defined by International Institute for Educational Planning/ UNESCO (2000) in terms of three commonly found factors. First, efficient schools are those which obtain better outcomes, in terms of examination results. Second, efficient schools are well managed. Third, efficient schools are those which give good results at a reasonable cost, affordable to the society as a whole and to the different individuals in that society. A closer look at these definitions indicates four dimensions of efficiency, namely, focus on outcomes, favorable internal management, cost-effectiveness and equity.

Griffits (1998) defines effective schools as schools who are led by strong instructional leaders whose primordial concern is to prove quality instruction for all learners. A strong instructional leader puts emphasis on setting of academic goals, on providing an orderly and safe climate conducive to learning, about setting high expectations of achievement for all students with a belief that every learner has a potential learn, unlearn, and relearn, and using regularly student achievement to evaluate the effectiveness and appropriateness of the curriculum and other curricular programs.

The underlying components and behavior indicators of the construct under study were based on the criteria of School Based Management (2009), in the Project Sterling Silver- Peer Accreditation for Public High Schools (2002) and on the criteria for evaluating the level of competence of School Heads- the National Competency Based Standards for School Head in pursuant to DepEd Order No. 32, s.2010 and implementation of R.A. 9155 Governance of Basic Education Act, which emphasizes decentralization of school governance and the operationalization of Basic Sector Reform Agenda (BESRA) which focus on the continuous school improvement.

The conceptual framework represented by the silhouette (Figure 1,p.10) illustrates that school efficiency can be gauged through process perspective. In education as opposed to a factory of good efficiency has to be pegged on how a system of education as a whole operates to meet its objectives postulated in Abagi and Odipo(1997). It assumes that a school is efficient and effective if its internal functioning is smooth and “healthy”. In evaluation, it is necessary to consider the school’s organizational process by which schools articulate preference, perceive demands, and make decisions. There is a clear relationship between school’s organizational procedures and educational outcomes. Schools efficiency can be manifested by the process perspective which is manifested through School Leadership, Instructional Leadership, Creating Student-Centered Learning Climate, Human Resource Management, School Management and Operations.

From among the various definitions of school efficiency, the position taken in this study is the conceptualization of Abagi and Odipo (1997) of the term school efficiency or educational efficiency as a “process perspective” as opposed to “outcome perspective”, that there is a need to go beyond the issue of “ at what cost” is a school meeting its objectives. They emphasized that in education, efficiency has to be pegged to how a system of education operates to meet the objectives, called “holistic operation”.

In view of the foregoing, this study was conceptualized in order to come up with a proposed instrument that will measure the efficiency of public secondary schools. It is a well-established fact that education is a collaborative effort between stakeholders, with various factors being put into consideration. Each stakeholder is playing important and vital roles in the learning process and continuous improvement of school quality. It is imperative for the school community, therefore, to work together to assure that this improvement process is achieved and sustained.

Figure 1 demonstrates how collaboration works in making the processes in the school get accomplished. It points out the importance of efficiency in managing a school through collaborative efforts of all concerned. The process of delivering quality service through empowerment strategies clothes the school with authority to ensure that the organization and management are working in unison to achieve the school's vision. This can be symbolically compared with that sailing of the boat. The task is very challenging and difficult. But as long as there is cooperation, coordination among the sailors, what seem to be an insurmountable task tends to become easy. Focusing on the right and one direction, the goals and vision of the school or any organization for that matter, becomes very attainable.

The sails of the boat, representing the instruments related to assessment, public schools efficiency through process perspective, are extended into the wind in such a way that the force be transmitted to the boat. Adding more force to that produced by the sailors will make the journey smooth and easy. Outriggers are extended on the sides, preventing the boat from tilting and sinking. This will provide stability to the boat. The components used in measuring the efficiency of schools, namely: School Leadership, Instructional Leadership, Student-centered Learning Climate, Human Resource Management, and School Management will serve as a paddler. These dimensions or components of schools' efficiency are the ones which will propel and steer the boat towards the desired destination. Just like the paddler, this must be held tightly by the sailor, who is required to be adept and experienced in manning a boat. To assure smooth sailing, these components must be closely knitted with the boat, properly coordinated and synchronized.

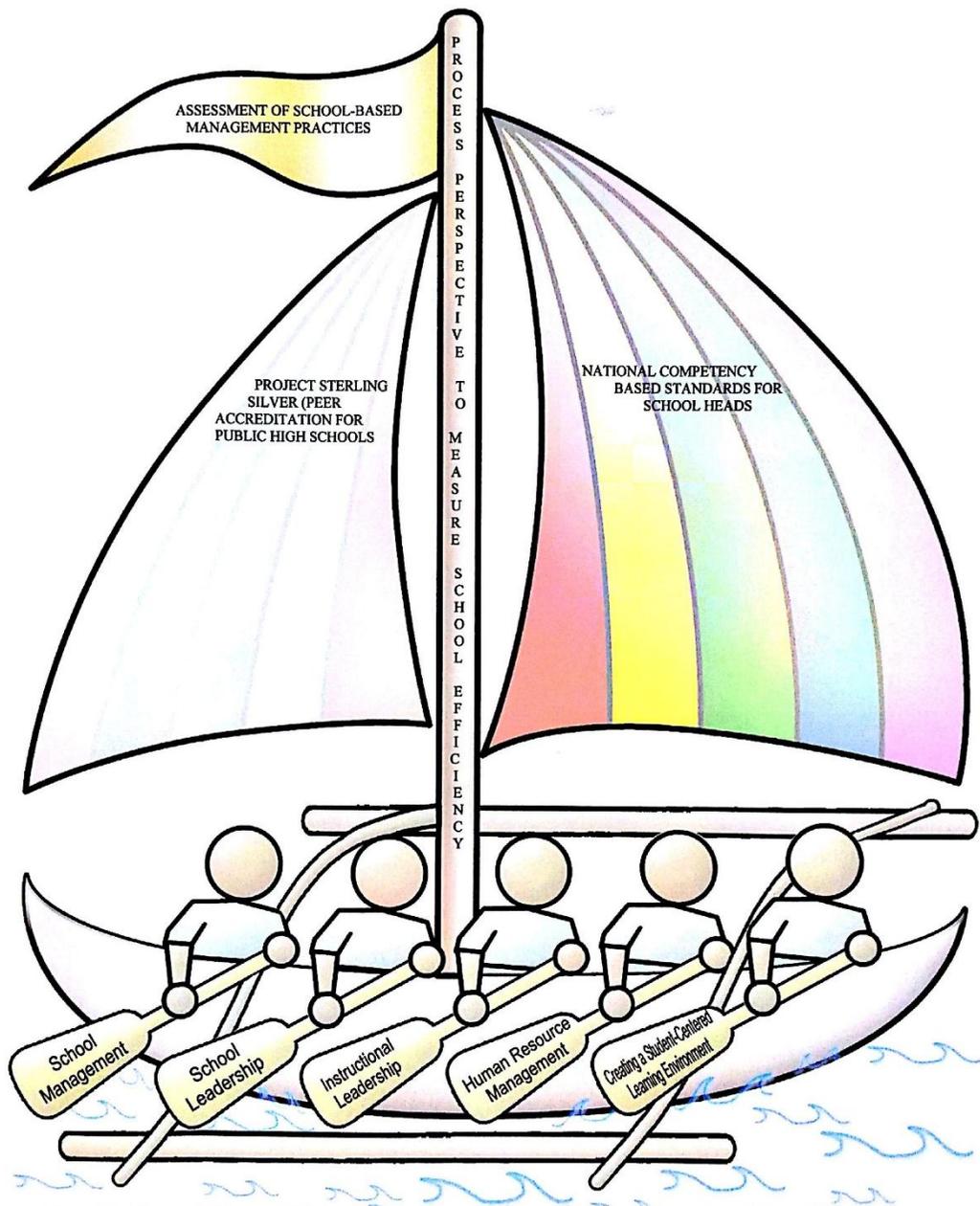


Figure 1. Conceptual Paradigm

This study aimed to propose an instrument to measure the efficiency of public secondary schools.

