MANAGING EDUCATION IN THE UNITED ARAB EMIRATES: A CASE STUDY IN SCHOOL DEVELOPMENT

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ABSTRACT

MANAGING EDUCATION IN THE UNITED ARAB EMIRATES: A CASE STUDY IN SCHOOL DEVELOPMENT. EVALUATING THE EFFECT OF THE CHANGES

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The current educational system in the UAE does not reflect the economic and social status of the country. The country is one of the leading oil producers and petrochemical manufacturers in the world, with a proven oil reserve of more than 98 billion barrels. This wealth has been reflected on most aspects of life including an advanced infrastructure, and prepared the country for the new century.

However, this wealth has not equally affected the educational system. It is true that the number of students was doubled more than 10 times in the past three decades, but the quality of education did not change enough to meet the requirements and challenges of the new century.

This thesis examines an innovative educational project aimed at bridging the gap between the education system output and the country's future needs. The project is based on a model school that is designed to enhance the students' academic standards more than the other governmental schools do.

The thesis covers a number of issues in ten chapters. It starts with an introduction in chapter one followed by a comprehensive background of the UAE as a country and its educational system in chapter two. Chapter three covers a theoretical framework of the education change process supported by a review of the literature. Chapters four to six are devoted to the model school project. In chapter four the origins of the model school are discussed, while the major changes implemented in the model school are presented in chapter five. These changes cover the areas of: teacher motivation, student motivation, time allocated for education, education materials, and teachers' professional development.

Chapter six clarifies the method by which teachers are allocated to work in the model school and the way students are selected to join the school. The case study methodology adopted in this thesis is explained in chapter seven.

In order to evaluate the model school project the thesis includes two strands. Strand one is the students' achievement test, and strand two is teacher perception of the changes in the model school. Strand one, which is discussed in chapter eight, compares the achievement test results of third grade students in the model school to that of other schools in Abu Dhabi Education Zone. Strand two which is discussed in chapter nine evaluates the teachers' perception of the changes implemented in the model school. Chapter 10 discusses the relevance of current literature on educational change to the educational system in the UAE. Conclusions and recommendations are presented in chapter eleven.

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Chapter One

INTRODUCTION

The United Arab Emirates (UAE) has experienced a vast economical and social development since its establishment in 1971. Since then, its economy has grown drastically and significantly due to its oil and gas production. This fast growing economy has attracted and still continues to attract foreign labor to the UAE, which is causing great demographic changes in the country. Today, the expatriate labor force in the UAE is estimated at more than 85% of the total labor force (see Chapter Two). It has long been established that demographic and economic changes reflect on the education system. These reflections are manifested in the number of students that increased from about 2,700 students in the academic year 1970/71 to about 323,000 in the academic year 1998/1999 (see Chapter Two).

The educational system in the UAE is a centralized one and as such is under the control of the Ministry of Education. The Ministry of Education divides the country into nine education zones, with most of the power and authority remaining under its control. Although, the past decades have seen a huge increase in the number of students, this only reflects a change in the quantity. In terms of quality, the educational system, unfortunately, has not undergone the required development.

Over the years, the Ministry of Education in UAE has tried to improve its educational services by implementing a number of innovative projects, but the results have always been below expectation. The vast and growing number of students, under a centralized education system with limited resources, has complicated the ministry's efforts of improving the quality of the education system within its territory.

The educational leadership in the Abu Dhabi Educational Zone has taken the initiative to improve educational standards. This was accomplished by establishing a new school, which they named the Model School; its objective is to improve the educational services that it provided for the local community. Although the ambitious goals of the ministry's educational policies were the original purpose behind the establishment of this innovative model school, and while these goals were set by the Ministry, the Ministry could not accomplish the implementation of its goals due to lack of resources. Thus, it became the Educational Zone's strategy to achieve this objective by establishing the Model School. Two major aspects characterize the Model School's project. The first is the compulsory payment of fees by parents to the Model School for the extra services it will provide. The second is the special financial and political support of the local government of Abu Dhabi to the Model School. These two aspects helped the Abu Dhabi Education Zone establish the Model School. Ultimately, the project included five major changes in the fields of teacher motivation, student motivation, teacher professional development, education materials, and time allocated for education.

Since its implementation, the Model School phenomenon spread throughout the UAE. It started off modestly with one school enrolling 233 students; it then expanded to a total of six schools operational within the Abu Dhabi Education Zone with approximately 3,500 students enrolled in those schools in the academic year 2000/2001. (Al Ittihad Newspaper 2001). Moreover, five more Education Zones in the UAE have introduced the same Model School system.

This thesis attempts to deal with several issues related to the model school project. The issues include teacher professional development, school leadership, professional relationships among school staff, parents, and students, teacher motivation, student motivation, education supervision, education resources, education material, extra curricular activities, time allocated for education, and the relationship between the school and the Education Zone. Even though the thesis deals with all of the above issues, it concentrates on the following five major fields:

teacher motivation, student motivation, time allocated for education, education materials, and teacher's professional development. It is hoped to arrive at appropriate conclusions about the extent that changes in the afore-mentioned five fields affect students' attainment level in the model school.

To reach such conclusions the research approach in this thesis is divided into two strands. Strand one evaluates the student's attainment level, while the strand two evaluates the Model School system from teachers' perception.

Chapter Two of the thesis presents a general background about the UAE. It covers the geography, the politics, and the economy of the country. It also covers the background of educational development in the UAE and discusses the educational environment in the Abu Dhabi Educational Zone, the zone where the Model School was first established.

Chapter three deals with a theoretical background of education change management. It includes definitions of change, a brief history of education change, and reasons for educational change. It also discusses detailed aspects of the change process with reference to relevant literature.

Chapter Four gives an overview of the Model School project, which includes the development of the school and its system.

Chapter Five discusses the five major changes implemented in the Model School. It covers the literature pertinent teacher motivation, student motivation; time allocated for education, teacher professional development, and education materials.

Chapter Six compares aspects of the Model School with other sample schools in the Education Zone. The comparison is in the fields of teachers' annual performance reports, teachers' work experience, teachers' qualifications, student selection methods, and class size. The purpose of this comparison is to consider whether these factors might have put the Model School at an advantage over other sample schools

Chapter Seven presents the thesis methodology. It addresses a number of issues including: the reasons for selecting the case study method, my position as a researcher, the study variables, and the two strands included in the study.

Chapter Eight includes strand one of the study, which is the student achievement test. In the achievement test, lower primary students in the Model School and a sample number from the sample school were tested in five subjects, which are Islamic studies, Arabic, English, math, and science. The test results were calculated and showed that in all of the five subjects students in the Model School performed better than students in the sample schools. The result of this test led to strand two, which explored the schools' systems.

Chapter Nine covers strand two of the study. Strand two is the exploration of the school system from the teacher's perception. The study instrument is a questionnaire that has two questions related to the five major changes implemented in the model school. The first question is, "What is the degree of priority given by your school to this issue?", while the second question is, "To what extent does the priority of the issue have a positive impact on the teaching/learning process at your school?"

The procedure of gathering and analyzing data for strand two is discussed. The data is interpreted using the Priority/Impact Model. The result of the analysis shows that the teachers perceive that the Model School gives higher priority to issues related to the five major changes implemented in the Model School than the other sample schools. Also, it shows that teachers perceive that this priority has a positive impact on the teaching/learning process in the Model School.

A summary of the study, in addition to conclusions and recommendations are presented in Chapter Eleven.

Chapter Two

THE CONTEXT: EDUCATION IN THE UAE

2.1. INTRODUCTION

This chapter presents an overview of the United Arab Emirates (UAE) and the development of its educational system. The first part consists of a background of the UAE, while the second part consists of a general outlook of the development of education in the UAE since early this century up to the mid-nineties, with detailed information on the modern era, which is called "The Formal Education after the Federation."

2.2. UAE BACKGROUND

2.2.1. Geographical Location

The United Arab Emirates lies between latitudes 22 - 26.5 North, and 51 - 56.5 East. It covers a land area of approximately 83,600 km^2, including some 200 islands. The UAE is bordered in the north by the Arabian Gulf, in the east by the Gulf of Oman and the Sultanate of Oman, in the south by the Sultanate of Oman and the Kingdom of Saudi Arabia, and in the west by Qatar and Saudi Arabia (Ministry of Information and Culture 1996, p. 268).

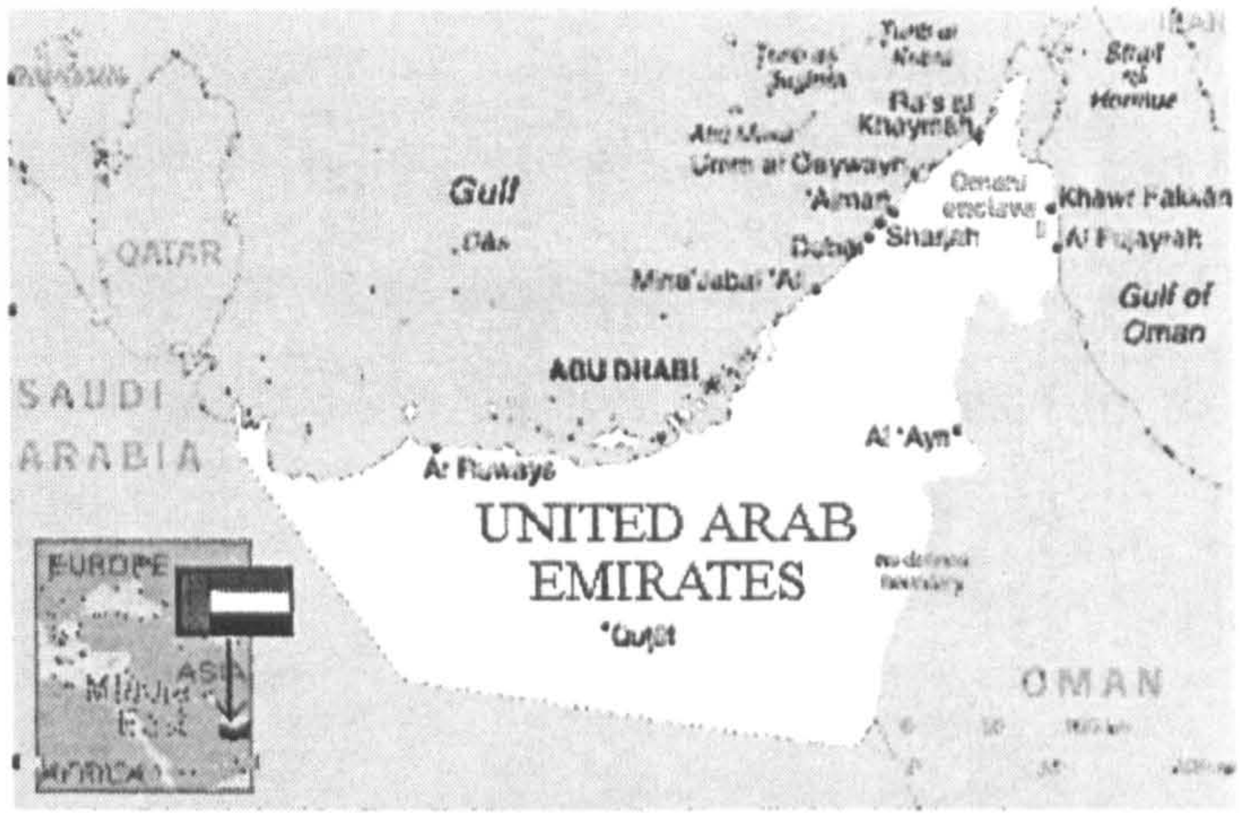


Figure 2.1: UAE Map

The UAE is a federation of seven emirates (states): Abu Dhabi, Dubai, Sharjah, Ras Al-Khaimah, Fujairah, Umm Al-Quwain, and Ajman. The emirate of Abu Dhabi is the largest emirate and covers more than 85% of the total area of the UAE. The city of Abu Dhabi is the capital of the UAE.

The following table shows the area of each emirate in the UAE and the land area percentage of each emirate. The emirate of Dubai comes second with 5% of the total area. The emirate of Ajman has the smallest area.

Table 2.1: Area of Each Emirate

Emirate	**Area (km^2)**	**%**
Abu Dhabi	67,340	86.67
Dubai	3,885	5.00
Sharjah	2,590	3.33
Ras-al Khaimah	1,684	2.17
Fujairah	1,165	1.50
Umm al-Quwain	777	1.00
Ajman	256	.33
Total	77,700	100.00

Source: Ministry of Information and Culture, UAE (1993)

2.2.2. Climate

The climate of the UAE is moderate between November and March. The UAE experiences warm sunny days with an average temperature of 26° C, and cool nights with an average temperature of 15° C. High temperatures (up to 50° C) and high humidity are the norm between June and August.

2.2.3. Population

There are no exact figures of the UAE population before the 1960's. However, the British authorities conducted a census in 1967, which showed that the population was 179,126 (Freegat, 1989).

According to the first official population census, which took place in 1975, the UAE population was 575,887. The second census was conducted in 1980 and showed that the population was 1,043,000. In 1985 the UAE population became 1,632,464 (*Ministry of Planning,* 1989). In 1995, the UAE population became 2,377,453 as shown in table 2.2, figure 2.2 (*UAE Year Book,* 1996; *Ministry of Information and Culture*).

Table 2.2: UAE Population Development

	Year	Population
*	1967	179,126
**	1975	557,887
**	1980	1,043,000
**	1985	1,632,464
***	1995	2,377,453

Freegat 1989 ** Ministry of Planning * Ministry of Information & Culture*

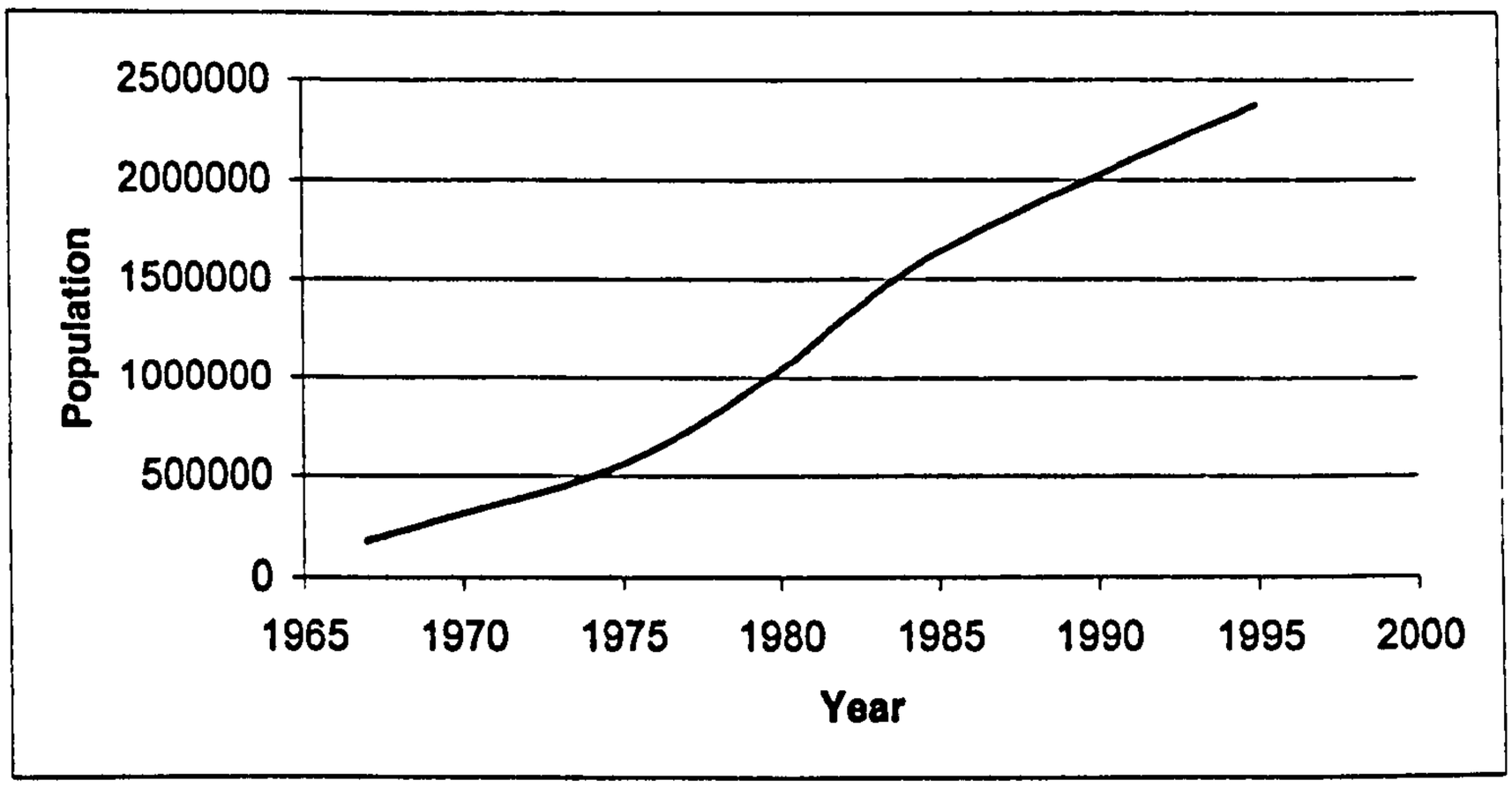


Figure 2.2: UAE Population Growth

It is clear from figure 2.2 that the population in the UAE has increased dramatically in the past 25 years. From 1967 to 1975 there was an increase of 211% which means a 23% annual increase in the population. Also, between the years 1975 and 1980 the population increased by 86%, or 17% annually.

In the last two decades, the UAE population has increased by more than four times. This expansion in the population was related to the comprehensive development plan that took place in the UAE since the beginning of oil export in the sixties.

There are no official figures, which reveal the actual percentage of the local UAE citizens in the UAE population, but there are some studies that show that the UAE citizens do not exceed one fourth of the whole population.

In 1985, UAE citizens comprised about 25% of the total population and 9% of the total labor force (Al Yusef 1993). The majority of the population is expatriates who came from the Arab world, the Indian sub continent, Iran, the Far East, and Europe, as shown in table 2.3, and figure 2.3.

Table 2.3: Working Force in the UAE

YEAR	UAE CITIZEN	EXPATRIATES	TOTAL	% EXPATS
1975	44,700	234,100	287,800	84%
1980	53,900	470,800	524,700	89.7%
1985	71,800	612,000	683,800	89.4%
1990	95,600	582,400	678,000	85.8%

Source: Al Yusef. Attaawun Journal issue No.29

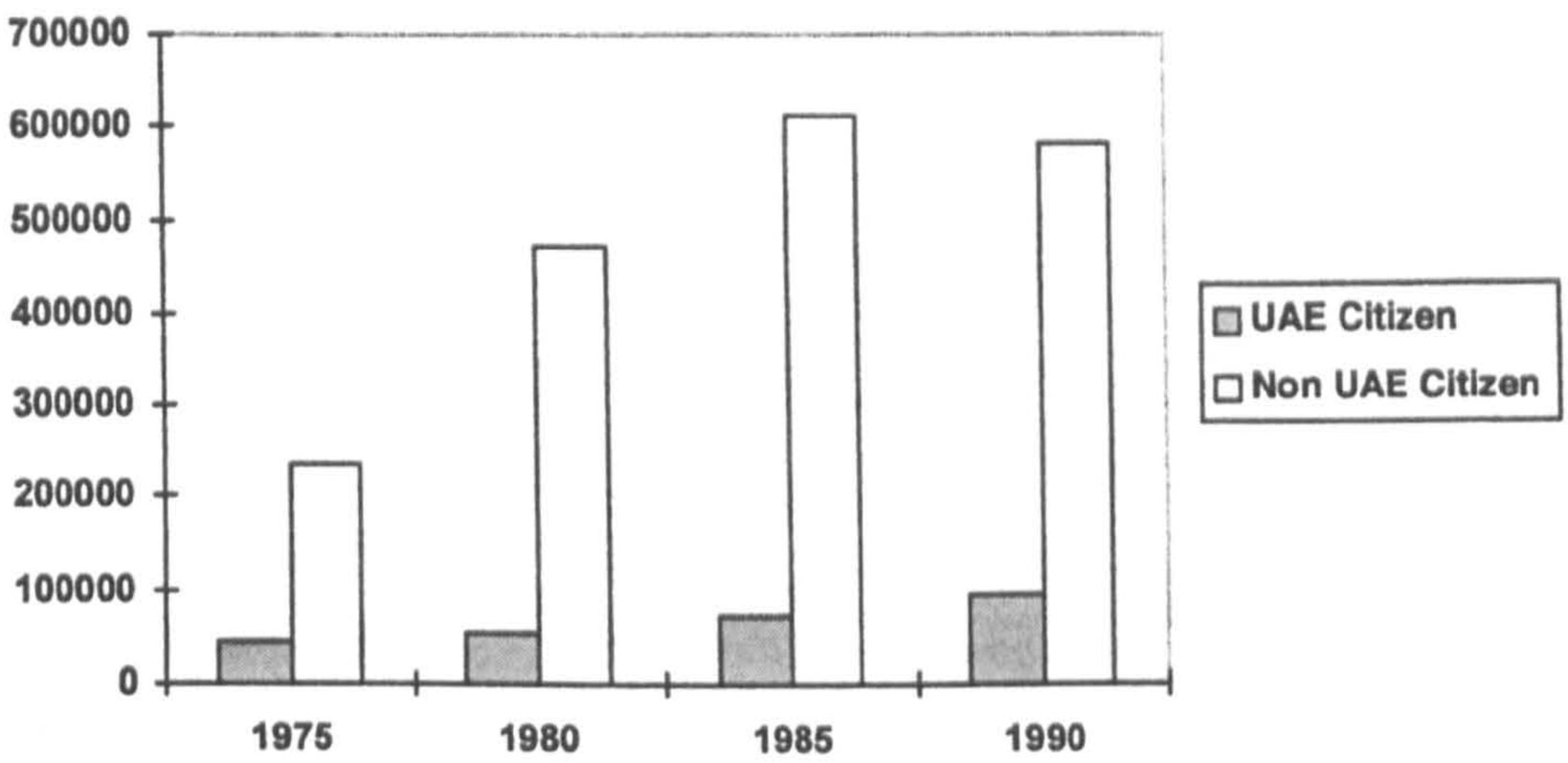


Figure 2.3: Labor Force in the UAE

Values calculated from table (2.3)

The main cause of the UAE population's growth was the high demand for the working force to meet the requirement of the huge infrastructure projects in the country during the seventies and the early eighties.

However, the UAE's dependency on foreign labor has both positive and negative aspects. Foreign labor played an essential role in constructing the infrastructure of the country, but at the same time increased the demand on local goods and services. Foreign experienced work force also helped in running the public sector. Nonetheless, the negative aspects of the foreign work force are obvious. Economically, there was a huge amount of fund transfers by foreign workers to their native countries. In addition, there were also negative social and cultural results that appeared in the UAE society (Al Yusef, 1993).

2.2.4. Political System

On the 2nd of December 1971, the UAE, formerly known as the Trucial States, was declared as a federation of seven emirates. A federal constitution was announced on the day of independence. Before the federation, a ruler, the sheikh, who was the leader of the most influential tribe in the emirate, led each emirate. After the federation, each ruler became a member of the Federal Supreme Council, the highest political body in the country. The constitution specified the powers to be allocated to the federal institutions. The federal authorities, under articles 120 and 121 of the constitution, were responsible for foreign affairs, security and defense, nationality and immigration matters, education, public health, currency, postal, telephone and other communication services, air traffic control and licensing of air craft, and a number of other matters, including labor relation, banking, delimitation of territorial waters and extradition of criminals.

The federation system is composed of Supreme Council, a Council of Ministers, the Federal National Council, which is a Parliamentary Body and an independent judiciary, which is the Federal Supreme Court at the top (Ministry of Information and Culture 1996). The constitution allows each emirate to form its local government, with each of the emirates being different in size, population, economic resources, and degree of development. Abu Dhabi became the capital city of the UAE and is located in the emirate of Abu Dhabi, which is the largest emirate in terms of size, population, and oil production.

2.2.5. UAE Economy

Since the declaration of the federation, oil has played a central role in the economic development of the UAE. However, the dependency on the oil sector has declined in the past 15 years. Oil contribution to the Gross Domestic Product (GDP) was 66.5% in 1975 and decreased to 34.25% in 1995, table 2.4.

Table 2.4: Oil Contribution to the GDP

Year	GDP
1975	66.8%
1980	64.2%
1985	44.9%
1990	46.4%
1995	34.2%

Source: Ministry of Planning Reports

According to the British Petroleum Statistical Review of World Energy that was released in 1996, the UAE ranked third in terms of proven oil reserves with 98.1 thousand million barrels, or 9.7 percent of world oil reserves (Ministry of Information and Culture 1996). UAE oil production has been pre-determined, by agreement with OPEC, at 2.161 million barrels per day. More than 80% is produced in Abu Dhabi (Ministry of Information and Culture 1996).

The expanding production of oil has created a new momentum, which affects the various aspects of life in the UAE like health services, education, public sector, business sector, and social life.

2.3. EDUCATIONAL DEVELOPMENT IN THE UAE

Throughout the twentieth century, education was practiced in four main different ways: *Al Mutawaa* (a traditional way of teaching), the informal education, the formal education before the federation, and the formal education after the federation.

2.3.1. Al Mutawaa Teachings

Al Mutawaa teaching was very popular throughout the Arab world. Some parts of the Arab world called it *El Katateeb*. *Al Mutawaa* is a religious male or female individual who teaches the student at his or her home or at the mosque the Quran, Islam's holy book. Some of the *Al Mutawaas* additionally taught, besides the Quran, some basic skills of reading, writing and arithmetic, although most of *Al Mutawaas* had no other textbook than the holy Quran (Kheder et al, 1988). Since the

Federation, the role of the *Al Mutawaa* as a teacher declined, because, all over the country, formal state schools were established (*Ministry of Education*, 1993).

2.3.2. Informal Education

An informal school is an informal education system similar to today's schools; however, it is not run under a specific educational system. Each principal or owner decides what is to be taught in the school. Such schools concentrated on teaching subjects like Islamic Studies, Arabic, History, and Arithmetic. These schools were considered private schools and were established by rich individuals who wished to help educate others. However, there wasn't a governmental institution, which could organize these schools. Such schools depended upon the financial status of the merchant who supported the school. Consequently, some schools closed during the decline of the pearling industry on which the whole country economy had depended. Furthermore, the quality of education provided in these schools depended on the qualifications of their teachers. As mentioned earlier, beside the religious topics, Arabic and basic arithmetic were taught in those informal schools (Kheder et al, 1988). The first known informal school was established in 1905 in Sharjah by a merchant called Ali Al Mahmood and the school was called Al Taymyah Al Mahmoodya. This school provided services for 16 years, with around 300 enrolled students. Furthermore, other schools throughout the country were established at the beginning of the century and operated until the late fifties (Al Mutawa et al, 1990).

2.3.3. Formal Education before the Federation

The first form of the formal education system, which was planned and funded by a specialized government institution, started in Dubai in 1938. At that time, the ruler of Dubai decided to improve the educational services by establishing an Education Department. He employed one of his relatives as a director of the Education Department and a general manager. This Department of Education hired 28 teachers. The department reopened many of the informal schools, which had closed down due to the financial difficulties. This old form of educational

administration helped develop education in Dubai. Principals and teachers felt more secure under the supervision of the Department. New ideas and developments were introduced to the schools in Dubai. One of the new ideas was the introduction to the curriculum of English as a subject alongside Arabic, religious studies and arithmetic (Al Taboor, 1992). Unfortunately, the outbreak of World War II and the difficult economic situation that resulted from it left its devastating impact on this part of the world as well. As a result of the former, only one single school in Dubai continued to provide services (*Ministry of Education*, 1993).

The modern education movement in the UAE started in Sharjah with the arrival of the first educational mission from Kuwait in 1953. It was funded by the Kuwaiti government and supervised by the Ministry of Education in Kuwait (Al Mutawa et al 1990). During that year the mission opened the first school in Sharjah. Later, in 1963, the mission formed the first organized foreign educational office in Dubai (Al Asi, 1993).

