

**Decision Making Based on Data Analysis Involving
Different Stakeholders in Secondary Public and
Private Schools of Dubai**

اتخاذ القرارات إستنادا الى تحليل البيانات الذي يشمل مختلف اصحاب
المصلحة في مدارس دبي الحكومية والخاصة

by

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of the requirements for the degree of
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**Dr. Cornelius Ncube
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ABSTRACT

Data has beneficial impacts on teachers' and schools' performance, hence, it a customary matter for schools since the past time to collect data from a variety of sources.

The core of this research is to assess the extent of data availability, its use in decision-making process and assess the decision-making process's participatory. Other core is to assess the stimulating and hindering factors that affect decision makers' use of data in Dubai's public and private secondary schools.

Therefore, the study included research objectives, research questions, corresponding hypotheses and a literature review that offers a broad spectrum of definitions included. However, number of different authors' related literature were reviewed under the research problem title.

The research was organised as the following; the descriptive research design, using survey method and interviews, data were collected by questionnaire and interview instruments and the main participants were teachers, school leaders (principals, vice principals, department heads) and supervisors. The participants of this study survey were 120 (110 teachers and 10 department heads). In addition, 10 participants in meetings (4 principals, 3 vice principals and 3 supervisors) from 10 different secondary schools.

One hundred and ten were retrieved from the survey and used for the study. SPSS was used for analysing the survey. While the research questions depended on data collection in order to bring up answers. The four hypotheses statistically tested by T- test Statistics for independent samples on 0.05 level of significance.

Thereafter, the study recommended the following:

- (a) schools should conduct training programs about data use skills for their staff.
- (b) develop their data system to promote the education quality.

- (c) schools should enforce students and parent's participation as it may promote decision making and implementation processes.
- (d) school heads should encourage students and teachers to be innovative and share in the improvement process.

المخلص

للبيانات تأثيرات مفيدة على أداء المعلمين والمدارس، ومن ثم فإنه من العرفي للمدارس منذ الوقت الماضي جمع البيانات من مصادر متنوعة.

ويتمثل جوهر هذا البحث في تقييم مدى توفر البيانات، واستخدامها في عملية صنع القرار، وتقييم المشاركة في عملية صنع القرار. ومن العوامل الأساسية الأخرى تقييم العوامل المحفزة والمعرفة التي تؤثر على استخدام صانعي القرار للبيانات في المدارس الثانوية العامة والخاصة في دبي.

لذلك، تضمنت الدراسة أهداف البحث، أسئلة البحث، الفرضيات المقابلة واستعراض الأدبيات التي تقدم مجموعة واسعة من التعاريف المدرجة. ومع ذلك، فقد تم استعراض عدد من المؤلفات ذات الصلة لمؤلفين مختلفين تحت عنوان مشكلة البحث.

تم تنظيم البحث على النحو التالي: تم جمع البيانات من خلال الاستبانة وأدوات المقابلة، وكان المشاركون الرئيسيون معلمين وقادة المدارس (مدراء المدارس ونواب المديرين ورؤساء الأقسام) والمشرفين. وبلغ عدد المشاركين في الدراسة الاستقصائية 120 مشاركا (110 معلمين و 10 رؤساء أقسام). وبالإضافة إلى ذلك، وبلغ عدد المشاركين في المقابلات 10 مشاركين (4 مدراء و 3 نواب مدراء و 3 مشرفين) من 10 مدارس ثانوية مختلفة.

تم استرجاع مائة وعشرة من المسح واستخدامها في الدراسة. تم استخدام SPSS، لفوائدها مع أسئلة البحث والإطار المفاهيمي، لتحليل المسح. في حين كانت أسئلة البحث تعتمد على جمع البيانات من أجل تقديم الأجوبة، فقد تم اختبار الفرضيات الأربعة إحصائيا على مستوى دلالة 0.05 باستخدام اختبار t للعينات المستقلة.

وبعد ذلك أوصت الدراسة بما يلي:

- (أ) ينبغي للمدارس أن تنظم برامج تدريبية بشأن مهارات استخدام البيانات لموظفيها.
- (ب) تطوير نظام بياناتهم لتعزيز نوعية التعليم.
- (ج) ينبغي للمدارس أن تفرض المشاركة على الطلاب و أولياء الأمور لأنها قد تشجع على اتخاذ القرارات وعمليات التنفيذ.
- (د) ينبغي أن يشجع رؤساء المدارس الطلاب والمعلمين على أن يكونوا مبتكرين وأن يشاركوا في عملية التحسين.

Dedication

For those who pave the knowledge path in front of me “often God help”

Those who facilitate all difficulties that faced me with their prayers

I dedicate this work to my parents may Allah prolong for age and blessed me with their
satisfaction.

For the person who encourage me to continue my scientific career, companion driveway
my husband ‘Shadi’

For my heart flowers sisters and brothers, my sweet heart daughters and my son ‘Layan,
Eleen & Yamen’

For those who supported me throughout my work.

For all of you I dedicate this humble effort.

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Chapter One: Introduction

This research consists of five chapters that concerned with data driven decision making process used in number of Dubai's secondary public and private schools. However, the first chapter presents the main introductory topics to the entire research such as background of the study, statement of the problem, research questions, research hypotheses, objective of the study and introducing data use in the school environment. A comprehensive review of relative literature is concluded in Chapter Two. Chapter Three involves the research design and data analysis methodology. Under Chapter Four, a comprehensive analysing implementation of data regarding the sample participants' responses was handled. And finally, summary, conclusion and recommendations of findings were stated in Chapter Five.

1.1 Background of the Study

In order to analyse data to direct actions in the right way, institutions have adhered to upgrade the process of making decisions by the way that guarantees competitiveness, innovativeness and pioneering in their environment. Schools, as an example of an educational institutions, are concerned in keeping step with making decision breakthrough as per applying this process in due form, they for sure can discharge all educational components into accomplishing their persuasive goals. It is worthwhile that making decision is an enduring process that maintain two types of procedures include; non-data based decision making that almost results in chaotic consequences and data based decision making that can be acted either positively, ends in a logical and desired results, or negatively, leads to unintended results. Therefore, data based making decision should be pervasive, executive and vital in schools due to the information availability that keeps decision improvement in progress.

School management is considered as a counterbalance that all external and internal links gather in achieving several educational goals according to different parties' trends demands and adequate to a varieties of policy instruments fall at the expenses of the school management. Therefore, management process is supposed to be performed orderly, sequentially and chronologically. Moreover, it should be characterized by management functions such as planning, organizing, directing, supervision and evaluation, (Hinjari, 2007).

School management has a basic managerial function that forms healthy systematic steps in making decisions process include:

1. **Planning:** that includes ordering given in a limited course of action in order to achieve pursued results. Moreover, it plays a pivotal role in management either in visualizing the future problems or keeping management ready with possible solutions.
2. **Organizing:** that provides suitable administrative structure to facilitate the execution of the proposed plan.
3. **Directing (leading):** that deals with leading and instructing people to accomplish several educational objectives. It involves controlling, coordinating, communicating and motivating.
4. **Supervision and Evaluation:** it is an essential process that ensures manpower's healthy, stable, efficient and coordinated behaviour.

Despite the positive effects of data based decision making on management, it is greatly distorted by school leaderships because of their various perspectives, beliefs and ideas about the participation in making decisions, (Dare, 2006) confirmatively annotated that, centralized or decentralized organizational climate may impede or encourage decision-making process in secondary schools. It is an evidence of the importance and distinction of making decision as a part of schools' administrations on the success of the schools' managements in achieving the proposed educational purposes.

Actually, school's management differ according to the style of leaderships; some are democratic and the others are autocratic ... etc. Critics and researchers have indicated the participation of all members in making decision is one of the most essential and crucial characteristic of the most efficient management. Therefore, this study is intended for indicating the solutions for the challenges that face the leaderships in determining the making decision process based on data analysis in public and private secondary schools in Dubai involving many participants.