Specifically, the study sought to identify indicators which may form part of the instrument to measure public school efficiency. It also describes the soundness of the preliminary draft of the instrument based on Factor Analysis and Reliability Analysis. It also aimed to prepare the final draft of the instrument with a calculated degree of reliability and construct validity.

Evaluating the efficiency of an educational institution is a very important strategy to improve and attain higher levels of school efficiency. Monitoring and evaluation are necessary for two reasons: first, there is a need to make judgments about the efficiency of the school. Second, there is a need to monitor and evaluate the development of an education system that ensures the quality and standard of programs, which in turn will generate pressure for improvement.

The instrument would be of help to schools to assess and improve school's efficiency as an organization. Using the instrument for evaluation can provide evidence of whether school processes result in observable positive outcome among students consistently over a period of time. This implies that the school is dependent more on its 'processes' and gauged by its 'outcomes' than on its 'intake'. School managers are expected to benefit from the utilization of the validated instrument for results or data gathered will lead to systematic feedback to quality improvement. It may be a valuable tool to assess for themselves how well they are doing and the increasing trend towards decentralization and greater local autonomy.

School's stakeholders are not only concerned with the performance of their school, but more so with how the school performance is evaluated vis a vis standard, how the learning outcomes are clearly articulated, and how strategies for improved standards can be measured through a school's efficiency evaluation. With these, they will have a sense of ownership where local accountability between them is developed.

Furthermore, it was deemed necessary to develop a valid instrument for school evaluation purposes. And there are several reasons why school evaluation should be conducted. First, in research it was found that effective schools frequently monitor and evaluate their programs and services. Second, it provides feedback that the school and its staff can use as information inputs in undertaking plan changes and innovations. Third, school evaluation is a school empowerment strategy. Fourth, it reduces the uncertainty about educational practice when experiences are limited. Lastly, school evaluation is an integral part of school improvement efforts. International Institute for Educational Planning/UNESCO (2000) postulates that school evaluation is an essential tool towards improving school efficiency. The most commonly carried out evaluation is the performance of students in examinations (on school outcomes). However, relying on the student evaluation alone may not help in identifying factors influencing school efficiency. Therefore, there is a need to evolve mechanisms to evaluate schools as unit or organization. Unfortunately, few reliable indicators to measure efficiency have yet to be developed.

For clarity, the following terms are defined.

**Efficiency** is about how resources are allocated to achieve one's goals. It is a means to utilize the minimum inputs to obtain a required quantity and quality of outputs (Amaral,

2011). It is about “doing things right, that is attaining the maximum level of results for a minimum level of investment. There is efficiency when educational wastage is avoided, that is providing the most effective utilization of all human, organizational, and financial resources to the best possible learning outcomes.

**Human Resource Development** is a process that uses developmental practices to bring about more quality, higher productivity, and greater satisfaction among employees as organization members. It is a function of an individual’s knowledge, skills, and attitudes and the policies, structure, and management practices that constitute the system in which the individual works. The goal of human resource development is to achieve the highest quality of work life for employees and produce highest quality of instructions and service possible for the school (Ubben & Hughes, 1997).

The only resource which can have an output greater than its parts is the human resource. Through and by men, other m’s---money, machines, materials, methods and markets-are acquired and utilized. Human Resources Management is the art and science of developing people for them to realize their full potential in order for them to become productive members of an organization or workforce to achieve one’s desired goal as well as the organization. The development of the necessary Knowledge, Skills and Attitudes of a person to match the demands of the job is the ultimate objective of human resource management. (Readings on Basic Management Course, National Educators Academy of the Philippines, Baguio City, 2009).

**Instructional Leadership** is developing and satisfying work environment for teaching and desirable learning conditions and outcomes for students. It enables the school to discover and maximize the capabilities of the students by developing the four H’s – head, heart, hands, and health, thus transforming them holistically (derived from the Lecture on Instructional Leadership of Dr. Ruth Balajadia-Ducut in 2010). Instructional Leadership is the ability to motivate and inspire teachers to engage learners in active learning for them to become productive, independent and reliable citizens. It is the ability to provide technical assistance to teachers in terms of content, instruction and assessment to ensure positive learning outcomes (DepEd Primer on Competency-Based Performance Appraisal System for Teachers (CB-PAST) Basic Education Sector Reform Agenda –Teacher Education and Development, 2009). Process Perspective deals on how a system of education operates to meet its objectives, called “holistic operation” according to Abagi and Odipo (1997).

**School Efficiency** can be defined in terms of three commonly found factors. First, efficient schools are those which obtain better outcomes, in terms of examination results. Second, efficient schools are those which are well managed. Thirdly, efficient schools are those which give good results at a reasonable cost, affordable to the society as a whole and to the different individuals in that society. A closer look at these definitions indicates four dimensions of efficiency, namely, focus on outcomes, favorable internal management, cost-effectiveness and equity (International Institute for Educational Planning/UNESCO, 2000)

**School Leadership** is the process of influencing others to work enthusiastically toward achieving school goals and objectives. School leadership is determined by personal traits and skills that one possesses that others would like to emulate because it is anchored on the principle of school leadership. School leadership is developing people (internal and external stakeholders); setting direction to the organization (mission/vision) ; and transforming

the school into a more effective organization that fosters powerful teaching learning for all students (Primer on School Based Management, 2009).

**School Management and Operations** forecast, plan, organize, command, coordinate, motivate and complement school (School Management, S. Gupta, J.C. Aggarwal, Published in India 2007 by Shipra Publications). School Management refers to supervision of daily operations management of personnel, finances, facilities, and other matters of the school as defined in the School Based Management Primer (2009).

**Student-Centered Learning Environment** is characterized by High performing schools with high standards, high expectations, and a caring environment. Studies and reports reveal four essential ingredients of the maximally productive environments for learning and positive student control: clear, firm, and high teacher, administrator expectation; consistent rules and consequences that directly relate to breaking these rules; a decided and well implemented emphasis on the self-esteem of all students; and public and private acknowledgement and rewarding of positive behavior of students (Ubben & Hughes, 1997).

## METHOD

This study is a quantitative research that used descriptive method. It aimed at proposing an instrument to measure efficiency of public secondary schools.

The study was anchored on process perspective to measure school efficiency, which was primarily based on the existing assessment instruments to evaluate the school's characteristics, its qualities of excellence, and its level of performance.

Related literature and studies concerning school efficiency and school management along with the existing school performance assessment references (from the Department of Education, specifically, the School-Based Management and Project Sterling Silver, National Competency-Based Standards for School Heads pursuant to the implementation of R.A.9155 which is the Governance of Basic Education Act emphasizing the decentralization of school governance and the operationalization of Basic Sector Reform Agenda that focuses on continuous school improvement), were reviewed and considered in identifying the possible components and behavioral indicators of the proposed instrument.

A Table of Specifications (TOS) was prepared to serve as a guide in writing the items of the instrument consisting of seven (7) components and 50 item behavioral indicators. These seven components were: School Leadership, Instructional Leadership, Creating a Student-Centered Learning Environment, Parent Involvement and Community Partnership, School Management and Operations, Personal and Professional Attributes and Interpersonal Effectiveness.

The initial draft underwent content validation by experts from the fields of education, research, management, and supervision who evaluated the appropriateness of the components, the clarity and grammatical soundness of the entire instrument and the alignment of the indicators to the constructs/ dimensions under which they were proposed to be classified.

The revised and corrected copy of the instrument was pilot tested among 300 respondents who all came from one national secondary school with a student population of

over 9,000. These respondents composed of 100 teaching and non-teaching staff randomly selected from different departments, 100 students from the Special Science Class, Special Section for Arts and first bracket sections of the third year and fourth year levels and their respective parents (one parent for each student, a total of 100). The questionnaires were administered and retrieved upon the approval of concerned authorities.

Data gathered were organized and subjected to statistical validation, encoded and made available in Excel spreadsheets and were exported to SPSS and then subsequently subjected to statistical analysis. Statistical validation was limited to the estimation of construct validity using confirmatory factor analysis, and internal consistency using Cronbach's Alpha. Confirmatory factor analysis was utilized in grouping the indicators or components of school efficiency. Items that did not load in any predetermined domains were eliminated and those that were deemed loaded on the inappropriate factor were likewise removed. Lastly, the internal consistency of the items in each category was also established using Cronbach's alpha.