Table 2.5: Number of Teachers and Administration Working for the Kuwaiti Educational Office Since Opening the Office

Year	62/63	63/64	64/65	65/66	66/67	67/68	68/69	69/70	70/71	71/72
M. Teacher	78	79	107	130	139	157	220	288	340	380
F. Teacher	37	37	44	75	86	112	172	244	291	351
Total	115	116	151	205	225	269	392	532	631	731

Source: Al Asi1993

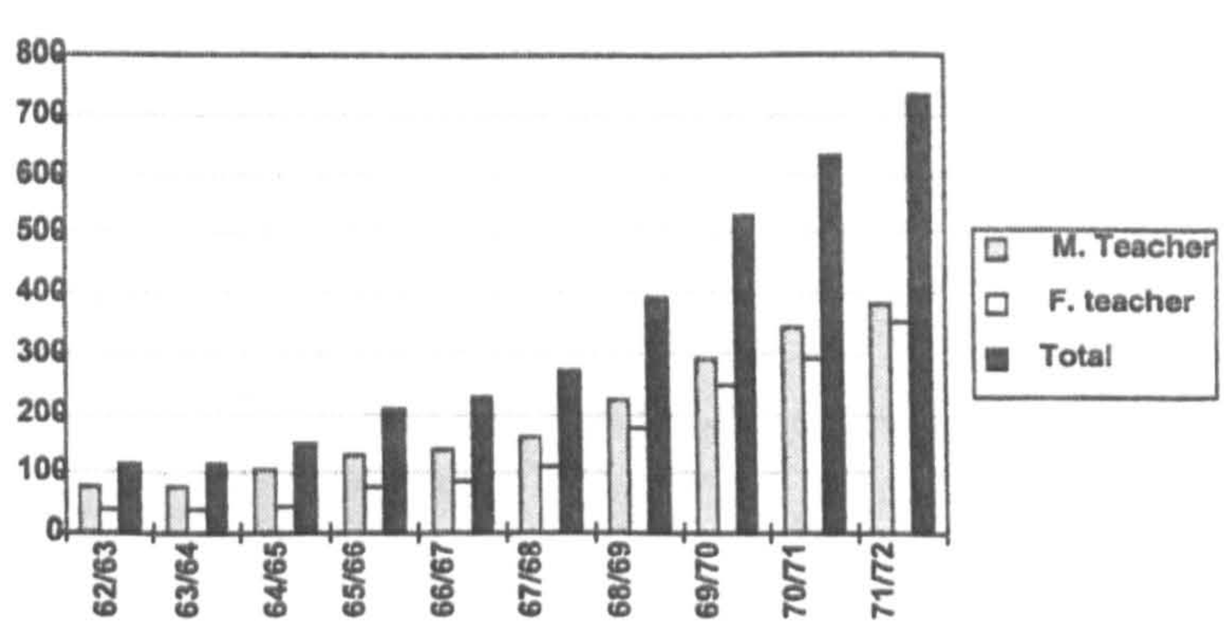


Figure 2.4: Male & Female Teachers Between 1962/63 and 1971/72.

Table 2.5 and figure 2.4 show the growth of the number of teachers and administrators that were hired by the Kuwait's Ministry of Education through its Educational Office in Dubai since the date of opening of the office. The total staff number was 115 during the academic year 1962/63 and became 731 in the academic year 1971/72. The annual average percentage growth was 20% between 1962/63 and 1971/72.

In 1963 the Kuwaiti Government approved a budget allowing the construction of 16 schools in different geographical areas within the UAE. These were opened in the academic year 1965/66 (Abdullah, 1981). Periodically, and before the UAE Ministry of Education started residential education inspection in 1965, it was the Kuwaiti Ministry of Education that used to send inspectors from Kuwait. In 1967, the Kuwaiti Educational Office started its training programs, which were aimed at training the local teachers. The first group of teachers graduated in 1970 (*Ministry of Education,* 1993).

The first school that was opened by the Kuwaiti mission was Al Qasimiya School. Soon after, the number of the formal schools increased from one in the academic year 1953\54 with 230 students to 41 schools in the academic year 1970/71 (Al Asi, 1993).

Table 2.6: Growth of Formal Schools and Students

Academic Year	Students	Schools
1953-1954	230	1
1956-1957	646	3
1960-1961	3,885	17
1964-1965	8,309	34
1968-1969	12,292	37
1969-1970	13,066	38
1970-1971	16,217	41

Source: Ministry of Education 1993

Besides Kuwait, substantial educational help was given by Egypt, Qatar, Bahrain, and Saudi Arabia in 1954, 1958, and 1960 respectively. Finally, Abu Dhabi

contributed to the education in the UAE after H.H. Sheikh Zayed Bin Sultan Al Nahyan came to power in 1966, table 2.7 (Abdullah, 1981).

Table 2.7: Members of the Education Missions in 1970/71 By Country

	Kuwait	Egypt	Saudi	Qatar	Bahrain	Abu Dhabi	Other	Total
Dubai	237	23	13	20	-	-	24	317
Sharjah	205	26	4	13	8	-	-	256
*R.A.K	119	10	6	8	1	-	-	144
**U.A.Q	21	1	-	7	-	4	-	33
Ajman	29	3	3	5	-	2	-	42
Fujairah	20	1	2	-	-	-	-	23
Total	631	64	28	53	9	6	24	815

** Ras -al Khaimah ** Umm al-Qaiwain Source: Al Asi 1993*

A look at Table 2.7 shows the number of each country's educational mission members in the UAE's schools in each emirate. The total number of school staff provided by other countries was 631 in 1970/71. The major participant was Kuwait with 77% of the total.

2.3.4. Education After the Federation

From a judicial point of view, Article 17 of the UAE constitution states " Education is a main factor in the progress of the society...and it is compulsory in the primary stage...and it is free at all stages within the UAE." (The UAE Constitution). Some acts of the Federal law No. 1-M(7)-1972 which are concerned with the mandates of the Ministries and Minister's authority allocate the following responsibilities to the Ministry of Education:

"-Bearing the responsibilities of educational affairs, supervising and improving them.

-Making education available to every citizen and compulsory in the primary stage.

-Drawing up educational plans and preparing curricula, examination systems and literacy programs.

-Establishing schools and institutes, licensing private schools and supervising them." (Federal law number 1-M (7) - 1972).

By 1972 the Federal Ministry of Education (MOE) was firmly established, and all the schools came under its supervision. A great change took place in the UAE educational system in the 25 years that followed the federation. The changes affected both the public and the private education system. Other parts of the education system such as adult education, technical education and religious education were affected by the mass development. Undoubtedly, the amount of money and the administrative efforts involved in this considerable change is unlimited.

2.3.5. Development of Public Education

Throughout the 29 years that followed the federation, the number of schools, students and staff grew rapidly. Table 2.8 summarizes the quantitative development of students, staff, and school numbers in the UAE public schools from 1970/71 to 1998/99. During the academic year 1971/72 there were 32,862 students in 73 schools and 1,585 teachers and administrators. Consequently, 29 years later and for the academic year 1998/99, these numbers increased to 323,545 students in 687 schools with 27,210 teachers and administrators. By simple calculation it can be seen that the number of students increased by 9.8 times, schools by 9.4 times and staff by 17.2 times respectively.

The quantitative growth can be noticed in table 2.8, which compares the academic years based on the number of students, staff and schools. None of the numbers from the same field in the table decreased, indicating a continuous growth occurred throughout the past 29 years.

Table 2.8: Growth of Students, Staff, and Schools 1970/71 to 1998/99

Year	Students	Staff	Schools
1970 /71	27,745	1,254	64
1971 /72	32,862	1,585	73
1972 /73	40,115	2,257	132
1973 /74	44,272	2,957	148
1974 /75	52,321	3,828	167
1975 /76	61,803	4,856	185
1976 /77	71,214	5,966	206
1977 /78	78,981	6,347	228
1978 /79	86,048	6,872	243
1979 /80	96,077	7,814	255
1980 /81	108,842	8,892	283
1981 /82	126,366	10,452	323
1982 /83	139,840	11,751	347
1983 /84	150,409	11,640	370
1984 /85	163,996	12,492	386
1985 /86	179,276	13,320	395
1986 /87	194,433	14,996	415
1987 /88	209,180	15,867	431
1988 /89	225,391	17,076	457
1990 /91	257,773	20,074	499
1991 /92	261,692	21,337	512
1992 /93	270,560	22,514	534
1993 /94	278,836	23,421	560
1994 /95	289,066	24,335	582
1995 /96	295,322	25,287	615
1996 /97	300,337	25,996	639
1997/98	306,641	27,061	672
1998/99	323,545	27,210	687

Source: Ministry Of Education

2.3.5.1 Student Status

As mentioned earlier, the number of students in the UAE's public schools continued to grow at different rates. The highest growth was in the academic year 72/73, when the number increased by 22% compared to the previous year. In the last six years the average growth of the number of students was 2%. Figure 2.5 shows the growth in the number of students.

In addition figure 2.5 emphasizes the continuous growth in the number of students since the formation of the federation, i.e. after the Ministry of Education took the responsibilities of education in the country.

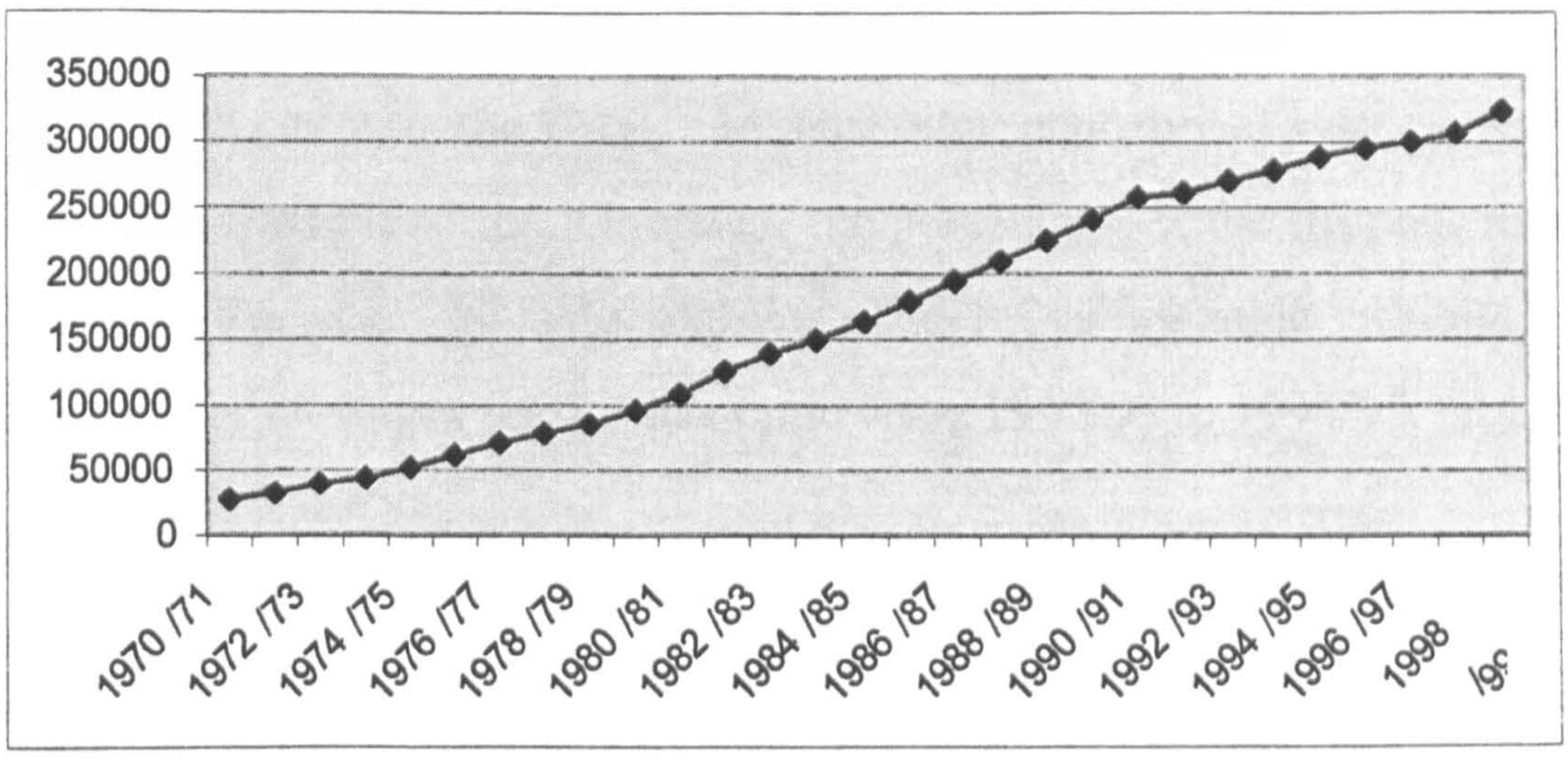


Figure 2.5: Growth in Number of Students

Source: Ministry of Education

2.3.5.1.1 Number of Students in the Classroom

It is significant to note that, even though the increase in the total number of students has been continuous, the average student population in the classroom is reasonable, with a maximum number of 30 students per class, table 2.9.

Table 2.9: Average Density in Each Educational Stage

Year	Kindergarten	Primary	Preparatory	Secondary
1992/93	24.80	26.45	28.61	23.88
1993/94	24.15	26.44	28.99	24.50
1994/95	24.10	26.34	29.20	24.52
1995/96	23.35	25.93	29.80	24.85

Source: National Report of the UAE on the Development of Education from 1993 to 1996

The lowest class size in the K.G and Primary Stages was in 1995/96, while 28.61 students per class was the lowest for the Preparatory Stage which was in 1992/93. The Secondary Stage's lowest was 23.88 student per class, which was in 1992/93. Furthermore, the student/teacher ratio is 18:1 for Kindergarten, 16:1 for Primary Stage and 13:1 for Preparatory and Secondary Stages respectively (National Report of the UAE on the Development of Education from 1993 to 1996).

2.3.5.1.2 Drop-Out and Repetition Rates

Public education in the UAE, like most other educational systems, suffers from dropouts and class repetition. However, the percentage of the dropout rate shows a decline over the years in male students. The following table exhibits the actual dropout rate for all stages for the academic years 1992/93 to 1994/95, table 2.10.

Table 2.10: Drop-out Rate From 1992/93 to 1994/95

Year	Male Drop-Outs	Female Drop-outs
92/93	2.2%	1.3%
93/94	2.1%	1.8%
94/95	1.9%	1.65%

Source: National Report of the UAE on the Development of Education from 1993 to 1996

Between the academic years 1992/93 and 1994/95 the dropout rate for male students was higher than that for the female students. For those three years the average percentage male dropout was 2.06%, whereas the average dropout rate for the females was 1.58%. Besides the dropout rate, the other concern facing the MOE, is the class repetition rate, i.e. the number of students who repeat their classes. Some percentage statistics of class repetition are given in table (2.11).

Table 2.11: Number of Pass & Failed Students Between 1992/93 and 1994/95

Year	Prim. P	Prim. F	Prep. P	Prep. F	Second. P	Second. F	Total
92/93	141,870	10,238	52,255	9,031	29,792	4,347	247,533
93/94	140,622	11,108	56,072	10,319	31,905	5,173	255,199
94/95	142,853	10,459	60,593	9,768	35,902	5,187	264,762
Average	141,782	10,602	56,307	9,706	32,533	4,902	255,831

Source: National Report of the UAE on the Development of Education from 1993 to1996

Table 2.11 shows that number of students who repeat the same class in the Primary Stage is 10,602, as compared to 9,706 students in the Preparatory Stage and 4,902 students in the Secondary Stage. This shows a percentage of 7.4% for the students in the Primary Stage, 17.2% in the Preparatory Stage and 15% of the students in the Secondary Stage who respectively fail their class. Consequently, the data reveals that the highest failure rate for the academic years 1992/93 and 1994/95

was in the Preparatory Stage, followed by the Secondary Stage and finally the Primary Stage.

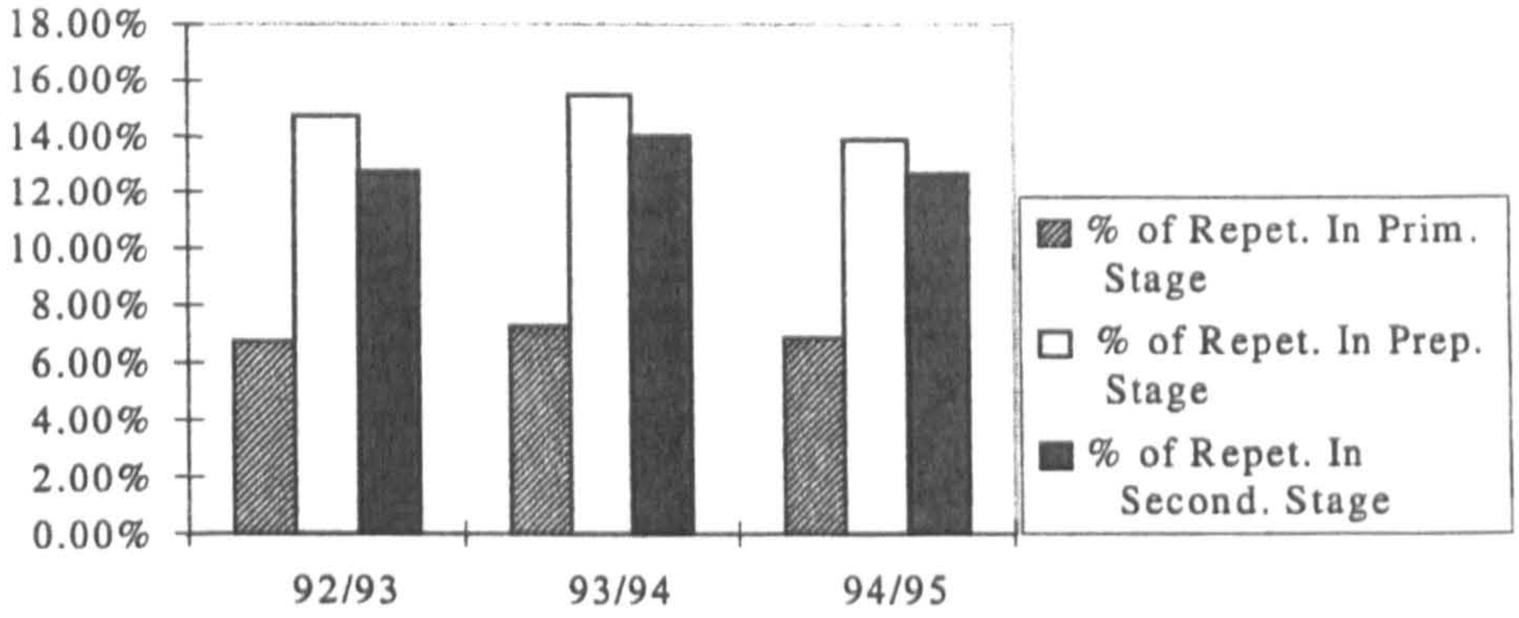


Figure 2.6: Repetition Rate From 1992/93 to 1994/95

Source: National Report of the UAE on the Development of Education from 1993 to 1996

It remains to be noted, that failing a class in the primary stage, occurs mostly in the last three years of the stage, that is in grades 4,5 and 6. This is mainly due to the fact that, students in the first three years, and as per the exam regulations, do not repeat the class unless they fail Arabic (National Report of the UAE on the Development of Education from 1993 to 1996).

2.3.5.1.3 Student Nationalities

Part of the increase in the number of students in the public school sector is caused by the Arab expatriate families that are living in the UAE, which provides free education for all Arab students. However, the law which allowed Arab children to enroll in the UAE public school system was modified in 1989 (Ministerial Resolution No. 480/2 for the year 1989) and prohibited the Arab expatriate students whose parents were working in the private sector from enrolling in the public school. As a result, this law increased the enrollment in the private schools.

The students of UAE public schools come from different parts of the world. Most of the expatriate students are from the Arab world, because Arabic is used as a

teaching medium. In the academic year 1995/96 there were 197,881 UAE national students in the public schools as compared to 97,441 expatriate students, 3,624 of whom were non-Arabs.

Since the amendment of the law, UAE national students formed 67% of the total number of students in the academic year 1995/96, while the Arab expatriate students and non-Arab expatriate students were 32% and 1% respectively, figures 2.7, and 2.8.

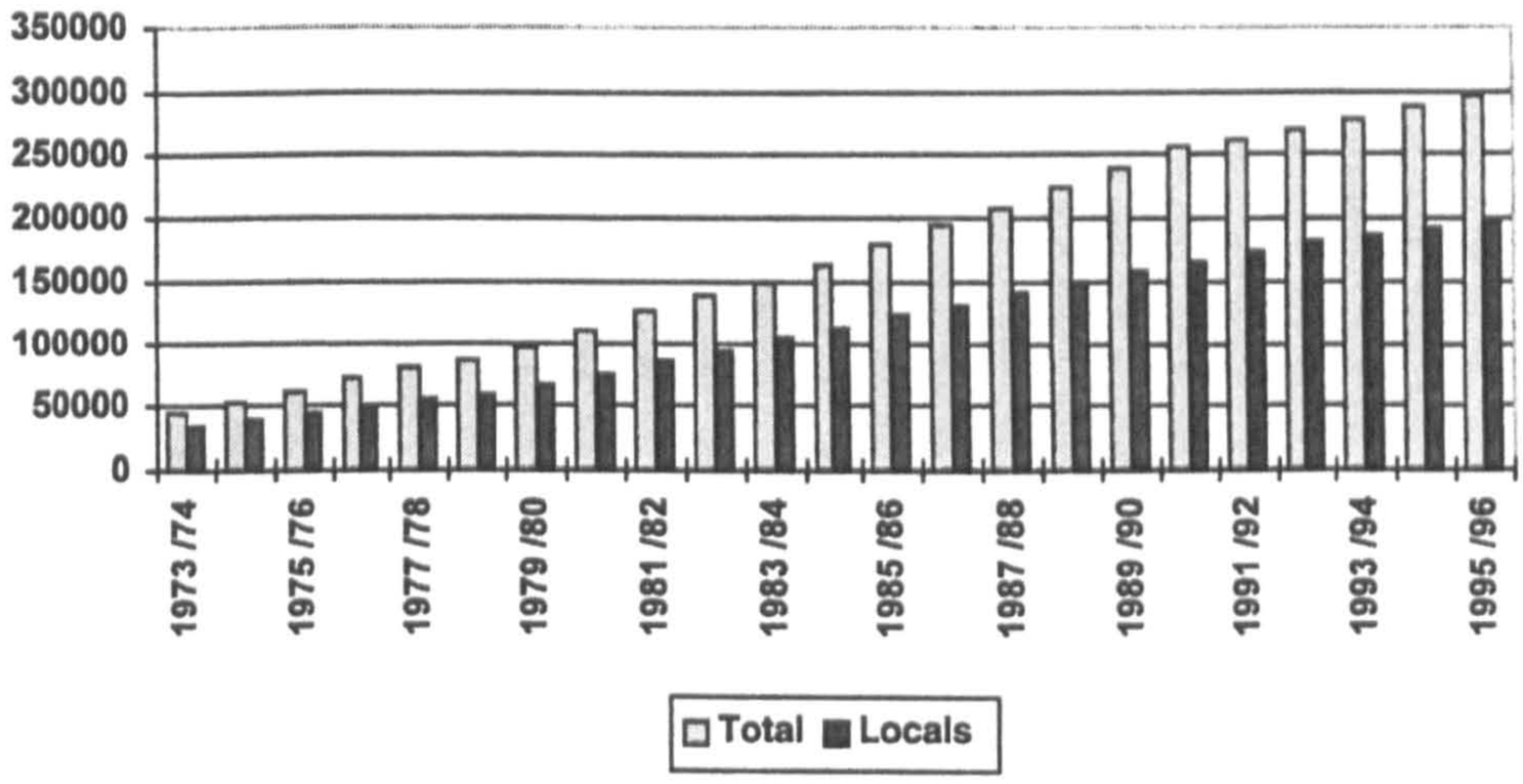


Figure 2.7: The Total Number of Students Compared to UAE National Students at the Public Schools, *Source: Ministry of Education.*

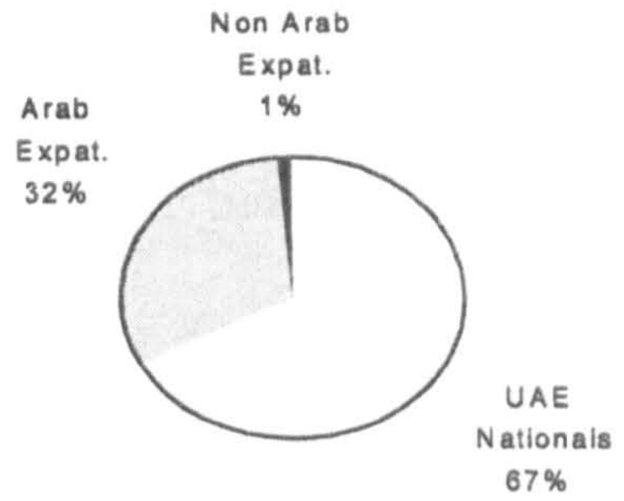


Figure 2.8: Percentage of Students By Nationality In the Academic Year 1995/96

Source: Calculated from Ministry of Education Statistics Report 1996

2.3.5.2 Schools Status By Stages

There are four cycles in the public education system in the UAE: Kindergarten, Primary, Preparatory and Secondary. Co-education is only in the Kindergarten stage.

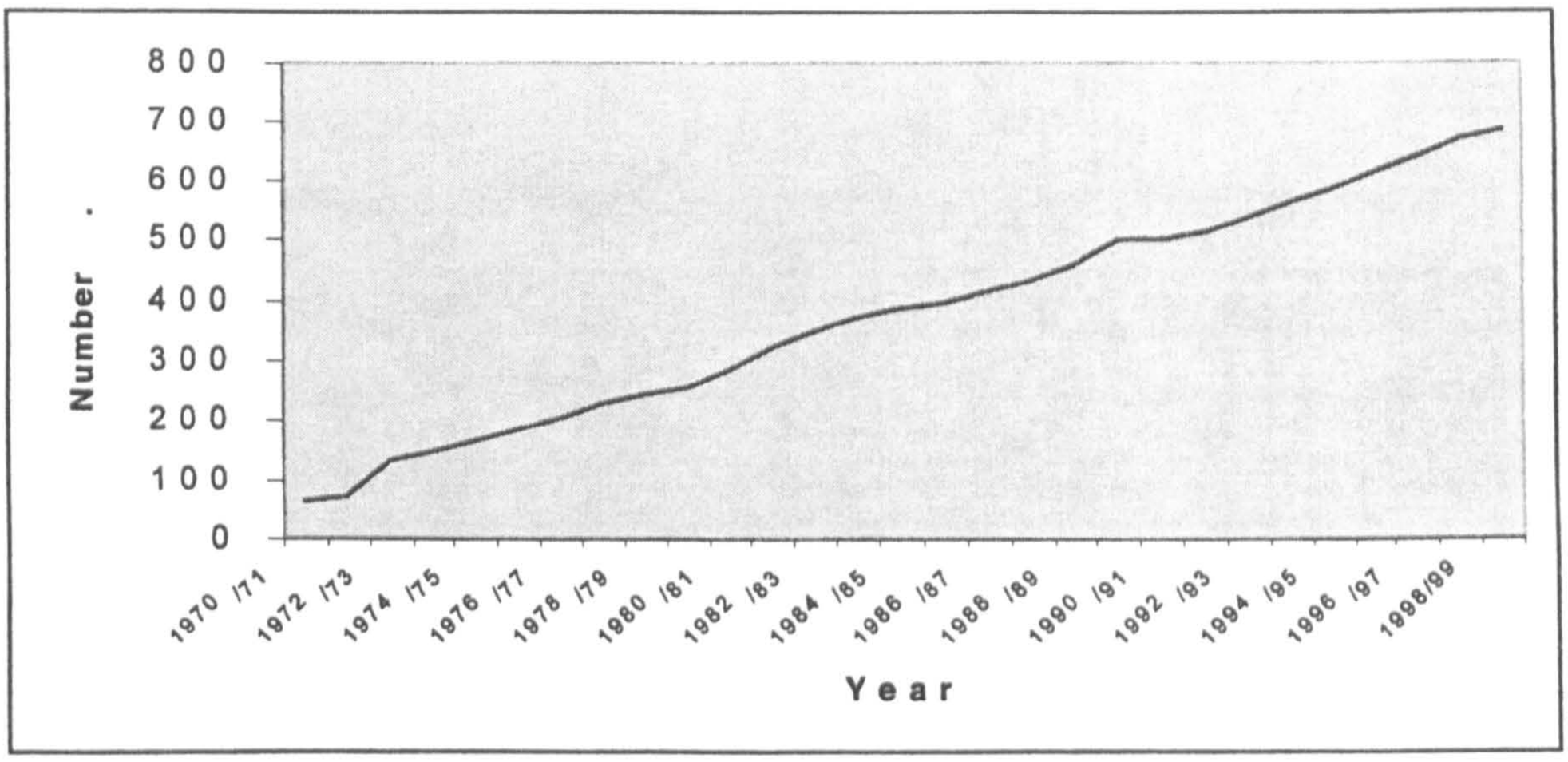


Figure 2.9: Growth of Schools Number from 1970/71 to 1998/99

Source: Calculated from table (2.8)

Schools of all stages have been continuously on the increase since 1970/71, the year of the federation. While in the beginning of the 1970s only 64 schools were providing services, a look at the academic year 1998/99 shows that the number of schools had increased to 687, an almost 10-fold increase.