1.2 Statement of the Problem

Decision making process presented as a group of weak areas in various fields such as, schooling, source of teaching, implementing a new technology for curriculum and learning, punctuality for teachers and students. (Okumbe, 1998)

In this regard, there is a constant counteractive association between quality and quantity; the rapid extension of educational institutions has led to a relapse in education quality. The subject matter that evokes more dedication to keep education quality in an elevated level, particularly, by keeping strategies and methods in a progressive modification (Chapman, 1990). Recent studies ((Campbell, 2009); (Carlson, 2011); (Timperley, 2009); (Wohlstetter, 2008)) argue that well trained teachers and leaders can use data by the way that guarantees the school, the curriculum and students' achievements improvement. On the contrary, some studies argue that either majority of teachers do not know how to use data correctly, or do not apply it at all in their daily activities. ((Ingram, 2004)I; (Schildkamp, 2010)).

The participation of teachers, students and members of community in decision making process especially in issues belong to each of the level could grant the policy making an impress of vitality and comprehensiveness. However, effective administration requires rational decision making that act upon culling the best methods to reach the anticipated

goals. Yet, the ability to make rational decision is limited in inadequate knowledge of schools' administrations, (Hinjari, 2007).

Deleterious reflections of emotions, politics, authority, power, bias, attitudes and job requirements often ends in unintended decisions, (Nwachuku, 2006). Moreover, the absenteeism of parents' participation in making decision may affect the quality of making decision process negatively as they considered main partners of management in making planning decisions regardless of the financial issues that always result in a conflict with the management that leads to a low level of parents' participation.

1.3 Research Questions

1. Data driven decision making process should be implemented by different stakeholders; what is the extension of such implementation?
2. What is the participatory extension of teachers, students and parents in decision-making process in Dubai's secondary schools?
3. What are the effective participatory factors that motivate teachers to be involved in the decision-making process in Dubai's secondary schools?

1.4 Research Hypotheses

The researcher designed the following hypotheses for the study:

1. No significant difference in the participants' overview about data analysing process and decision- making process in management in number of Dubai's secondary schools.
2. No significant difference in the participants' overview about decision organizing in management in number of Dubai's secondary schools

3. No significant difference in the participants' overview about decision directing in management in several Dubai's secondary schools.
4. No significant difference in the participants' overview about the effect of decision making process based on data analysis involved different stakeholders on the management of secondary schools in Dubai.

1.5. Objective of the Study

Researcher works on this study to deliver areal image of the observance range of data based decision-making by secondary schools' administrators, furthermore, to assess the participation extent of different stakeholders in school decision-making process. Moreover, to estimate the overt actualized benefits of involving stakeholders (parents, students, teachers and leaders) in making decision process.

The utmost degree of the study result is to enhance stakeholders with ample and accurate information about the range of using data in making decision in the selected schools. Moreover, such a study may enrich studies in the same sort such as studies concerned with data based decision-making in schools' staff practices.

Overall, many benefits of using data are presenting in school improvement such as: improving curriculum, by monitoring and identifying areas of need, planning and developing policies, supporting conversations, motivating staff and students, enhancing self-directed reflection and meeting accountability demands; improving teacher decision, by reconsidering instructions and taking up professionalism; aiding personnel related decisions; legitimize action taken. Totally, those and more benefits of using data can absolutely enforce teachers and supervisors to adapt with data in decision making to guide their practices.

1.6. Introducing Data Use in School Environment

For years, schools deal with data collection in many forms. For instance, as a test score, schools have gathered a huge series of students' information and administrative data, such as, human resources data, employment data and financial data.

Because of the system's disability to connect its systematic stores with the real requirements, it becomes difficult to analyse data in a comprehensive and integrated fashion. For instance, some schools may face such a problem in budget and sources. Based on data collected for making decision and getting a clear feedback about the effectiveness of each program managers can simply analyse the relationship between student's participation in the programs and other practices such as student's achievement, discipline incidents and their attendance. However, programs should be according to the real facts rather than emotions.

Overall, at present time, data based decision making plays an essential role in regard to providing stakeholders with access to large amounts of information. In addition, it is considered the background of school, stakeholders, teachers and students' performance improvements.

1.6.1 Definition of Terms Used in the Study

1. **Data:** There are many definitions of data differs denotative meaning according to the author viewpoint and the scope of the study. However, data was defined as: "a set of discrete, objective facts about events", (Davenport, 1998); "objective facts and figures used in the functioning of the school", (Schildkamp, 2010), in spite of the specification of the second definition, both of them have one in common particle; that data are a raw, non-interpreted facts. Other definitions of data were coined by (Schildkamp, 2012) who defined data as a related information to school, students and teachers that needed for decision making process such as surveys and assessment results

that could be qualitative and quantitative data. What is clear about this definition that data were dealt as the same as information. This study will adopt the denotative of the last definition as a reference.

- 2. Concept of Decision-Making:** (Eisenfuhr, 2011) defined decision making as “a process of making choice from a number of alternatives to achieve desired results”. He counted three key elements in this definition; choosing from alternatives; determining the action course; achieving targets or purposes through the selected course of action.

There are many close definitions of decision making coined by a number of authors such as (Aminu, 1986) who defined it as “the process of selecting from several choices, products or ideas, and taking action”. The most significant of this definition is his belief that this process requires the whole system of man not just mental abilities.

Other author called vein, (March, 1994) defined it as “administration” this definition limits this process in administration and it reinforces its importance for administrators.

However, generally, researchers defined decision making as; choosing from alternatives, it is a mental process standing on different criteria that maintain a variety of priorities; determining the course of action, it starts from the final step of the first process where decision maker reaches the result of contrasting process between alternatives and start controlling the action performance; achieving desired results, it depends on the first two processes. All these processes are called administrative where decision maker tries to hit targets through evaluation and controlling the performed activities.

- 3. Data Based Decision Making:** There were many attempts to link data with decision making process. For example, (Cousins, 1993) argued that the action should be taken based on data analysis and interpretation. (Schildkamp, 2010) argue that data-based decision-making is a systematic analysis of existing

data sources and use the results of this analyses to modernise education, curricular, and school performance and finally, evaluating those modernises. However, this study will consider (Schildkamp, 2010) argument that the usage of information generated from data in order to advise and direct curriculum, teacher and school improvement actions, as a reference of data-based decision making.

1.6.2 Rationale for Data Use in Schools

Pretending such efforts is to explore the likely advantages of data use in school, in improving curriculum decisions (e.g. addressing weaknesses in several spheres), and in improving teacher decisions (e.g. reconsidering strategies, instructions and performance).

Both kinds of improvements lead, consequently, to a comprehensive making up for the entire components of the school (e.g. improving learning achievements). Students' achievements increase depends entirely on data based decisions where data such as assessment results and students' data should be dealt with in decision making rather than the traditional concepts such as politics and ideology, (Honig, 2008). This should be drastically handled by policy makers. However, moving practices in schools needs a lot of faith in data, (Spillane, 2012).

1.6.3 Factors Influencing Data Use in School Environment

In order to find out factors that influence data use in schools, it is a prerequisite to discover the obstructions that hinder effective data utilization. The decision making is an enduring process wherein teachers and leaders withstand to multiple decision within a limited time (Schildkamp, 2012). Consequently, it is worthwhile to be said that data based decision making is not observed by all school staff. (Schildkamp, 2010) (Ingram, 2004),

England (Downey, 2013), (Archer, 2013), and New Zealand (Lai, 2009) also report similar challenges.

The studies ascribe this to the deficiency in teachers' in ago conditions data, the lack of analysis and interpretation skills and replacing data by experience, in other words, "experience is enough" (Ingram, 2004); (Schildkamp, 2010). Furthermore, another study (Stringfield, 2001) disclose that data analysis requires a great deal of labour due to the cluttered way of storing data which frustrate flexible analysis in schools and discourage teacher from using it.

Studies expose many types of teachers with regard to data use in making decisions imply; teachers either not using data properly or not using it to direct their activates, (Schildkamp, 2008); (Wohlstetter, 2008); instead, most of their decision is an output of tuition and limited observation (Ingram, 2004). Teachers patronize data as a leaders' belonging (Schildkamp, 2010); teachers restrict their jobs in teaching not in collecting and using data (Earl, 2002); (Ingram, 2004); (Schildkamp, 2010); (Schildkamp, 2012).

Studies also uncover many facts about communication problems in making decision process such as the low level of cooperation and coordination between teachers and leaders in making decisions depending on data; as for each one of them a professional liabilities differs from the other; while leaders handle data interested in inspection and sampling, teachers confine themselves in classroom and students data in order to monitor and fix students' problems, (Schildkamp, 2010).