Based on the results of the statistical validation, the final form of the proposed instrument was drafted.

## **RESULTS**

The results of the study are presented according to the sequence of the objectives as stated in the Introduction: items which may form part of the first draft of the school efficiency scale instrument, soundness of the draft instrument based on experts' assessment and item analysis, and calculated reliability and construct validity.

### **First Draft of School Efficiency Scale**

Table 1 presents the Table of Specification of School Efficiency, and its possible components and sub-components with corresponding definitions and item placement. The first draft was made based on existing instruments that measure school system efficiency.

School efficiency can be described as having seven components from the original construct of the instrument, namely: School Leadership, Instructional Leadership, Creating a Student-Centered Learning Environment, Parent Involvement and Community Partnership, School Management and Operations, Personal and Professional Attributes and Interpersonal Effectiveness.

**Table 1**  
**Table of Specifications of the First Draft of the Items**

Indicators of Efficiency in Public School	Item Placement	Total No. of Items
<b>I. School Leadership</b>		
<p>School leadership is the process of influencing and supporting others to work enthusiastically toward achieving school goals and objectives. It is determined by personal traits and skills that make others want to follow the direction set and is anchored on principles which define the characteristics and behavior of school leaders.</p>		
Developing and Communicating Vision , Mission, Goals , and Objectives	1,2,3	3
Data-based Strategic Planning	4,5	2
Problem Solving	6,7	2
Building High Performance Teams	8,9,10,	3
Coordinating with Others	11,12,13,14,15	5
<b>II. Instructional Leadership</b>		
<p>It is developing a productive and satisfying work environment for teachers and desirable learning conditions and outcomes for students. It can enable the school to maximize the capacity of each student by developing their minds and touching their hearts; thus transforming them holistically.</p>		
Assessment for Learning	16	1
Developing Programs &/or Adopting Existing Programs	17	1
Implementing Programs for Instructional Improvement	18,19,20,21 ,22,23	6
<b>III. Creating a Student-centered Learning Environment</b>		
<p>It refers to the support services and actual learning processes being delivered by the school for student development.</p>		
Setting High Social and Academic Expectations	24,25,26,27, 28,29,30,31,32	9
<b>IV. Human Resource Management and Professional Development</b>		
<p>It is the art and science of acquiring, motivating, maintaining, and developing people in their jobs in light of their personal, professional, and technical knowledge, skills, potentials, needs and values and in synchronization with the organization philosophy, resources and culture for the maximum achievement of individual, organization and society goals.</p>		

Creating a Professional Learning Community	33,34,35,36	4
Recruitment and Hiring	37	1
Managing Performance of Teachers and Staff	38,39	2
<b>V. Parent Involvement and Community-Partnership</b>		
Any collaboration and relationships established between and among educators, students, families and the community at large to work together in bringing about better and improved school performance.		
Parent Involvement	40	1
External Community Partnership	41	1
<b>VI. School Management and Operations</b>		
It refers to supervision of daily operations management of personnel, finances, facilities, and other matters of the school		
Managing School Operations	42,43	2
Fiscal Management	44,45	2
Use of Technology in Management and Operations	46	1
<b>VII. Personal and Professional Attributes and Interpersonal Effectiveness</b>		
It refers to personnel and teachers' qualities manifesting uncompromising adherence to the ethical code of behavior and maintaining standards of personal and professional conduct.		
Professionalism	47	1
Communication	48	1
Interpersonal Sensitivity	49	1
Integrity	50	1
<b>TOTAL</b>		<b>50</b>

### Experts' Validation on the Components of School Efficiency

Table 2 shows the components, sub-components, with their corresponding definitions of school efficiency. The table illustrates that Human Resource Management and Professional Development was changed to Human Resource Management because Professional Development is definitely under Human Resource Management. And School Management and Operations were also replaced to School Management because School Management really entails operations. All other components were accepted. However, several suggestions of the experts on the definitions of the components were considered and revisions were made as shown in the table except for component III: Creating a Student-Centered Learning Environment; component VI School Management and Operations; and Component VII Personal and Professional Attributes and Interpersonal Effectiveness.

**Table 2**  
**Experts' Validation on the Components of School Efficiency**  
**and Their Corresponding Definitions**

Original Components and Their Original Definitions	Revised Components and Their Revised Definition
<p>I. School Leadership</p> <p>School leadership is the process of influencing and supporting others to work enthusiastically toward achieving school goals and objectives. It is determined by personal traits and skills that make others want to follow the direction set and is anchored in principles which define the characteristics and behavior of school leaders.</p> <p>A. Developing and Communicating Vision ,Mission, Goals , and Objectives</p> <p>B. Data-based Strategic Planning</p> <p>C. Problem Solving</p> <p>D. Building High Performance Teams</p> <p>E. Coordinating with Others</p>	<p>School Leadership</p> <p>School leadership is the process of influencing and supporting others to work enthusiastically toward achieving school goals and objectives. It is determined by personal traits and skills that make others want to follow the direction set.</p> <p>Accepted</p> <p>Accepted</p> <p>Accepted</p> <p>Accepted</p> <p>Accepted</p>
<p>II. Instructional Leadership</p> <p>Instructional Leadership is developing a productive and satisfying working environment for teachers and desirable learning conditions and outcomes for students. It can enable the school to maximize the capacity of each student by developing their minds and touching their hearts; thus transforming them holistically.</p> <p>A. Assessment for Learning</p> <p>B. Developing Programs &amp;/or Adopting Existing Programs</p> <p>C. Implementing Programs for Instructional Improvement</p>	<p>II. Instructional Leadership</p> <p>Instructional Leadership is developing a productive and satisfying working environment for teachers and desirable learning conditions and outcomes for students. It enables the school to discover and maximize the capabilities of students by developing the four H's –head, heart, hands, and health thus transforming them holistically.</p> <p>Accepted</p> <p>Accepted</p> <p>Accepted</p>

<hr/>	
<p>III. Creating a Student-centered Learning Environment</p> <p>A student-centered learning environment refers to the support services and actual learning processes being delivered by the school for student development.</p> <p>A. Setting High Social and Academic Expectations</p>	<p>Accepted</p> <p>Accepted</p>
<hr/>	
<p>IV. Human Resource Management and Professional Development</p> <p>Human Resource Management is the art and science of acquiring, motivating, maintaining, and developing people in their jobs in light of their personal, professional, and technical knowledge, skills, potentials, needs and values and in synchronization with the organization, philosophy, resources and culture for the maximum achievement of individual, organization and society goals.</p> <p>A. Creating a Professional Learning Community</p> <p>B. Recruitment and Hiring</p> <p>C. Managing Performance of Teachers and Staff</p>	<p>IV. Human Resource Management</p> <p>Human Resource Management is the art of acquiring, motivating, maintaining, and developing people in their jobs in light of their personal, professional, and technical knowledge, skills, attitudes, and values in synchronization with the philosophy, organization, resources and culture for the maximum achievement of individual, organization and societal goals.</p> <p>Accepted</p> <p>Accepted</p> <p>Accepted</p>
<hr/>	
<p>V. Parent Involvement and Community-Partnership</p> <p>Any collaboration and relationships established between and among educators, students, families and the community at large to work together in bringing about better and improved school performance.</p> <p>A. Parent Involvement</p> <p>B. External Community Partnership</p>	<p>V. Parent Involvement and Community-Partnership</p> <p>Any collaboration and relationships established between and among educators, students, parents and the community at large to work together in bringing about better and improved school performance.</p> <p>Accepted</p> <p>Community Partnership</p>
<hr/>	
<p>VI. School Management and Operations</p> <p>School Management and Operations refers to supervision of daily operations management of personnel, finances, facilities, and other matters of the school</p>	<p>VI. School Management</p> <p>Definition Accepted</p>

A. Managing School Operations	Accepted
B. Fiscal Management	Accepted
C. Use of Technology in Management and Operations	Use of Technology in Management
<hr/>	
VII. Personal and Professional Attributes and Interpersonal Effectiveness refers to personnel and teachers' qualities manifesting uncompromising adherence to the ethical code of behavior and maintaining standards of personal and professional conduct.	Accepted
A. Professionalism	Accepted
B. Communication	Accepted
C. Interpersonal Sensitivity	Accepted
D. Integrity	Accepted

### **Experts' Evaluation and Validation on the Behavioral Indicators and Preliminary Draft of Items for the Instrument**

Illustrated in Table 3 is the experts' evaluation and validation on the preliminary list of behavioral indicators of school efficiency. It reveals that only indicators no.4, 5, and 11 were further elaborated based on the suggestions of experts and twelve other items were accepted. Under Instructional Leadership, three out of eight indicators were also revised namely indicators no.16, 18, and 21. Moreover, indicators no.25, 26, and 32 were also revised. However, it shows that all behavioral indicators from item 33-40 were accepted by experts. On the other hand, item no.41 was clarified as to the specifics of the word stakeholders, while item 42-48 and 50 were accepted and item 49 was specified as to the word empathy.