2.3.5.2.1 Kindergarten Stage

This stage is also called pre-school. It is a two-year program that admits children at the age of four. Only UAE nationals are allowed to enroll in the public sector's K.G program. The purpose of the K.G. education is summarized in the following quotation:

> *Here a child is prepared socially and psychologically in a way that develops his aptitudes and qualifies him for the primary stage (National Report of UAE on the Education Development 1989/1990 – 1991/1992).*

The first kindergarten was opened in Abu Dhabi in the academic year 1968/69 (Education History in The UAE 1900 to 1993). Table (2.12) represents the

quantitative growth of Kindergarten schools between the academic year 1991/92 and 1995/96. In 1991/92 there were 16,659 children in 48 K.G. schools with 1,215 teachers and other administrative staff. Four years later, the number in the K.G. schools increased by more than 13% to become 19,291 children enrolled in 75 K.G. schools.

Table 2.12: Quantitative Growth of Kindergarten schools from 1991/92 to 1998/99

Year	School	Classes	Girls	Boys	Total	Density	Staff
91/92	48	682	8,197	8,462	16,659	24	1,215
92/93	55	712	8,756	8,965	17,721	25	1,213
93/94	65	760	9,150	9,295	18,445	24	1,283
94/95	71	784	9,419	9,543	18,962	24	1,351
95/96	75	823	9,671	9,620	19,291	23	1,429
96/97	Data not available						
97/98	NA	894	10,134	10,101	20,235	22	1,561
98/99	NA	933	10,858	10,636	21,494	23	1,543

Source: National Report of the UAE on the Development of Education 93/94 to 95/96
Statistics and Documentation Section - Ministry of Education report for 97/98
Statistics and Documentation Section - Ministry of Education report for 98/99

On the other hand, a Kindergarten Development Center was opened in Dubai in 1993 with the cooperation of UNICEF. The center provided training courses for teachers and accommodates a lab that was used for the application of new teaching methods (Nowair 1996).

2.3.5.2.2 Primary Stage

This stage is six years long, i.e. it enrolls children from age six to twelve. It is compulsory by law for children of this age group to attend school. The objective of this stage is to develop the abilities and aptitudes of children, instill in them Islamic ethics and values, and to teach them the principles of Islam so they develop innate values and behavioral patterns that are applied in daily life. Students are also provided with knowledge and scientific and professional skills (National Report of UAE on the Education Development 1989/1990 - 1991/1992). In the first three years of the Primary Stage, a class-teacher system is applied. The class-teacher teaches all

the basic subjects (Arabic, Islamic studies, science, and mathematics). Subject trained teachers teach music, art, physical education and English.

As for the quantitative growth in the primary stage for the years 1991-1999, Table 2.13 shows that the number of the students decreased slightly from 152,790 in the academic year 1991/92 to 150,967 in the academic year 1997/98, while there was a slight increase to 152,920 in the academic year 1998/99. (The data for 96/97 is not available). Staff numbers, on the other hand, increased from 10,963 to 11,955 until the academic year 1997/98, then decreased to 11687 during the academic year 98/99. In 1972/73 there were 74 elementary schools in the UAE. This number increased to 270 by the academic year 1995/96 (Nowair 1996).

Table 2.13: Quantitative Growth in the Primary Stage From 1991/92 to 1998/99

Year	Schools	Classes	Males	Females	Total	Staff	Class Density
1991/92	203	5,709	77,256	75,534	152,790	10,963	26.8
1992/93	215	5,793	77,252	76,016	153,268	11,256	26.5
1993/94	225	5,783	77,107	75,860	152,967	11,562	26.5
1994/95	241	5,849	77,637	76,436	154,109	11,725	26.3
1995/96	255	5,889	76,861	75,881	152,742	11,908	25.9
1996/97	Data not available						
1997/98	NA	6,030	76,268	74,699	150,967	11,955	25.0
1998/99	NA	6,078	77,608	75,312	152,920	11,687	25.2

Source: National Report of the UAE on the Development of Education 93/94 to 95/96
Statistics and Documentation Section - Ministry of Education report for 97/98, 98/9

2.3.5.2.3 Preparatory Stage

The preparatory or junior high school stage is three academic years long. This three-year stage prepares the student for the secondary stage where he can decide on whether he wishes to pursue general or vocational education.

At this stage, students are made aware of national aspirations and a sense of belongingness to their Arab nation. A sense of loyalty is inculcated in them driving them to seek the progress and prosperity of their country. (Source: National Report of UAE on the Education Development 1989/1990 - 1991/1992.)

As table 2.14 shows, between the years 91/92 and 98/99 the number of student enrollment increased by more than 41%, and a total number of 741 additional classrooms were utilized for the Preparatory Stage.

Table 2.14: Quantitative Growth in the Preparatory Stage From 1991/92 to 1998/99

Year	Classes	Males	Females	Total	Class Density
1991/92	2,005	27,510	29,338	56,848	28.3
1992/93	2,186	30,288	32,148	62,436	28.5
1993/94	2,320	32,608	34,645	67,253	28.9
1994/95	2,455	35,238	36,462	71,700	29.2
1995/96	2,572	37,250	37,538	74,788	29.0
1996/97	Data not available				
1997/98	2,732	38,541	38,614	77,155	28.2
1998/99	2,746	40,704	39,591	80,295	29.2

Source: National Report of the UAE on the Development of Education 93/94 to 95/96
Statistics and Documentation Section-Ministry of Education report for 97/98, 98/99

2.3.5.2.4 Secondary Stage

This is the last stage of the educational system and academically stretches over three years. *This stage qualifies students to face life as well as prepare them for higher education. It serves the society and its needs by providing it with the manpower needed to realize development plans. It inculcates in the students religious values, develops their mental skills and supplies them with scientific and technological knowledge.* (Ministry of Education 1992).

Table 2.15 clearly demonstrates how between the years 1993/94 and 1998/99 (data for 1991/92 & 1992/93 is not available) the number of students increased by more than 38%, while approximately 615 additional classrooms were utilized for the Secondary Stage.

Table 2.15: Quantitative Growth in the Secondary Stage From 1993/94 to 1998/99

Year	Classes	Males	Females	Total	Class Density
1991/92	Data not available				
1992/93	Data not available				
1993/94	1,564	16,202	21,425	37,627	24.1
1994/95	1,704	18,006	23,781	41,787	24.5
1995/96	1,848	19,684	26,251	45,935	24.9
1996/97	Data not available				
1997/98	2179	23,728	31,469	55,147	25.3
1998/99	NA	27,209	33,618	60,827	NA

Source: National Report of the UAE on the Development of Education 93/94 to 95/96
Statistics and Documentation Section - Ministry of Education report for 97/98, 98/99

Once the student reaches his eleventh year, he is entitled to decide as to whether he wishes to focus on scientific or literary subjects. Furthermore, computer studies are introduced in the first year of the secondary stage.

In the final year of this stage, i.e. the twelfth scholastic year, every student must sit for a governmental administered centralized final exam. Finally, and after completing the secondary school, students usually enroll at colleges and universities for higher education.

2.3.5.3 Schools' Staff Development

A typical school in the UAE consists of three types of staff: administrative, technical, and teaching staff. The administrative staff consists of a principal, a vice-principal, a supervisor, a secretary, and a storekeeper. The technical staff consists of a social worker, a librarian and a laboratory technician. The teaching staff consists of teachers and senior teachers (Ministry of Education act No.1479/2 for 1992). Each school has only one principal, but the number of students determines the number of the staff.

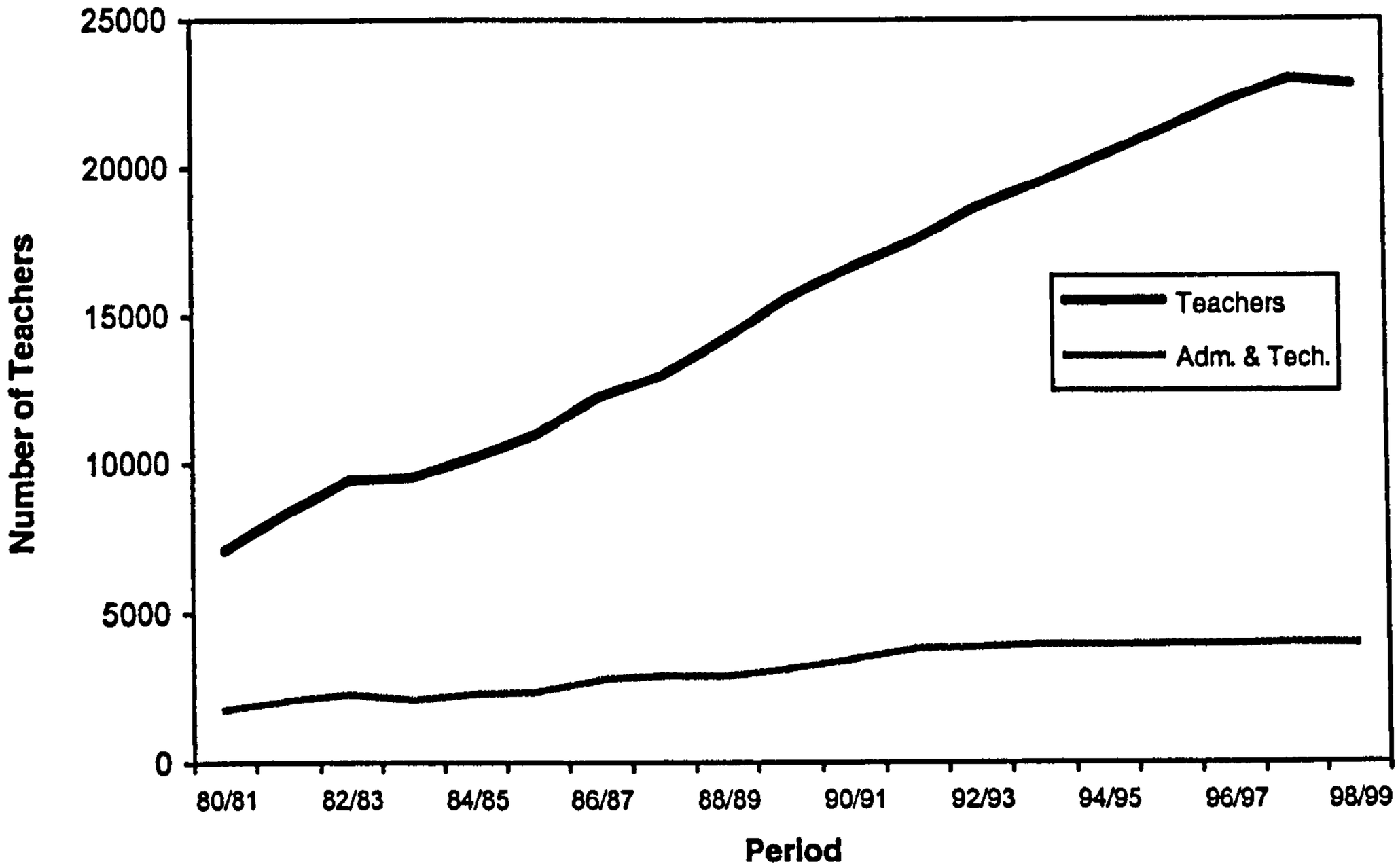


Figure 2.10: Teachers, Administrative and Technical Staff at Schools from 1980/81 to 1998/99, (From Table 2.16)

As is evident figure 2.10, the line identifying the teacher numbers shows an increase between the academic years 1980/81 to 1995/96; however it starts decreasing in 1998/99. Simultaneously, the same figure portrays the trend that the administrator and technical staff line has increased from 1980/81 to 1992/93, while it portrayed a decreasing trend as of the academic year 1993/94 and until 1998/99. However, and interestingly enough, the number of administrative staff increased very slowly and only slightly decreased in 1992/93. During the academic year 1998/99 both lines representing teaching staff and administrative and technical staff decreased due to the decrease in the teaching and administrative staff. Table 2.16 gives an insight into the number of teachers and administrative between the years 1980/81–1995/96.

Table 2.16: Teachers and Administrative From 1980/81 to 1995/96

Year	Teachers	Adm. & Tech.	Total Staff	Annual Percentage Increase in Total staff
1980/81	7,119	1,773	8,892	
1981/82	8,364	2,088	10,452	18%
1982/83	9,442	2,309	11,751	12%
1983/84	9,518	2,122	11,640	-1%
1984/85	10,175	2,317	12,492	7%
1985/86	10,950	2,370	13,320	7%
1986/87	12,201	2,795	14,996	13%
1987/88	12,946	2,921	15,867	6%
1988/89	14,185	2,891	17,076	8%
1989/90	15,581	3,137	18,718	10%
1990/91	16,613	3,461	20,074	7%
1991/92	17,522	3,815	21,337	6%
1992/93	18,645	3,869	22,514	6%
1993/94	19,469	3,952	23,421	4%
1994/95	20,374	3,961	24,335	4%
1995/96	21,312	3,975	25,287	4%
1996/97	22,251	3,977	26,228	4%
1997/98	23,028	4,033	27,061	3%
1998/99	22,845	3,977	26,822	-1%

Source: Calculated from different statistical reports Ministry of Education

For example, in the academic year 80/81 the total number of staff working in the schools was 8,892: 7,119 of which were teachers, while the rest (1,773) were administrators and technicians. Similarly, the trend is repeated for the academic year 1995/96, whereby the total number was 25,287, of which 21,312 and 3,975 were administrators and technicians. The average annual percentage increase between 1980/81 and 1995/96 is 6%, while the highest annual increase is in 1981/ 82 at 18%. During this year, a total of 1,560 additional staff joined the Ministry of Education; 80% of them were teachers and 20% were administrators and technicians. The lowest increase was -1% in the academic year 1983/84, when 111 employees left their jobs in the schools, 68% percent of them being teachers as compared 32% who were administrators and technicians.

The same decrease occurred again in the academic year 1998/99 when the decrease was –1%, and a number of 239 employees left their jobs in the schools.

2.3.5.3.1 Staff Nationalities

The staff in the UAE schools encompasses 23 different nationalities, the majority of which come from Egypt, Syria, Jordan, Palestine, Sudan, Tunisia, and the UAE.

In the academic year 1995/96, 8,446 UAE nationals were part of the working staff. This represents 34% of the total teaching staff. The main expatriate nationalities are the Egyptians with 7,093 representing 28% of the total teaching population. The Jordanians with 3,830 represent 15%, the Syrians with 2,855 represent 11%, the Palestinians with 1,774 represent 7%, the Sudanese with 650 represent 3%, the Tunisians with 229 represent 1%, whereas the other nationalities represent 1% (Ministry of Education, 1996). These statistics for the same year further show that 73% of the total teaching staff were expatriates, whereas 32% of the total administrative and technical staff were expatriates (Ministry of Education 1996).

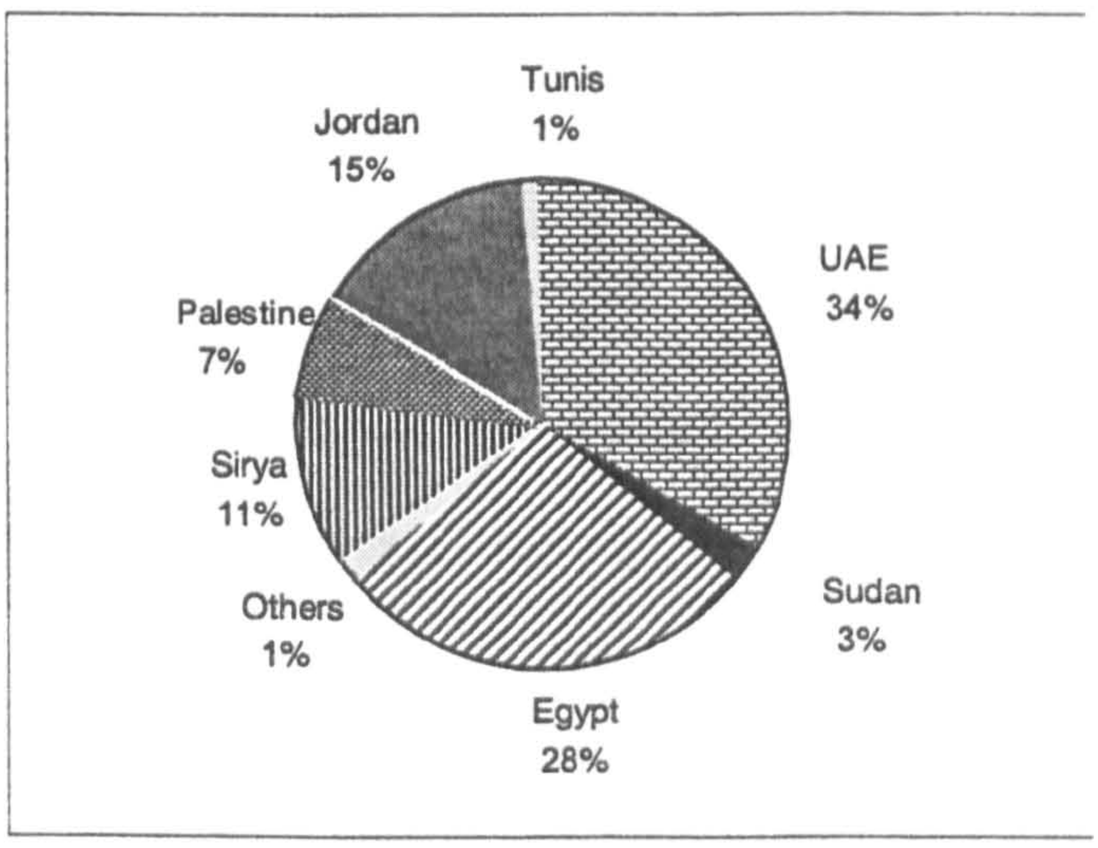


Figure 2.11: Distribution of the schools' staff by nationality in the academic year 95/96

Source: Ministry of Education 1996

The Ministry of Education encourages the concept of nationalizing its staff in the schools. This implies hiring UAE nationals as teachers. In some emirates like Fujairah, Ras-al Kaimah, Ajman, Sharjah and Umm al-Quwain nationalization occurred faster than in Abu Dhabi and Dubai where the chances of getting other better paying jobs are higher.

Statistics show that the average percentage of expatriate teachers between the academic year 1974/75 and 1996/97 was 85%, with the highest percentage of 94% in the academic years 1975/76, 1976/77 and 1979/80. On the other hand, the lowest percentage was 72% in the academic year 1996/97. Further, during the academic year 1995/96, there were 3,970 administrators and technicians, of which 68% were UAE nationals and 32% were expatriates. In comparison, the total number of teachers was 21,319, of which only 27% were UAE nationals (most of them are female) and 73% were expatriate teachers (National Report of the UAE on the Development of Education from 1993/94 to 1995/96).

2.3.5.3.2 Schools' Staff By Gender

Analysis of the data in Table 2.17 shows that for the academic year 1973/74 enrollment in schools of UAE male and female shows no significant difference in number, whereby 49% were males and 51% females respectively.

However, twenty-two years later, females comprised 91% and males only 9% of the schools' staff. The main reason as to why more women than men work in schools is that, in the UAE, women traditionally tend to work in a female environment. Men, on the other hand, have better work opportunities in different places. Furthermore, to absorb the women's demand for teaching jobs, especially in the primary stage, the Ministry allowed women to teach boys in lower primary, i.e. grades one, two and three.

In addition, table 2.17 shows the distribution of the teachers by gender and nationality since the academic year 1973/74. It is evident that the percentage of UAE male teachers was the highest for the academic year 1973/74 (9%), while, between 1981/82 and 1983/84, the percentage of UAE male teachers was at its lowest level for the academic year 1996/97, reaching a 6% enrollment.

On the other hand, the lowest percentage for UAE female teachers was between the years 1975/76 and 1976/77, with a record of only 8%. However, since then the percentage has continuously increased, reaching a high of 44% for the academic year 1996/97. Figure 2.12 further illustrates the trend of the above findings. It shows that the line of non-UAE males in the graph is on the increase, whereas non-UAE females are on the decrease due to the increasing number of UAE males joining the teaching profession.

Table 2.17: Teachers by Sex and Nationality from the Academic Years 1974/75 to 1996/97

Year	UAE Males	Expatriate Males	UAE Females	Expatriate Females	Total UAE Teachers	Total expatriate Teachers
1973/74	145	1,534	149	1,129	294	2,663
1974/75	146	1,937	177	1,567	323	3,504
1975/76	102	2,005	149	1,743	251	3,748
1976/77	108	2,389	199	2,158	307	4,547
1977/78	107	2,431	241	2,315	348	4,746
1978/79	170	3,204	441	3,057	611	6,261
1979/80	60	3,020	327	2,894	387	5,914
1980/81	55	3,365	421	3,278	476	6,643
1981/82	46	3,835	624	3,859	670	7,694
1982/83	60	4,228	790	4,364	850	8,592
1983/84	62	4,346	846	4,264	908	8,610
1984/85	87	4,575	959	4,554	1,046	9,129
1985/86	123	4,850	1,409	4,568	1,532	9,418
1986/87	211	5,148	1,896	4,946	2,107	10,094
1987/88	289	5,408	2,315	4,934	2,604	10,342
1988/89	341	5,939	2,688	5,217	3,029	11,156
1989/90	415	6,402	3,123	5,641	3,538	12,043
1990/91	424	6,761	3,314	6,114	3,738	12,875
1991/92	431	7,158	3,517	6,416	3,948	13,574
1992/93	467	7,233	4,269	6,676	4,736	13,909
1993/94	437	7,645	4,499	6,888	4,936	14,533
1994/95	513	8,029	4,855	6,977	5,368	15,006
1995/96	539	8,420	5,223	7,130	5,762	15,550
1996/97	557	8,708	5,614	7,130	6,171	15,846
1997/98	596	9,029	6,076	7,327	6,672	16,356
1998/99	560	8,559	6,429	7,297	6,989	15,856

Source : Ministry Of Education

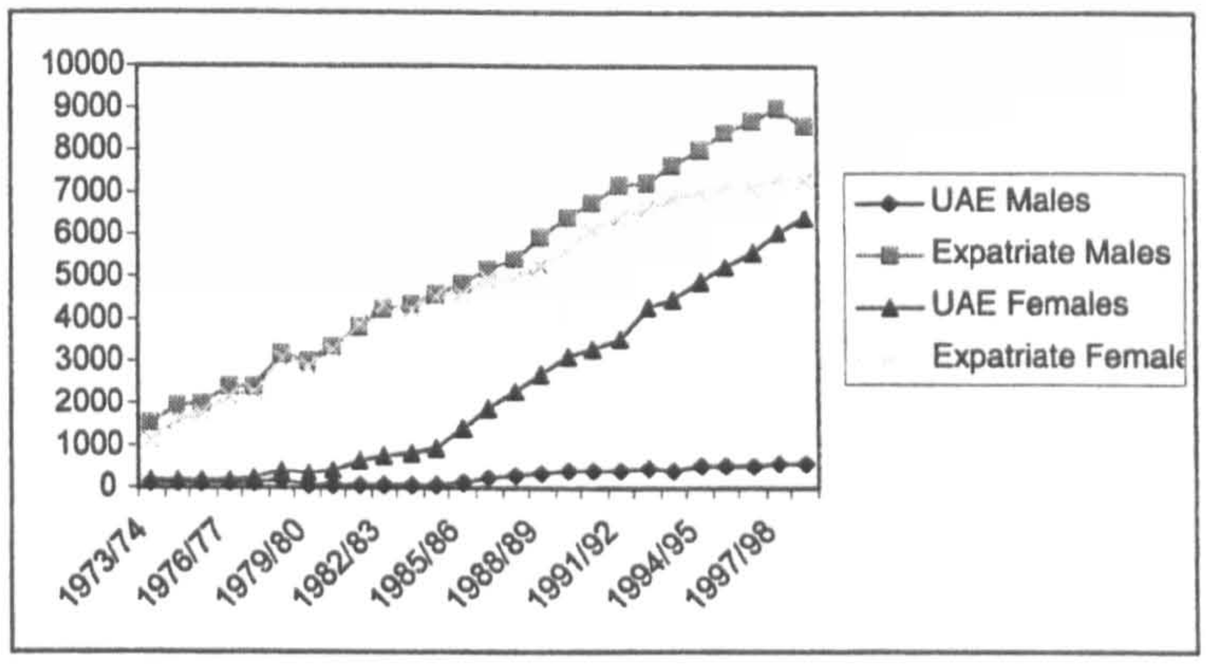


Figure 2.12: UAE Teachers by Gender and Nationality

Calculated from table (2.16)

2.3.5.3.3 Staff Qualification, Training and Motivation

Staff qualifications in the UAE schools vary from two-year diplomas to Ph.D. degrees. Figure 2.13 illustrates the qualifications of the schools' staff in the academic year 1995/96. Of the staff, 58.1% hold a four year college education, 40.8% hold a two-year college degree, 0.9% have earned a master degree, and only 0.2% have a Ph.D. degree (see figure 2.13).

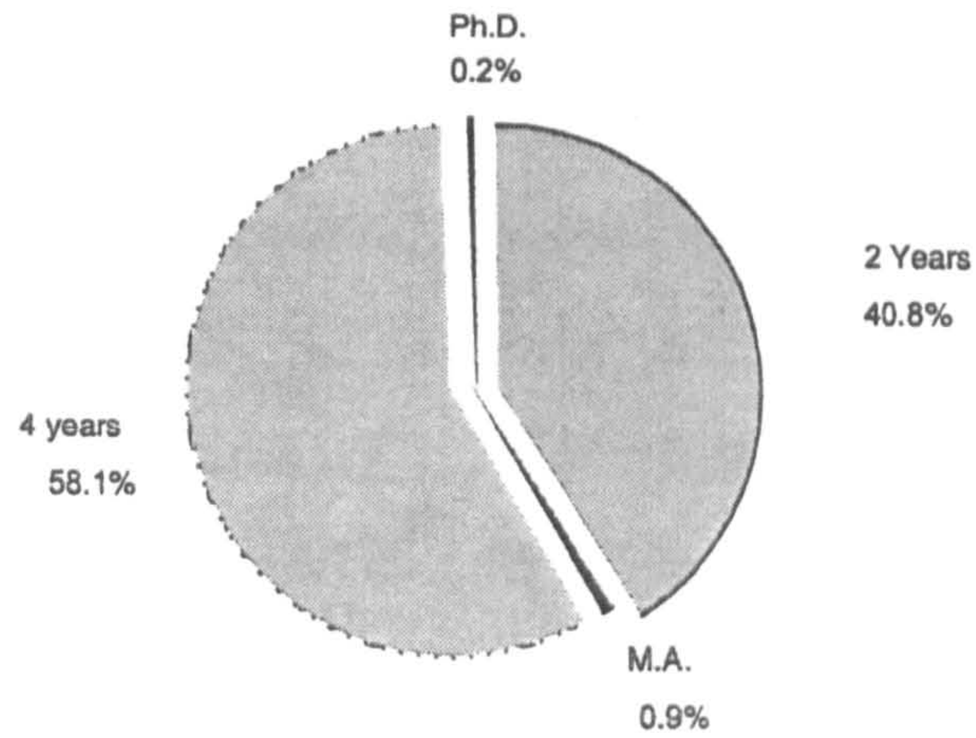


Figure 2.13: Qualifications of the Schools Staff in the Academic Year 1995/96

Calculated from the National Report of UAE on the Development of Education From 1991 to 1994.

With regard to the salaries of the teaching staff, and according to the Cabinet decree No. 316/4 for the year 1976, the government decided to set two different salary scales, one for the UAE national teachers and another for the expatriate teachers, table 2.18.

Table 2.18: Teaching Staff Basic Salaries

Degree	UAE National	Expatriate
High School	Dh.2875	Dh.1700
1 Year After HS	Dh.3125	Dh.1800
2 Years After HS	Dh.3750	Dh.2000
Bachelor	Dh.5250	Dh.2500

Source: Ministry of Finance(1995)

It is important to note that in addition to the basic salaries, teachers receive allowances for accommodation, transport, and cost of living, as well as a yearly increment based on inflation. Holders of Masters' degree receive an allowance of Dh. 500 per month, while Ph.D. holders receive Dh. 1000 per month (Ministry of Education 1996d). To answer the question as to why UAE nationals do not apply in great numbers for teaching positions, it should be noted that it is not only the low salary by it self, but also that in comparison to other low-paying jobs, teaching demands more hard work and effort. Moreover, university graduates seem to prefer joining the army, the police, the oil companies, the private financial institutions or the local government departments, which ultimately pay more and provide greater possibilities in terms of future promotions.

Nevertheless, a study conducted in the Abu Dhabi Educational Zone in 1993 showed that the number one cause of discouraging new teachers is the low salaries (Abu Dhabi Education Zone 1993). In the same year, UAE male nationals who worked in the Abu Dhabi Educational Zone were less than 1% of the total male teachers in the zone. The UAE national female teachers, on the other hand, totaled 937 out of 3,443 in the same zone, which is more than 27% of the total female teachers.