The ineffectiveness of data systems is one of problems that obstruct data use and keep it difficult to collect and analyse data (Wohlstetter, 2008). Consequently, teachers find no way out of deadlock, they still repugnant from making decisions stand on suitable data that coincide their needs (Schildkamp, 2007).

Overall, most studies end in that many school leaders and teachers divided in terms of using data to guide their practices into two sets; those who use data improperly and the others who don't use it at all due to many factors. This result can be noted in (Fullan,

2007), that “educational change” depends on what teachers think and do is anything to go by, then findings in this magnitude present a worrying state of affairs regarding data use in school. For instance, factors such as teacher perceptions and reluctance to change may mean that schools might still far from embracing data to inform practice.

Chapter Two: Review of Related Literature

This chapter consists of many titles in relation with the related literature of participation aspects in schools' data driven decision making. It includes a comprehensive review of concepts, models, areas and rationale for participation in decision making.

2.1. Concepts of Decision Making in Education

Decision making has a contrastive set of definitions concocted by various authors and specialists accentuates in gross on the process involved during decision making, the followed procedures during a decision making and the participants involved in decision making. Decision making is the process of specifying the nature of a particular problem and selecting among available alternatives in order to solve the problem, (Coleman, 2005) Localizing the same fractals, (Law, 2000) defined decision making as a process of individuals and groups take a sequence of action amongst another possibility to get a wanted result. This definition alluded to the decision-making participants; either individuals or groups, and the process of selecting from alternatives.

Decision making is an enduring process wherein decision's partials; facts, values and assumptions, are a subject of change through time, (Okumbe, 1998). In this regard, Researchers elaborated upon decision making implementations in such chronologically organized phases implied in; defining decision making occurrences, preparing a participatory plan, verbalizing the participatory implementations, and finally, evaluating and estimating feedbacks. Decision making process has three mandatory parts: policy, aims to define targets; sources, manpower and materials; and means of execution, integration and synthesis. Therefore, school administrator should identify two major values; policy decision that seek purposive action and executing decision that seek coordination's of action (White, 1992).

To sum-up, as a cumulative and consultative process, decision making should result in a viable choice or choices to be able to meet all organisation's members critical needs by following a particular discourse of actions. It is a daily school process that may be involved under many frames such as work conduction, the distribution of resources and short-term goals.

2.2. Patterns of Decision Making

Participatory decision making has many advantages in concerning to schools and teachers' performance. In this regard theories have presented a variety of a participatory making decision models that could be contented under two main types; motivational and cognitive (Somech, 2010).

2.2.1. Stimulus Pattern

Motivational technique is considered as an important step of the participatory decision making. It is used for procuring works sufficiency and satisfaction in order to foster school outcomes (Durham, 1997). When it comes to educational participatory decision making, it is located furthers outcomes of students, teachers and school over teacher empowerment technique and organizational commitment motivational technique (Somech, 2005). In concerning to the organisational commitment, there are various factors that have a role- play in activating this mechanism. However, the most pivotal motivational factors where emphasized by motivational theories are identification and self-control (Latham, 2005). When teachers and students are involved in decision making process, this will certainly increase their submission to its consequences and raise their motives to execute it. Therefore, involvement and commitment come out of teachers and students' participation in making decision can definitely ensure more contributions in school improvement.

Motivational mediators such as organizational commitment and teacher empowerment could play an essential and inconsistent role in school and teachers outcomes. This perspective was emphasized by (Wu, 1996) and (Somech, 2005) who claimed that motivational mechanism in teacher empowerment play an important role in term of participative approach to school and teacher performance.

2.2.2. Cognitive Pattern

Cognitive model asserts the importance of participatory decision making in elevating the viability of the flow and use of needful information in organizations (Guzzo, 1996). Moreover, some scholars considered the cognitive realm is the most consistent benefit of Participatory Decision Making (Sagie, 2002). Some other theories support such model by claiming that teachers are more knowledgeable than management in regard to their field what make them be able to enrich decision making process by their beneficial information (Durham, 1997). As they are the closest to the source of information and problems, namely, classrooms, teachers' participation is essentially required to support administrators with such critical information which in turn leads to more improvement of the quality of curricular and instructional decisions.

Cognitive models asserts also the benefit of participation by teachers and students in decision making for many reasons include; giving them more knowledge about the procedures of decision execution (Sagie, 2002); encouraging them to discover new opportunities and challenges, to learn through acquiring, sharing and combining knowledge; promoting cooperation and collaboration; as this process includes clarification of problems, information seeking, data sharing, resonance of ideas, and synthesis of (Sagie, 2002), that foster educative exchanges about matters of curriculum and instruction.

However, cognitive mechanisms promote organisational and employees' outcomes even where no motivational effects of Participatory Decision Making are present (Durham, 1997). To sum up Stimulus and cognitive patterns play an important role in participatory decision making.

2.3 Decision-Making Based Data Analysis

Data is the most essential part of decision making process whereas process depends entirely on analysing and Comparison data. In education, this process is handled by stakeholders (principals, administrators and teachers) who systematically collect and analyse various types of data; input, process, outcome and satisfaction data, in order to reinforce improvement. The below figure (1) shows the stages of decision making process.

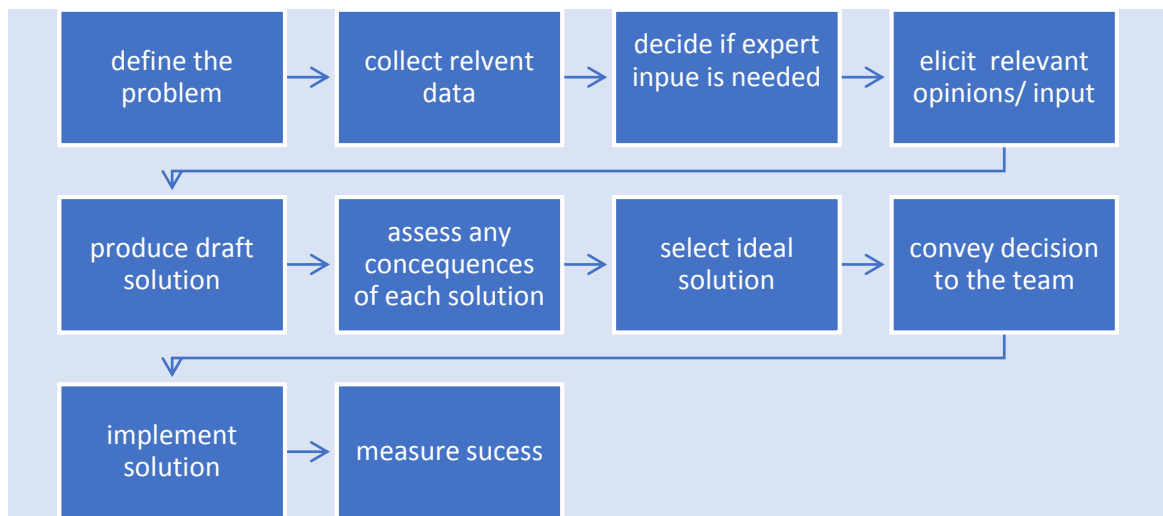


Figure (1): steps of decide an action based on data analysis.

As a source of information regarding all aspects of educational environment, data play an essential role in guiding improvement. On the other hand, educational organizations refer to data in its decision making to deliver more individuality to students, qualified

enhancement for resources, professional organizational structure and develop parent's communication with community.

Among the history of education, data-driven concept were concluded in some of arguments such as: school system efforts to engage in strategic planning in the 1980s and 1990s (Schmoker, 2004); debates about measurement-driven instruction in the 1980s (Popham, 1985), nevertheless, data plays an essential role in decision making process either in the past time or at the present in spite of the great deal of changes that occurred in models In the past several decades.

Data and liability played the best part in educational change. large- scale assessment systems have been applied by schools and ministries of education. Moreover, they set up indicators of adequacy, set targets and made investigation programs.

In any case, Data is the aftereffect of experience, perception or trial, utilizing quantitative or subjective techniques. Data in in schools are just emblematic portrayals communicated in numbers or in words. Along these lines, Data procures an incentive by changing these images into learning by melding the data, or sorting out it and contemplating what it may mean. (Senge, 2006) contend that information driven basic leadership is a procedure that requires catching and sorting out thoughts, as well as transforming the data into significant activities. There are four sorts of Data:

- 1. Input Data:** This kind of Data is worried about school uses, enrolment, participation, the socioeconomics of the understudy populace like nationalities and dialect capability. Such kind of data should find out the number of understudies that selected in the school during current year.
- 2. Process Data:** This kind of information is worried about instructional systems, classroom rehearses, notwithstanding the monetary operations. Such sort of data should define actions that we are teaching to instruct perusing for as long as couple of years.