**Table 3**

### ***Experts' Suggestions and Comments on the Behavioral Indicators and Preliminary Draft of Items for the Instrument***

<b>Indicator No.</b>	<b>Indicator</b>	<b>Suggested Revisions/Remarks</b>
1	The school's vision, mission , goals and objectives are formulated by all stakeholders	Accepted
2	There is active involvement of stakeholders in achieving the vision and mission of the school	Accepted
3	Programs and projects are anchored on the vision, mission goals, and objectives of the school	Accepted

4	The school has established BEIS/SIS and baseline data of all performance indicators	The school has established Basic Education Information System/School Information System and baseline data of all performance indicators.
5	All stakeholders are involved in developing the SIP/AIP	All stakeholders are involved in developing the School Improvement Plan/Annual Improvement Plan.
6	Problems are being resolved at the school level through the School Grievance Committee and School Governing Council	Accepted
7	A proactive approach to problem solving is being practiced in the school	Accepted
8	There is active involvement of stakeholders in meetings and deliberations for decision making	Accepted
9	There are a opportunities for growth and development of members as team players	Accepted
10	The school implements a system of rewards and benefits for teachers and staff	Accepted
11	There is a collaboration among staffs on the planning and implementation of programs and projects	There is a collaboration among teaching and non-teaching personnel on the planning and implementation of programs and projects
12	There is proper allocation and utilization of resources (time, fiscal, human, IMS, etc.)	Accepted
13	Innovations are being introduced in the school to achieve higher learning outcomes	Accepted
14	There is regular monitoring and evaluation of change programs in the SIP/AIP	Accepted
15	Teachers and personnel are empowered to identify, initiate, and manage changes	Accepted
16	Traditional and non-traditional assessment tools are used to evaluate learning processes and outcomes	Traditional (Multiple-choice type, Matching type, Completion type, Essay type) and non-traditional assessment (Performance type, Task-based, Many correct answers, student self-evaluation) tools are used to evaluate learning process and outcomes

17	Research-based school program is developed and adopted	Accepted
18	The school offers varied co-curricular programs like SPA,SPS ,SFL, and SPED based on local needs	The school offers varied co-curricular programs like Special Section for Arts, Special Section for Sports ,Special Section for Fast Learners, and Special Education based on local needs
19	Lesson plans as well as classroom and learning management are evaluated	Accepted
20	The school provides technical and instructional support to teachers through In-service trainings , seminars, and workshops	Accepted
21	Instructional time or academic learning time is maximized	Instructional time or academic learning time is maximized(i.e. classes are started and ended on time)
22	Teachers employ varied teaching strategies to develop students' higher order thinking skills	Accepted
23	Teachers and learners utilize technology to facilitate the teaching-learning process	Accepted
24	Learning environment is very conducive that makes every student capable of harnessing his/her own potential	Accepted
25	Teachers and learners utilize technology to facilitate the teaching-learning process	Teachers and students work together to achieve set learning goals and standards
26	Basic student services are available to students with ample materials and human resources to address the needs of the students.	Basic services are available to students with ample materials and human resources to address their needs (guidance, library, medical, food services).
27	Students are well-disciplined, showing high regard for fellow students, teachers and administrators	Accepted
28	Student records and profiles are updated and well-kept	Accepted
29	Academic achievement of students is above 75%	Accepted

30	There is active participation and involvement of student in school activities and decision making.	Accepted
31	Learners are encouraged to pursue further learning through various guidance programs.	Accepted
32	The school gives recognition to performing learners, teachers, parents and other stakeholders	The school gives recognition to performing learners, teachers, parents and other stakeholders (donors, benefactors, guests, etc.)
33	There is unity and interaction among teachers in achieving higher learning outcomes	Accepted
34	The Teacher Induction Program is institutionalized/implemented	Accepted
35	Teachers are required to make an Individual Plan for Professional Development	Accepted
36	The school develop the potential of staff by providing professional development through trainings and other development programs	Accepted
37	The school implements a selection and recruitment system based on merit, competence and fitness.	Accepted
38	Teaching and working assignments are based on competence and specialization.	Accepted
39	Teachers are monitored and evaluated based on the accomplishment of their performance targets.	Accepted
40	There is an effective management of school programs which enhance school-parent partnership for the improvement of student learning	Accepted
41	The school receives sufficient support from external stakeholders.	The school receives sufficient support from external stakeholders ( non-government organizations, alumni, local government units, retirees)
42	Fund appropriation is sufficient for the improvement and maintenance of school physical facilities and equipment.	Accepted
43	Regular monitoring on the implementation of specific programs to meet SIP/AIP is being	Accepted
44	The school budget is based on the SIP/AIP	Accepted
45	School resources are judiciously spent following government accounting and auditing rules and regulations.	Accepted

46	Functional data-based on personnel and student tracking system is utilized(IPMS)	Accepted
47	Teachers and personnel serve as models of Ethical Leadership and live in adherence with the Code of Ethics for Teachers and Public Officials	Accepted
48	There is open communication among stakeholders both in oral and written forms	Accepted
49	Stakeholders demonstrate empathy with others.	Stakeholders demonstrate empathy with others (examples: sensitivity to the needs of others, spend time to involve in addressing needs of others)
50	Stakeholders are made accountable for their own actions	Accepted

### Results of Factor Analysis

Based on the factor analysis results, Table 4 reveals that 37 items though loaded in other dimensions also loaded under original dimension such as item 1,2,3,4,5,6,7,8,9,11,

12,13,14,15,16,17,18,19,20,21,22,24,25,27,29,31,34,35,36,37,38,39,42,43,44,45, and 46. Meanwhile, one (1) item though loaded in its predetermined dimension also loaded highly in another dimension. Items 28 and 30 did not load in the discarded dimension. Finally, there were ten items specifically items 23, 26, 32, 33,40,41,47,48,49,50 did not load under predetermined dimensions where these items were initially assigned.

**Table 4**  
**Summary of Table of Before and After Factor Analysis**

Factors and items Before Factor Analysis	Highest Factor Loadings	Factor	2 <sup>nd</sup> Highest Factor Loadings	Alternative Factor
1.The school's vision, mission , goals and objectives are formulated by all stakeholders	.687	1		
2.There is active involvement of stakeholders in achieving the vision and mission of the school	.741	1		
3. Programs and projects are anchored on the vision, mission goals, and objectives of the school	.715	1		
4. The school has established Basic Education Information System (BEIS)	.637	1		

and baseline data of all performance indicators				
5. All stakeholders are involved in developing the School Improvement Plan/Annual Improvement Plan (SIP/AIP)	.709	1		
6.Problems are being resolved at the school level through the School Grievance Committee and School Governing Council	.656	1		
7. A proactive approach to problem solving is being practiced in the school	.613	1		
8.There is active involvement of stakeholders in meetings and deliberations for decision making	.575	1	.301	7
9. There are a opportunities for growth and development of members as team players	.590	1		
10. The school implements a system of rewards and benefits for teachers and staff	.441	3	.416	1
11. There is a collaboration among personnel(teaching and non-teaching) on the planning and implementation of programs and projects	.407	1		
12. There is proper allocation and utilization of resources (time, fiscal, human, IMS, etc.)	.392	4	.391, .345	1,3
13. Innovations are being introduced in the school to achieve higher learning outcomes	.495	4	.396	1
14. There is regular monitoring and evaluation of change programs in the SIP/AIP	.473	4	.359, .315, .307	1,2,3
15.Teachers and personnel are empowered to identify, initiate, and manage changes	.499	4	.371, .312	1,5
16. Traditional (Multiple-choice type, matching type, Completion type, Essay type) and non-traditional assessment(Performance type, Task-based, Many correct answers, student	.603	4		