Abu Dhabi is considered the emirate with the lowest UAE male enrollment in the public school sector. In order to increase and attract a higher number of male UAE nationals to work in the schools in Abu Dhabi, the local government decided to provide more incentives; this would be in addition to what they were receiving from the federal Ministry of Education. This decision was taken in 1993 when the

number of male UAE teachers was only 24 out of a total of 3,383 teachers in the Abu Dhabi Educational Zone, which, notably, is the biggest educational zone in the UAE (see table 2.27). The incentives included free accommodation in addition to a 40% raise in the basic salary.

The effect of the incentive law is very clear. The number of the national UAE male teachers increased more than six times since the academic year 1993/94, table 2.19. These incentives were applied after the educational zone made a comprehensive scanning study on the UAE national students which recommended that nationalizing schools' staff was important to improve the educational services provided by schools. This was mainly due to the conclusions drawn from the study which showed that the interpersonal relationship between national students and UAE teachers at school was more effective than the relationship with non-national teachers (Planning Section at Abu Dhabi Educational Zone).

Table 2.19: Teachers & Administrators in Abu Dhabi Educational Zone

86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/95	96/97	97/98	98/99
11	16	21	33	30	30	24	37*	87	113	150	174	194

Source: Ministry of education.
** The year in which the incentive law applied*

2.3.6. Private Education

The UAE society is a multinational one. People from all over the world come to the UAE, mainly seeking better jobs. Therefore, the Ministry of Education made special laws for private education. The laws allow each community to open a school that adopts the national curriculum of the minority. There are American, British, Pakistani, Iranian, Indian, French, Japanese, German and Bangladeshi schools. Also, the private sector is involved in the education business by opening many schools across the UAE (Al Hosani Ph.D.1995), table 2.20.

Table 2.20: Distribution of Private Schools By Nationalities in the academic Year 1995/96

Arabic*	Indian	Pakistani	Bangladesh	Others**	Total
146	91	32	4	107	380

Source: (Education Campaign in the UAE1996)
**Schools that adopt Ministry of Education's education curriculum.*

*** If the number of Arab students exceeds 20% in schools that adopt American, French or British curriculum, then they have to teach Arabic, Islamic Studies and Social Studies as per Ministry of Education curriculum. There are some schools that apply the Egyptian education curriculum (Education Campaign in the UAE 1996).*

Table 2.21: Growth of the Private Education from 1972/73 to 1996/97

Year	Number of Students	Number of Teachers	Number of Schools
72/73	**4,460**	**200**	**22**
73/74	**5,889**	**288**	**27**
74/75	**7,785**	**369**	**31**
75/76	**10,570**	**533**	**36**
76/77	**13,924**	**734**	**40**
77/78	**17,130**	**911**	**44**
78/79	**20,606**	**1,131**	**46**
79/80	**25,874**	**1,374**	**57**
80/81	**30,368**	**1,691**	**69**
81/82	**41,929**	**2,484**	**92**
82/83	**51,456**	**3,177**	**130**
83/84	**57,953**	**3,752**	**147**
84/85	**62,439**	**4,066**	**157**
85/86	**70,291**	**4,410**	**164**
86/87	**76,372**	**4,816**	**178**
87/88	**87,964**	**5,575**	**198**
88/89	**102,619**	**6,580**	**231**
89/90	**115,670**	**7,260**	**240**
90/91	**126,609**	**7,910**	**274**
91/92	**136,604**	**8,590**	**302**
92/93	**149,477**	**8,407**	**321**
93/94	**173,544**	**9,682**	**359**
94/95	**189,830**	**10,562**	**365**
95/96	**192,226**	**11,042**	**377**
96/97	**205,556**	**11,765**	**386**

Source: Ministry of Education

A cross section analysis of the above tables shows that in the year 1972/73 there were 22 private schools throughout the UAE with 4,460 student and 200 teachers. By the year 1996/97 the number of schools had increased more than 17 times to become 386 schools, while the number of students increased by more than 46 times, becoming 205,556 students in the private schools.

2.3.7. Vocational Education

Vocational education was established in 1958 in the UAE in the Emirate of Sharjah. In 1964 the Dubai Emirate opened its vocational school, followed by Ras Al-Khaimah, which opened its national school in 1969 (Kheder & Others 1988).

All of these vocational schools provided educational courses related to the industrial fields such as welding, carpentry, and electricity. However, some other academic subjects were also taught in the vocational schools. In 1967 another vocational school was opened in Ras Al Khaimah, which taught agricultural elective courses.

Due to the economic growth, the demand for the skilled laborers increased in the UAE. Businesses in the UAE were attracted by the cheap foreign labor that dominated the labor market. For this reason, the Ministry of Education took the initiative in contributing to the government efforts in replacing the expatriates with local labor. The Ministry's tool was Vocational Education.

Vocational Education has two aims:

1) *Providing the country with national staff needed for development plans and labor market.*

2) *Preparing highly specialized staff by allowing brilliant students to complete their university studies. Vocational education provides students with the fundamentals of technology in the fields of industry, agriculture and commerce.*

(National Report of UAE on the Education Development 1989/90-1991/92, p 5).

Enrollment at vocational schools is open after grade 9, i.e. the first year of the secondary school (Nowair 1996). In March 1996 The Federal Council approved a report from the Ministry of Finance and Industry on the financial allocations required for the implementation of a project to develop technical education in the country in cooperation with a specialized German institute. The project includes the

construction of nine industrial and commercial schools at a cost of Dh 52 million (Ministry of Information and Culture 1996, p 174).

A vocational school student can major in different areas such as Business Administration, Industry, Agriculture, and Public Health. The following chart shows the growth of vocational schools by number and year, table 2.22.

Table 2.22: Vocational Education Between 1972/73 and 1996/97

Academic Year	1972/73	1996/97
Number of Students	333	1,733
Teachers & Administrators	67	270
Number of Classes	25	97
Number of Schools	5	7

Source: (Nowair 1996)

2.3.8. Religious Education

Religious education is considered the oldest type of education in the UAE (Kheder & Others 1988). Early in this century, and before the existence of formal education, religious education was the only popular one. With the start of the formal education system in 1953, the number of students enrolled in the religious educational institutions declined (in exchange for the Islamic Studies in the formal school). In 1962 the first formal Islamic studies school was opened in Dubai, table 2.23 (Kheder & Others 1988). A close look at the development of religious education between the academic years 1991/92 and 1995/96 shows a negative trend. Schools, classes, students and staff numbers declined by 1, 15, 488 and 28 respectively. Modern religious education in the UAE aims at "preparing religious guides and preachers and allows students to specialize at the university in Islamic studies" (Ministry of Education 1992, p 4).

Table 2.23: Religious Education Between 1991/92 and 1995/96

Year	Schools	Classes	Students	Staff
1991/92	4	62	1,501	164
1992/93	4	62	1,416	175
1993/94	4	57	1,391	160
1995/96 *	3	47	1,013	136

Sources: National Report of The UAE 1991 to 1994, National Report of The UAE 1994 to 1996

2.3.9. Adult Education Development

Adult illiteracy is an obstacle not only facing the UAE but also many developing countries in the world. Since the initiation of formal education in the UAE, the Ministry of Education has given special attention to adult education. On the 20th of February, 1989, the UAE Cabinet of Ministers issued a degree (No. 83/7/89) which was the starting point for the Comprehensive Campaign to eradicate adult illiteracy before the Year 2000, the ministry opened evening schools (centers) to provide an opportunity for adults, not only to reduce illiteracy, but also to continue their education (Ministry of Education 1990b).

Table 2.24 shows that the demand for adult education in the UAE in the academic years 1991/92 and 1995/96 is almost the same. The number increased from 23,272 to 23,863. Within five academic years the number of learners declined and reached 17,756 in the academic year 1993/94 and increased the next two years. According to the Ministry of Education report for 'The World Conference on Education for All', which took place in Thailand in March 1990, (Ministry of Education 1990a), the percentage of illiterates in the UAE in 1985 was 21.19 % and was expected to decrease to 2.11% by 1998. The adult education program is a two-year program of teaching illiterate people the basic skills of writing and reading. Adult students can then continue with four years of primary, three years of preparatory level and three years of secondary level (Al Asi 1993).

Table 2.24: Quantitative Growth in the Literacy and Adult Education from 1991/92 to 1995/96

Year	Centers	Classes	Students	Staff
1991/92 *	137	1,027	23,272	2,689
1992/93 *	147	1,115	18,946	2,955
1993/94	143	1,127	17,756	3,011
1994/95	140	1,160	18,887	3,074
1995/96	138	1,122	23,863	3,029

*Source: *National Report of the UAE on the Development of Education 1991/92 to 1993/94 and 1993/94 to 1995/96*

2.3.10. Education Expenses

The percentage of the federal budget spent on education shows that the UAE Federal Government treats education as one of its top priorities. From table (2.25) one can notice the following things:

1) The average percentage of the Ministry of Education's budget of the federal budget in the years 1973 to 1996 is 12%.
2) In 1994, 17.3% (the highest percentage) was allocated to the federal budget by the ministry, as compared to only 7.7% in 1977.
3) Between the years 1988 and 1996 the Ministry's budget percentage was between 14.2% and 16.7%.
4) In 1996 the Ministry of Education budget was Dh. 3.04 billion, which is about 16.7 percent of the total federal budget.
5) In the past 25 years the Ministry of Education's budget has continued to grow, except for some years due to the fluctuations of oil prices.
6) From 1973 to 1996 the number of students increased by 6.7 times, school staff increased by 8.8 times, and the budget increased 12 times.

Abu Dhabi's local government contributed to the federal budget for educational projects and services within the Emirate of Abu Dhabi. Between the years 1975 to 1996 Abu Dhabi contributed Dh. 1,234,228,000. That is more than Dh. 58 million yearly. Most of the funds were for the maintenance and construction of new schools (Ministry of Information and Culture 1996)

Table 2.25: Development of the Federal Budget & the Ministry of Education Budget Between 1973 and 1996

Year	Federal Budget	M. of Ed. Budget	Percent
1973	2,382,956,000	247,241,820	10.38%
1974	3,462,801,470	434,625,906	12.55%
1975	7,158,801,055	701,385,496	9.80%
1976	13,234,674,000	1,021,248,996	7.72%
1977	16,735,640,000	1,339,397,600	8.00%
1978	10,500,000,000	1,305,025,900	12.43%
1979	9,715,693,900	1,212,130,000	12.48%
1980	11,356,100,000	1,388,018,200	12.22%
1981	16,583,458,200	1,643,425,800	9.91%
1982	22,559,500,000	1,709,508,200	7.58%
1983	18,406,000,000	1,800,443,000	9.78%
1984	17,229,400,000	1,678,473,000	9.74%
1985	16,633,700,000	1,738,155,000	10.45%
1986	14,023,800,000	1,744,579,000	12.44%
1987	14,421,300,000	1,608,491,000	11.15%
1988	14,255,304,000	2,026,017,000	14.21%
1989	14,650,242,000	2,179,556,000	14.88%
1990	15,636,419,000	2,273,362,000	14.54%
1991	16,413,740,000	2,445,588,000	14.90%
1992	17,376,900,000	2,650,976,000	15.26%
1993	17,615,400,000	2,657,331,000	15.09%
1994	16,047,265,000	2,771,879,000	17.27%
1995	17,949,000,000	2,927,425,000	16.31%
1996	18,254,200,000	3,044,627,000	16.68%

Figure 2.14 shows the distribution of the Ministry of Education's budget in 1994 among the three stages of education. K.G and primary stage consumed 59% of the budget. The Preparatory stage came second with 24%, while the secondary stage consumed 17% of the budget.

Figure 2.15 compares the development of the number of students with the development of the Ministry of Education's budget from 1973 to 1996. It is clear that the number of students increased at a healthy rate until the late 1980s, namely because of the new law that was issued forbidding non-UAE nationals whose parents were not working in the public sector from joining public schools. This law

was passed in response to the budget deficit that was caused by the drop in oil prices. In return, the ministry had to devise means of dropping the cost per student.

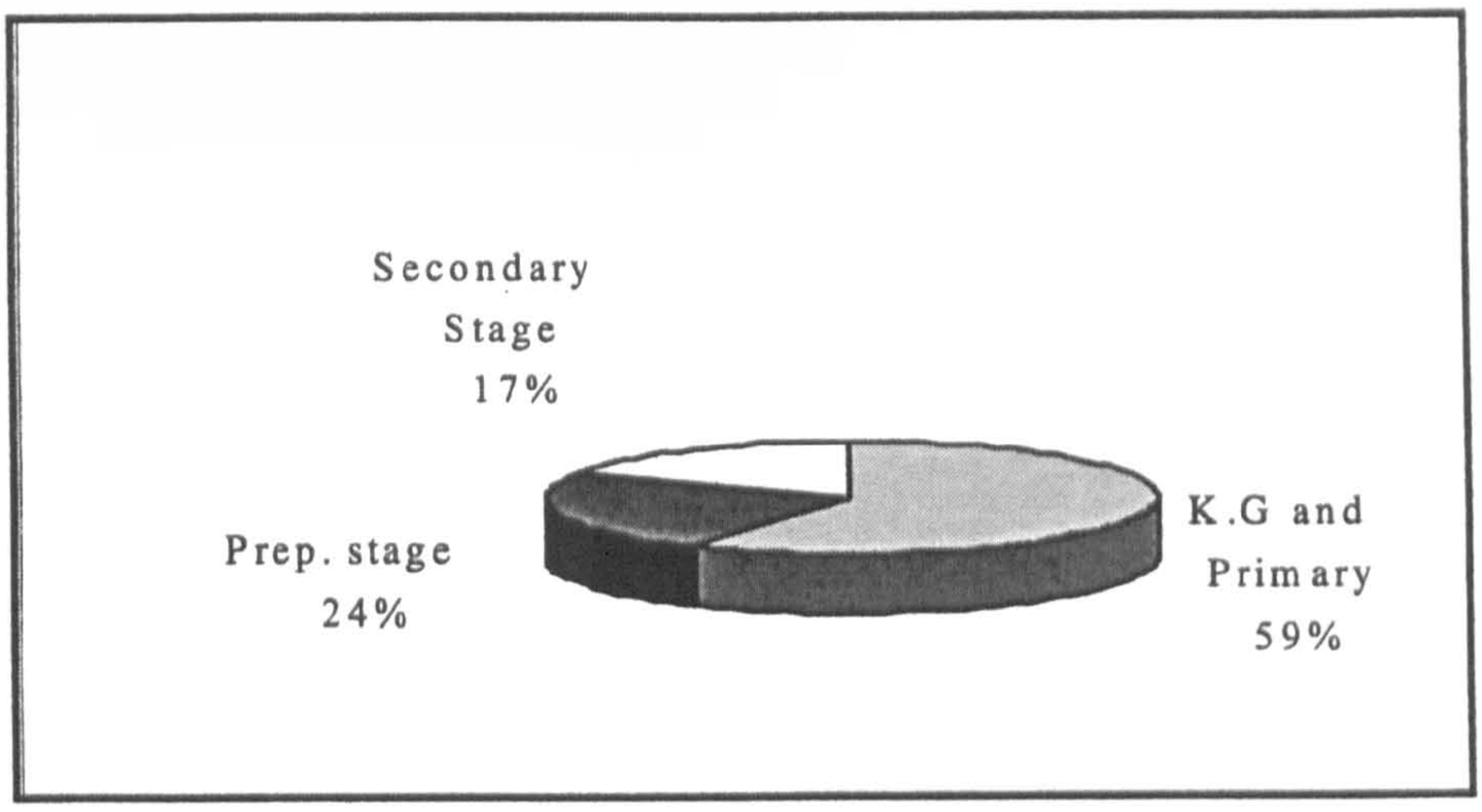


Figure 2.14: Distribution of 1994 Budget by Stage

Source: National Report of UAE on Development of Education 1991 to 1994

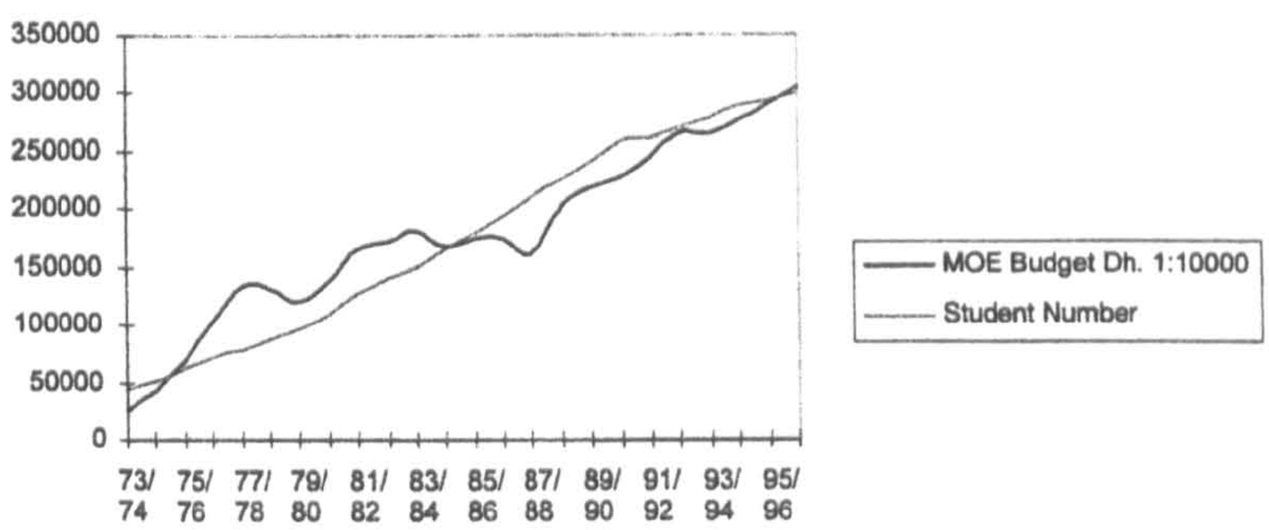


Figure 2.15: Progress of Student's Number Against Ministry's Budget

Source : Ministry of Education and Ministry of Finance

A look at the academic year 1975 table 2.26.shows that the lowest cost per student was Dh. 5,585 in the academic year 1973 as compared to the rate of 16,958 for the academic year 1977. The year 1974 showed the highest percentage increase at 0.49%, figure 2.16.

Table 2.26: Cost of The Students in Public Schools Between 1973 and 1996

Year	M. of Ed. Budget	Number of Students	Cost per Student
1973	247,241,820	44,272	5,585
1974	434,625,906	52,321	8,307
1975	701,385,496	61,803	11,349
1976	1,021,248,996	71,214	14,341
1977	1,339,397,600	78,981	16,958
1978	1,305,025,900	86,048	15,166
1979	1,212,130,000	96,077	12,616
1980	1,388,018,200	108,842	12,753
1981	1,643,425,800	126,366	13,005
1982	1,709,508,200	139,840	12,225
1983	1,800,443,000	150,409	11,970
1984	1,678,473,000	163,996	10,235
1985	1,738,155,000	179,276	9,695
1986	1,744,579,000	194,433	8,973
1987	1,608,491,000	209,180	7,690
1988	2,026,017,000	225,391	8,989
1989	2,179,556,000	241,538	9,024
1990	2,273,362,000	257,773	8,819
1991	2,445,588,000	261,692	9,345
1992	2,650,976,000	270,560	9,798
1993	2,657,331,000	278,836	9,530
1994	2,771,879,000	289,066	9,589
1995	2,927,425,000	295,322	9,913
1996	3,044,627,000	300,337	10,137

Source: Ministry of Finance

Student cost is per UAE Dirham. Source: Ministry of Finance and Ministry of Education

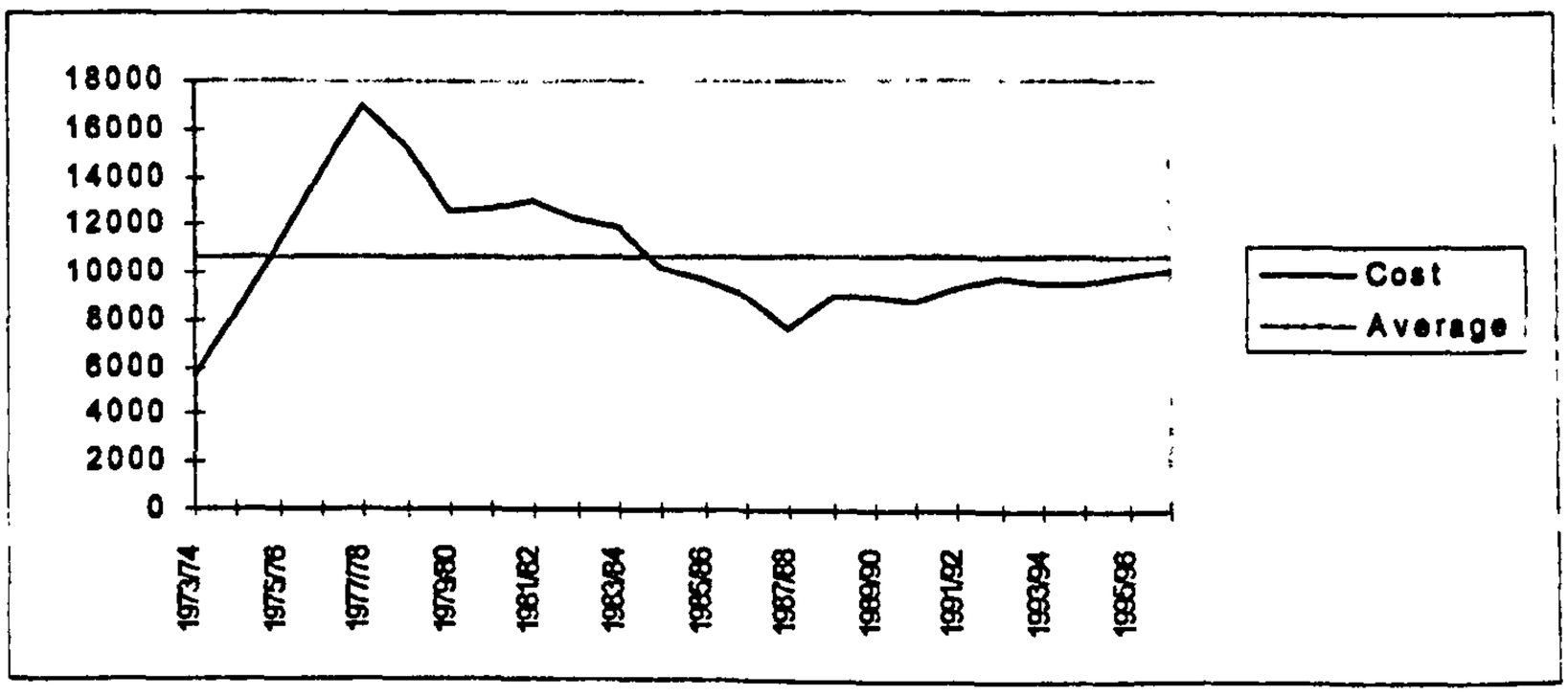


Figure 2.16: Development of Student's Cost & the Average Student's Cost from 1973 to 1996

Source: Calculated From the Previous Table

2.3.11. Educational Policies

In the past two decades, the MOE has twice prepared an educational policy, but neither was approved by the legislative authorities (Al Asi 1993). Finally, in April 1995, the cabinet approved the Educational Policy. Main trends of the approved Educational Policy are as follows.

The Educational Policy document was prepared by the Ministry of Education in accordance with the highest political directives to ensure education for all and to prepare future generations equipped with knowledge to cope with the challenges of the present era and future technological changes. Many parties have participated in the preparation of the documents including various organizations, establishments and institutions related to education since it is the responsibility of the whole community to ensure high quality education. (Ministry of Education 1996d.)

The Educational Policy depends on the fundamental constituents of the UAE society, which are:

1) Islamic religion as the state's official religion.
2) The UAE's Federal Constitution, which is the source of laws.
3) Heritage and history of the UAE.
4) Probabilities and expectations of population growth, which indicates that there is a continuous increase in the population of those who are below 15 years of age, which is a school age.
5) The vast economic development.
6) The UAE's foreign policy and the Gulf, Arab, Islamic and International relations.
7) The status and the accomplishment of education.
8) Future aspirations and challenges.

(Nowair et al 1996):

The general principles of the educational policy are:

1) Bringing up citizens, bearing in mind Islamic prospects and values.
2) Education for the sake of strengthening national, individual, and cultural unity.
3) Education for the sake of comprehensive and continual development as well as productive beneficial work.
4) Education for the sake of preparation for the changing developing future.
5) Education for continual education.

(Ministry of Education 1994, p23).

Based on the previous five principles, the Education Policy specifies twelve general objectives of education, four social objectives, two economic objectives and seven curricular objectives (Ministry of Education 1994, p24).

2.3.11.1 General Objectives

1) Inculcating faith in God and His prophets and human and spiritual values.
2) Inculcating love of the nation, homeland and Arab nationality.
3) Developing mind, body, and emotions.
4) Training individuals to the duties of citizenship, social, and economic cooperation.
5) Inculcating the values of work, production and perfection together with performing them.
6) Preparing man for the future and helping him to have a quick reaction to positive changes.
7) Contributing to comprehensive development and bridging the gap in technology.
8) Developing systematic thinking and a self-mental criticizing style.

9) Developing mind and making best use of its potentialities while helping completion of education as a whole that encompasses both body and intellect.

10) Abolition of illiteracy, a case that should be given first priority since it is related to social and economic aspects that affect the society and its development.

11) Stressing the idea that education is a continuous process throughout life.

12) Considering education as a major integral part of society's need, since both mutually influence each other.

2.3.11.2 Social Objectives

1) Equal opportunity in education for all.

2) Emphasizing human unity and equality amongst people without any discrimination, with emphasis on tolerance, sympathy and human treatment; intellectual fanaticism should be avoided as we should benefit from experiences of other nations.

3) Emphasizing the role of the family and other social establishments in education and stressing the school/family relationship.

4) Trying to affiliate expatriate labor with the society's culture through non-formal and private education.

2.3.11.3 Economic Objectives

1) Preparing and training national manpower by means of the formal and non-formal educational institution.

2) Diversifying and developing education so as to answer all the economic social needs and the comprehensive development plan.

2.3.11.4 Curricular Objectives

1) Implanting the teaching of Islam with its clear views on life, the universe, and the position of man while adhering to its original inheritance; this will contribute to the development and progress of society.

2) Providing learners with a suitable portion of culture and religious knowledge, particularly those related to the principles of religion and fundamentals of Islamic law as a and basis of morality and behavior.

3) Inculcating the learning and teaching of Arabic and English besides sciences linked to economics and computer.

4) Teaching civilized conduct based on Islamic principles such as truthfulness, honesty, discipline, self-control, respect for others' rights, and associating words with deeds.

5) Emphasis on applied sciences as an integral and basic part of the curriculum. Creation and progress in these sciences will lead to a stronger faith and a better life for Muslims.

6) Creating a balance between rights and duties and implanting this in youngsters.

7) Stressing the acquisition of the following values:

- Psychic balance; equilibrium and equanimity.
- Team spirit sited of individuality.
- Considering the role of woman as complementary to the role of man in social structure.
- Respect for the elderly and the aged.
- Appreciating the human values of man.
- Appreciating the value of work and production.
- Respect for others' jobs.
- Tolerance for others.

- Judging other cultures objectively.

2.3.12. Educational Administration

Educational administration in the UAE education system has three main levels. The ministry level is the central educational authority and has two branches, one in Abu Dhabi and the other in Dubai. The second educational administration level includes the educational zones and offices. Finally, the third educational administration is the administration at the schools' level.

2.3.12.1 The Ministry of Education's Administrative System

The Ministry of Education's administrative system incorporates the Minister, the Under Secretary, and four Assistant Under Secretaries, whereby each one of the afore-mentioned assistants is the head of a sector.

In the academic year 1995/96, there were 905 employees working for the Ministry. The employees were distributed between the two branches of the Ministry in Abu Dhabi and Dubai. The Minister of Education chairs the Ministerial Committee for Education, which has three Ministers acting as its members, whose job is to study all subjects relating to educational policies (Ministry of Education, 1996d).

The Minister also chairs the Committee of Administrative Regulations and Development (CARD). The Under Secretary and the four Assistant Under Secretaries are members of CARD, which is concerned with the endorsement of the Ministry's plan for performance and development.

Each one of the sectors in the Ministry's structure supervises a number of administrative and technical departments. Each is entrusted with specific functions and tasks. The Ministry structure includes nine educational zones and offices concerned with the implementation of educational plans at school (UAE Cabinet 1987). The four sectors are Planning and Evaluation, Education Affairs, Educational and Central Activities, and Administration.

The sector of Planning and Evaluation consists of four departments:

1) Information and Research.

2) General Planning and Follow-up

3) Curriculum, Text Books, Evaluation, and Examination

The Educational Affairs sector consists of:

1) Kindergarten and Primary Education Department

2) Preparatory and Secondary Education Department

3) Vocational Education Department

4) Adult Education Department

5) Private education Department

The Educational and Central Activities sector consists of:

1) Libraries Department

2) Training Department

3) Social Services Department

4) Teaching Aids Department

The last sector is the Administration sector, which contains four departments:

1) The Legal Affairs Department

2) Personnel Department

3) Financial Department

4) Services Department.