3. **Outcome Data:** This kind of data is worried about dissecting appraisal information, for example, standard evaluations, test results and grade guide normal all together toward decide the efficient issues. Such sort of data can answer questions like: How did understudy at the school score on a specific government sanctioned test? Or, then again Are there contrasts in understudy scores on state sanctioned tests throughout the years?

4. **Satisfaction Data:** This type of data is concerned with detecting common ideas and thoughts of the whole educational parties about teaching-learning process. There are a variety of detecting methods such as questionnaires, observations and interviews that is supposed to find answers for many problems such as learning culture and its environment from teachers, students and parents overview.

2.4 The Participative Style of Management (Different Stakeholders)

Participative models accept that associations decide approach and settle on choices through a procedure of dialog prompting accord. Power is shared among a few or all individuals from the association who are thought to have a common comprehension about the goals of the establishment Bramble (Tshomela, 2009).

The accentuation is on a specific measure of energy evening out in the participatory mode, with the goal that subordinates, as well, have a say really taking shape of choices (Khandwalla, 2009). Participative mode of management maintains many features that concluded explicitly in Khandwalla list include: speaking up freely and frankly for everyone, sharing ideas and information with no obstacles, the discussions must be ended in a consensus decisions, coordination and control is the whole group responsibility rather than the administrator's own and finally, loyalty to the group and being in charge of its sustainability are the main sources of motivation.

Other important features were summarized by (Davidmann, 1998) include: responsibilities are delegated to subordinate group, subduing difficulties that face the subordinate group is the manager's responsibility, work is the source of satisfaction and punishment, participation in decision making is a right for everyone, Individuals learn to acknowledge, as well as to look for more prominent obligation, workers are spurred by rewards.

2.4.1 Areas of Teachers' Involvement in Decision Making

This section focuses on the teachers' decisional areas for participation. Such areas can be concluded in school domain improvement programs; teaching-learning, learning conditions, community participation and other school activities such as planning, students' affair and school discipline.

Teachers are in charges of accomplishing school improvement targets in concern to students' learning and behavior outcomes. Due to their effective role in strengthen and weaken students' learning and changing, school improvement guideline underlines the necessity of involving teachers in planning, implementation and evaluation processes. So, this part mainly focuses on school domains the important of them: Learning and teaching; school leadership and management.

2.4.1.1. Learning and Teaching Domain

Teachers have a pivotal role with respect to students' efforts and curriculum. However, teachers' efforts and initiatives can be contextualized within three frames; teaching process; learning and evaluation; and curriculum. Those efforts and initiatives are emerged clearly once implementation occurs through students' interaction. In this matter, (Aggarwal, 2004) explained that the child's tendency to change ensures the teacher's role vitality to put forth in him a great deal of responsibility and, moreover, to reinforce his adaptation and socialization. Therefore, teachers are in charge to assure a safe and healthy

environment in order to enable children to obtain desirable values of freedom, integrity, equality ... etc.

As teachers are the most effective in belonging to school improvement and developing students' outcome amongst the other stakeholders, they are in charge of having a professional code of ethics and discharging their responsibilities accordingly. Since skillful, model and knowledgeable teachers; those who have the academic knowledge needed to teach, plan and implement teaching task sufficiently, are, consequently, able to shape students in the needed way.

In this regard, Dubai education sector program action plan emphasis, therefore, to improve not only the academic qualifications but, furthermore, the ethical values of teaching staff. However, more efforts should be exerted in order to have a well-motivated, disciplined and endowed with ethical values teacher to be able to act as a professional model for students.

The other accountabilities that are supposed to be discharged by teachers are enhancing their performance by using participatory teaching methodologies and other modern approaches in learning-teaching process, delegating students with tasks; contain the three features of education (knowledge, skill and attitude), such as class work, homework, short tests individual or group projects (Hume, 1990), recording results and give back their feedback; this will back up the teacher with a real reference to identify the weak performers in order to provide a special assistance, keeping a continuous evaluation of their capacity of teaching and amending their approach accordingly, and encouraging students to participate by asking questions and sharing comments in order to enforce their self-confidence.

Problem solving; implemented though exercises and assignments, should be emphasized intensively by teachers in order to employ a student-oriented continuous system of evaluation. Overall, there are lots of benefits result in teacher's participation in decision making that can be obviously observed throughout the upgraded outcomes of students in teaching-learning process.

2.4.1.2. School Leadership and Management

Leadership and administration play an important role in all managerial functions include; planning, organizing, coordinating, evaluating and supervising manpower's efforts in order to pursue improvement in school and student levels. The governing guide line for the implementation of the school improvement program stated that the leadership and administration include the following: director and deputy Director, School leadership committees (drawn from teachers, students, parents and the local community) and Professionals and officials of education outside of the school.

These organs are expected to play the forefront role in bringing continuous improvement in schools. Therefore, as these organs carry out the responsibility of a continuous improvement; by uncovering problems and weaknesses and employing a professional practices and experience to find out solutions for such problems, they should act in an integral, coordinated and organized form; illustrated within a strategy plan due to the school management's vision.

2.5. Factors Affecting Teachers' Participation in Decision Making

Perception of workload, school productivity and school innovation are the main factors that affect teachers' participation in schools' decision-making process. In-depth researchers claim over survey will be conducted below.

2.5.1. Perception and Workload

Despite the extra time and workload yielded from decision making process, teachers somehow will prefer to be a part of group decision rather than shunning away. (Raywid, 1990), observed that when the additional time and vitality requested by arranging and

decision-making are adjusted by genuine specialist, instructors report fulfillment, even richness.

(Mowday,1994) recognized that the orderly examinations report that educators and principals alike are baffled by the expanded requests on their opportunity and vitality, by the need to accept obligations outside their experience as well as mastery, and by part ambiguities and associate strains. However, there were many focus points that principals were certain about include; preplanning; staff supporting; and teachers' compensation in case of overload of decision making process practice.

(Duke, 1980) appraisals of effort to include site participants, teachers, in school basic leadership and decision-making show that efforts able to degrade the instructional database by redirecting consideration, depleting vitality, or potentially decreasing genuine showing time, especially when these requests come notwithstanding, not in lieu of, the obligations principals and educators commonly accept.

(Chapman, 1986) stated that teachers particularly disappointed when the expanded workload was the aftereffect of school based administration errands which were for the most part administrative and general association work and estimated that trading teaching preparation time for site-based administration work may lessen the nature of training offered to understudy. Hill and Bonan (1991) Saied that because of school-based administration, teachers may encounter a noteworthy increment workload with no genuine extra impact over choices.

Consequently, teachers' cooperation in basic leadership effects workload; the issue that requested some recognition in this research.

2.5.2. School Productivity

Teachers are considered the mean between participation and productivity; in this regard, the effect of decision making participatory on teacher performance at classroom were inspected due to its importance in determining the consequences of such participation. In-

role performance is behaviours which are required or expected as part of performing the duties and responsibilities of the assigned role (Van Dyne, Cummings & McLean Parks, 1995).

Teacher productivity can be promoted by PDM, in order to enhance the decision making quality in education through providing managers an admission to confidential data nearby to the root causes of schooling ((Tschannen-Moran, 2001)). By tackling unanticipated problems directly and immediately. Furthermore, by increasing willingness to implement decision making outcomes in class, or indirect benefits of teacher job satisfaction, confidence, and minimize conflict” ((De Dreu, 2006)).

2.5.3. School Innovation

Innovation plays a crucial role in school’s sustainability and progression. However, many claims refined to this subject such as (De Dreu, 2006)) who reports that school’s innovation represent a very aggressive and dynamic condition, which requires adaptability and quick adjustment to new circumstances and evolving settings. School advancement is characterized here as the deliberate presentation and application in the school of new thoughts, procedures, items, or methodology intended to profit it altogether " (Murphy, 1995) see participative directors as looking to urge educators to find new open doors and challenges and to learn through procuring, sharing, and joining information". The examination writing (De Dreu, 2006) recommends that "cooperation is basic for the school's capacity to transform new thoughts and separately held information into inventive methods, administrations, and items".