self-evaluation) tools are used to evaluate learning processes and outcomes				
17. Research-based school program is developed and adopted	.509	4	.428	5
18. The school offers varied co-curricular programs like Special Section for Arts, Special Section for Sports, Special Section for Fast Learners, and Special Education based on local needs	.476	4	.431, .347	7,3
19. Lesson plans as well as classroom and learning management are evaluated	.647	4	.349, .305	6,1
20. The school provides technical and instructional support to teachers through Inset, seminars, and workshops	.555	4	.358	6
21. Instructional time or academic learning time is maximized (i.e. classes are started and ended on time)	.475	6	.391, .308	4,3
22. Teachers employ varied teaching strategies to develop students higher order thinking skills	.481	4	.373, .345	6,2
23. Teachers and learners utilize technology to facilitate the teaching-learning process	.512	5		
24. Learning environment is very conducive that makes every student capable of harnessing his/her own potential	.489	6	.358	5
25. Teachers and students work together to achieve set learning goals and standards	.540	5	.450	6
26. Basic services are available to students with ample materials and human resources to address their needs (guidance, library, medical, food services)	.419	6	.380	4
27. Students are well-disciplined, showing high regard for fellow students, teachers and administrators	.735	5		
28. Student records and profiles are updated and well-kept	.327	6		

29. Academic achievement of students is above 75%	.616	5		
30. There is active participation and involvement of student in school activities and decision making.	.680	7		
31. Learners are encouraged to pursue further learning through various guidance programs.	.527	5		
32. The school gives recognition to performing learners, teachers, parents and other stakeholders (donors, benefactors, guests, etc.)	.335	3	309	2
33. There is unity and interaction among teachers in achieving higher learning outcomes	.454	5		
34. The Teacher Induction Program is institutionalized/implemented	.356	1	.337, .305	3,4
35. Teachers are required to make an Individual Plan for Professional Development (IPPD)	.560	3	.315	2
36. The school develops the potential of staff by providing professional development through trainings and other development programs	.593	3		
37. The school implements a selection and recruitment system based on merit, competence and fitness.	.514	3	.409, .350	2,1
38. Teaching and working assignments are based on competence and specialization.	.679	3		
39. Teachers are monitored and evaluated based on the accomplishment of their performance targets.	.635	3		
40. There is an effective management of school programs which enhances school-parent partnership for the improvement of student learning	.604	3		
41. The school receives sufficient support from external stakeholders ( non-government organizations, alumni, local government units, retirees)	.602	2		

42. Fund appropriation is sufficient for the improvement and maintenance of school physical facilities and equipment.	.576	2		
43.Regular monitoring on the implementation of specific programs to meet SIP/AIP is being undertaken	.751	2		
44.The school budget is based on the SIP/AIP	.746	2		
45. School resources are judiciously spent following government accounting and auditing rules and regulations.	.757	2		
46. Functional data-based on personnel and student tracking system is utilized(IPMS)Information Program Management System	.684	2	.329	3
47.Teachers and personnel serve as models of Ethical Leadership and live in adherence to the Code of Ethics for Teachers and Public Officials	.435	4	.363	2
48. There is open communication among stakeholders both in oral and written forms	.483	2	.309, .302	1,3,4
49. Stakeholders demonstrate empathy with others (examples: sensitivity to the needs of others, spend time to involve in addressing needs of others	.528	2	.336	5
50. Stakeholders are made accountable for their own actions	.445	2	.338, .335	3,5

### Final Results of Factor Analysis

Results revealed in Table 5 that two out of seven components were eliminated, namely: Parent Involvement and Community Partnership, and Personal and Professional Attributes and Interpersonal Effectiveness. These components were discarded based on the results of factor analysis, as it showed that item 40 in Parental Involvement and Community Partnership loaded in Human Resource Management while item 41 loaded in School Management. Moreover, items of Personal and Professional Attributes loaded to other domain item 47 to Instructional Leadership, while 48-50 loaded to School Management.

With the procedure of evaluation and validation, the final instrument was revised where the original construct of seven components were reduced into five, namely: 1) School Leadership 2) School Management 3) Human Resource Management

4) Instructional Leadership 5) Creating a Student- Centered Learning Environment, and 48 items out of the initial 50 items behavioral indicators.

**Table 5**  
**Final Results of Factor Analysis**

Factors	Factor Loading
<b>I. School Leadership</b>	
1.The school's vision, mission , goals and objectives are formulated by all stakeholders	.687
2.There is active involvement of stakeholders in achieving the vision and mission of the school	.741
3. Programs and projects are anchored on the vision, mission, goals, and objectives of the school.	.715
4. The school has established Basic Education Information System/SIS and baseline data of all performance indicators	.637
5. All stakeholders are involved in developing the School Improvement Plan/Annual Improvement Plan	.709
6.Problems are being resolved at the school level through the School Grievance Committee and School Governing Council	.656
7. A proactive approach to problem solving is being practiced in the school	.613
8.There is active involvement of stakeholders in the meetings and deliberations in decision making	.575
9. There is an opportunity for growth and development of members as team players	.590
10. There is a collaboration among personnel (teaching and non-teaching) on the planning and implementation of programs and projects	.407
11. There is proper allocation and utilization of resources (time, fiscal, human, IMS, etc.)	.392
12.Innovations are being introduced in the school to achieve higher learning outcomes	.396

Factors	Factor Loading
13. There is regular monitoring and evaluation of change programs in the SIP/AIP	.359
14. Teachers and personnel are empowered to identify, initiate, and manage change	.371
<b>II. School Management</b>	
15. The school receives sufficient support from external stakeholders ( non-government organizations, alumni, local government units, retirees)	.602
16.Regular monitoring of the implementation of specific programs to meet SIP/AIP is being undertaken	.751
17. There is open communication among stakeholders both in oral and written forms	.483
18.Stakeholders demonstrate empathy with others (examples: sensitivity to the needs of others, spend time to involve in addressing needs of others	.528
19.Stakeholders are made accountable for their own actions	.445
20. The school budget is based on the SIP/AIP	.746
21. Fund appropriation is sufficient for the improvement and maintenance of school physical facilities and equipment.	.576
22. School resources are judiciously spent following government accounting and auditing rules and regulations.	.757
23. Functional data-based on personnel and student tracking system is utilized(IPMS)Information Program Management System	.684
<b>III. Human Resource Management</b>	
24. The school implements a selection and recruitment system based on merit, competence and fitness.	.514
25. The Teacher Induction Program is institutionalized/implemented	.337
26. Teachers are required to make an Individual Plan for Professional Development	.560
27. The school develops the potential of staff by providing professional development through trainings and other development programs.	.593
28. There is an effective management of school programs which enhances school-parent partnership for the improvement of student learning	.604

29. Teaching and working assignments are based on competence and specialization. .679

30. Teachers are monitored and evaluated based on the accomplishment of their performance targets. .635

#### **Factors**

#### **Factor Loading**

31. The school implements a system of rewards and benefits for teachers and staff .441

32. The school gives recognition to performing learners, teachers, parents and other stakeholders (donors, benefactors, guests, etc.) .335

#### **IV. Instructional Leadership**

33. Traditional (Multiple-choice type, matching type, Completion type, Essay type) and non-traditional assessment(Performance type, Task-based, Many correct answers, student self-evaluation) tools are used to evaluate learning processes and outcomes .603

34. Research-based school program is developed and adopted .509

35. The school offers varied co-curricular programs like Special Section for Arts, Special Section for Sports ,Special Section for Fast Learners, and Special Education based on local needs .476

36. Basic Services are available to students with ample materials and human resources to address their needs (guidance, library, medical, food services) .380