(UAE Cabinet 1987)

2.3.12.2 Educational Zones and Offices

The Ministry of Education has divided the country into nine educational zones and offices. Smaller zones are called educational offices. The zones are Abu Dhabi

Ed. Zone, Al Ain Ed. Zone, Eastern Ed. Zone, Dubai Ed. Zone, Sharjah Ed. Zone, Ras Al-Kamiah Ed. Zone, Western Ed. Zone, Ajman Ed. Office, and Umm Al Quwain Ed. Office.

The Abu Dhabi Education Zone is the largest in terms of students, schools staff, and zonal staff. Al Ain Education Zone is the largest in terms of inspectors, and similar to the Abu Dhabi Educational Zone, in terms of number of schools. Umm Al Quwain Education Office is the smallest in all fields. (Table 2.27)

Table 2.27: Distribution of Schools, Students, School's Staff, Zones' Staff and Inspectors in the Academic Year 1995/96

Zone	Schools	Students	School Staff	Zone Staff	Inspectors
Abu Dhabi	104	59,094	4,701	97	72
Al Ain	104	54,445	4,523	83	98
Western	38	10,940	1,193	28	57
Dubai	82	39,215	3,447	69	80
Sharjah	71	33,662	2,900	52	93
Ajman	35	17,787	1,452	31	40
U.A.Q *	21	7,210	794	13	28
Eastern	74	38,404	3,000	52	65
R.A.K *	86	34,565	3,277	60	90
Total	615	295,322	25,287	485	623

Source: Ministry of Education. Umm Al Quwain. ** Ras al-Khaimah*

Educational zones serve as a link between the central ministry and the schools. Each zone is headed by a director who is assisted by two deputies. The first deputy is in charge of educational affairs and related activities. The second deputy assists the director in the administration and planning. The director of the educational zone is responsible to the Assistant Under Secretary at the Ministry of Education with regards to work related in the concerned sector. The Director of the zone supervises the execution of plans and rules that are set centrally by the Ministry. The zone suggests its plan to the Ministry, which includes the budget and need of manpower for the schools. Each zone is provided with inspectors for each subject taught at the school. The inspectors train, evaluate, and follow up on the work of the teachers in their respective zones.

2.3.12.3 School Administration

Internal School administration in the UAE consists of a principal, deputy, school counselor, supervisor, secretary, social worker, librarian, laboratory technicians and teaching staff (Ministry of Education 1992).

The principal is considered the person in charge of and responsible for organizing both technical and administrative duties. This includes the control and follow-up on the overall educational program and its implementations. The principal is also the head of the school council. The deputy principal assists the principal with many duties and in monitoring administrative and financial affairs after school; he also acts on the principal's behalf in his absence. The social worker is in charge of organizing the educational social programs of the school such as sports, trips and functions (Ministry of Education 1992). Also, the social worker's duty is to establish the links between the school and the community. A school supervisor is responsible for the students' affairs and school services. The senior teacher's role is to act as a middle person between the school administration and educational counseling on the one hand and the teachers on the other. The librarian takes care of the library services in the school. The school secretary executes the secretarial job in the school administration. The laboratory technician's role is to maintain the laboratories in the school and help teachers and students in conducting experiments. Finally, and most important, is the teacher who is considered the main element of the education process.

2.4. SUMMARY

UAE is a small, rich country, which became independent in 1971. Due to its wealth and scarcity of manpower, many people migrated to the UAE in search for better job opportunities, and, as a result, UAE citizens became a small minority. Before the federation, formal education was provided to the UAE citizen through friendly countries, for example Kuwait in the early 1950's. Education in the UAE was affected by the country's wealth and demographic situation. Since the formation

of the federation in 1971, the quantity of schools, students and teachers has grown continuously. Budget growth is associated with the quantitative growth of education. No clear evidence of quality growth occurred along with quantitative growth. However, expatriates still dominate the teaching profession, especially within boys' schools. The Ministry of Education is the central educational authority in the UAE. There are a number of Education Zones throughout the country, which help the Ministry supervise the educational services.

This work, with its brief background of the UAE and its education system, aims at studying the educational developments in the UAE and will attempt to clarify the obstacles that stand in the way of education development. Furthermore, the study aims in particular at providing an administrative model to ease education reforms.

Chapter Three

EDUCATION CHANGE: THE THEORETICAL BACKGROUND, A REVIEW OF THE LITERATUTRE

3.1. INTRODUCTION

The theme of this thesis, the model school, is an educational innovation, which is carried out through a change process. Change processes differ from one innovation to another, and depend on many factors. For example, they can depend on the size and complexity of the educational innovation, the amount of resources provided, leadership quality, and the extent of the resistance to change. However, there are some aspects of the change process that are repeated in most education innovations. This chapter explores the theoretical background of the major aspects of the educational change process. They include: 1) definition of change, 2) a brief history of educational change, 3) reasons for educational change, 4) approaches to the change process, 5) phases of the change process, 6) conditions for the success of educational change, 7) reasons for educational change failure, 8) resistance to change, 9) education change's leadership, and 10) a conclusion that includes general lessons from previous education change projects.

3.2. DEFINITION OF CHANGE

Change as a management term is defined as *an alteration in the status quo of the system that affects the goals, personnel, technology, and/or structure of the system* (Kimbrough and Nunnery 1983). Education change is also defined as *any intentional change in the positive direction, which can be as small as the improvement of a single teaching method or as big as a major change in the entire school system* (International Encyclopedia of Education 1994). I think this definition fits the model school project because it is an intentional change in the positive direction and the model school project involves small education changes and at the same time it aims at introducing a new education system.

There are various terms used in the educational change literature such as educational improvement, education renewal, educational reform, and education innovation. Such terms are used to show some sort of change in education however the first three are usually used to reflect a change in the education system that involves alteration in national educational policies and structure (Fagerlind and Saha 1989). Education innovation, on the other hand, is used widely to reflect changes that are introduced to the school level to improve students' skills, knowledge, and personal development. (International Encyclopedia of Education 1994). In this thesis all of the above terms are used to reflect any education change whether it is a small or a major one.

3.3. A BRIEF HISTORY OF EDUCATIONAL CHANGE

Historically, educational change was not studied in depth until the 1960`s. One of the researchers who studied the development of educational change management is M. Fullan. Fullan sees four phases of the study of planned educational change, which he labeled Adoption (1960s), Implementation Failure (1970-77), Implementation Success (1978-82), and Intensification vs. Restructuring (1983-90) (Fullan and Stieglbauer 1991). The first phase, the Adoption era, is characterized by curriculum innovations. The new math, was introduced in this period, and physics

and chemistry were revised. It was called the Adoption era, because schools were interested in adopting as much as they could of education innovations. "In the 1960s educators had been busy developing and introducing innovations, while in the 1970s, they were busy failing at putting them into practice," (Fullan and Stieglbauer 1991). Therefore, Fullan called the seventies the era of implementation failure. The period between 1978 and 1982 experienced a number of successful educational change stories in North America, such as in the field of staff development, educational leadership, and school improvement. While the North American educators were engaged in small education change projects, European educators engaged in large-scale projects. They claimed that Americans were preoccupied with small-scale projects rather than tackling comprehensive educational reform. Later on, even the Americans shifted their thought toward large-scale reform projects. The National Commission on Excellence in Education released the famous document, *A Nation At Risk,* which attacked the attempts of implementing one innovation at a time (National Commission on Excellence in Education 1993). The last phase in the evolution of the study and practice of planned educational change is the Intensification vs. Restructuring phase, which was in the period from 1983 to 1990. Intensification is a reform trend that emerged at the state level, which has to do with change in curriculum, standard tests, and teaching methods. Restructuring, on the other hand, is related to the major changes like school-based management, enhancing the teachers' role in the decision-making process, reorganizing teacher education, and teacher leadership.

Fullan concluded with some notes. First, unlike the previous change attempts, intensification and restructuring reform steps were intended to bring change both top -down and bottom-up. Second, since the two change approaches build upon each other, it is expected to see another form of comprehensive educational change that attempts to include elements of both approaches (Fullan and Stieglbauer 1991).

3.4. Reasons for Educational Change

The urgent need for educational change is discussed by many educators all over the world, and every one of them has his own reasons for the change. Schlechty says that a general societal transformation took place during the twentieth century while public education, in general, has changed relatively little (Schlechty 1990). This means that education should change to keep up with the vast development occurring in the world. Fullan and Stieglbauer think that imported values and technology in any society are strong reasons for redirecting the education systems (Fullan and Stieglbauer 1991). Also, demographic changes and economic conditions in some societies force the educational system to change (Grestner et al 1994). Educators think that change should reach the traditional educational systems that do not prepare individuals to think critically and creatively and to be life long learners (Schlechty 1990).

The reasons for educational change mentioned above are applicable in the UAE case. If we look at the history of the UAE, we can see that the country experienced a huge societal transformation during the past 30 years, which affected the social, political, and economical values of the country (see Chapter Two). Despite the relatively big changes in the different aspects of life due to the wealth in the UAE, the educational system is still a traditional one that does not suit the country. Hence, the external education change circumstances are such that the UAE is ready for change. I think education change leadership in the country should improve the circumstances of the education system and prepare the system for the required change.

3.5. Approaches to the Change Process

There are three approaches to education change. An education change can be 1) top-down, 2) bottom-up or 3) bottom-up and top down (Darling-Hammond 1998). If the education change is decided from the education central authority and implemented by schools, then this approach is a top-down one. Changes approached

this way are more likely to fail. "Telling schools to change has never worked to produce markedly different teaching over many decades of efforts at curriculum reform" (Darling-Hammond 1998, p. 642). Studies show that the fate of any new change introduced to the schools rests on teachers' and administrators' opportunities to learn, experiment, and adapt ideas to the local context. Without these opportunities, innovations fade away when the support stops (Darling-Hammond 1998).

The failure of the top-down approach led to the bottom-up approach. In the bottom-up approach, change is introduced from the school level. Teachers and school administrators implement changes using the school's available resources. The problem with the bottom-up approach is that the success of the change will be limited; it will not spread school wide (Darling-Hammond 1998). Moreover, some educators believe that this change approach does not often lead to improvement in the student's performance (Reynolds et al 1993).

Educators suggest that education change occurs best with a top-down and bottom-up approach, in which the large system provides support and direction and the actual change process is left to the school (Fink and Stoll 1998).

Fullan concludes that systems cannot change schools by mandates, and widespread school change cannot occur by school invention alone without the support and leadership from the policy system (Darling-Hammond 1998).

From my personal experience, I agree with Fullan's conclusion, which is that without the joint efforts of the Ministry of Education, the Educational Zones, and the school, successful change would be very difficult to obtain.

Almost all of the major educational changes that took place in the UAE public schools were introduced centrally by the Ministry of Education. That is applying the top-down approach. In other words, changes were usually initiated and planned from the top, and the school role is implementation. The problem with this approach is that school level staff tend to resist the implementation of the education project,

because they are not involved in it's planning. The other problem with the Ministry of Education's way of implementing education changes was that the ministry did not provide the needed support.

The change approach applied in establishing the model school was similar to the top-down and bottom-up approach in the sense that both the Educational Zone authority and the school level administration work together. The Education Zone allowed the school to introduce changes that helped in improving student performance and supported the model school to achieve its goals. However, the approach of spreading the model school innovations was different. The model school was only admitting students from grade one. Therefore, there was no reason to open another model school as long as the model school could accommodate new grade one students. However, what was needed was to open new classes or a new model school for students who were in the older age groups. In other words, the model school system was expanding vertically not horizontally, with the growth of its own students only.

The advantage of this type of expansion is that the change occurs gradually. Each year the model school planned innovative changes suitable for the new higher grade and allocated the required resources. Also, admitting grade one students helped the model school keep its quality service instead of admitting academically weak transfer students who were used to a different system. Another advantage is that the model school can keep track of the personal development of its students throughout the school years.

3.6. PHASES OF CHANGE PROCESS

Educational change simply consists of two aspects: what change to introduce, and how the change is introduced. What needs to change are the practices that need to be introduced to the educational system. The later aspect is the change process, which is how the education innovation is introduced to the system. In the current

research, the change to be introduced is the model school project, and the process is the method by which the model school innovation is introduced and implemented.

Most of the empirical studies on education change concentrated on the change process as the major factor that affects change. However, there are a number of models in the management literature, which describe the change process. One of them is the Kotter Model (Kotter, 1996), which reflects the roles of the change leaders in eight change stages:

1) Establish a sense of urgency that change is needed, and identify a problem and communicate it broadly in the organization.

2) Establish a strong coalition to lead the change process. Change leaders develop a teamwork group that is committed to the change objective. All levels of management are involved in the change process and seek the support of each other to maintain the strength of the coalition.

3) Develop a vision to guide the change process and a strategy to achieve that vision.

4) Change leaders widely communicate the vision and strategy with the employees in the organization.

5) Change leaders provide the employees with empowerment and resources needed to act on the vision.

6) Change leaders generate short-term successes to maintain the employees' enthusiasm momentum.

7) Build on the credibility gained from the short-term wins to create greater change.

8) Institutionalize the innovation in the organizational system.

The model school project went through Kotter's eight change stages (Kotter, 1996). The signs of low education performance among the local student in the Education Zone schools caused the Education Zone leadership to take a number

initiatives. First of all, the problem was clearly identified through a comprehensive field study (see Chapter Four). Then, a strong committed team was established to find a solution to the problem. Following this, the education leadership developed a vision of the education change, which was the model school, and it communicated the vision and the strategy to achieve the vision throughout the community. Also, the change leadership in the Education Zone kept encouraging the change team members by empowering them, providing them with the required resources, and celebrating their short-term success to maintain their enthusiasm and momentum. Finally, the change leadership kept the support until the model school became part of the educational system of the Abu Dhabi Education Zone.

A second change model is the Daft Model, which consist of four events (Daft 1997).

1) Internal and external forces of change rise.

2) Managers perceive a need for change within the organization.

3) The perceived need for change encourages the initiation of change.

4) Implementing the change.

All of the four events of the Daft Model occurred in the model school change project, except the institutionalization stage, which is not included in Daft Model.

The third model, which was developed by Fullan, includes three overlapping phases (Fullan and Stieglbauer 1991).

1) The initiation phase.

2) The implementation phase.

3) The institutionalization phase.

There are some differences and similarities among the three models. Fullan's Model and Daft's Model have less major steps; Fullan's has three, Daft's has four, while Kotter has eight. However, if we look closer to Fullan's and Kotter's model, we can see that Kotter's eight major events are included in Fullan's sub events as it

occurs during each phase (explained later in this section). The first five events of Kotter's are included in Fullan's initiation phase. The sixth and seventh events are included in the implementation phase of Fullan's Model. The last event of Kotter's, i.e. institutionalization, is the last phase of Fullans. Similarly, the first three events of Daft's are considered the initiation phase of Fullan's and the fourth is implementation, which is the second phase of Fullan's. The major difference between the three is that Daft's did not give importance to institutionalization, while both Fullan and Kotter gave importance to the institutionalization of the innovation to the system. This makes me more inclined to Fullan's and Kotter's compared Daft's. Further more, Fullan's is preferred to Kotter's because Fullan's is built as an education change model. The details of Fullan's model discuss the change process in relation to teachers and principal instead of employees and managers of school, and school districts culture instead of a business organizational culture. Schools involve many relationships that are not available in other organizations. A school involves relationships between teachers and students, students and a principal, teachers and parents, and so on.

The education change process according to Fullan consists of three overlapping phases. The three phases are the initiation phase, the implementation phase, and institutionalization or continuation phase (Fullan and Stieglbauer 1991). The following section discusses in detail the three phases of the change process with reference to the model school project.

3.6.1. Initiation

The first phase of the change process is the initiation phase. Initiation begins with awareness of the potential for change and leads up to the decision to adopt a new practice or proceed with a plan. This phase may start by an innovation produced by a teacher; a group of teachers might agree on a new teaching style and decide that their students would benefit from, or the school board might issue a mandate in response to community pressure. During the initiation phase the need for change is

identified, key people team up and actively communicate and advocate the change and focus on what needs to be changed (Busick et al 1994). Also, at this phase change leaders develop a vision of how to lead the change process, determine priorities, and consider some of the requirements such as costs, materials, personnel, space, and so on (Horsley et al 1990). The model school innovation was initiated after it appeared as a recommendation of a study, which also raised the awareness of the poor educational performance of the national student in the Education Zone schools (Abu Dhabi Education Zone 1993). Immediately after this, the education leadership took seriously the recommendation of establishing a model school and set up a committee to develop a vision and the implementation strategy for the model school. During the initiation stage, the education leadership communicated the model school project to the community to gain the support for the implementation of the new education innovation.

3.6.1.1 Factors that Influence Initiation

There are a number of studies that discuss the general factors, which help in making a successful change initiation (Hopkins, et al 1998). The major factors that influence initiation include the quality of the innovation, the support of the education authority, change facilitators, strong advocate, and active initiation.

3.6.1.1.1 <u>The quality of innovation</u>

The quality of innovation is one of the factors that influences the initiation phase of the change process. If the education innovation previously shows a positive observable change, then it is expected to go through the initiation phase in a successful way. To the best of my knowledge, this factor has not reported in the literature for the model school's project under similar conditions.

3.6.1.1.2 <u>The support of the education authority</u>

The support of the education authority is crucial to the initiation of change. Such support eliminates many obstacles, which may rise in the way of the change project, not only during the initiation phase but also throughout the whole change

process. Studies show that the director of the education authority is an extremely important source of advocacy, support, and initiation of new programs. At the same time, the central education authority can block any changes that it doesn't like. This factor is crucial to the model school. The Education Zone in Abu Dhabi, as a local education authority, gave all of the needed support to the model school. Because the project required more political and financial support and the Ministry of Education was not able to give it, the Education Zone's leadership turned to the local government of Abu Dhabi. This step was not usual, because local governments in the UAE were not usually involved in the education process because education is a federal matter; however, the local government cooperated and convinced the Ministry of Education to let the model school project continue.

3.6.1.1.3 The change facilitator

The change facilitator plays an essential role in initiating change projects. He makes the school staff aware of the existence of the new practices and helps in training them. Also, the change facilitator eases the change resistance that may occur during the change process. For the model school project, there was no change facilitator allocated for the project; however, the Director of the Education Zone played the part of the change facilitator. Even though he did not train the model school's staff, he arranged the professional development through others. The Director of the Education Zone played an essential role in easing the change resistance during the implementation, which occurred from the school staff and the supervisors in both the Education Zone and the Ministry of Education.

3.6.1.1.4 Strong advocate

Strong advocate of the innovation are important at the initiation stage. The innovations need one or more people who are strong supporters of the education innovation to get it going. The main advocate of the model school was the Director of the Education Zone who was the leader of the change team. This made him a strong advocate for the change project (for more detail, see Chapter Seven "My Position as a Researcher").

3.6.1.1.5 Active initiation

Active initiation is important and need not be hindered due to the assumption that full needs assessment has to be completed before you get started. Delaying the initiation leads to confusion because people get overloaded with information without action. After receiving the required political and financial support, the model schools change team immediately started preparing for the implementation of the project.

3.6.2. Implementation

Implementation is the process of putting into practice a set of activities and structures that are new to the people attempting or expected to change (Fullan and Stieglbauer 1991). It is the phase of attempted use of the education innovation. During this phase, change leaders carry out action plans, develop and sustain commitment, check the progress, and overcome all types of implementation problems (Hopkins, et al 1998).

Problems during implementation are expected to dominate the whole process; therefore, coping with problems, which is discussed later, is an essential skill a change leader should acquire. The first expected problem may be that the enthusiasm that often accompanies the initiation phase starts to diminish with the realities of the tasks and the reaction of people involved. This problem might develop an even deeper problem in the initial stages of the implementation process, which is the problem of the "implementation dip". Implementation dip is when things during the change process are expected to be better but actually get worse (Busick and Inos 1994). This occurs when the individuals who are the target of the change project have abandoned ineffective practices but have not acquired the new strategies. Change leaders must recognize that this phenomenon is normal, and it is a characteristic of the early stages of implementation. Dealing with the implementation dip with patience and persistence is crucial in overcoming its negative effects, because many education innovations die in the face of the implementation dip (Busick and Inos 1994). One of the strategies for dealing with

change problems is dealing with them as quickly as possible, because small problems become bigger later.

There are a number of activities that occur during the implementation phase. During this phase the action plans for implementing the education innovation are carried out. Another activity is to develop and sustain commitment of continuing the implementation. Also during the implementation phase, change leaders keep checking the implementation progress and solve problems (Hopkins, et al 1998).

Before the model school is implemented, a comprehensive action plan was set. The change team revised the plan and started implementing it. Because problems were expected, the change team under the leadership of the Director of the Education Zone met almost daily to evaluate the implementation progress and figure out solutions to problems that arose. Dealing with the problems immediately reduced their effect on the project.

The following sections cover in detail a number of issues related to the implementation phase of the change process. The issues include factors of successful implementation, key factors affecting implementation, and key themes in the implementation process.

3.6.2.1 Factors of Successful Implementation

Researchers suggested a number of factors that contribute to success during implementation (Busick and Inos 1994). The first factor is **coordination.** Implementation of an education innovation requires a leader who coordinates the implementation process. Also, clear coordinating responsibilities of different members of the change team help in troubleshooting and monitoring the implementation process. Second, many successful implementations are characterized by shared control through **empowering** members of the change team. Work pressure is a challenge to almost every member of the change team and may lead to a failure in the implementation process; however, proper support and

insistence in doing things right makes pressure a positive effect and leads to the implementation in the desired direction.

Another essential factor that helps in the success of the implementation process is **professional development.** Professional development or technical support builds up the school capacity in dealing with implementation's difficult situations. It is normal to see a large number of technical support activities such as workshops, peer coaching, and external consultations throughout the change process. This sort of professional development plays an essential role in making change go smoothly.

Finally, change leaders should consider ***rewarding*** their team members throughout the implementation stage and, more importantly, when problems arise. During different times change team members during hard times want their needs to be met, such as extra time, load reduction, collegiality, resources.

The four factors of successful implementation mentioned earlier are important considerations during the implementation of the model school project. In terms of clear responsibilities, the change leadership defined the job of every member of the change team after discussing it in detail with the member. This discussion helped in reducing role conflict among the implementation team and increased the awareness of the leadership of what were the requirements of each member. Such intensive meetings between change leadership and members of different teams helped the leadership in carrying out effective coordination among them. Such coordination smoothed the implementation process.

Second, empowering the model school staff was a major aspect of the work environment of the model school. It is believed that this is one of the factors, which make the staff creative and motivated in solving the implementation problems. Working overtime became a normal sign of the model school staff throughout the implementation process.

Third, professional development was an integral part of the whole change process, even before the implementation of the model school. It was noticed that

professional development of the implementation staff speeded up the effective implementation with fewer problems. Therefore, professional development became one of the major changes in the model school project (see Chapter Five: Teachers' Professional Development).

Finally, rewarding the model school's change team was carefully considered by the change leadership. Chapter Five includes details on how staff of the model school were rewarded and motivated.

3.6.2.2 Factors Affecting Implementation

Fullan listed nine factors affecting implementation and organized them in three categories relating to 1) the characteristics of the innovation, 2) local factors, and 3) external factors (Fullan and Stieglbauer 1991).

Each category has a number of factors, which are discussed below.

3.6.2.2.1 <u>Factors Related to the Characteristics of the Change</u>

Examining the real ***needs*** and priority is important to the decision about change direction. Studies show that implementation is more effective when specific needs are clarified. However, a precise need is not always clear in the initiation stage, but it becomes clearer as change is implemented (David 1989). The need for higher quality education, which the model school system was expected to provide, was clear. Parents and educators along with the change team believed strongly that a successful implementation of the model school project would lead to better education for the students.

Even though there is an agreement on the change needs, the ***clarity*** of the change's goals and the way to achieve them affects directly the implementation of the education innovation. Unclear changes can lead to anxiety amongst those who implement them. The change leadership of the model school made it clear that the main objective of the model school was to provide the students with better education that would lead to improving their achievement level. Therefore, everyone in the

school knew his clear goals, which were agreed upon with the change leadership and other team members.

Unlike simple education change, ***complex*** change promises to accomplish more; however, it demands more effort and time, and failure costs a lot. It seems that breaking complex changes into simpler ones reduces the failure risk (Fullan and Stieglbauer 1991). The model school change team knew that improving all the students' achievement levels was a complex task. Therefore, it was decided (starting from the second year of the initiation of the project) that model school should admit students of grade one only in order to trial with a smaller population with a better chance of enhancing their achievement level. A patch of students of grade two and grade three were admitted for one time in the first year of the project only.

3.6.2.2.2 Local Factors

This section analyzes how the organizational setting of the educational system affects the implementation process. Local factors include the Education Zone, the school principal, and the teachers. Some studies include education boards and the local community; however, in the case of the UAE, there are no such school boards for the governmental schools.

The Education Zone can be a supporting factor for education innovation or an obstacle in the way of implementing the innovation. Studies show that an individual teacher or a single school can implement an education innovation without the help of the education zone; however, this innovation will not spread to the other schools without the support of the Education Zone (Fullan and Stieglbauer 1991).

In the case of the UAE where the education authority is in the hand of the Ministry of Education, the system was not giving the Education Zones enough flexibility for innovation. However, it needed extra political effort from the Director of the Education Zone to implement some educational innovation, which did not directly interfere with the Ministry's regulations. As stated earlier in this section, the education leadership in the Abu Dhabi Education Zone sought political and financial

support from the local Government of Abu Dhabi. This was the most important step the Education Zone's Director took for the benefit of the model school project. In fact, after this step, the implementation of the model school project became smoother, because the resistance of change from the Ministry of Education decreased.

The principal in the school is either the main change agent or the toughest barrier in education innovation. Studies show that the school principals can strongly influence education change in the school, but they also show that principals do not play the role of the change leader (Fullan and Stieglbauer 1991).

I think one of the reasons why school principals do not play a stronger role in the change process is because they don't have enough skills in change management. A study in the U.S. estimated that only one in ten school principals were systematic problem-solvers (Leithwood and Montgomery 1984). The case in the UAE is believed to be worse, because school principals are not usually trained to be systematic problem solvers. Another study indicated that if the principal is involved more with teachers and understands their concerns, he or she will be able to provide support for the implementation of the new education projects introduced by the teachers (Leithwood and Montgomry 1984). This means that teachers and administrators at the school level can form a good change team if the understanding is there (See Principal's Role at the end of this section).

The change leadership picked a principal for the model school who was aware of the problem and believed in the role of the model school as an education innovation that would help in solving the problem of improving the national student's achievement level. Also, the principal believed that this complicated task could not be achieved without strong teamwork.

The teacher can influence education change individually or with the other teachers in the school. Individually, some teachers have more capability in bringing about successful implementation (Hopkins, et al 1998).

Also, the school climate affects the teacher's skills toward creating a new education innovation or implementing it. Collegiality, support, and trust among teachers is strongly related to the implementation quality. In such a school climate, learning among teachers will be more effective than in a school where no such relationship among teachers exists (Rozenholtz 1989) (see Teacher Role at the end of this section). The belief in the importance of teacher's role in implementing the model school project forced the education change leadership to select teachers who were committed and creative to participate in the implementation of model school project. Also, collegiality and teamwork among teachers became part of the school system. Collegiality in the model school saved a lot of money and effort, especially in the professional development where the teachers taught each other new instructional methods or innovative ways of solving daily problems in the school. In order to expand the benefit of each teacher's expertise in his subject, the school formed a committee for each taught subject. These committees were to develop the curriculum and invent new instructional methods.

3.6.2.2.3 External Factors

In the UAE, the main external factor affecting implementation is the Ministry of Education. The assumption here is that if the Ministry of Education and the school are working collaboratively in implementing the change, then it is most likely that the implementation is going to be successful. But if the Ministry of Education and the school are in two entirely different worlds and there is no collaboration and cooperation between the two education institutions, then it is expected that the implementation of the education innovation will face a lot of difficulties, which might lead to failure. In the UAE, the Ministry of Education is the educational policy maker, and the school is the executor of this policy. Caught in between is the Education Zone. The relationship between the ministry and the Education Zone was more in the form of episodic events than processes. Paperwork, not people work, connected the two sides. The leadership of the Abu Dhabi Education Zone knew that such a relationship did not support a successful implementation of the model school

project. The only way to influence the change project in a strong and positive way was through regular interpersonal forums of communication and sharing between staff of both sides (Fullan and Stieglbauer 1991). Unfortunately, such a relationship did not exist in the in UAE's Education system, and therefore the Education Zone turned to the local government of Abu Dhabi seeking the political and financial support for the implementation of the model school project.

3.6.3. Continuation

The third phase, **continuation**, has most often been called *institutionalization*, to represent whether or not the innovation has been incorporated into the routine way of going about schooling, and into regular budget, policies, curriculum guidelines, and the like (Horsley et al 1991). Institutionalization occurred when a change became a part of people's everyday behavior and beliefs (Curry 1992).