As (Cohen, 2004) noted that participation of teachers having assorted and distinctive learning will expand the school's ability for making novel linkages and relationship past what any individual can accomplish. In fact, school innovation needs the absorptive ability to perceive, absorb, and apply inventive thoughts. Teachers participation in decision making will make the capacity higher and can expand the pool of thoughts, materials, and techniques (Somech, 2002) Investment in the basic leadership process may

likewise urge teachers to try different things with inventive practices in educational modules and teaching method.

2.6 The Role of Teachers and Schools in Supporting Parental Involvement

Parental involvement is an essential priority for schools in order to have an effective partner in concerning to the improvement process. Parental involvement is influenced by school characteristics (Feuerstein, 2000). Thus, school's vision and managerial trends are necessarily the means of indicating the extent of this involvement. However, to encourage parents to get involved, schools should offer a variety of involvement options and should have an adequate knowledge about involvement techniques.

Schools differentiate, in the degree of assumptions and promotions, in regards to attract parents to be involved in decision making process, so some schools have more ability to promote parents involvement than the other (Kerbow, 1993). School, teachers and students should offer more options of parents' engagements considering their needs such as invitation; that convey to parents that they are welcomed to be involved, and respect for parental concerns and suggestions. Such assumption, indeed, sets such a strong foundation of involvement. However, invitation and respect from teachers, on one hand, result in trust that is the basis of collaboration and coordination in regard to children learning at home and school. On the other hand, invitation and respect from children can also prompt involvement and keep parents aware of their children learning.

3.0 Chapter Three: Research Design and Methodology

This chapter focuses on the research methodology that the researcher went through. It includes research design, sources of data, population, sample size and sampling techniques, instrument of data collection, procedure of data collection and methods of data analysis.

3.1 Research Design

As per analysing, employing and developing a circumstantial and profound data collection, the descriptive methodology was employed to carry out the study This is because the researcher believed that this method would help him to find or gather relevant data in detail and to make detailed analysis.

in addition to the mixed-approach design that enhance the researcher to incorporate quantitative and qualitative approaches in developing data collection instruments and tools to broaden understanding

3.2. Sources of Data

Researcher built up the analyses data based on sources of data form public and private secondary schools in Dubai.

This research was launched in some of Dubai secondary schools, as a clue of the research information, in both governmental and private sectors.

1. Meetings:

This research implemented the meeting mechanism in order to collect information regarding its subject matter. These interviews were administered with school's stakeholders (leaderships (principals, vice principals, department heads, unit leaders) and teachers).

The interview had two parts, the first one was about background of interviewee (sex, experience, qualification). The second part was four questions about my study.

the questionnaire interviews were conducted with 4 principals, 3 vice principals, 3 supervisors (Appendix-B), from Dubai secondary schools.

2. Survey:

This research utilized an adjunct mechanism, the survey, as an instrument to bring out more supportive information which distributed for department heads, and teachers.

Out of the one hundred twenty (120) copies of questionnaire distributed to the teachers and department heads by survey, only one hundred and ten (110) were retrieved successfully from the respondents and used for the purpose of this study.

3.3. Population, Sample Size and Sampling Techniques

3.3.1. Target Population of the Study

The population for the study which drawn as a sample was 110 teachers, 10 department heads, 4 principals, 3 vice principals, 3 supervisors found in these ten-selected sample secondary schools of Dubai.

3.3.2. Sample size and Sampling Techniques

For this study, different sampling techniques were used. These schools were selected because the researcher can easily access to the information that is useful for this research. Therefore, Dubai was selected purposively; because of availability sampling.

In the selected secondary schools, 110 of the teachers were selected. School leaders (10 department heads, 4 principals, 3 vice principals, 3 supervisors) of 10 secondary schools were selected.

3.4. Instruments of Data Collection

Using different types of tools for gathering data help to get adequate and sufficient data for the problem on the study to hit the target seeking after, the researcher exploited two data-collection mechanisms; questionnaire and interview, as instruments to interact with the focus population.

3.4.1. Questionnaire

Questionnaire mechanism has many benefits, as a practicable instrumentality, whereby the researcher can obtain several kinds of information, attitudes and opinions of a great deal of candidates in a fairly short time. Assessing data driven decision-making extension; determining the participatory motivational factors of teachers and parents in school decision making processes; finding out decision making improvement mechanisms in school, were included in such questionnaire. (Appendix A)

The questionnaire had five parts. The first is about respondent's qualification, statues and years of experience. Second part and third part consist of five items for each. It about Opinions of Respondents on Analysing data and Decision-Making Process in the Management of Secondary Schools in Dubai, Opinions of Respondents on the Organization of Decision in the Management of Secondary Schools in Dubai, Respectively. Finally, Part four and five consist of four items for each.

It about Opinions of teachers and department heads on directing decision in the management of secondary schools in Dubai and Opinions of Respondents of the Impact

of Decision Making Process based on data analysis involved different stakeholders on the Management of Secondary Schools in Dubai, Respectively. And the respondents were answer by agree or disagree of the last four parts.

The collected data from questionnaire was organized and analysed by SPSS-V23 for identification of Cronbach's alpha for the questionnaires' reliability.

3.4.2. Interview

On the account of detecting information about participatory in decision making process, in common with the questionnaire interviews were conducted with 4 principals, 3 vice principals, 3 supervisors (Appendix-B), from Dubai secondary schools. However, the interviews' questions were concerned in obtaining in-depth, recommended and urged information that in turn convict the study targets.

The interview had two parts, the first one was about background of interviewee (sex, experience, qualification). The second part was four questions about my study.

3.5. Procedure of Data Collection

Data those valid this research was collected through questionnaire and interview. The questionnaire conducting passed three phases; workout and adjustment phase, wherein ambiguity and confusion were avoided; preparation phase, wherein the final draft of the questionnaire was adapted; and as a final procedure, the administration phase, wherein the questionnaire was conducted, with the help of administrators and leaderships, after providing the necessary orientations by the researcher.

The questionnaire was about 110 clauses addressed teachers, and 10 clauses addressed department heads. The questionnaire duration was at most 14 days; whereas it is considered an adequate response duration for participants to determine their answers with

no disturbance. Thereafter, the response received income was as the best anticipation with 101 from 110 of teachers' questionnaire and 9 of 10 of department heads' questionnaire.

For the matter of interviews regarding 4 principals, 3 vice principals and 3 supervisors, responses of the respondents were organized properly to be organized and analysed.

Since it was end of the academic year when the researcher started with the case study, some principals excused to meet the researcher directly because they were busy with exams, students grade or other activates, so they could transfer the interview to their vices or supervisors otherwise some of them answered the researcher by email.

3.6. Methods of Data Analysis

By using quantitative method, data that was used to be collected from the study participants was subdued to a consecutive process starting from a systematic coding, tabulating and organizing of data, and then storing them in an editable excel spreadsheet imported to SPSSv-23, and finally, analyzing them using descriptive (percentage, frequency) and inferential (independent sample t-test, mean, weighted mean and standard deviation) statistics. Items were classified according to the results' assignability and non-assignability into separate tables whereas results were analysed and interpreted.

Regarding the variety of results brought from the questionnaires and interviews, different statistical tools were implemented in the respect of analysing and interpreting include; frequency and percentage distributions were implemented to handle various characteristics of the sample population such as sex, academic qualification, and work experience; independent sample t-test, standard deviation and weighted mean were implemented in order to compute the contrast views of both department heads and teachers. Furthermore, results were analyzed qualitatively, whereby respondents' ideas were described and narrated.

4.0 Chapter Four: Data Presentation and analysis

4.1 Introduction

This chapter contained the statistical analysis of the data collected from the teachers and department heads by survey and from leaders and principals by meetings regarding to the study on the effect of decision making in the management based on data analysis of public and private secondary schools in Dubai.

Research data analysis and interpretation of results in the study were carried out on the basis of the responses collected from the questionnaire administered by the researcher. Out of the one hundred twenty (120) copies of questionnaire distributed, only one hundred and ten (110) were retrieved successfully from the respondents and used for the purpose of this study.