37. Lesson plans as well as classroom and learning management are evaluated .647

38. The school provides technical and instructional support to teachers through Inset, seminars, and workshops .555

39. Instructional time or academic learning time is maximized (i.e. Classes are started and ended on time) .391

40. Teachers employ varied teaching strategies to develop students' higher order thinking skills. .481

41. Teachers and personnel serve as models of Ethical Leadership and live in adherence to the Code of Ethics for Teachers and Public Officials. .435

#### **V. Creating a Student-Centered Learning Environment**

42. Teachers and learners utilize technology to facilitate the teaching-learning process .512

43. Learning environment is very conducive that makes every student capable of harnessing his/her own potential .358

44. Teachers and students work together to achieve set learning goals and standards	.540
45. Students are well-disciplined ,showing high regard for fellow students, teachers and administrators	.735
46. The Academic achievement of students is above 75%	.616
47. Learners are encouraged to pursue further learning through various guidance programs.	.527
48. There is unity and interaction among teachers in achieving higher learning outcomes	.454

### Final Form of the Table of Specifications

Table 6 presents the final form of the Table of Specifications. With the procedure of validation, the instrument ended with 48 items out of the initial 50 items. The final items in the instrument under each domain are presented in Table 6 with the Table of Specification 14 items (1-14) are under School Leadership, 9 items (15-23) fall under School Management, 9 items (24-32) are under Human Resource Management ,9 items (33-41) are under Instructional Leadership and lastly,7 items (42-48) are under Creating a Student-Centered Learning Environment.

**Table 6**  
**Final Form of the Table of Specifications**

Indicators of Efficiency in Public School	Item Placement	Total No. of Items
I. School Leadership		14
School leadership is the process of influencing and supporting others to work enthusiastically toward achieving school goals and objectives. It is determined by personal traits and skills that make others want to follow the direction set and is anchored in principles which define the characteristics and behavior of school leaders.		
A. Developing and Communicating Vision ,Mission, Goals , and Objectives	1,2,3	
B. Data-based Strategic Planning	4,5	
C. Problem Solving	6,7	
D. Building High Performance Teams	8,9	
E. Coordinating with Others	10,11,12,13,14	

## II. School Management 9

It refers to supervision of daily operations management of personnel, finances, facilities, and other matters of the school.

- |                                    |                |
|------------------------------------|----------------|
| A. Managing School Operations      | 15,16,17,18,19 |
| B. Fiscal Management               | 20,21,22       |
| C. Use of Technology in Management | 23             |

## III. Human Resource Management 9

Human Resource Management is the art of acquiring, motivating, maintaining, and developing people in their jobs in light of their personal, professional, and technical knowledge, skills, attitudes, and values in synchronization with the organization philosophy, resources and culture for the maximum achievement of individual, organization and societal goals.

Indicators of Efficiency in Public School	Item Placement	Total No. of Items
A. Recruitment and Hiring	24	
B. Creating a Professional Learning Community	25,26,27,28,29	
C. Performance of Teachers and Staff	30,31,32	
<b>IV. Instructional Leadership <span style="float: right;">9</span></b>		
Instructional Leadership is developing a productive and satisfying work environment for teachers and desirable learning conditions and outcomes for students. It can enable the school to maximize the capacity of each student by developing their minds and touching their hearts; thus transforming them holistically.		
A. Assessment for Learning	33	
B. Developing Programs &/or Adopting Existing Programs	34,35,36	
C. Implementing Programs for Instructional Improvement	37,38,39,40,41	

V. Creating a Student-centered Learning Environment 7

A student-centered learning environment refers to the support services and actual learning processes being delivered by the school for student development.

A. Setting High Social and Academic Expectations 42,43,44,45,46,47,48

---

**TOTAL** 48

---

### Overall Reliability of the Instrument

After regrouping as a result of factor analysis, the reliability of the instrument was determined using Cronbach Alpha to determine how well a set of items measure a single latent construct.

Table 7 presents the summary of computing the overall reliability of the instrument on the evaluation of school efficiency. Data reveal that the instrument is highly reliable based on the minimum reliability index of 0.7. The domain that yielded the highest reliability coefficient of .919 is School Management followed by the School Leadership with .909 ,Instructional Leadership.884, Human Resource Management .879 and the domain under Creating a Student-Centered Learning Environment got the lowest reliability coefficient of .817 compared to other domains.

**Table 7**  
**Overall Reliability of the Instrument**

DOMAINS	Number of Items	Number of Cases	Cronbach's Alpha *
School Management	10	697	.919
School Leadership	12	641	.909
Instructional Leadership	11	603	.884
Human Resource Management	8	644	.879

---

Creating a Student- Centered Learning Environment	7	562	.817
---	---	-----	------

---

\* Minimum reliability index: 0.7

## DISCUSSION

The developed instrument to measure school efficiency was anchored on the existing references on assessing school performance, specifically the School-Based Management and Project Sterling Silver, National Competency-Based Standards for School Heads pursuant to the implementation of R.A.9155 which is the Governance of Basic Education Act emphasizing the decentralization of school governance and the operationalization of Basic Sector Reform Agenda that focus on continuous school improvement.

The School-Based Management Practices (SBM) was launched in 2009 by the Department of Education, through Basic Education Sector Reform Agenda (BESRA). With the SBM, the school as a key provider of education is equipped in empowering its key officials to make informed and localized decisions based on their unique needs toward improving the educational system (Manual on the Assessment of SBM Practices 2009).

On the other hand, Project Sterling Silver Accreditation, a project of Ford Foundation, Department of Education, Association of Secondary School Administrators and the University of Asia and the Pacific serves as a peer accreditation for public high schools.

The third assessment tool where the instrument was anchored, the National Competency-Based Standards for School Heads (NCBS-SH) is a self-rating competency tool for School Heads launched by the National Educator Academy of the Philippines. NCBS-SH defines the standards to be used as a basis for school heads' decision making, actions and performance of their functions (NEAP 2010).

The NCBS-SH was also used as a basis for the preparation of comprehensive training development based on the expected tasks that will be utilized to deliver supply-driven training programs to ensure efficiency, effectiveness and excellence of school heads' job performance. Set of standards, knowledge, skills and values are clarified through the indicators defined per strand on every domain (DepEd Order No.32,s. 2010). There are seven domains in the NCBS-SH namely: School Leadership; Instructional Leadership; Creating a Student Centered Learning Climate; Human Resource Management and Professional Development; Parents Involvement and Community Partnership; School Management and Operation; and Personal and Professional Attributes and Interpersonal Effectiveness.

From the three aforementioned instruments, the proposed instrument to measure the efficiency of public secondary schools was developed. The initial seven domains were taken from the seven domains of NCBS-SH while the fifty indicators were based on the three tools which are the SBM, Project Sterling Silver and NCBS-SH.

The results of factor analysis revealed that after the validation process, two domains from the original seven were deleted. These two are the Parent Involvement and Community-

Partnership, and Personal and Professional Attributes and Interpersonal Effectiveness. The final instrument was left with five domains, namely: School Management, School Leadership, Human Resource Management, Instructional Leadership, and Creating a Student-Centered Learning Environment.

The final output also shows that two indicators of the 50 original indicators were deleted namely: Item 28, "Student records and profiles are updated and well kept" because it was the only item with a one factor loading which is Domain 6 (Personal and Professional Attributes and Interpersonal Effectiveness). Item 30, "There is an active participation and involvement of student in school activities and decision making" was also deleted because it was the only item also with one factor loading which Domain 7 (Parent Involvement and Community-Partnership). With the deletion of two items, the reliability index of the dimensions raised from .931 to .967.

Under the School Leadership Domain, one out of the 15 original indicators was transferred to another domain. This is the Item No.10, "The school implements a system of rewards and benefits for teachers and staff," which was transferred to Domain 3. This transfer may be justified since the concerns of the Human Resource Development or Personnel Development includes creating a professional learning community, recruitment and hiring, and managing performance of teachers and staff .It deals with people and organization efficiency, with day-to-day problems and concerns to promote well-being and strengthen the commitment and competence of employees. This was also emphasized in the DECS Service Manual (2000) under Human Resource Management and Development Policies which states that every employee is expected to perform his/her duties and responsibilities with efficiency and effectiveness. The government, acknowledging the employee's performance, in return, grants benefits and other welfare assistance.