The term *institutionalization* seems inappropriate in the context of fundamental reform. Instead, fundamental reform is an ongoing process that is intended to promote constant growth of the educational system rather than a fixed stopping point for reform. However, institutionalization is still an essential concept when it comes to the specific education innovations that make up major reform. Successful institutionalization of new practices in major change projects is a source of motivation for those who implement it, which may encourage them to implement the next innovation (Horsley et al 1991).

There are a number of signs of institutionalization of education innovations. Institutionalization can be achieved to varying degrees over time and can be observed in many levels: the structural, procedural, and cultural (Curry 1992). At the school structural level, the education innovation was represented in many ways, e.g. assigning new roles and responsibilities, adding funds in the school budget, and writing the new innovation to school curriculum. At the procedural level, the policy and action involved in the innovation became the teacher's and principal's favored way of viewing the school. At the cultural level, school staff accepted the values

associated with the change which made them part of the school's organizational culture (Curry 1992).

There are a number of signs, which indicate that the model school project was institutionalized. The first one was the growing number of the model schools in Abu Dhabi Education Zone and in the other education zones in the country. The number of model schools in the Abu Dhabi Education Zone increased from one school with 223 students in the academic year 1994/95 to six schools accommodating 3,500 students in the academic year 2000/2001 (Al Bayan Newspaper Sept 9, 2000 and Al Ittihad Newspaper March 10, 2001). The other sign of being part of the educational system was that the Abu Dhabi Education Zone added to its hierarchical structure a permanent committee headed by the director of the Zone to look after the model school. Also, the model school budget became a normal part of the education zone budget.

There are many education change projects that were abandoned after implementation, which means that the new practice did not reach the institutionalization stage (Horsley et al 1991). Such failure reflects the complexity of the change process. Studies show that poorly implemented education change projects do not continue, but they indicate that only a small number of the well-implemented changes continue to the institutionalization stage (Fullan and Stieglbauer 1991). It is believed that the policy of limiting admission to the model school to grade one only helped in the institutionalization of the project in a way that the model school system implemented one new grade level every year. This meant that changes are applied on a limited target group before it was institutionalized.

There are several major reasons why education innovation was not institutionalized. (Later in this section there is more discussion on this issue.) The first reason was the lack of interest by the staff at the school level. If the teachers and administrators in the school paid little attention and gave inadequate concern to the implementation of the new innovation, it is most likely that this innovation would be part of the school system. The second reason is scarcity of funds. Money was spent

generously in the beginning and during the implementation, but, when the change approached institutionalization, funding declined or stopped. The third reason was lack of staff development and support of continuing and new teachers. New education change required new knowledge and skills. The case was even worse with new teachers who joined only during the institutionalization stage. Such teachers needed more support and training to participate in the education innovation. Finally, the lack of support and interest from the central office was a major reason for the failure of institutionalization. Such observations agree well with relevant findings reported in the literature by Fullan and others (Fullan and Stieglbauer 1991).

For example, the model school experienced the failure of institutionalization of some minor education changes. One of the minor changes that failed to be part of the model school system was creativity and critical thinking curriculum. The clear reason for the failure was that the teachers did not receive the required training before implementing the new curriculum, and some of them did not have the interest in teaching it. This became a valuable lesson that the school leadership learned. Successful implementation did not mean a successful institutionalization of the education change. Bringing the change to be part of the school system needed, proper planning and active participation of many people, and long lasting commitment especially from change leaders.

3.7. CONDITIONS FOR THE SUCCESS OF EDUCATION CHANGE

There is no specific prescription for successful educational change; however, the literature (Louis and Miles 1990, Miles 1987, Schlechty 1994, Fullan and Stieglbauer 1991, Stallings 1989) shows that there are a number of general conditions that help in the success of education change. Researchers do not agree on the importance of all of the conditions; however, I shall pick those which are believed to be more agreed upon among researchers and which relate to the UAE case.

3.7.1. Evolutionary planning

One of the conditions of successful education change is evolutionary planning. Evolutionary planning means developing a plan that may evolve through interaction between change leaders and participants of the change process. Research shows that the most successful education change efforts occurred in schools that adopted their implementation plans as they went along to take advantage of unexpected developments (Miles 1987).

This means that change leaders are expected to change plans when needed throughout the change process and therefore the education change planning process is flexible, not a tight scenario. Effective education change planning should avoid blueprinting approaches and instead have a strong evolutionary approach (Louis and Miles 1990). I think this is a valid argument because education change is "full of uncertainty" as described by Fullan (Fullan and Stieglbauer 1991, p. 40), and many unexpected factors affect the education innovation that occurs during the implementation process. However, it is essential to note that it should be based on a solid feedback. For this reason, change leaders should continuously seek feedback on the change process so that they can alter the plan when necessary. Evolutionary planning does not mean that change leaders do not plan for the change implementation, but they should develop plans that are flexible because substantial change projects do not run by themselves (Louis and Miles 1990). Seeking feedback was one of the major concerns of the model school leadership, if they were to rearrange the implementation plans based on the feedback. This was usually clear for the last grade the model school's students reach. The change leadership concentrated more on the highest grade in the school as compared to taking into account in a proper manner the feedback from the experience gained in the lower grades.

3.7.2. Staff Development

Change is not a simple task to manage. Many education change projects fail because the change leadership lacks adequate managerial skill. Change involves many skills such as team-building, creative problem solving, motivation. Therefore, it is essential that those who are planning to carry out an educational change project acquire the required skills to achieve a successful change.

An educational change process involves a lot of new ways of doing things and new ways of thinking, therefore, staff development becomes a central element in the change process. To be precise, staff development is not effective unless it is related directly to the requirements of the change process and combines pre-implementation training with assistance during implementation (Fullan and Stieglbauer 1991).

Teachers need more support and assistance during the implementation stage, not only during the initiation, because their doubts and concerns appear when they start to implement the education innovation. Not all methods of staff training are effective. Studies show, for example, that teachers learn best from each other; therefore, when teachers are trained as staff developers, they can be very effective in working with other teachers (Stallings 1989). Professional development is one of the five major changes in the model school project, and a detail section is written about this subject in Chapter Five of this thesis.

3.7.3. Monitoring and Solving Change Problems

All of the serious implementations of education innovations have problems (Louis and Miles 1990). To overcome implementation obstacles, change leaders need to keep monitoring and solving change problems. Monitoring, in this context, does not mean evaluation in the narrow sense, but it also means gathering data on different aspects of the implementation process. Such data is essential to the continuous process of problem solving which is one of the main functions of the change leaders throughout the change process. The success of the implementation process depends on the way of collecting and organizing information on how good

or bad the implementation process is (Louis and Miles 1990). Monitoring is helpful for the implementation process, because it makes information about innovative practices available for the professional development (Fullan and Stieglbauer 1991).

Such good practices can be available for all of the schools throughout the Education Zone. Schools can learn from the successes and failures of the implementation efforts of other schools.

Change leaders should prepare themselves for coping with all types of problems by developing their skills in dealing with change problems. Without the condition of problem coping, it is not likely that change would be successful. Change leaders should deal with problems of all types and sizes immediately and actively without delaying them. Delaying or denial of change problems are causes of change failure. One of the first major problems the model school project face was the low performance of third grade students whom the school admitted in the first year of implementing the model school project. It was not planned to admit third graders, but due to external influence, the students were admitted (see Chapter Four). Based on continuous evaluation, the change team noticed that third graders were adopting less of the new education system that was implemented by the model school. Accordingly, the change team decided to admit students of grade one, and third graders were then transferred to another school by the end of the academic year.

3.7.4. Support from Central Authority

Educational change is most successful when schools, education zones, and the Ministry of Education are actively engaged with each other. Lessons from the past show that rules and mandates from the central authority did not bring effective education change. Also, successful education innovation did not spread to other schools without the intervention of the central education authority (Fullan and Stieglbauer 1991). In addition, schools needed the help and support of the central authority to overcome the problems they faced.

Schlechty (1994) listed a number of conditions that need to be met in order to improve the central education authority and schools' capacity to handle effective education change.

First of all, both should develop a shared understanding of the nature of the problems that give rise to the need for the change. Second, they should produce a vision of a school in which every child will learn more than his current learning level. This vision should be accepted and supported by all of the schools. This will guarantee that the vision stays, even if the principal or other key leaders leave. Third, because the main target of education is the student, education change focus should be on the student. Fourth, central education authority should work with schools and among schools in the same education zone. Teachers should know what teachers in other schools are doing. Fifth, both the schools and the central education authority should encourage innovation and support those who try something and it doesn't work out. They should provide training and political support for creative education innovations.

The model school project is a good example of the support between the local educational authority and schools in the Education Zone. The point to be stressed here is that the Education Zone's authority is far less than the Ministry of Education's authority; however, the Abu Dhabi Education Zone gained its extra authority from the support of the local Government of Abu Dhabi. This support, which was given to the model school project from the Education Zone, was essential for the implementation of the model school.

3.7.5. Shared Vision Building

Any education change-leader must develop a mental image of the possible desired future state of the school before he starts the education innovation. This image, or *vision,* "may be as vague as a dream or as precise as a goal or mission statement. The critical point is that a vision articulates a view of a realistic, credible,

attractive future for the organization, a condition that is better in some important ways than what now exists." (Bennis and Nanus 1985, p. 89).

A vision guides and assesses the change process. It also can energize commitment to change by providing stakeholders (in the school, Education Zone, and Ministry of Education) with a common goal and challenge. Research and practice have demonstrated the important role that vision plays in schools (Barth 1993). According to Louis and Miles (1990) visions have two elements. The first is what the school could look like, and the second is of the change process, i.e. the general plan of how the school is going to achieve its ultimate vision. Studies emphasized a shared vision as an essential concept to the education change process, and it did much to guide the educational change project.

Owning the vision by school staff is critical and requires serious time investment, patience, and empowerment for success. Developing a vision is a joint process and it depends on the interaction among those who are related to the change project, whether they are school staff or the central education authority (Sergiovanni 1991).

Change leaders play an essential role in developing and sustaining a shared vision. They often develop a vision of the school by collaborating with all of the major stakeholders in the school community. They must regularly express the vision in word and deed and communicate it through mission statements and behavior. The mission should be reconsidered on a regular basis, incorporating changes and additions to reflect new circumstances, new opportunities, or new goals (Bennis & Nanus 1986 and Sergiovanni 1991). I think it is important that the vision be embraced and supported by the whole school community and not only by the change leaders. This will ensure that the vision stays, even if the principal or other key leader leaves.

Louis and Miles (1990) learned that even when the initial vision ideas spring from the principal (or even the district office), teachers, department heads, and

school-based specialists need to know they can influence the vision (and its actualization) in significant ways. The staff should be rewarded for contributing ideas relevant to the vision. Sharing the vision is not just a matter of exhorting staff to believe but also a way of sharing responsibility and accountability (Louis & Miles 1990). A shared vision was critical to those who participated in the implementation of the model school project, because they came from different schools that worked under different work environments. The change leadership held many meetings with the teachers and administrators of the model school. The main purpose of such a meeting was to develop the school's vision and the method of implementing the vision. What was clearly noticed was that many changes occurred during the implementation process based on the teachers' recommendations.

3.7.6. Availability of Resources

Implementing a successful education change in a school requires extra resources. Such resources are mainly time, assistance efforts, and money. In their study, Louis and Miles (1990) found that a school staff needs extra time to manage an education innovation. Typically, a school administrator spends 32% of his work time on managing the education change project, while the teacher spends 13% of his time engaging in change-related work. Of course these percentages may vary based on many factors including the project's size, complexity, and the resources available, however, there is no doubt that implementing an educational innovation needs extra time.

Also, change demands additional assistance resources for training, consulting, coaching, coordination and capacity building. The need for extra assistance resources is due to many complex change problems to be solved and new skills to be learned. Also, researchers show that money is an important issue to the change process, and a minimum level of funding is always needed (Louis and Miles 1990).

The change leadership of the model school treated resources as an essential factor of the success of the model school project. The resources include money,

time, and human resources. Time allocation for education and professional development for those participating in the implementation of the model school project are two of the five major changes in the model school (see Chapter Five).

Extra funding, beyond that normally available to government school, was essential for the required innovations to be implemented in the model school. Therefore, the change leadership did not implement the project before getting the required funds from the local government and from the school fees.

3.7.7. A School Principal's Commitment to Education Change

The school principal plays an essential role in the success of education change in the school. Studies suggest that school principals play specific roles in order to help in the success of the education change efforts (Senge 1990, Deal & Peterson 1994, and Sparks 1993). The major roles school principals should play are the following:

1) Encourage and support the development of a collaborative school culture, clear educational missions and processes, structures, and resources that allow educational change to flourish.

2) Shape the school culture through their actions, words, and deeds; what they get excited about; and the plans and activities to which they devote their energy.

3) Learn and understand the dynamic of the change process.

4) Have leaders in administration and the classroom who can overcome the obstacles and challenges that develop during the change process.

5) Provide high quality learning for all students, by initiating, implementing, and integrating programs that improve access to engaged teaching and learning for all students. They are concerned with issues of equity and access to powerful learning, particularly for those students most at risk of academic failure.

6) Encourage teamwork and facilitate the development and work of teams that lead school improvement initiatives.

7) Utilize the resources and expertise of parents, businesses, and social service and community agencies to foster the academic, emotional, and social well being of students.

8) Overcome resistance to change problems.

One of the early challenges faced at the model school was the selection of the school principal. The Education Zone leadership screened all of the school principals in the Education Zone, looking for a principal who was qualified to play all of the identified roles. The result was that no one principal could play all of the roles alone. Then the leadership decided to form a team of administrators and teachers headed by the school principal to implement the model school project. This issue is discussed further in the rest of this chapter.

3.7.8. Sharing Decision Making and Collaboration

One of the conditions of successful education change that is agreed upon among most educators is the teacher's participation in the decisions of the education change process. By 'sharing decision making' we mean allowing school staff to participate in the decision-making process that relates to the change project. When teachers participate in the decision making process of the education change project, they will identify problems, define goals, formulate policy, shape direction and ensure proper implementation (Mitchell 1990). Shared decision-making transforms schools into communities where the appropriate people participate meaningfully and constructively in decisions that enhance student-learning abilities (Bohac- Clarke, V and Brownlee,B 1995).

There are four major principles of shared decision-making. First, those who are most closely affected by decisions should play a significant role in the making and implementation of those decisions. Second, school staff should have more say about policies and programs affecting their schools. Third, those closest to the students will make the best decisions about the children's education. Fourth, in order to obtain an effective and long lasting education change, the people who feel a sense of

ownership and responsibility for the process should carry out the education change (Bauer, 1992).

Allowing teachers to participate in education change decision-making process will enable them to make decisions that support the change objectives they are trying to accomplish. To boost the effectiveness of teacher participation in the decision making process, change leaders may need to encourage collaboration among teachers while engaging in the decision making process.

I think when teachers are empowered to work collaboratively, they become a useful tool for the education change project because they focus their collective experience and expertise on change problems. This is clear in the model school where teachers worked collaboratively and creatively in introducing new educational ideas to solve the students' problems. In fact, many of the education innovations used in the other schools in the Education Zone were originally produced in the model school.

There are some negative side effects of which change leaders should be aware when letting teachers participate in the decision making process. The first one is the confusion in the roles and responsibilities a teacher might encounter when he participates in the decision making process for the first time. Johnson and Boles (1994) caution that people long accustomed to narrow roles and clearly defined responsibilities will find difficulty with the uncertainty of new roles and responsibilities. Some of the teachers in the model school faced the problem of confusion over their responsibilities in their first year in the model school; however, with the help of the school, the principal and other teachers in the school, they became able to succeed. Second, there may be the expected power struggle between teachers, administrators and supervisors.

Third, having a teacher involved in the decision making process might consume his time (White 1991). This may make him unmotivated or it may conflict with the teacher's other educational priorities. It is true that teacher involvement in

the decision making process in the model school consumed some of their time; however, allocating time in the school schedule and working in teams reduced this side effect.

Fourth, it increases teacher's accountability for outcomes of the change project, which may cause tension for the teacher (Bohac-Clarke and Brownlee, 1995). Again this was also true for the model school, especially in the first two years of the implementation when teachers felt the tension of the challenge of implementing a new education innovation that many people thought would fail. During this time, the change leadership played an essential role in reducing the tension.

Finally, sharing decision-making may make the teacher promote his hidden agenda at the expense of the change project objective (White 1991).

In order to utilize the advantages of sharing the decision making process, change leaders are urged to encourage a collegial and collaborative climate in the school, because it reduces professional isolation of teachers and allows sharing successful practices among teachers. Also, collaboration raises teacher motivation and opens the door for experimentation (Bohac-Clarke and Brownlee, 1995).

3.7.9. Teamwork

During the change process, change leaders should allocate all possible resources that help in the success of the change project. The strategy of team building is one of the resources that enhances the change process. Education change is often more effective if it occurs as a teamwork activity, because change requires more than just an individual effort. For teams to be efficient, members must have clear objectives, the will and ability to work together, mutual accountability, and access to the required resources (Estes & Owston 1996). In reality, teachers are isolated in many schools. They individually handle the education change responsibilities (Maeroff, 1993). Working together in teams often is a more effective way to accomplish important tasks. Teams have many advantages over individuals working in isolation. According to Sparks, teamwork has a number of advantages.

First of all, it produces more successful and more creative solutions. Then, teamwork enhances team members' motivation and responsibility for implementing the education change. Also, teams become part of the learning process of professionals in schools. Finally, it provides team members the needed support for solving complex change problems (Sparks 1993).

Maeroff justifies the importance of teamwork by saying that "Most employees want to feel that they 'own' their jobs and are making meaningful contributions to the effectiveness of their organizations. Teams provide possibilities for empowerment that are not available to individual employees" (Maeroff 1993 p. 514).

Effective teams do not develop by accident. Teams take time, skills, and knowledge to be successful. It is the education change leader's responsibility to build highly committed teams to ensure effective implementation of the education innovation. Change leaders should continuously participate in inspiring, motivating, and supporting team members (Estes & Owston 1996). High performing teams not only flourish under strong committed leadership but also in a school, where colleagues support each other in learning, risk-taking, innovation, and change (Senge, 1990).

Due to the importance of the teamwork to the education change process, change leaders should maximize the output of the school staff by spending more time and effort with them to produce an effective team. Also, it is essential to develop the skills of working within a team for each one of the school staff, including the school principal.

It is true that teamwork has the potential to produce more; however, some of the teachers tend to be more effective when they work alone. Smart education change leadership will combine the advantages of both work approaches for the benefit of the change project. Research shows that some successful education innovations started from a single teacher and spread all over the education districts

(Glickman 1991). Teamwork characterizes the work atmosphere in the model school from the initial implementation stages. The teachers know from the beginning that without the joint efforts of everybody, the implementation process will be a difficult task. The awareness of typical problems related to putting together a team and arriving at harmonized and effective teamwork is essential, and provide the basis to more productive output.

3.7.10. Partnership With Higher Education Institutions

Successful partnerships between schools and universities play an important role in effective school change efforts. There are many ways in which change leaders can draw from higher education institutions some positive support for their education change project. First of all, change leaders can benefit from previous research done by the universities in the field of education change. Previous information is essential because it helps change leaders learn from others' experiences before they start their education change project. Second, specialized university staff can help in evaluating the education change project and provide a professional and impartial feedback. Third, universities can help in meeting the intense requirement of the professional development of those involved in the education change project. Fourth, university staff can use their professional connections with other universities to seek support for the change project. I think in order to maximize the benefit of the higher education institutions, change leaders need to team up with professionals from the higher education institution from the initial stages of the change project. Unfortunately, there is no higher education institution in Abu Dhabi close to the location of the model school; however, staff of the model school benefited from the relationship between the Education Zone and the Education Department at the UAE university through the participation of some of the university staff in the professional development of the model school teachers.

3.7.11. The Real Will for Change

One of the most important conditions for the success of education change is the real will for change. Due to its complexity and uncertainty, the change process requires a strong personal will from those who lead and implement the change project. I think a process of this nature and throughout the different stages of the change process requires patience from all of those who participate in it.

3.8. REASONS FOR EDUCATION CHANGE FAILURE

Studying the failure of previous attempts at education change is essential because failure causes many problems. First of all, it depresses and discourages the change team, disenabling it to handle another change effort. Second, education change projects cost money, effort, and time, which means that all of these resources are wasted.

One of the ways of eliminating education change failure is to study the reasons of previous education change failure. Literature on education change discusses this issue in detail (Fullan and Hargreaves 1996; Hargreaves 1994; Hargreaves 1997; Hargreaves, Earl, and Ryan 1996; Newmann and Wehlage 1995; and Stoll and Fink 1996). This section summarizes some of the major reasons behind the failure of education change efforts.

3.8.1. The purpose of the change is not obvious

When it is not clear what the goals of the education change are and how the change is going to be implemented, it is more likely that the change project will not achieve its goal. In order to be focused and more productive, a teacher needs to understand clearly the objective of the education change. If the purpose of the change is not clear, then the teacher will stick to his old way and never change.

3.8.2. Very ambitious change is difficult to achieve

If the participants in the change process have to do many things that are beyond their capabilities, it is expected that they will not succeed in implementing the education innovation. Ambitious goals are welcomed in education; however, and before going into the implementation process, change leaders should consider their abilities as well as those of others who are going to participate in the change project. If the change is beyond the available abilities, then it is better either not to implement the change or implement only part of it, if possible.

3.8.3. The speed of change is a factor of change failure

Change should be implemented at a reasonable speed because changes made too quickly are difficult to implement and changes made too slowly will cause the teachers to become bored and will shift their focus to something else other than the change project.

3.8.4. Lack of resources obstructs the success of the education change

Change requires resources throughout the change process, from the initiation to the institutionalization. Some of the change projects are provided with the required resources, but when some positive signs of the innovation appear, the resources are withdrawn. This leads to the failure of the change. Major changes require money, time and effort. Without the needed resources, the innovation will not survive.

3.8.5. Lack of commitment to the change project

Change, as mentioned earlier, needs a lot of effort to succeed. Without strong commitment to carry out the change from its supporters and leadership, the change will not achieve its goals.

3.8.6. Resistance to change

It is one of the most common causes of failure in change projects. Resistance is discussed later in a separate subtitle in this section.

3.8.7. Change leadership

Success or failure of education changes depends partly on the change leadership. Again the issue of change leadership is discussed later in a separate subtitle in this section.

3.8.8. Poor reaction to the education change's complex problems

This is a main cause of failure. Solving change problems is not an easy task. Things that are not expected occur during the change process, and nobody has previous experience in solving them. Such complex problems take place in education chase, which is already a more complex system. Ineffective reaction to the change problem as they arise will make it more complicated for the change to survive.

3.8.9. The adoption of education innovation for non-educational reasons

This does not necessarily lead to successful change. Some of the politicians' support an education change for political reasons, such as gaining more voters during the election, and once the election is over either they decrease the support or withdraw it completely, which is more likely to lead to change failure. However, education change leaders need political support.

3.8.10. Lack of understanding of the organizational culture of the school

Lack of understanding of the organizational culture of the school in which the change is implemented will, most likely, lead to implementation failure. Schools tend to copy successful innovation without considering the different environment in which the innovation was successful. Allocating the same resources and applying the same implementation plan by itself does not necessarily lead to successful change. Change leaders should look at other essential factors of successful implementation, including the schools' social structure and staff collaboration.

3.9. RESISTANCE TO CHANGE

Resistance to change is one of the major challenges facing education change leaders. Many education change projects fail because teachers resist accepting the education innovation. It is known, that even if all of the appropriate change management procedures are applied in any organization, there will be a resistance to the change (Newstorm and Davis 1993). Resistance to change becomes almost natural whenever an innovation is introduced to any organization. Some researchers think that employees resist change because it pushes them out of their comfort zone where they have their own ways of viewing and doing things, and where they have normal relationships (Fiorelli and Margolis 1993). This may be true; however, there are many others reasons behind teachers' resistance to change, which will be discussed later.

The purpose of this section is to give an overview of the resistance to change and discuss a number of related issues, including defining the resistance to change, types of resistance, causes of change resistance, strategies to eliminate side effects of resistance to change, and the change leaders' role.

3.9.1. Definition of Resistance to Change

Researchers view resistance to change differently. Some give a broad definition by saying that resistance is a *fearful response to change* (Marshak, 1996; Valencia & Killion, 1988). Others think it is a *natural part of any change process* (Theron & van der Westhuizen, 1996). A definition of resistance to change is that it is *a response to an interpersonal or organizational change that has the potential of personal impacts* (Friend & Cook, 1996). Newstorm and Davis say it is *any employee behaviors that seek to prevent the implementation of the change* (Newstorm and Davis 1993). I think the last definition is most suitable because it of its broadness and wide application.

3.9.2. Types of Resistance to Change

In order to deal effectively with resistance to change, change leaders should understand types of resistance to change, because not all resistance to change are negative, as we will see later in this section. Researchers classify resistance to change differently. Newstorm and Davis, for example, say that resistance to change has three types: logical resistance, psychological resistance, and sociological resistance. *Logical resistance* arises from the desire to preserve the status quo. *Psychological resistance* is caused by fear of the unknown, mistrusting management's leadership, or feeling that their security and self-esteem are threatened. *Sociological or group resistance* appears if the employees from the same political coalitions or labor union or the same community feel that the change is challenging group interest, norms and values. Sociological resistance takes the group form. Change leaders, therefore, should understand the resistance type in order to treat it effectively and make teachers accept the change cooperatively (Newstorm and Davis 1993).

Janas and Boudreaux (1997) also say that there are three types of resistance, but from a different view. They say the three types are aggressive resistance, passive-aggressive resistance, and passive resistance. The first type, *aggressive resistance*, is the easiest type to identify, because it's obvious. For example, a colleague expresses his resistance verbally by saying that he is not going to participate in the change process. The second type, according to Janas and Boudreaux, is the *passive-aggressive resistance*. In such cases, staff members appear willing to change, but change never takes place. Teachers who experience passive-aggressive resistance keep promising to participate in the education change project but never do effectively. Finally, there is the *passive resistance*. In this type, people look like they will wholeheartedly accept, until action fails to take place. Staff members willingly discuss change, and may in fact seem enthusiastic, but never follow through. This is, according to Janas and Boudreaux, the most difficult

form of change resistance, because change leaders cannot detect it easily (Janas & Boudreaux 1997).

3.9.3. Reasons for Resistance to Change

It is essential that change leaders understand why people are refusing to implement the innovation. Knowing the reasons is not only to overcome the resistance but also to learn more about the reality of the new project to be introduced. Resistance can be productive, logical, and serve the needs of the education system. It helps to prevent the school from mistakes change leaders do not see (Fiorelli and Margolis 1993). This means that it is not always true that resistance to education change is a response of uncaring teachers, as some may think. Therefore, change leaders should not only track resistance to change to overcome its side effects but also to learn more about the unknown weaknesses of the education innovation which they are implementing.

Literature on the causes of the change resistance reveals many reasons. One of the reasons of change resistance is the nature of the organizational structure. Traditional structures, systems, and procedures in the education system support the status quo (Fiorelli and Maegolis 1993). Any education change efforts that threaten this traditional system will face resistance from all levels within the education organization whether it is a school, an Educational Zone, or the Ministry of Education. The same applies to the teacher. Teachers become comfortable with their ways of doing things, and their relationships with others. Change, however well justified, threatens all this. Thus teachers are likely to resist change because it pushes them out of their "comfort zone." (Fiorelli and Maegolis 1993).

Teachers may resist the education change as a result of the nature in which the change is introduced (Newstorm and Davis 1993). In terms of the nature there are a number of things involved. Teacher may resist change if they feel that the nature of the education change is violating their moral belief (Fiorelli and Maegolis 1993). Or,

they may resist if the change project requires efforts and skills beyond the teacher's limits. In this case, change leaders should consider the appropriate resources to improve teacher skills required for the implementation of the new education project and allocate the required time span.

Teachers sometimes resist change, not because they don't want to change, but because the change project is not promising and has not proven to be successful where it was implemented. There are many change efforts that are ambiguous, do not offer adequate evidence of effectiveness, and are not systematic enough to resolve the present problem (Greenwood, Carta, and Hall 1988).

Teachers may resist, as mentioned earlier, because of the method in which the education change is introduced. One of the ways of introducing education change that causes resistance to change is introducing it by force. That is, teachers are forced to implement the education change without it being discussed with them. The other way is introducing the education change quickly before everybody is prepared for it. Teachers are expected to resist implementing the education change if it is introduced this way.

In the literature of resistance of change, many researchers speak about loss of power as one of the reasons of resistance to change (Margolis 1991). I agree with this; however, I don't think this is applicable to the UAE situation where education is centrally managed, and teachers do not have authority to make major changes in the education system.