Such a type of data was organised and processed by descriptive statistics; in order to bear the four hypotheses; that was experimented to provide valid solutions for the research. In this regard, t-test statistics; in particular, by using overall mean scores to draw conclusions according to the decision rule at 0.05 level of significance, were in use for the purpose of ascertaining an ultimate result.

4.2 Data Presentation

4.2.1 Survey

A descriptive analysis of the teachers and department heads' questionnaire's data is the subject matter of this section.

1. Participants' Overview about Data Analysing Process and Decision-Making Process in Management in Number of Dubai's Secondary Schools.

The variables raised in this section of the questionnaire was set to determine the respondents' opinions of analysing data and decision making process in the management of secondary schools in Dubai.

This table includes a percentile analysis of teachers' and department heads' response income in regard to several items; handled the data analysis process and the decision-making process in management in a number of Dubai's secondary schools.

Item Statement	Agree	Disagree
1. The administration team's plans should be involved as a part of decision making process.	29.1%	70.9 %
2. Decision making process should be executed under the supervision and consultation of the management team.	30%	70%
3. Data analysis has a very limited effect on decision making process in your school.	57.3%	42.7%
4. Is it applicable to participate teachers and students in decision making process to realize the secondary school's objectives?	16.4%	83.6%
5. Teachers and students are the implementers of decisions.	76.4%	23.6%

Table (1): Participants' overview about data analysing process and decision making process in management in a number of Dubai's secondary schools.

Table (1) above contains detailed information on Participants' overview about data analysing process and decision making process in management in a number of Dubai's secondary schools as presented using percentages.

The data collected showed that (29.1%) of the respondents agreed that the administration team's plans should be involved as a part of decision making process. On the other hand, (70.9%) disagreed

On the other hand, (30%) of the respondents agreed that Decision making process should be executed under the supervision and consultation of the management team (70%) disagreed.

Regarding the assertion that Analysing data has a very limited effect on decision making process, (57.3%) of the total respondents agreed. On the contrary, (42.7) respondents disagreed.

With regards to the statement that participate teachers and students in decision making process to realize the secondary school's objectives (16.4%) of the respondents agreed to the statement while (83.6%) disagreed.

In responding to item five, (76.4%) of the respondents agreed, (23.6%) disagreed.

2. Participants' Overview about Decision Organizing in Management in Number of Dubai's Secondary Schools.

This section sought to determine the opinions of respondents on the Organization of Decision in the Management of Secondary Schools in Dubai. Therefore, this table (2) includes a percentile analysis of teachers' and department heads' response income regarding several items; handled the decision organizing process in management in number of Dubai's secondary schools.

Item Statement	Agreed	Disagreed
1. Organizing decision making process becomes a difficult task for the management if data analysis was not accomplished perfectly.	63.6%	36.4%
2. Is it applicable the decision making process executed based on data analysis in your school?	29.1%	70.9%
3. Decision making process takes cognizance of the interest of the students and teachers.	10.9%	89.1%
4. Teachers and students don't consider the decision making process as their priority, where they focus on their daily activities and feel it loss of time.	30%	70%
5. Is decision making process improvement is associated with innovation and achieving targets?	88.2%	11.8%

Table (2): Participants' overview about decision organizing in management in number of Dubai's secondary schools.

The table (2) above shows details of Participants' overview about decision organizing in management in a number of Dubai's secondary schools as represented in percentage.

(63.6%) of the total respondents agreed that Organizing a decision making process becomes a difficult task for the management if data analysis was not accomplished perfectly. (36.4%) disagreed on this assertion.

With regards to item 2, that the decision making process executed based on data analysis (29.1%) of the total respondents agreed to the statement, (70.9%) disagreed.

With regards to the statement that Decision making process takes cognizance of the interest of the students and teachers, (10.9%) of the total respondents agreed while (89.1%) disagreed.

With regards to item 4, (30%) of the total respondents for the study agreed that teachers and students don't consider the decision making process as their priority, where they focus on their daily activities and feel it loss of time. (70%) disagreed.

On the statement that Decision making process improvement is associated with innovation and achieving targets, (88.2%) of the total respondents agreed while (11.8%) disagreed.

3. Teachers' and Department Heads' Overview about Decision Directing in Management in Number of Dubai's Secondary Schools.

This table includes a percentile analysis of teachers and head department's response income regarding to several items; handled the decision directing process in management in number of Dubai's secondary schools.

Item Statement	Agreed	Disagreed
1. Flexibility and fruitfully decision making process and implementation depends on participation of all parties.	11.8%	88.2%
2. Principal, teachers, students and parents are all responsible of directing the decision.	12.7%	87.3%
3. In some cases, teachers and student have a difficulty in directing the decision due to their ignorance of some details.	69.1%	30.9%
4. It is common that decisions are made based on the selfish interest of school principals.	80%	20%

Table (3): Teachers' and department heads' overview about decision directing in management in number of Dubai's secondary schools.

Table (3) contains detailed information on the Teachers' and department heads' overview about decision directing in management in number of Dubai's secondary schools. as responded on each item on the questionnaire and represented in percentage.

A total of (11.8%) respondents agreed that flexibility and fruitfully decision making process and implementation depends on participation of all parties, (88.2%) disagreed.

In responding to item '2' that Principal, teachers, students and parents are all responsible of directing the decision (12.7%) agreed while (87.3%) disagreed.

(69.1%) of the respondents agreed that in some cases teachers and student have a difficulty in directing the decision due to their ignorance of some details. (30.9%) disagreed.

In responding to item '4' that It is common that decisions are made based on the selfish interest of school principals 80%) agreed while (20%) disagreed.

4. Participants' Opinions about the Impact of Decision Making Process Based on Data Analysis Involved Different Stakeholders on the Management of Secondary Schools in Dubai.

This table includes a percentile analysis of teachers and department heads to illustrate the responses of teachers and department heads to each item on the questionnaire set to determine the Impact of Decision Making Process based on data analysis involved different stakeholders on the Management of Secondary Schools in Dubai. Therefore, the results obtained are presented in table (4).

Item Statement	Agreed	Disagreed
1. Poor performance in academic performance of students is attributed to poor decisions.	70%	30%
2. your school have concerned with Students' participate in decision making process, to enhances their interest and commitment.	10.9%	89.1%
3. your school have concerned with Parents' participate in decision making could to enforce their interest and loyalty.	39.1%	60.9%
4. your school have concerned with Teachers' participate in decision making to motivate their performance.	22.7%	77.3%

Table (4): Participants' Opinions about the Impact of Decision Making Process based on data analysis involved different stakeholders on the Management of Secondary Schools in Dubai

Table (4) above contained details on the Participants' Opinions about the Impact of Decision Making Process based on data analysis involved different stakeholders on the Management of Secondary Schools in Dubai as responded on each item as represented in percentages.

Responding to item '1 a total of (70%) respondents agreed that, Poor performance in academic performance of students is attributed to poor decisions, (30%) disagreed.

With regards to the statement that the school have concerned with Students' participate in decision making process, to enhances their interest and commitment, (10.9%), (89.1%) of the total respondents agreed, disagreed respectively.

In responding to the statement, the school have concerned with Parents' participate in decision making could to enforce their interest and loyalty (39.1%) of the total respondents Agreed while (60.9%) disagreed.

With regards to the last statement that the school have concerned with Teachers' participate in decision making to motivate their performance, (22.7%) agreed (77.3%) indicated disagreed respondents.

4.2.1.1 Hypotheses Testing

Researcher defined four hypotheses (H1, H2, H3 and H4) were designed to offer solutions for this study where those hypotheses established to define the differences in opinions for participants (respondents) on the effect process of decision making and data analysing in management. In this project, the hypotheses testing carried out using t-test statistics at significance level of 0.05 for different samples. In general, the significant relationship of participants in study should be tested statistically and at the end it could either under rejected hypotheses or accepted one. Based on that, the hypotheses will be accepted in case the probability value (P) is higher than the level of significance (Probability >0.05). However, if the (probability <0.05), then the hypotheses will be rejected.

First Hypotheses (H1): For selected secondary schools in Dubai, overview of teachers and head of departments is considered as no clear difference on effecting the process of data analysis and decision making in term of management, Table (5).

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ADDM	Equal variances assumed	.469	.495	-1.044	108	.299	-.33773	.32355	-.97907	.30361
	Equal variances not assumed			-1.300	10.572	.221	-.33773	.25976	-.91229	.23683

Table (5): T-test statistics for the first hypotheses (H1).