On the other hand, the 14 indicators originally assigned in the School Leadership Domain remained in the said domain because they deal with the effectiveness of leaders and how they should lead and manage change. These are in consonance with the School Leadership domain that emphasizes that effective leaders should lead and manage change in the teaching-learning process, school operations, policy and guidelines formation, all for the achievement of academic achievements as well welfare of teachers, personnel and students (Lapus, 2009)

Under Instructional Leadership Domain, Item No.23, "Teachers and learners utilize technology to facilitate the teaching learning process," was transferred to Domain 5 (Creating a Student Centered Learning Environment) where it was loaded. The result is supported by one of the indicators in the National Competency –Based Standards for School Heads that says schools are to provide an environment that promotes the use technology among learners and teachers. The other 7 indicators were retained because all of these are concerned about teaching and learning, and managing the professional learning of teachers as well as students' performance. School heads show instructional leadership by establishing a culture within the school that support continuous growth and taking explicit steps to support teachers (Seashore, Leithwood, Wahlstrom & Anderson, 2010).

Also the seven indicators covered assessment of learning, developing programs, implementing programs for instructional improvement and instructional supervision. Instructional supervision is a professional, continuous and cooperative process for the improvement of instruction. It is characterized by guidance, assistance, sharing of ideas,

facilitation, or created to help teachers improve learning situation and quality of learning in the schools which supports the instructional leadership domain.

For the Creating a Student Centered Learning Environment domain, seven indicators were included which focus on setting high social and academic expectations and creating a school environment focused on the needs of learners. Similarly, Junenberg (2010) believed that the principal is a critical factor in facilitating, improving and promoting the academic progress of students. However, Item 26, "Basic services are available with ample materials and human resources to address their needs" was transferred to Domain 4 (Instructional Leadership) because Instructional Leadership entails the enrichment of curricular offerings based on local needs as cited in the NCBS-SH.

Item No. 28, "Student records and profile are updated and well-kept," was deleted, because it was loaded in the deleted Domain 6; and, Item No.30, "There is active participation and involvement of students in school activities and decision making" was deleted because it was also loaded in the Domain 7; and, Item No.32, "The school gives, recognition to performing learners, teachers, parents and other stakeholders (donors, benefactors, guests)" was transferred to Domain 3. This transfer may be justified since the concerns of the Human Resource Development or Personnel Development includes creating a professional learning community, recruitment and hiring, and managing performance of teachers and staff.

Under Human Resource Management domain, the Item No.33, "There is unity and, interaction among teachers in achieving higher level outcomes " was transferred to Creating a Student Centered Learning Environment because it has the only Domain 5 as a factor loading so it was included in the said domain.

Results after the validation of the instrument also show that Domain on Parental Involvement was left with no indicators causing its deletion from the seven domains. The two original indicators assigned to this Domain which are Item No. 40, "There is an effective management of school programs which enhances school parent partnership for the improvement of student learning "was transferred to domain 3 while Item No. 41, "The school receives sufficient support from external stakeholders (NGO's, alumni, LGU's and retirees)" was transferred to Domain 2 (School Management).

Under School Management Domain, all five indicators originally assigned to it were retained. This is because all the five indicators are geared to the supervision of school daily operations, fiscal management, and the use of technology in school processes. Moreover, all the five indicators suggested school managers as possessing outstanding management and fiscal leadership skills, managing school operations and resources ensure safe, caring, and effective learning environment. School managers effectively plan, organize and manage the human physical and financial resources of the school and identifies the areas of need (Principal in Alberta, 2009).

Under Personal and Professional Attributes and Interpersonal Effectiveness Domain, Item No. 47, Teachers and Personnel serve as model of ethical leadership and live in adherence to the Code of Ethics of Teachers and Public Officials," was transferred to Domain 4, Instructional Leadership, Moreover, Item No. 48, "There is open communication among stakeholders both in oral and written forms; Item No. 49, "Stakeholders demonstrate empathy with others (examples: sensitivity to the needs of others, spend time to involve in addressing

needs of others; and, Item No.50 “Stakeholders are made accountable for their own actions” were transferred to Domain 2, School Management.

From the final results of the factor analysis, the following conclusions are drawn: there are five domains that measure efficiency of Public Secondary Schools, namely: 1) School Leadership 2) School Management 3) Human Resource Management 4) Instructional Leadership and 5) Creating a Student-Centered Learning Environment. This domain has forty eight indicators that were distributed to the five domains, which are as follows: Domain 1- School Leadership has fourteen indicators: (1) The school’s vision, mission, goals and objectives are formulated by all stakeholders; (2) There is active involvement of stakeholders; (3) Programs and projects are anchored on the vision, mission, goals, and objectives of the school ; (4) The school has established Basic Education Information System/SIS and baseline data of all performance indicators; (5) All stakeholders are involved in developing the School Improvement Plan/Annual Improvement Plan; (6) Problems are being resolved at the school level through the School Grievance Committee and School Governing Council; (7) A proactive approach to problem solving is being practiced in the school; (8) There is an active involvement of stakeholders in the meetings and deliberations in decision making; (9) There is an opportunity for growth and development of members as team players; (10) There is collaboration among personnel (teaching and non-teaching) on the planning and implementation of programs and projects; (11) There is proper allocation and utilization of resources (time, fiscal, human, IMS, etc.); (12) Innovations are being introduced in the school to achieve higher learning outcomes; (13) There is regular monitoring and evaluation of change programs in the SIP/AIP; (14) Teachers and personnel are empowered to identify, initiate and manage change;

Domain 2- School Management with nine indicators, namely: (1) The school receives sufficient support from external stakeholders (non-government organizations, alumni, local government units, retirees); (2) Regular monitoring of the implementation of specific programs to meet SIP/AIP is being undertaken; (3) There is open communication among stakeholders both in oral and written forms; (4) Stakeholders demonstrate empathy with others (examples: sensitivity to the needs of others, spend time to involve in addressing needs of others ; (5) Stakeholders are made accountable for their own actions; (6) The school budget is based on the SIP/AIP; (7) Fund appropriation is sufficient for the improvement and maintenance of school physical facilities and equipment; (8) School resources are judiciously spent following government accounting and auditing rules and regulation; (9) Functional data-based on personnel and student tracking system is utilized(IPMS)Information Program Management System;

Domain 3- Human Resource Management consist of nine indicators namely: (1) The school implements a selection and recruitment system based on merit, competence and fitness; (2) The Teacher Induction Program is institutionalized/implemented; (3) eachers are required to make an Individual Plan for Professional Development; (4) The school develops the potential of staff by providing professional development through trainings and other development programs; (5) There is an effective management of school programs which enhances school-parent partnership for the improvement of student learning; (6) Teaching and working assignments are based on competence and specialization; (7) Teachers are monitored and evaluated based on the accomplishment of their performance targets; (8) The school implements a system of rewards and benefits for teachers and staff; (9) The school

gives recognition to performing learners, teachers, parents and other stakeholders (donors, benefactors, guests, etc.).

Domain 4 – Instructional Leadership composed also of nine indicators: (1) Traditional (Multiple-choice type, matching type, Completion type, Essay type) and non-traditional assessment (Performance type, Task-based, Many correct answers, student self-evaluation) tools are used to evaluate learning processes and outcomes; (2) Research-based school program is developed and adopted; (3) The school offers varied co-curricular programs like Special Section for the Arts, Special Section for Sports, and Special Section for Fast Learners, and Special Education based on local needs; (4) Basic Services are available to students with ample materials and human resources to address their needs (guidance, library, medical, food services); (5) Lesson plans as well as classroom and learning management are evaluated; (6) The school provides technical and instructional support to teachers through Inset, seminars, and workshops; (7) The school provides technical and instructional support to teachers through Inset, seminars, and workshops; (8) Instructional time or academic learning time is maximized (i.e. Classes are started and finished on time); (9) Teachers and personnel serve as models of Ethical Leadership and live in adherence to the Code of Ethics for Teachers and Public Officials;

Finally, Domain 5- Creating a Student-Centered Learning Environment has seven indicators: (1) Teachers and learners utilize technology to facilitate the teaching-learning process; (2) The Learning environment is very conducive that makes every student capable of harnessing his/her own potential; (3) Teachers and students work together to achieve set learning goals and standards; (4) Students are well-disciplined, showing high regard for fellow students, teachers and administrators; (5) The Academic achievement of students is above 75%; (6) Learners are encouraged to pursue further learning through various guidance programs; and (7) There is unity and interaction among teachers in achieving higher learning outcomes.