3.9.4. Eliminating the Side Effects of Resistance

It is crucial that change leaders keep an eye on change resistance throughout the change process phases and develop strategies to overcome the change resistance problems, which may interrupt or weaken the change process (Friend and Cook 1996). Change leaders should know that previous experiences show that overcoming resistance is very important. It is not an easy task, and yet they need to learn the

strategies that help them in eliminating the negative effects of resistance to change (Clift, Holland, & Veal, 1990).

3.9.5. Strategies for minimizing resistance of change

A review of the resistance to change reveals a number of strategies that help in preventing or minimizing resistance of change. The following strategies concentrates on the change leader's role in eliminating resistance to change of teachers and other education change's participants.

3.9.5.1 The awareness of the change process's difficulties

As stated earlier, resistance to change is a natural product of change, and missteps and setbacks are common (Gallegos 1994). Therefore, change leaders need to understand the reality of the resistance to change and be aware of how to overcome it.

3.9.5.2 Teacher participation in the change process

Including teachers as participants in the education change project in formulating education change objectives and deciding on courses of action is more likely to increase commitment to an outcome than enforcing ideas from the higher authority (Combs 1988). Normally, the traditional school system tends to "control" teachers, while effective schools empower teachers and actively encourage their participation, which produces stronger commitment and less resistance to education change (McCarty 1991).

3.9.5.3 Change leaders' support

Due to the difficulties of implementing education change, teachers need continuous support in understanding the education innovation and overcoming change problems (Khan 1995). If they don't receive proper support, teachers' enthusiasm to the change project will diminish. Also, direct and clear information that teachers receive about their effectiveness related to the change implementation motivates them to achieve more of the change objectives (Combs 1988).

3.9.5.4 Understand change from the teachers' perception

Teachers tend to behave according to how they see and feel things. Therefore, a teacher who sees the proposed changes as opposite to his interests is more likely to resist. Without seeing things from the teachers' perspective, change leaders are not as likely to correctly predict teachers' behavior. Change leaders should seriously take care of addressing with fairness and dignity teachers who are negatively affected by the change. Change leaders can improve their understanding to teachers' resistance to change if they answer questions such as the ones in the following list from the teachers' perspective (Fiorelli and Margolis 1993):

- To what degree will the changes benefit or harm me?
- What is the probability of my effectively making the changes?
- What will others think of me if I succeed or fail?
- Do I have the time and resources to institute the changes?
- Will I get the support I need to effectively make the proposed changes?
- Do I really understand the proposed changes?
- How demanding are the proposed changes?
- What are the consequences of making or not making the changes?
- Will the education authority listen and act on my concerns?
- Can I return to the old ways if the proposed changes fail?
- Ultimately, how important are the proposed changes to me?
- Will these changes make life easier or more difficult for me in the short and long term? (Fiorelli and Margolis 1993).

Those are some of the questions the teacher might ask himself and which reflect his real concern. In order to clarify why teachers may resist change, change leaders are urged to think of such questions and answer them from the teacher's

point of view and then try to come up with ideas that help them in taming the teachers resistance to change.

3.9.5.5 Encourage trust and risk taking in the school

Trust between change leaders and teachers can enhance teachers' commitment to the change project and reduce its resistance. Activities such as discussing ideas, respecting teachers views, and encouraging experimentation help in building trust between teachers and education change leaders, because implementing an education innovation is difficult to impossible in a school environment where open communication, mutual trust and risk taking are not nourished and actively encouraged (Fiorelli and Margolis 1993).

3.9.5.6 Focus on and reward what is important

Teachers' rewards during the difficult time of implementation enhance their commitment and reduce their resistance to the change project. I think one of the strongest rewards is when the teachers see the positive effect of the change project on their students' outcomes. Resistance is less likely when teachers view proposed education innovation as making their lives easier, more meaningful, or more productive in meeting their educational goals (Fiorelli and Margolis 1993).

3.9.5.7 Introduce achievable education change

Teachers should understand that the change is achievable. Their resistance will appear once they discover that change is unobtainable (Janas & Boudreaux 1997). Change leaders should make a balance between big changes that make big differences and small changes that do not reflect visible differences by breaking down big change efforts into smaller ones that can be achieved with fewer obstacles.

3.9.5.8 Eliminate barriers to change

In order to reduce teachers' resistance, change leaders should eliminate barriers to change. Usually barriers are either individual or organizational. Organizational barriers include rules and regulations that are used in the schools. Such rules

sometimes contradict the change process and make it hard for teachers to continue the implementation of the education innovation (Combs 1988). A strong central education authority, such as in the UAE, puts even more pressure on sticking to the old formal rules. Therefore, change leaders should deal with rules that hinder the change process with the higher authority before the teachers start implementation.

Individual barriers to education change include negative teacher perceptions, lack of awareness toward the need for change, and lack of critical skills required for the change effort to be successful. Therefore, professional development is crucial for the success of the change process. It helps in minimizing teacher resistance and gaining the support and the commitment of teachers. It also demonstrates the change leader's long-term commitment to the seriousness and importance of the change effort.

3.10. EDUCATION CHANGE LEADERSHIP ROLES

Education change projects, as any other projects, require a leadership because simply nothing will happen without leadership (Deal 1990). It is not only a leadership, but also a strong leadership that is critical for the success for the implementation of education change projects (Miller 1988).

Some researchers have reported the importance of the school principal leadership to the change process (Duttweiler & Hord, 1987). Others show the important role of the district-level leadership in bringing about change and improvement (Coleman & LaRocque, 1990). Some of the studies stress the teacher's leadership of the change process (Busick and Inos 1994). I think education change leadership is not restricted to people occupying particular positions. Any person who can deliver the leadership function is a leader (Block 1987). However, studies stress a team leadership rather than a single leader (Mortimore et al, 1988). I think an education change leader can be a teacher, a school principal, or one of the education district's staff, including the superintendent himself. However, a team which includes staff from the school and the education district can be a more effective

leadership in implementing the education change, because isolated leadership is unlikely to implement an effective education change (Murphy 1999).

As stated in the beginning of this section, the literature review on education change management includes general guidelines for change leadership. The following section of the literature review, however, discusses the role of specific players in the education change leadership. They are the education zone's director, the school principal and the teacher.

3.10.1. The Director of the Education Zone's Role

The leadership of the superintendent or education zone directors, as they are called in the UAE, can do many things to encourage education change; however, there are a number of major roles that are related to this position. First of all, creating a culture of change within the education zone is essential. In other words, he develops an atmosphere that encourages schools to change. He can do so by developing relationships with principals as his ally for change, delegating extra responsibilities to the principals, challenging principals and teachers to create innovative ideas, and making suggestions for education improvement (Paulu 1988).

Murphy and Hallinger 1986, reported other activities for building a change atmosphere that superintendents engage in. The activities include: being available to speak to and communicate with staff; having an open-door policy; never being too busy to interact with staff and exhibit interest and support; being a team player and building coalitions, team work groups, and committees to address issues; being concerned about staff and visiting schools to support staff morale; being a problem solver by securing rapid solutions to problems and cutting through red tape (Murphy and Hallinger 1986).

Another major role an education zone director can play and that supports change is allocating the required resources of the change process. The resources are not only money but also time, people, material, existing equipment, and assistance (Boyd 1992).

Also, an Education Zone Director plays an active role in monitoring change and improvement efforts. He does so by school and classroom visits to inspect and to assess progress in the implementation of new education innovation (Pollack, Chrispeels, Watson, Brice, & McCormack, 1988).

I think it is essential that the Education Zone Director, as a change leader, prepare and train second line change leaders to fill his position if he leaves the position for any reason. This will ensure the continuation of the education change project.

There is one final critical role that requires a lot of effort from the director and his staff. It is the role of facilitating the transferring of a successful change from one school to another within his Education Zone. This role by the Director of the Education Zone will help in spreading the successful education innovations among the schools in the same education zone.

3.10.2. The Teacher Role in the Change Process

Teachers play a critical role in the success or failure of educational change (Busick and Inos 1994). The logic behind this is simple. Teachers are the closest people to the students who are the ultimate targets of the education change; therefore, it is crucial to consider the teacher's role in the change process. Teachers are more aware of the student needs and conditions than any other staff in the school or in the school district, and, eventually, they hold a powerful impact on the transformation of student learning. From this we can say that teachers should participate in the leadership of the change process, if change leaders wish to have a positive impact on the teaching/learning process at the classroom level. It is essential that teacher leadership and administrative leadership work in collaboration to implement an effective education change (Miller, 1988).

3.10.3. The School Principal's Role

A school principal's role is crucial to the success of the education innovation implementation. Studies show that the school principal is a central element in implementing an effective education innovation in the school (Fullan, 1991; Hansen & Smith, 1989). The reason behind the importance of the principal's role is that the school principal is the leader of the teachers who are the main players of the change process. However, his position as a leader of the school by itself is not enough to be an effective change leader. Studies identified that the primary determining factor of excellence in schools is the skillful leadership of the individual principal (Task Force on Education for Economic Growth, 1983). Hence, knowing how to manage an education change is an essential skill for the school principal who wants to implement an effective education innovation in the school.

As with any change leader, a school principal has to play certain roles to ensure the success of the change implementation. First of all, a school principal needs to develop sense of mission and values about what the school should be and discuss this with school faculty staff, and then deal with conflict that usually occurs during the change process (Madden, Livingston, & Cummings 1998).

Second, a school principal needs to act as a change facilitator, not "manager of status quo". Many education change processes fail because of the principal's resistance to change (Frederick, 1992). If he acts as a change facilitator, he will be a strong advocate for the change process and will utilize all of his efforts to implement the change in a successful way. However, to be to an effective change facilitator, a school principal needs to improve his change skills by the proper professional development.

Third, a school principal needs to create and maintain a sense of trust among teachers and administrators in the school and create a professional community and networks for communication within the school (Murphy & Louis, 1999). In doing so, principals often have to develop skills of collaboration, learn to empower teachers, and learn to share power with them (Wasley, 1989). For principals, this

involves a balancing act of knowing when to be directive and when to step back and allow teachers to direct reform efforts (Leithwood & Jantzi, 1990). In order to do this, principals need to be willing to take risks associated with losing some of their control (Prestine, 1993).

3.11. CONCLUSION

Education change is complicated, and there is no specific way to implement the change. However, from the literature we can conclude a number of lessons that can be a guide for the education change leaders. The lessons are imported from previous education change experiences and are collected from the works of different researchers (Fullan et al 1992, McLaughlin 1990, and Busick and Inos 1994).

Education change process needs to be in the experts' hands. Education change is a complex process that needs special handling. And, if there are no change experts, change leaders are urged to build up the awareness and capacity of individuals involved in the change process. This means making the change process accessible not to leaders only, but to the other members of the change team also. For the model school project, the complex part was allocating the needed resources and taming the resistance facing the project, which was obtained with success. The rest of the education innovations in the model school were not hard to implement, because the teachers who originated the innovations implement them in the school.

Education change requires flexible planning. It is important to plan the change project; however, it is essential that the plan not be rigid. Change leaders are not required to stick to their early ideas of how the change will be implemented. There are a lot of unexpected events that occur during the change process, which urge the change leader to rethink his/her plans. Every year the model school change team used to revise the implementation plan to suit the new situations that occur during the academic year. For example the plan of recruiting teachers was changed drastically based on the observation of the change team (for more detail see Chapter Six).

Problems are part of the education change process. No education change occurs without problems. If the problems are not solved, change leaders might have less conflict, but they will not succeed in the change project. Change leaders need to master the problem-solving skills before approaching change problems. Also, they need to deal with problems as learning opportunities that sharpen their skills in coming up with creative solutions. During the initial implementation stages, most of the model school staff meetings are spent in discussing implementation problems. As time passes, the staff become more competent in solving certain implementation problems, and the staff meeting agenda includes less discussion of implementation problems.

Education change is resource-hungry. Major education change consumes a lot of resources, which include money, time, and effort. It is essential to predict such resources from the beginning; otherwise a time will come when there are no resources left to carry out the change project.

Education change requires both individual and collaborative efforts. It is true that both have positive and negative sides; however, past education change experiences show that schools that have successful education innovation have the capacity to work in clusters, but they also have the capacity to simultaneously respect the individual as a total person. In the model school both the individual efforts and the group efforts were respected, because it was observed that both approaches contribute to the success of the school.

Education change requires sharing decision-making. When all participants are involved in the decision making process, they will have the legitimacy and power to take necessary steps.

Effective education change is implemented locally. The implementation of an education innovation takes place daily by teachers and school principals, not by others in the central education authority far away from the implementation site.

Forced education change results in resistance. Successful education change occurs naturally and willingly, as participants develop the necessary skills and share a deep understanding of the innovative solutions. Forcing change on teachers will result in resistance.

Detailed vision comes later. A detailed educational vision is important; however, a premature one can blind. It is inappropriate to plan for everything in advance, since visions often come from reflection after or resulting from action. A shared vision evolves through dynamic interaction between the change leaders and other participants in the change process. The discussion will be far more realistic than if change leaders had started with the concepts in the absence of trying them out.

Education change occurs when there is collaboration between the school and central education authority. There should be a dialogue between the school and central education authority. Studies show that working in isolation does not lead to an effective change that reflects on the students' performance (Fullan 1992). Also, an individual school can become highly collaborative despite the district they are in, but it can't stay that way if it's not being supported.

Imported change projects do not always fit. Imported education changes from other education systems that do not address the real needs, context, and culture tend to eliminate the implementation success of the education change project.

An education change never sticks without institutionalization. Change leaders tend to leave one education innovation to another when they see first signs of success, which cause the change to fail. First signs of success are misleading, and change leaders should stay leading the change project until it becomes part of the education system.

There is no specific way to implement change. Research on education change implementation does not provide a specific step-by-step way of implementing

change. Rather, the research provides broad guidelines with details that vary with each school context.

Political support is necessary for some education change projects. Change in any organization, including the school, requires the support of the higher authorities. Most of the support is needed to allocate the resources for the change project and to safeguard it from the resistance. However, change leaders need to be careful of some of the political support that is provided for political reasons only as the support can end when the politician achieves his political goals.

Resistance to change is a natural part of any change process. Change leaders are urged to prepare themselves to deal with the expected resistance during the change process and should not always treat the resistance to change as a negative thing, because sometimes it reflects some negative sides of the change project.

In brief, if identified and managed correctly, resistance can actually become a force for improving professional development, enhancing program innovation, and providing rich opportunities for reflection, growth, and renewal. This can be aided by a three-step process: being aware of resistance, identifying sources and types of resistance, and developing and applying proactive strategies for managing resistance (Janas & Boudreaux 1997).

Chapter Four

ORIGINS OF THE MODEL SCHOOL PROJECT

4.1. INTRODUCTION

The education quality in Abu Dhabi Education Zone's schools was below expectation. Both those who work in the educational field and people in the community reflected this fact (Abu Dhabi Education Zone 1993). I agreed with this fact especially when we compared other development, which took place in the country with the progress achieved by the educational system (see chapter two). Economically the country progressed and achieved a high level of economic growth, which was reflected on the living standard. Education on the other hand was not able to fulfill the requirement of the economic development. UAE economy was prepared for the 21st century global economy while our school provided the country with low achievement students whom, it was felt, could not survive with the global changes. This concern made us in Abu Dhabi Education Zone think seriously about how to improve the quality of the school output in order to support the community with high achievement students. Our thought drove us to establish a model school which aimed at providing the community with higher quality education to suit the future economic and social needs.

This chapter explains the rationale behind the model school project. Before the detailed discussion on the model school project, this chapter starts with a brief theoretical background on school effectiveness literature and an overview of education improvement in the UAE.

4.2. SCHOOL EFFECTIVENESS

Low achievement is a strong sign of the failure to improve the school quality, which has been identified as one of the most serious problems facing countries, particularly third world countries (Chapman 1990; Lockheed et al 1991). Among the main causes of the decline of school quality is the decline of the teacher's quality and his work life (Snyder 1990). A popular study conducted in the early 1960's demonstrated that student's achievement generally was not affected strongly by the school system. This means that school could bring little influence upon student's achievement (Coleman 1966), but the social background, according to Coleman, is the main element that influences student's achievement. However, studies in the past two decades in school effectiveness demonstrated different opinions. These studies indicated that school makes a difference to the student's achievement (Reynolds et al 1994). In fact, sometimes the school influences one subject more than another. For example, the variation in reading performance due to the school system influence was found to be four times more than due to the home background (Mortimore et al 1988). Some studies were not only comparing academic effectiveness between schools but even between departments within the same school. Out of 18 schools, the school which ranked number one in math ranked 15 in English (Smith and Tomlinson 1989).

Even though the studies on school effectiveness have not produced an identical list of characteristics of effectiveness, there are some overlaps of several characteristics. Edmonds lists five ingredients of an effective school: strong administration leadership, high expectation for children's achievement, an orderly atmosphere conducive to learning, an emphasis on basic skills acquisition, and frequent monitoring of student progress (Edmonds 1981). Some researchers think that parent involvement and support is another character of the effective school (Tomlison 1980). The major factors of school improvement that appeared in some studies are instructional material, time spent in school, teacher level of education, teacher training, and salary (Fuller 1987, Lockheed and Verspoor 1991, Haribson

and Hannshek 1992). Some studies stress teacher and management collaboration and collegiality, because they have a direct relation with student achievement. Proper relationship with teachers also increases teacher motivation which reflects positively on the whole school climate (Harris 1996). In their valuable review of research in the field of school effectiveness, Purkey and Smith believe that the most important elements of an effective school are:

1) Teachers' autonomy in determining the exact means by which they address the problems of improving academic achievement.
2) Leadership that initiates and maintains the school improvement process.
3) Keeping the school staff stable. This means that successful teachers will stay together and maintain school improvement process.
4) Curriculum articulation and organization.
5) Staff development, especially in the fields that are related directly to the development of instructional programs.
6) Parental involvement and support.
7) School wide involvement and support.
8) Maximizing learning time.
9) Educational authority support.

(Purkey et al 1985)

School work environment seems to be an essential factor in the success or failure of a place of learning. The effective school work environment should be characterized by collaborative planning, sense of community, clear goals and high expectation and discipline. (Purky et al 1983).

The previous thoughts are suggested groups of different factors that help in improving school quality; however, there is no one specific combination of variables which is agreed upon by educationalists that improves school quality. Some of the

variables may have strong positive relation with school improvement, while in another school they may have a negative effect (Brookover et al 1970). Therefore, it is essential that the education planner has in mind that school improvement factors that suit one country might not be significant in another one.

4.3. EDUCATION IMPROVEMENT IN THE UAE

Public education in the UAE has been improving quantitatively and rapidly in the past two decades (see Chapter Two). However, studies show that the quality of the education services in the governmental schools are below expectation and face public criticism (Abu Dhabi Education Zone 1993). Like any other country, people in the UAE are demanding better education for their children. In other words, there is a demand for educational improvement in the education provided by the governmental schools. Private schools tried to fill in the gap but could not because of the lack of resources and the absence of strong educational regulation that govern these schools. Studies that evaluate the educational system recommend the introduction of many new changes into the system. The Ministry of Education attempted to introduce new educational projects; however, the lack of resources did not allow many projects to survive.

The Abu Dhabi Educational Zone strongly advocates the need for improving the educational system. In order to make the steps toward educational improvement, the zone conducted a comprehensive study to explore and diagnose education in the Abu Dhabi Zone. As expected, the study revealed many weaknesses in the system, which the zone cannot improve with the available resources. The Education Zone authority decided to start implementing the improvement project only at the lower primary stage.

Therefore, in the academic year 1994/95, the Abu Dhabi Educational Zone established a model lower primary school aimed at improving the quality of education by introducing new ideas in the field of education in the UAE. The model school adopted a number of changes that studies had proven to have positive effect

on the students' academic achievement. The changes are in the fields of teacher motivation, student motivation, education materials, teacher professional development, and time allocated for education (see chapter five).

4.4. Educational Conditions in the Abu Dhabi Educational Zone

When I was appointed as a director of the Abu Dhabi Educational Zone in 1992, I had little experience in the field of educational management, and I was not aware of the reality of the educational situation and the barriers impeding its development. Nor was I acquainted with the pupils' level of achievement. However, I had always heard about discipline problems. I therefore started researching and reading through academic research, exchanging idea with specialists in the field and conducting numerous visits to schools during which I discussed the positive aspects of the educational field and the hindrances impeding its development with both teachers and administrators. I then started to worry about our educational institutions, the hardships they encounter, and the problems our pupils face. As a result and in order to establish a firm and realistic description of the situation, I decided to carry out a study about the pupils in our schools. That was the content of the Administrative Decree number 109 issued on the 15/6/1993 (Abu Dhabi Educational Zone 1993). The decision was to create a committee of competent teachers and supervisors working in the Abu Dhabi Educational Zone who would investigate the real situation of national pupils. The study investigated the national pupils' achievement level and its relationship with the curriculum in its different aspects: goals, content, teaching methods, teaching aids, educational activities, and evaluation.

The study focused on three basic components: analyzing the mid-term exam results, the syllabus, and the results of the surveys focusing on the two major human factors of the educational process, i.e. the teacher and the learner. The study targeted all of the registered national pupils in the Abu Dhabi Educational Zone. It focused

on a sample of 10%. It was based on first and fourth primary, as well as first secondary grades. This choice was based on the assumption that these levels are starting points for the three different stages at which weaknesses are often diagnosed.

Data was collected from different sources for this purpose. It was retrieved from the exam results of the chosen sample classes, curriculum analysis of the sample subjects at the chosen levels, and four specially designed surveys. The surveys were designed for teachers and supervisors, school principals, parents, and first secondary pupils.

The outcome of the study explains, to a high extent, the real educational situation in the educational zone. It shows many serious educational problems which negatively affect the educational system as a whole. To our great dismay, the study showed that about 72% of UAE national student experience some sort of learning problems, in particular in terms of achievement level.

Furthermore, the study revealed that parental involvement with the school was weak. Only 9% of sample parents visit the school regularly while only 55% of them observed their children while doing their homework. The study exhibited a number of barriers facing the teacher; for example, lack of in-service training, overload timetables, and low salaries. Teachers complained about the old school buildings which do not contain necessary equipment and teaching aids.

As a final step, the study indicated a number of essential recommendations. It suggests the adaptation of a longer school day so the students can do some of their homework at school, under the teachers' supervision. Also, the study recommended reducing the number of students in each classroom, as well as introducing new teaching methods. Another important recommendation was the establishment of a model school that provided better educational services for the national students to pilot proposed changes. The study urged that the teachers should not handle extra administrative work and they needed positive motivation.

4.5. THE MODEL SCHOOL PROJECT

Based on the results of the study and the negative aspects, which were observed, I decided to establish a model school starting at the lower primary levels of grade one to grade three. The aim was to establish a school to minimize all of the negative aspects pointed out by the study. The school was established in 1994/1995 and provided places for 223 students. During the preparatory period, I formed an internal committee of supervisors to study the project. The committee held six meetings (Internal Document No 2 1994b). The members visited some educational institutions and collected ideas from the teachers and the educational experts. It further determined which fields required more detailed study in order to come up with a whole plan for establishing the model school. The plan consisted of the goals, the resources, the methods (to achieve the goals), the features of the project, and the student selection method.

4.5.1. The Goals of the Project

The study set the following goals for the model school project (Internal Document No 2 1994b):

1) To improve the pupils' achievement in the lower primary schools in the Abu Dhabi Educational Zone.

2) To emphasize some of the local cultural heritage (obedience to elders, compassion towards children, hospitality, etc.)

3) To encourage pupils' self reliance by providing a healthy educational environment based on free initiative taking that would enhance creative thinking and skill development.

4) To discover the pupils' major inclinations and aptitudes and nourish them by continuous care.

5) To activate the role of the teachers, the pupils, and the families by making it more effective, providing a peaceful learning environment for the pupils,

reinforcing collaboration with the family, and allowing the teachers more freedom.

4.5.2. Resources and Methods

The committee believed that proper resource allocation was very important for the success of the project. The resources included administrative staff, including the school principal, the instructional staff, the school building, the education materials and teaching aids. The committee also stresses introducing new teaching techniques as one of the resources of the model school.

4.5.3. Administrative Staff and Teachers

The committee suggested that the administrative staff should be selected carefully and trained in advance to better their performance. In addition, a special criteria should be established in selecting qualified teachers with outstanding performance.

I presided over a committee for teacher selection; its role was to interview the candidate teachers for the model school. In order to motivate the teachers and the administrative staff, we decided to apply a number of strategies. The first one was to provide a good social and educational atmosphere so as to strengthen the relations among the teachers, with the parents, and the administration through meetings and excursions. The second was to encourage among the teachers the feeling of belonging to the school community. The third was to avoid overloading teachers with administrative tasks. The fourth was to hold training sessions run by experts in the field to increase the teachers' professional development. Finally, we decided to pay a two thousand-Dirham allowance, since the school adopts the full day system which is about 3 working hours daily. (A year later it was increased to reach 2500 Dh) (Internal Document No 3 1995a).

4.5.4. School Building and Education materials

A committee from the educational zone's officials, including the school's Principal, was formed to discuss the following (Internal Document No 2 1994a):

1) The school facilities
2) The teaching equipment and materials
3) The location of the school

The committee visited many school buildings in Abu Dhabi, then chose one located in a district mainly inhabited by nationals. Although the committee had selected a school building that didn't comply with all the necessary requirements. It lacked the gym and sufficient playgrounds. Nonetheless, the committee decided not to delay the project.

In view of all the needs, the Education Zone provided the school with the best available and efficient education materials such as TV sets, videos & projectors, a computer lab, and a mini zoo (domestic animals). Specially designed classrooms for carpentry, electricity, etc. were started for extra-curricular activities. Since we intended to adopt a cooperative learning methodology, the classrooms were equipped with round tables.

As the school was to adopt the full day system (7:30 am to 4:30 pm), the Education Zone provided pupils with two meals (breakfast and lunch). As soon as the Education Zone realized that the meals prepared out of the school do not cater to the pupils' needs, it was decided to equip the school with a school canteen. A special health committee worked to guarantee that hygienic and nutritive criteria were both respected.

4.5.5. Features of the Model School

The study determined that the following should be features of the school (Internal Document No 1 1994a):

1) The time allotted for the model school (full day system) would provide more time for the remedial work weaknesses, caring for outstanding pupils and working on consolidation assignments under the supervision of the teachers. In other words, the school system would provide specialized care for the students.

2) By doing the homework at school under the supervision of the teachers, students should get used to doing their own work and develop a self-study habit.

3) The model school would enrich and update instructional methods because of the availability of resources.

4) It would provide a model for other school development.

5) It should be a center for practice and training in the field of educational research.

6) The model school experiment would provide a healthy educational environment, exploiting the available facilities to improve the educational process and thus moving from theory to practice.

4.5.6. Pupil Admission Policy

The committee recommended several points in relation to the students' admission. First of all, all children enrolled should be nationals in order to get full support from the local government. Second, pupil admission policy should be in accordance with the Ministry of Education regulations since the model school was a governmental school. Finally, all children enrolled in the school should be able bodied, i.e. having no major impairments that may require special care.

4.5.7. Major Changes in the Model School

Based on the review of the published literature on effective education, the author's perception and experiences through the local researches conducted in the Abu Dhabi Education Zone, and the feedback from school principals and teachers, a vision was developed regarding the major changes that need to be implemented in

the model school. Accordingly, it has been decided that the changes should concentrate on the following five major fields that are believed to have the most positive impact on student achievement in the model school: *teacher motivation, student motivation; time allocated for education; teacher professional development; and education materials*. A detailed description of each one is discussed in Chapter Five.

4.6. CONCLUSION

The Abu Dhabi Education Zone established a model school in the academic year 1994/95 in order to improve the quality education. The project's design was based on previous school effectiveness research and the conditions of the local schools in the Education Zone. The model school project introduced a number of education innovations. The model school project was evaluated in the second academic year. Finally, the project introduced some changes based on the evaluation of feedback.

Chapter Five

MAJOR CHANGES INTRODUCED IN THE MODEL SCHOOL PROJECT

As was stated earlier in Chapter Four of this thesis, the major changes introduced in the Model School project are mainly in the fields of teacher motivation, student motivation, time allocated for education, teacher professional development, and education materials.

This chapter discusses in detail each one of those five fields and considers the theory relating it to school improvement. The chapter begins by reviewing the theory of motivation since the motivation of both teachers and students has been the corner stone of the development of the model school. The chapter then discusses teacher's motivation and student's motivation separately including an overview of how teachers and students were motivated in the UAE educational system. The rest of the chapter explains the other three fields of changes implemented in the model school and reviews the perception of the model school after the first year of school.

5.1. MOTIVATION THEORY

5.1.1. Introduction

The major role of any school administration is to motivate the teacher to enhance his teaching performance and to motivate the student to improve his learning ability. Therefore, the motivation process is a crucial part of any school system. The Model School project takes into account the importance of motivation

for both the teacher and the student. Due to the complexity and the importance of the motivation process, the thesis designates this section to motivation. The section covers a general background of major motivation theories. Also, it focuses on issues related to teacher work motivation and issues related to student learning motivation. Finally, this section discusses teacher and student motivation in the Model School and in the other sample schools.