Since the T-test calculated value (Sig.= 0.495) is less than the T-test critical value ($t = 1.044$) at 108 degree of freedom (df) as explain below:

$$\text{Sig} < t(\text{df}) = 0.495 < t(108) = 1.044$$

While the significant level for this t-test (Sig(2-tailed) = 0.299) is higher than (0.05) as explained below:

$$\text{Sig}(2\text{-tailed}) > 0.05 = 0.299 > 0.05 = \text{Probability} > 0.05$$

This result (Probability>0.05) confirmed that the first hypotheses (H1) is retained and accepted that the overview of teachers does not differ significantly from head of department on effecting the process of data analysis and decision making in term of management.

Second Hypotheses (H2): For selected secondary schools in Dubai, T-test used to analyse the difference of overview about decision establishing in management. Table (6).

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
ODM Equal variances assumed	.249	.619	-.718	108	.474	-.25633	.35685	-.96366	.45101
Equal variances not assumed			-.823	10.078	.430	-.25633	.31154	-.94975	.43710

Table (6): T-test statistics for the second hypotheses (H2).

Based on table (6), it observed that the T-test calculated value (Sig.= 0.619) is also less than the T-test critical value ($t = .718$) at 108 degree of freedom (df) as explain below:

$$\text{Sig} < t(\text{df}) = 0.619 < t(108) = 0.619 < .718$$

Furthermore, (Sig(2-tailed) = 0.474) is higher than (0.05) as explained below:

$$\text{Sig}(2\text{-tailed}) > 0.05 = 0.474 > 0.05 = \text{Probability is higher than } 0.05.$$

For this hypotheses (H2), Probability is higher than 0.05 and this confirmed that it is retained and accepted that the difference of overview of decision establishing in management for teachers do not differ significantly from head of departments.

Third Hypotheses (H3): For selected secondary schools in Dubai, T-test used to analyse the differences of overview of teachers and head of departments in term of decision directing in management.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
DDM	Equal variances assumed	.087	.768	.626	108	.532	.18702	.29851	-.40469	.77873
	Equal variances not assumed			.727	10.151	.483	.18702	.25710	-.38468	.75871

Table (7): T-test statistics for the third hypotheses (H3).

In Table (7), the T-test calculated value (Sig.= 0.768) is also higher than the T-test critical value ($t = .626$) at 108 degree of freedom (df) as explain below:

$$\text{Sig} > t(\text{df}) = 0.768 > t(108) = 0.768 > .626$$

Where, (Sig(2-tailed) = 0.532) is higher than (0.05), as explained below:

$$\text{Sig}(2\text{-tailed}) > 0.05 = .532 > 0.05$$

Probability higher than 0.05 which proofs that the third hypothesis (H3) is retained and accepted. This result confirmed that the differences of overview of teachers and head of departments in term of decision directing in management do not differ significantly.

Fourth Hypotheses (H4): For selected secondary schools in Dubai, T-test used to analyse the impact of different opinions on decision making process based on data analysis involved different stakeholders on the Management.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
DMDA Equal variances assumed	2.869	.093	.782	108	.436	.24202	.30955	-.37155	.85560
Equal variances not assumed			.591	8.745	.570	.24202	.40965	-.68881	1.17286

Table (8): T-test statistics for the fourth hypotheses (H4).

Based on the observations on table (8), T-test calculated value (Sig.= 0.093) is also less than the T-test critical value ($t = .789$) at 108 degree of freedom (df) as explain below:

$$\text{Sig} < t(\text{df}) = 0.093 < t(108) = 0.789$$

However, (Sig(2-tailed) = 0.436) is higher than (0.05) as explained below:

$$\text{Sig}(2\text{-tailed}) > 0.05 = 0.436 > 0.05 = \text{Probability} > 0.05$$

For this hypotheses (H4), Probability > 0.05, so it confirmed that the impact of different opinions on decision making process based on data analysis involved different stakeholders on the Management is accepted.

4.2.2 Interview

Based on the meetings were done for selected decision makers (4 principals, 3 vice principals and 3 supervisors) in Dubai`s schools, the researcher found that most of them are depending on the data collected throughout the academic years. In general, the feedbacks from the decision makers were summarized as following: It is very clear that the schools in Dubai are following different set up and systems to define their decision making process. It is considering as one of the common systems that the managers normally deal with to decide the right actions on their decision making is (Students Data

System) that allows them to access to their student's information (schedules, grades, exam scores and attendance).

When it comes to preview their current personal data for their students, archived information and financial history to take an action in some cases, the decision makers refer to other system which is called (Archived Data System).

In order to support the managers and the decision makers to follow up their academic planning and monitor/analyse the yearly performance, some schools designed a smart system called (Planning System for Managers).

Furthermore, Table1 shows the common data types that used by decision makers in Dubai schools which gathered by researcher. However, not all types are applicable in all schools where some of them depends on either daily sheets - non- computerized systems - which could lead to mismatch data or depends on their experiences.

No.	Types of Data Sheets Available – Dubai Schools
1	Attendance data sheet.
2	Exam / Grade data.
3	Students' Performance data.
4	Identical and uniform test
5	History file for individual Students for test scores covering previous years.
6	Student course history.
7	Students last previous attended schools.
8	Supplementary educational programs students list.
9	School staff data sheet (Staff personal, educational and experience data)
10	School finance sheet (salaries and expenses).

Table (9): Data Sheets Used by Schools in Dubai.

On the other hand, researcher defined some barriers that faced in Dubai schools in term of implementing a systematic data analysis for their decision making. In this project and based on the meetings, the barriers could be summarized as following:

1. The cultural negligence of the importance of data collection in many schools, where teachers disregard it since they have a comprehensive perspective in virtue of experience and they never consider it as a high priority. Lack of training, equipment and time to carry out data analysis, for example, a big slice of teachers have no training in dealing with data and in dealing with technological resources if they are, luckily, available; data analysis phobia, whereas many teachers fear from data analysis as it turn up unfavourable results that may declare their incompetence, moreover, data analysis could provide a clear facts that may indicate school abilities and competency, the matter that hang over its progression.
2. Most of schools do not invest on gathering data by putting it in the priority activities, hiring relevant staff who can manage the process, teach decision makers and follow up the quality of process.
3. Data gathering is not part of the job description of staff (Teachers and administrators), so they feel that it is not their job and waste of time and they avoid participating in any decisions.
4. Lack of knowledge about data manipulation.
5. Lack of data collection techniques.
6. Lack of data categorization methods.
7. Lack of data chronological management.

Schools could use data in terms of providing a practice; there is no need for a high level of technology or scientific tools to be a precondition of applying data-based decision process; they may need to substitute hypotheses with facts, try to limit reasons of problems, assess the desires and needed resources to report them, establish action plans and maintain track of whether they become proficient. (Williams, 2013)

Based on data collected, researcher found that the responsibilities of teachers in Dubai schools were within the classroom by managing their student`s behaviours and academic level. Some schools ask teachers to participate in development of academic curriculum

and exams. However, School roles, policies and other activities outside classroom were related to school principals, governing bodies and politician, but teachers were rarely involved or their voices totally missing.

For students, they have a limited opportunity to participate in any decision making for school activities or infrastructural facilities. However, several schools allow their students to select school themes or book cover colours, but no participating in serious decision making.

When it comes to parent's participation, it is not applicable in Dubai's schools yet. Based on managers feedback, practically it is very hard to keep parents involved in educational decision making and it could be a long-term planning for schools in Dubai.

In fact, managers and other supervisor who were met believe that keeping teachers and student participated and involved in decision making process and school management system are gold factors that could lead to real improvements of school, teachers and student's performance. In addition, they all agreed on engaging teachers, students and parents to live in democracy academic environment where their voice is a matter and should take it in its consideration.

5.0 Chapter Five: Summary, Conclusion and Recommendations

Overall, this chapter presents a summary, conclusion and recommendations; starting with the summary and the ultimate findings, and then ending with, the conclusion and recommendations.

5.1 Summary

Evaluating the data driven decision making in Dubai's secondary schools, evaluating the influence of decision making participatory of all those who concerned – stakeholders (i.e. head department, teachers, and parents)- in such schools, furthermore, the endeavouring to improve current performance and practices, were all the main purposes of this study. However, in order to solve such problems; this study raised the following basic questions:

1. Data-driven decision making process should be implemented by different stakeholders; what is the extension of such implementation?
2. What is the participatory extension of teachers, students and parents in decision making process in Dubai's secondary schools?
3. What are the effective participatory factors that motivate teachers to be involved in decision making process in Dubai's secondary schools?