It may be noted that after final analysis, changes in the number of items per domain were done. These changes were nonetheless justified based on reviewed literature and prevailing standards.

The final form of the instrument may be used by school managers in evaluating school efficiency. However, caution is warranted in generating these results as the samples in this study were drawn completely from a single but very large school. Nevertheless, the analytical procedures used in the study provide an adequate assessment of construct validity.

Further research may be conducted to improve the proposed instrument. It is recommended that a series of studies be initiated to evaluate the psychometric properties of the instrument like item bias study, interview and pilot testing. Future studies may also further evaluate factor variances across multiple groups, e.g. small school, medium and big schools ensure that the posited model is accepted across groups.

**References**

- Abagi, O. and Odipo, G. (1997) Efficiency of Primary Education in Kenya: Situational Analysis and Implications for Educational Reform. Retrieved on October 21, 2011 from <http://www+crremadri.it/materials/arreegeopolitiche/africa/kenya/kenyaeffedupri.pdf>.
- Amaral,M.(2011) Analysis of the Principle of Administrative Efficiency Applied to Public Procurement in Brazil, George Washington University, Washington D.C. Retrieved on October 24, 2011 from [https://www.gwu.edu/~ibi/minerva/spring2011/Marcio\\_Amaral.pdf](https://www.gwu.edu/~ibi/minerva/spring2011/Marcio_Amaral.pdf).
- Asian Institute of Management (2002) Education Stakeholders Map.
- Chapman, D. (2002) Education in Developing Asia Volume 2; Management and Efficiency in Education: Goals and Strategies. Asian Development Bank Comparative Education Research Centre The University of Hongkong Retrieved on September 22, 2011 from [cerc.edu.hku.hk/wp-content/uploads/2013/11/vol2\\_chapman\\_bokk4.pdf](http://cerc.edu.hku.hk/wp-content/uploads/2013/11/vol2_chapman_bokk4.pdf).
- DECS Service Manual (2000).
- DepEd. SBM.TWG. (2009) A Manual on the Assessment of School-Based Management Practices. Retrieved on October 21, 2011 from <https://depedkoronadacity.files.wordpress.com/2012/>.
- Ford Foundation, Department of Education Philippine Association of Secondary School Administrators University of Asia and the Pacific (2002) Project Sterling Silver (Peer Accreditation for Public High Schools) General Instructions and Survey Instrument for Accreditation Process.
- Golafshani,N.(2003).Understanding Reliability and Validity in Qualitative Research Retrieved on November 26,2011 from <http://www.nova.edu/ssssQR/QR8-4/golafshani.pdf>.
- Grauwe, A. and Naidoo,J.(2004) School Evaluation for Quality Improvement, UNESCO International Institute for Educational Planning. Retrieved on November 16, 2011 from [unesodc.unesco.org/images/0013/001398/139804e.pdf](http://unesodc.unesco.org/images/0013/001398/139804e.pdf).
- Griffits, B. (2000) School Efficiency and Student and School Evaluation in Victoria. UNESCO/International Institute for Educational Planning Retrieved on November 12, 2011 from <http://www.unesco.org/iiep>.
- Gupta, S. & Aggarwal,J (2007) School Management, Published in India by Shipra Publications Retrieved on November 13,2011 from [kolkata.locanto.in/ID\\_221018225/school\\_Management\\_s\\_Gupta\\_and\\_J\\_C\\_Aggarwal.html](http://kolkata.locanto.in/ID_221018225/school_Management_s_Gupta_and_J_C_Aggarwal.html).
- Jose,E.(2006) Development and Validation of an Instrument to Measure Professionalism in Teaching, Presented to the Graduate School, University of the Assumption.
- Knupfer, N. and Mclellan, H. (2001) Descriptive Research and Methodologies Retrieved on

November 26, 2011 from [http://www.ebooks\\_freedownload.net/view.php?Url=http://www.coedu.usf.edu/itphdsem/41/pdf](http://www.ebooks_freedownload.net/view.php?Url=http://www.coedu.usf.edu/itphdsem/41/pdf).

Lapus, J. (2009). *School-Based Management Primer (SBM)*.

Lunenberg, F. (2010) *The Principal as Instructional Leader*. *National Forum on Educational and Supervision Journal*, 27 (4) Retrieved on November 13, 2011 from <http://www.learningdomain.com/PrincipalInstructLeader.html>.

Miller, M. (n.d.) *Reliability and Validity* Retrieved on November 26, 2011 from [http://www.michael/millerphd.com/res500lectures/reliability and validity.pdf](http://www.michael/millerphd.com/res500lectures/reliability%20and%20validity.pdf).

NCBS-SH *Primer (2010)*.

Ncube, N. (2004) *Managing the Quality of Education in Zimbabwe: The Internal Efficiency of Rural Day Secondary Schools*. Retrieved on November 16, 2011 from [uir.unisa.ac.za/bitstream/handle/10500/619/thesis.pdf?sequence=1](http://uir.unisa.ac.za/bitstream/handle/10500/619/thesis.pdf?sequence=1).

NEAP (2010) *National Competency-Based Standards for School Heads*.

NEAP (2010) *Readings on Basic Management Course*.

Pangilinan, D. (2006) *Statistical Validation of a College Faculty Evaluation Instrument and Comparison of Teaching Performance by Gender and Age Groups*, College of Education, University of the Philippines Diliman.

Principal in Alberta. (2009). *The Principal Quality Practice Guidelines Promoting Successful Leadership School Levels*. Retrieved on November 14, 2011 from <http://education.alberta.ca/admin/resource.aspx>.

Ridley, K. (2005) *The Multimedia Activity Recall for Children and Adolescents (MARCA): Development and Validation*. Retrieved November 26, 2011 from [http://www.nphp.gov.au/documents/physact att02 validity.pdf](http://www.nphp.gov.au/documents/physact%20att02%20validity.pdf).

*School Based Management Primer (SBM)*, (2009). Department of Education.

Seashore L.K, Leithwood, K. Wahlstrom, K. & Anderson, S. (2010) *Learning from Leadership. Investigating the Links to Improved Student Learning*. N.Y.: The Wallace Foundation Retrieved on November 13, 2011 from <http://www.floridarti.usf.edu/resources/presentations/2014/nasp/Symposium/Investigating-the-Links-to-Improved-Student-Learning.pdf>.

Soteriu, A. Karahanna, E. Papanastasiou, C and Diakourakis, M. (1998). *Using DEA (Data Envelopment Analysis) to Evaluate the Efficiency of Secondary Schools: the case of Cyprus* Retrieved on September 22, 2011 from [https://www.researchgate.net/publication/249360131\\_Using\\_DEA\\_to\\_evaluate\\_the\\_efficiency\\_of\\_secondary\\_schools\\_The\\_case\\_of\\_Cyprus](https://www.researchgate.net/publication/249360131_Using_DEA_to_evaluate_the_efficiency_of_secondary_schools_The_case_of_Cyprus).

Ubben, G. and Hughes, L. (1997) *The Principal Creative Leadership for Effective Schools*

UNESCO/International Institute for Educational Planning (2000). Asian Network of Training and Research Institutions in Educational Planning Report Retrieved on November 12, 2011 from [unesdoc.unesco.org/images/0012/001205/120595e.pdf](http://unesdoc.unesco.org/images/0012/001205/120595e.pdf).

Yin-cheong, C. (1990) Conception of School Effectiveness and Models of School Evaluation: A Dynamic Perspective. Retrieved on September 22, 2011 from <http://sunzi.lib.hku.hk/hkjo/view/33/3300455.pdf>.