The impact of the basic managerial functions that forms healthy systematic steps in making decisions process in secondary schools was the ground on which the researcher empowered in order to explore, assess and evaluate the influence of data analysis in decision making process, and, moreover, to determine the influence of such functions on the schools' leaderships. However, objectives, research questions, and corresponding hypotheses were propounded consequently.

Consequently, the accompanying procedural advances were embraced: seeking related resources to outline foundation of the research, figuring fundamental questions, providing instrument for information accumulation, choosing strategies for distinguishing proof of respondents, finalize the analysis and documenting the final report.

Giving a broad spectrum of various definitions on decision making based on data analysis as well as reviewed the trends on which management principle impact on decision making process in secondary schools in Dubai. However, several relevant and related literatures by different authors were reviewed on the research problem.

Data were collected by using questionnaire and interview as instruments for data gathering; the main subject was teachers, school leaders (principals, vice principals, department heads and supervisors); the respondents of the study were 101 teachers, 9 department heads, 4 principals, 3 vice principals and 3 supervisors from 10 secondary schools.

This study helped to answer the pivotal questions of this research., by its findings that revealed that respondents do not differ significantly in their opinions on the impact of decision making and the management of secondary schools in Dubai based on data analysis the data as presented in table (5).

5.2. Summary of Findings

1. Teachers' participatory in decision making process has a great impact on schools' and students' performance and achievements. It is reflected beneficially, as a result of reducing absenteeism and on the managements', teachers' and students' performance as it results in a responsible implementation of taken decisions and more accountability of their consequences. However, a large set of researchers such as (Jung, 2014)

assured on the importance of such participatory due to its benefits and controversial results.

2. Students' participatory, in concern to most schools' governance issues, is very limited, and in contributing to school long-term plan it's in the lowest degree. However, wither students were not informed at all or merely informed.
3. Parents' participatory, in concern to the school governance issues, was lower than students' participatory. Instead, it still higher with regards to long-term school planning and pedagogical technical issues. However, the study shows that there are hardly any issues where parents regularly join education managers in making educational decisions rather than decisions on parental contributions.

5.3. Conclusions

Data driven decision making plays a crucial role in schools' achievement and fruitfulness, nonetheless, the participatory of all stakeholders and students could influence the implementation of such decisions. However, students' participatory in decision making particularly in Dubai's secondary schools is yet as little as notified in spite of its fruitful impact on leaderships performance improvement.

Drawing on the expertise of individuals who are interested in and knowledgeable about issues that touch the successful performance of students is one of backgrounds that is provided by School-based decision making. However, the definition of decision making parameters and overarching goals, and the provision of the information and professional development necessary to make effective, long-lasting decisions are all fell on the expense of the leadership.

Finally, data driven decision making should be the main segment of school improvement cycle; students required to be taught to examine their own data and set their own learning goals, principals must create a strong vision for school extensive data use, schools need to foster a data-driven culture and school districts must develop and maintain the wide data systems. Those are the main guidelines of this research.

5.4. Recommendations

By virtue of the ultimate findings and the conclusion contents, the following recommendations were braced particularly to direct the school's decision making process:

1. Decision making process is a must and should be considered seriously especially in instructional programmes decisions. Schools should guarantee an effective students participation in order to promote an educational leadership's quality and Students' participation stimulation in students' affairs and human resources.
2. Teachers' participation in different areas of decision making was limited due to the lack of knowledge, skills and an awareness of such matters. Which in turn come to light such problems in transparency and teachers' empowerment. Therefore, decision making process should be transparent in order to guarantee more participation of teachers.
3. The deadlock of teachers' participation in decision making is the result of inactive stimulation utilities in schools. Therefore, schools' managements should hold at its expense to provide different incentives like award, recognition and other motivational means in order to high up teachers' morale and to ensure better learning outcomes.
4. School principals' knowledge, skills and attitude toward the participation of teachers in school decision making processes could for sure affect their participation. Hence, the empowerment of principals, by several means such as giving them an opportunity to organize a seminar, workshop and

different trainings to build principal confidence, is a necessity in order to reinforce the leader personality.

5. Lack of knowledge, skills and attitude towards the advantage of decision making are the main impeding factors that hold teachers' participation in decision making. Hence, school leaders should identify knowledge, skills and attitudes' gaps of teachers and ought to provide continual training to resolve related problems.
6. Staff training, awareness rising, close support, support to work and decided in group and other mechanisms should be devised in order to improve teachers' participation in decision making process. Teacher participation and students in decision making should be enforced by the principal and experienced teachers.
7. The main focus of this research is to assess the teachers' participation, students and parents' in different schools' decision -making processes based on data analysis, and moreover, to discover the impeding factors that affect such participation. However, it is recommended that such research should handle first the root cause of the weakness of their participation in decision making process in schools.

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Appendix A:

QUESTIONNAIRE FOR DEPARTMENT HEADS AND TEACHERS ON THE ASSESSMENT OF DECISION MAKING BASED DATA ANALYSIS IN SECONDARY SCHOOLS IN DUBAI

Department of IT
 Faculty of IT& engineering
 Information Technology Management
 British University in Dubai, UAE

Dear All,

Kindly respond to this questionnaire of decision making process based on data analysis in Secondary Schools in Dubai. Please be noted that all answers will be secured and analysed confidentiality.

Researcher is highly appreciated your kind participation.

Bayan Ahmad

Part 1

Personal Data:

1. Qualification: 1. Ph.D [] 2. M. ed [] 3. B.ed [] 4. NCE [] 5. others []
2. Status: 1. Head department [] 2. Teacher []
3. Years of experience: 1. 1-5 [] 2. 6-10 [] 3. 11-15 [] 4. 16 and above []

Part 2

Item Statement	Agree	Disagree
1. The administration team's plans should be involved as a part of decision making process.		
2. Decision making process should be executed under the supervision and consultation of the management team.		

3. Data analysis has a very limited effect on decision making process in your school.		
4. Is it applicable to participate teachers and students in decision making process to realize the secondary school's objectives?		
5. Teachers and students are the implementers of decisions.		

Part 3

Item Statement	Agreed	Disagreed
1. Organizing decision making process becomes a difficult task for the management if data analysis was not accomplished perfectly.		
2. Is it applicable the decision making process executed based on data analysis in your school?		
3. Decision making process takes cognizance of the interest of the students and teachers.		
4. Teachers and students don't consider the decision making process as their priority, where they focus on their daily activities and feel it loss of time.		
5. Is decision making process improvement is associated with innovation and achieving targets?		

Part 4

Item Statement	Agreed	Disagreed
1. Flexibility and fruitfully decision making process and implementation depends on participation of all parties.		
2. Principal, teachers, students and parents are all responsible of directing the decision.		
3. In some cases, teachers and student have a difficulty in directing the decision due to their ignorance of some details.		
4. It is common that decisions are made based on the selfish interest of school principals.		

Part 5

Item Statement	Agreed	Disagreed
1. Poor performance in academic performance of students is attributed to poor decisions.		
2. your school have concerned with Students' participate in decision making process, to enhances their interest and commitment.		
3. your school have concerned with Parents' participate in decision making could to enforce their interest and loyalty.		
4. your school have concerned with Teachers' participate in decision making to motivate their performance.		

Appendix B:

British University in Dubai
POSTGRDUATE PROGRAM DIRECTORATE
Department of Engineering & IT
Information Technology Management Program

Background of the interviewee

Sex: 1) Male 2) Female

Total work experience

1) 1-5 years 2) 6-10 years 3) 11-15 years 4) 16–20 years 5) 21 years and above

Interview Questions

Interview for Supervisors respondents

Researcher carried out such this interview to collect relevant information related to decision making based data analysis in Dubai secondary schools and affected factors on participants and its solution on how to increase their participations in decision making processes in schools. The followings are the questions that raised during the interview:

- 1) Do you use any kind of systems to support school data analysis and decision making?
- 2) Which type of data do you use to make decisions, and how you use them?
- 3) What barriers do schools face when implementing data analysis for Decision making?
- 4) Who involved in the decision-making process?