5.1.2. Definition of Motivation

There are many definitions of motivation. It has been defined as *the psychological process that gives behavior purpose and direction* (Kreitner, 1995). Others define it as *the process that starts with a physiological or psychological deficiency or need that activates behavior or drive that is aimed at a goal or incentives* (Luthans 1997). Motivation also is defined as *a predisposition to behave in a purposive manner to achieve specific, unmet needs* (Buford, Bedeian, & Lindner, 1995). It is *an internal drive to satisfy an unsatisfied need* (Higgins, 1994) or *an inner state that energizes, activates or moves, and that directs or channels behavior toward goals* (Hanson 1996); and *the will to achieve* (Bedeian, 1993). For this paper, motivation is operationally defined as ***the inner force (need) that drives individuals to accomplish goals***.

5.1.3. Motivation Process

The key points in the motivation process are need, drives or motives, and goals or incentives. Needs set up drives or motives aimed at goals or incentives (Luthan 1997).

5.1.3.1 The Basic Motivation Process

NEEDS ⟶ DRIVES ⟶ INCENTIVES

In the motivation process needs, which means a deficiency, occur first as a result of physiological or psychological imbalance. Then comes the drives or the motives, which are the heart of the motivation process. Motives act as energizers

that push toward the goal accomplishment. At the end of the motivation process come the incentives, which are defined as *anything that alleviates a need and reduces a drive* (Luthans 1997).

This next example illustrates the theory: it is common knowledge that a need for food arises when the body is hungry (physiological imbalance). As a result of the hunger, drives or motives direct the person to ease the tension and the imbalance caused by the hunger "the need for food." Food becomes the goal or the incentive of the person. The end of the motivation cycle is when the imbalance is restored and the motives are reduced or cut off. In the case of the hungry person, eating food restores the imbalance and cuts off the hunger motive.

5.1.3.1.1 Primary and Secondary Motives

As said earlier, motives or drives are the heart of the motivation process, and, therefore, they deserve to be studied carefully. Psychologists are not in a total agreement regarding the classification of human motives, but they would acknowledge that some of the motives are unlearned "primary" motives and others are learned "secondary" motives (Luthans 1997). Primary motives include hunger, thirst, and avoidance of pain, etc. There are many secondary motives; however, the important ones include power, achievement, affiliation, and the competence motives. In the organizational context, usually, secondary motives are more important than the primary motives, because it is expected that an employee will meet his primary needs (Luthans 1997). In the following section four types of secondary motives are discussed. They are the achievement motive, the power motive, the affiliation motive, and the competence motive.

5.1.3.1.2 The Achievement Motive

This is the desire to be successful in competitive situations or to perform excellently (Luthans 1997). There are a number of characteristics of high achievers. First, they are moderate risk takers. Second, they prefer tasks that have rapid and precise feedback. Third, high achievers seek intrinsic satisfaction of getting the job done over the material rewards. Finally, they tend to be totally preoccupied with the

task in hand. The last characteristic has a drawback on their social relation. Sometimes high achievers commit to their job at the expense of their relationships (Hanson 1996).

5.1.3.1.3 The Power Motive

This is a drive to manipulate others (Luthans 1997). The desire to hold power has two sides, a positive side and a negative side. It is positive if the power is used for the achievement of the organizational goals and negative if it is used for personal needs.

5.1.3.1.4 The Affiliation Motive

This is the desire to belong to and be accepted by the group (Luthans 1997). Employees who are affiliation-motivated work better when they are complimented for their cooperation, and they tend to receive inner satisfaction from working with friends (Newstorm and Davis 1996).

5.1.3.1.5 The Competence Motive

This is the desire to perform high quality work. People who are competence motivated seek job mastery, enjoy developing and using their problem solving skills, and strive to be creative when faced with a problem. They tend to overlook the importance of the human relationship on the job (Newstorm and Davis 1996).

5.1.4. Content Theories and the Process Theories

There are two major strands of thought dominating the field of motivation: the content theories and the process theories. Content theories assume that (1) drives /needs initiate, channel, and sustain goal-directed behavior; (2) the drives/needs behaviors are initiated when an equilibrium imbalance or a deprivation is felt; (3) the drives and needs are prioritized into higher and lower levels; (4) when the need is fulfilled it is no longer motivating; and (5) we all share basically the same prioritization of drives and needs. (Hanson 1996). The major models of content theories are Maslow's hierarchy of needs, Herzberg's two-factor theory, and Alderfer's ERG theory.

The process theories, on the other hand, reject many of the content theories' assumptions. They reject the assumption that human behavior is a response to drive, or that people hold a common hierarchy of needs (Hanson 1996). Process theories suggest that identifying the profile of a common behavior process that people go through, when they seek to achieve goals, helps in understanding motivation (Hanson 1996). Process theories assume that (1) people exert effort toward obtaining goal-related rewards as long as they expect that rewards can be achieved; (2) people are autonomous beings who independently seek out solutions for achieving goals through the most effective alternate routes available; (3) effort is sustained while goal-directed actions are proving successful; (4) effort is terminated when goal is achieved or people realized that it will not be achieved (Hanson 1996). The major models of the process theories are the Vroom's model, the Lawler-Porter model, and the Equity theory.

Each of the major motivation models related to the content theories or the process theories are discussed in the following section.

5.1.4.1 Content Theories

5.1.4.1.1 Maslow's Hierarchy of Need

Maslow believes that the motivational needs of a person can be arranged in a hierarchical way. And, once a given level of need is satisfied, it no longer serves as a motivator does. The next higher level of need has to be activated in order to act as a motivator (Luthans 1997). Maslow identified five levels in his hierarchy of needs: the physiological needs, the safety needs, the love needs, the esteem needs, and the need of self-actualization.

The physiological needs are the most basic needs. They are called the primary unlearned needs, such as the need for food, air, and sleep. The safety needs are the second level of needs in the hierarchy, and they consist of needs like job security and health. The love needs or as some called it the social needs or belongingness (Luthans 1997) are on the third level of the hierarchy. The fourth level is the esteem

needs level, which is the need for power, achievement, and status. Finally and at the top of the hierarchy comes the level of self-actualization needs.

5.1.4.1.2 Herzberg's Two Factor Model

Herzberg concludes from his studies that there are two separate sets of factors that influence motivation. The first set of factor is the *hygiene factor*. Herzberg believes that the hygiene factor presence does not motivate or create satisfaction; however, the absence of the hygiene factor can create job dissatisfaction. Examples of the hygiene factor are company policy, supervision, working conditions, and salary. They are also called maintenance factors because they are necessary to maintain a reasonable level of motivation in employees (Newstorm 1996).

Motivational factors are the second type of factors in Herzberg model. Such factors operate primarily to build motivation, but their absence does not necessary dissatisfy the employee (Newstorm 1996). Examples of motivational factors are achievement, responsibility, and advancement.

5.1.4.1.3 Alderfer's E.R.G Model

Alderfer built his model upon Maslow's model. He reduced Maslow's five level model into three levels. The levels are 1) existence needs level, 2) relatedness needs level, and 3) growth needs level. The three letters E.R.G. represent the three levels. He suggests that an employee is initially interested in satisfying his existence needs which are the physiological and security needs such as work conditions, pay, and job security. Relatedness needs are in the next level and involve accepting and being accepted by people working with. Growth needs, the third level, involves the desire for self-esteem and self-actualization. The E.R.G. model accepts that all of the three levels are active together (Newstorm 1996).

5.1.4.2 Criticism of the Content Theories

Although the content theories contributed significantly to work motivation they have a number of weaknesses. Content theories make the management aware of the diverse needs and needs of humans at work. Also, content theories, particularly

Herzberg's theory, draw attention to the importance of the job content factor in work motivation (Hanson 1996).

The major two criticisms are that content theories lack empirical data to support their models and they assume that employees are alike in terms of what motivates them. And, in general terms, they don't adequately describe the complex motivational process at work (Hanson 1966).

5.1.4.3 Process Theories

5.1.4.3.1 Vroom's Expectancy Theory

This theory is based on four assumptions. First, behavior is determined by the combination of two forces, forces in the environment and forces in the individual. Second, employees make decisions about their own behavior. Third, people have different types of needs, desires, and goals. Fourth, people select a behavior based on their perceptions of the degree to which a given behavior will lead to a desired outcome (Hanson 1996).

The theory argues that the force of motivation is equal to the product of *valence*, *expectancy*, and *instrumentality*. By *valence* Vroom means the strength or desire to achieve a particular goal or goal attractiveness. *Expectancy* is the belief an employee holds that his performance will attract positive recognition. *Instrumentality* is the perceived probability that the reward is achieved as a result of the performance outcomes. In this theory there is quite an important distinction between intrinsic and extrinsic motivation.

If the employee retains high valence, expectancy, and instrumentality, his motivation toward work will remain high. If one of the three is low from the beginning there will be no initial motivation toward task performance. Also, if one of the three declines after the effort has begun, task motivation will decline (Hanson 1996).

5.1.4.3.2 Equity Theory

The Equity Theory states that employees will compare their work effort and its reward with what others are getting in a similar job. If a person perceives that the ratio of their input-outcome is not equal to others, then dissatisfaction occurs. And, employees will attempt to correct the situation by either increasing performance or output when the perception is that they are over-rewarded, or decreasing performance or output when they feel they are under-rewarded. In light of the equity theory, an employee should be rewarded based on performance, and not length of service (Robbins & Stuart-Kotze, 1990 and Thapisa, 1991).

5.1.4.3.3 Porter-Lawler Theory

Porter and Lawler theory suggests that satisfaction is the result, not cause of performance; and performance brings about rewards, and rewards bring about satisfaction. It is important for the employee to understand what rewards are obtainable and what level of performance is expected. If the outcome is considered as not worth the effort, or if the reward is perceived as not equitable to the effort, motivation cannot be sustained (Luthans 1997 and Hanson 1996).

In short, the above motivation theories provide different perspectives of what motivation consists of and how we perceive it. Work motivation is a very complex process in which there are no prescribed methods to follow. Instead, it is up to organization leadership to put the motivation theories into practical use by finding out what motivates the employees.

There are a number of conclusions that can be inferred from the motivation theories. First of all, an employee has different needs that motivate him. Second, there are two types of work factors that influence an employee's motivation: 1) factors that do not create satisfaction but their absence create dissatisfaction and 2) factors that motivate the employee but their absence does not necessarily dissatisfy the employee. Third, an employee should expect his reward in order to be motivated. Fourth, employees should be given the same reward for the same effort. Finally, internal or intrinsic factors are the most effective motivators.

5.2. TEACHER MOTIVATION

The following section relates the previous motivation theory to teacher motivation. In school, the teacher is viewed as central to the success of the teaching-learning process. He is the heart of the school and his performance reflects the quality of the education services, which the school is providing. Any education reform without teacher support will have little success (Chapman 1983). As learned from the motivation theories, which were discussed earlier, motivation is a main input of high performance. Accordingly, to achieve high quality education, schools need to motivate teachers to reach a high level of instructional performance. Therefore, school leadership needs to understand what motivates teachers. Almost all of the schools apply some type of rewards to motivate teachers. However, the question is to what extent do the rewards increase the level of teacher performance. Current school climates are a "reward-scares" setting and sometimes it seems to work against the teacher's effort of quality of education (Peterson 1995).

This section of the thesis discusses different methods of rewards used to motivate teachers and assesses each one of them. It starts with the traditional ones, then discusses methods that are more likely to be successful in satisfying teachers. Then, a teacher motivation model is reviewed. Finally, at the end of the section, the thesis discusses the issues related to teacher motivation in the sample schools.

5.2.5. Traditional Teacher Motivation Methods

Two of the most popular teacher motivation methods are merit pay and career ladder. Both methods are used to motivate teachers, but they have been criticized for their inefficiency in improving teacher performance. The two methods are discussed in detail in the following.

5.2.5.1 Merit Pay

This means that if a teacher meets the established objectives he receives financial rewards. This method of boosting teacher motivation is similar to the

assumption of the expectancy theory, which states that if there is an anticipated reward that the teacher values, he most likely will strive to achieve the work objectives. Research on teacher work motivation concluded that individual incentive pay programs and merit don't work (Odden and Kelley 1997). Merit pay plans may encourage teachers to adjust their teaching down to the school standard without going beyond them. It, also, might divide the school staff, teachers and administrators, against each other as a result of inadequate evaluation methods (NAAEN 1999).

5.2.5.2 Career Ladder

This way of motivating the teacher aims at rewarding the teacher with giving him a higher position with more responsibilities in comparison to his colleagues. Again, such motivating programs failed for largely the same reasons that merit plans have failed (NAAEN 1999).

In short, merit pay and career ladder reward programs were meant to provide the teacher with external incentives, such as financial rewards and advancement opportunities but did not sufficiently solve the problem of teacher satisfaction (NAAEN 1999). Even though, extrinsic rewards such as salary might bring the teacher to work in a specific school; the decision to stay or leave the school is based on other intrinsic factors (Oliver et al 1988).

5.2.6. Effective Teacher Motivation Methods

We have seen that external rewards or extrinsic rewards are not effective in satisfying the schoolteacher. There are many studies that show teachers enter the teaching profession to help young people learn, and their highest reward is to achieve this goal (Frase 1989 and Mitchell et al 1987). This achievement motive is considered as the biggest intrinsic reward for many teachers. This clearly indicates that teachers are motivated by intrinsic rewards. The following are a number of intrinsic rewards that studies show motivate teachers and can be used to improve the level of his teaching performance. There are a lot of teacher motivation methods,

however most of them are related to four major ones. They are shared decision-making, professional development, proper evaluation and feedback, and parental support.

5.2.6.1 Shared Decision Making

Teacher participation in the decision making process in the school is a strong source of motivation, especially if the decision to be made is related to improved student achievement (NAAEN 1999). This source of motivation is well aligned with the primary motivator of teachers – the power of helping the children learn (NAAEN 1999). The concept of shared decision-making and its positive relation to teacher motivation is supported by many studies (Zemmelman et al 1993; Blasé and Blasé 1994; Johnson 1986; Rozenhlts and Smyle 1984, NAAEN 1999). When the school principal effectively applies participatory management in his school, teachers feel energized and motivated and their sense of ownership and empowerment increases (Blase and Blase 1994). Participating in the decision-making process makes the teacher responsible for the outcome and committed to the school's objectives, which by itself is a source of motivation. It also makes the teacher feel that the school leadership recognizes him.

5.2.6.2 Professional Development

Again there is an agreement among researchers that professional development intrinsically motivates teachers (Zemmelman et al 1993, and NFIE 1996). The logical relation between professional development and teacher motivation is obvious. Professional development, for example, helps the teacher gain more confidence in himself, which helps him in dealing with education challenges. The ability of overcoming problems is a source of motivation. The fact that the teacher's professional development leads to motivation is true given that the teacher is involved in designing the training program. The advantage of the professional development is that it provides the teacher with confidence in dealing with increasing work challenges.

5.2.6.3 Teacher Evaluation and Feedback

The main purpose of the teacher evaluation is to provide the teacher with information to help develop instructional performance. The knowledge of performance acts as a motivator for the teacher, because, without this knowledge there will be no satisfaction (Rosenholtz 1989). Studies show that the use of evaluation, feedback, and assistance to the teacher with day to day problems result in greater skill mastering by the student (Gerston et al 1988).

5.2.6.4 Parental Support

Parental support is seen by many researchers as an essential factor in the improvement of student achievement, and, at the same time, motivates teachers by reducing some of the burden from their shoulders in many ways (Epstein 1987 and NNCES 1997). First, teachers consider parental involvement as an extra teaching resource that increases their efforts. Second, working with parents helps the teacher understand the students more. Third, parental involvement may reduce uncertainty of teachers because of shared understanding and effort (Epstein 1987).

In short, a teacher is the main factor of the educational process. His level of motivation reflects directly upon his performance. Therefore, educational leadership should learn what motivates each teacher in the school and find ways to keep him highly motivated in order to sustain high quality output. Educational leadership should also consider the intrinsic rewards to motivate the teacher, because extrinsic rewards are proven to be weak in motivating the teacher. There is a strong agreement among researchers that intrinsic factors motivate more than extrinsic ones. Rewards such as sharing in the school decision-making, professional development, proper evaluation, and effective parental support are strong sources of teacher motivation.

5.2.7. Frase Model of Teacher Motivation

Larry Frase developed a model of teacher motivation that includes two factors (Frase 1992). It is similar to Herzberg's two factors in his motivation model in the

sense that both authors have two factors. The first group of factors is called hygiene factors by Herzberg and is called context factors by Frase. The other group of factors is called motivational factors by Herzberg and Frase calls them content factors.

Frase's context factors are those that meet the teacher's baseline needs. They include working conditions such as the availability of instructional material, student discipline, and class size; psychological needs such as money and security, and the quality of school administration. Frase states that adequate supply of context factors prevents dissatisfaction. However, these factors might not lead to teacher motivation that cause an improvement in teacher performance (Frase 1992). Research found that teacher salary, benefits, and supplemental income showed little relation to long-term satisfaction (NNCES 1997). In short, extrinsic rewards do not necessarily lead to teacher motivation.

Content factors, according to Frase, are crucial to teacher motivation for a high level of performance. They include rewards that are intrinsic to the work such as recognition, responsibility, achievement, empowerment, and authority. Studies confirm that the previous intrinsic rewards, along with parental support and teacher participation in school decision-making, are strongly associated with teacher satisfaction (NNCES 1997).

5.2.8. Current Position of Teacher Motivation in the Education Zone

If we look at some aspects of the work condition of the teachers in the sample schools other than the Model School, we can notice their level of motivation, or we can see an indicator.

Teachers in the other sample schools are the least paid in the Educational Zone. There are two main reasons for this. First, they are non-UAE nationals, and, therefore, their salary does not include the allowances that a UAE national teacher has. Second, they hold a two-year college degree, which is usually a lower paid segment than a four-year college degree. Also, they are not secure in their job. The Ministry of Education may decide, before the end of any academic year, not to

renew the teacher's work contract. Usually, it is very difficult for a non-UAE national to find a job with a higher salary. The case of job security became worse after the decision was taken by the Ministry of Education to allow female teachers to teach in the lower primary stage. Beside the lack of main needs such as job security, teachers in the sample schools lack basic needs such as instructional material and professional development. Studies showed complaints from the lack of parental support, which increased the teacher work burden. Teachers lacked both intrinsic rewards and extrinsic rewards because of their low salaries. This clearly was a bad situation, which the Ministry should look at carefully and solve.

Teachers of the Model School, on the other hand, were in a far better position in terms of extrinsic rewards. They were paid almost double the salary, and the school provided most of their requirements for teaching materials (Internal Document No 2 1994b). This could not be applied to non-national teachers who did not possess bachelor's degrees, due to ministerial laws and regulations and made them less motivated.

There will be more analytical discussion in the coming sections about this issue when the questionnaire responses on teacher motivation are analyzed.

5.3. STUDENT MOTIVATION

Student motivation is an important element of the teaching/learning process that takes place in the classroom. It is essential because it has to do with the students' desire to participate in the learning process, which is not activated without proper student motivation (Lumsden 1994). Therefore, keeping students motivated is one of the aims of the Model School project.

When the students are motivated, instruction becomes easier for teachers (Wentzel 1999). The crucial role of motivation to the teaching/learning process urges the teachers and school administrator in the Model School to implement it in the classroom and in the school as a whole. Many schools that are successful in

improving their students' achievement level are reported to be so due to their commitment to engaging student motivation (Darling-Hamond 1996).

This section covers a background of student motivation, and it discusses issues related to the student's intrinsic and extrinsic motivation in the school. Finally, it covers a brief review of the general state of student motivation in the Educational Zone and in the Model School with more detail.

5.3.1. Intrinsic and Extrinsic Motivation

One important aspect of student motivation which teachers and school administrators should be aware of is the difference between the intrinsically motivated student and the extrinsically motivated student. This is discussed in the following section.

5.3.1.1 Extrinsic motivation

Extrinsic motivation is an encouragement from an outside force; behavior is performed based on the expectance of an outside reward. An extrinsically motivated student performs "in order to obtain some reward or avoid some punishment external to the activity itself," such as grades, stickers, or to please his teacher (Lepper, M 1988).

Extrinsic motivation that is implemented in schools is criticized by a lot of scholars. Over the years, extrinsic motivators have been shown through research to have numerous, long-term effects that are considered undesirable by many educators (Rogers et al 1999). The criticism focuses on a number of issues. First of all, extrinsic motivation has a temporary effect. "They do not create an enduring commitment to a set of values or to learning; they merely, and temporarily, change what we do" (Kohn, 1993, p. 784). Also, it reduces the student intrinsic interest. Chance (1992) states that by motivating students with extrinsic rewards, the intrinsic value in the task is undermined by the task-contingent reward.

Another problem with the extrinsic motivation is that the student aims at the reward but not the benefit from what he is learning from his teacher, and once the reward has been achieved, the student no longer has any motivation to what he has learned (McKeachie, 1994; Ryan, 1996). In the long run extrinsic rewards become less motivating for the student in the classroom. Either they become insufficient enough or even de-motivators for many students (Rogers et al 1999). Finally, by promising a reward for behaving in a desired way, the teacher is essentially controlling his or her students by tempting them with external factors that do not even relate to the task itself (Kohn 1993).

Lepper's (1988) studies on student motivation show that extrinsic rewards have negative effects on the student. It makes the student put forth the minimal amount of effort necessary to get the maximal reward and tends not to increase their effort if they are faced with difficulties.

Given all these negative effects of extrinsic rewards, I think there are still some advantages that can be retrieved from this type of reward if implemented with caution. To start with, extrinsic rewards can be used at the start of the learning process until students are able to experience new sources of motivation from the activity itself. Also, they are effective for students who have negative attitudes toward school and who, for a variety of reasons, are not motivated by conventional methods (Csikszentmihayi 1990). In such limited cases extrinsic rewards can be applied; otherwise intrinsic motivation is more effective.

5.3.1.2 Intrinsic motivation

An intrinsically motivated student is the one who undertakes an activity "for its own sake, for the enjoyment it provides, the learning it permits, or the feelings of accomplishment it evokes" (Lepper 1988). The basic idea behind intrinsic motivation and intrinsic rewards is that learning, both searching for answers and finding those answers, is reinforcing in itself (Kohn 1993).

Researchers agree on the fact that those intrinsically motivated students are deeply involved in their schoolwork and their achievement outcomes are higher than extrinsically motivated students (Wolters 1998). Kohn (1993) says that intrinsically motivated students are utilizing their natural learning energy. Because all of these are advantages over extrinsic motivation, schools should work hard to promote intrinsic motivation because intrinsically motivated students obtain more academic qualifications than do extrinsically motivated students. Intrinsically motivated students are interested in improving their skills to increase their effort for success and prefer challenging activities over easy tasks because they can learn from them (Elliot & Dweck 1988, Lepper 1988, and Wolters 1998).

5.3.2. Factors That Encourage Intrinsic Motivation

There are a number of factors that encourage students' intrinsic motivation to learning. Some of these are related to the teacher in the classroom, and others are related to the school leadership.

Teachers in the classroom can play a crucial role in enhancing students' intrinsic motivation. There are a variety of specific actions that teachers can take to increase motivation in the classroom. One of these actions is showing the student why learning a particular content or skill is important and relating it to his needs. Also, the teacher can enhance the student's intrinsic motivation when he maintain the student's curiosity and runs the classroom on their natural motivation (Stipek 1997). Studies show that when teachers care about students, are fair and understanding, provide nurturing feedback, and give clear expectations, students in that classroom are more likely to be motivated (Wentzel 1999).

Much of the recent research on student motivation has rightly centered on the classroom, where the majority of learning takes place and where students are most likely to acquire a strong motivation to gain new knowledge. Such an atmosphere, especially when motivation to learn evolves into academic achievement, is a chief characteristic of an effective school. However, it is not only the classroom where the

students can develop his intrinsic motivation; the school, as a whole system, affects student motivation.

School leadership can play an essential role in making the school environment supportive to student motivation. First of all the school principal can be the role model for motivating both school staff and students. Also, he can use his authority to enforce motivational acts and activities such as offering students choices of different academic and non-academic activities in the school, which give students opportunities for success (Klug 1989). Another thing a school leadership can do to promote a student's intrinsic motivation is providing staff with professional development in the field of student motivation (Leithwood and Montgomery 1984).

5.3.3. Student Motivation In the Educational Zone

The main goal of the Model School project was to provide students with high quality education, which mainly depends on the teaching/learning process. It is clear from the previous literature background that motivation is an essential component of this process. Therefore, student motivation becomes one of the major education change fields that are implemented in the Model School. Before discussing the status of the students' motivation in the Model School, an overview of student motivation in the other boys' lower primary schools will be covered. From my own observation I can say that the most popular rewards are of the extrinsic type and limited to grades and verbal praise. In those schools, you don't usually see other extrinsic rewards such as stickers or small gifts. Here, the problem is not the lack of rewards but the excessive use of physical punishment. Even though the Ministry of Education prohibits such punishment, many teachers still use it.

There is no clear reason why effective rewards were not used in the lower primary schools. However, if we look at these schools more closely, we may find some reason that may relate to why an effective rewarding system was not applied in them. First of all, teachers in the lower primary schools were applying limited motivational methods for grades and verbal praise because the school was not able

to buy different types of material rewards for all of the teachers. Also, we cannot ask or expect the teacher always to buy material rewards for his students because he is the lowest paid teacher in the whole educational system (see Teacher Motivation). The logical question at this point is, if the school and the teacher cannot afford offering extrinsic rewards other than what we have said why don't they apply intrinsic motivation? The answer is, that they either didn't want to or they didn't know how to do it. I feel that the answer more likely is that they don't know how, because if the teacher knows it, he is going to practice it in the classroom to enhance his productivity. Consequently, it is crucial that school leadership help teachers improve their skills in student motivation, especially in the area of intrinsic motivation.

In the case of the Model School, the matter was different. Student satisfaction was an important issue in the Model School project. It was believed that achieving high academic standards requires a motivated student. Therefore, the Model School allocated a portion of its resources to enhance student motivation (Internal Document No 3 1995a). Besides making resources available to improve student motivation, there were some other steps that can be taken in favor of student motivation.

Teachers were directed to give high priority to enhancing student motivation in the classroom. Part of the teacher evaluation was related to how he treats his students. The general school climate improved student motivation through providing them with daily choices of activities where the student picked the activity that he masters best to provide him with a higher chance of success. The teacher in the classroom was instructed to keep the student highly motivated through using a variety of education materials to reduce the negative attitude of some students and to ask questions that enhance student creativity. Along with these activities, teachers in the Model School were informed to tell their students about the importance of the knowledge they were learning. Mainly the school avoided any action that made the student fear the school.

As an observer I can conclude that student motivation in the boys' lower primary schools in the Abu Dhabi Educational Zone was facing many difficulties in effectiveness. In the Model School the situation was different, because many resources were allocated to motivate students.

5.3.4. Conclusion

Motivation is an important element of the teaching/learning process. Teachers and the school leadership should consider giving effort to maintaining a high motivational environment for the students inside and outside the classroom. Experts identify two types of student and teacher motivation, intrinsic and extrinsic. In the short term, both types have positive effects on the primary stage students, but research suggests that extensive use of the extrinsic rewards has negative effects on the student (Rogers 1999 and Csikszentmihayi 1990).

Research also suggests that better learning occurs when intrinsic motivation is emphasized over extrinsic motivators (Kohn 1993). Studies show that a student can be intrinsically motivated if some strategies are applied by the teacher and by school leadership (Wentzel 1999 and Klug 1989).

The use of extrinsic rewards should be limited to tasks that have limited intrinsic appeal or for students who show little interest in learning on their own (Csikszentmihayi 1990).

The Model School system attaches great importance to the issue of student motivation compared to the other lower primary schools in the Educational Zone. It implemented a number of strategies that enhance student motivation to learn.

5.4. TEACHER'S PROFESSIONAL DEVELOPMENT

Professional development is another major education change, which the Model School project adopted. The initiator of the Model School project knew from the beginning that there would be a high demand for teacher professional development because of the new innovations implemented in the Model School.

Although the student, the target of the Model School, is not the primary client of professional development, he is the ultimate beneficiary. The purpose of professional development is to enhance the student's learning ability. There are many studies supporting the fact that professional development has a positive effect on student achievement.

A study that was conducted on 900 educational districts in the U.S. found that teacher expertise explains 40% of the difference in student achievement (Ferguson 1991). This reflects the size of the effect which teacher's professional development has on student achievement. Another study showed that the same result was reached even when controlled for teacher past learning (Cohen and Hill 1998).

Such research outcomes and the teacher's personal experience made him utilize professional development to enhance his instructional ability in order to increase student achievement level. In one of the researches, teachers were asked what made them seek professional development, and 73% indicated that they wanted to improve student achievement (Renyi 1998). Teacher professional development has advantages other than improving teacher's instructional skill; it is an essential source of teacher motivation (see the section on Teacher Motivation). It makes the teacher feel better about his teaching practice. It encourages the teacher to get rid of his old teaching habits and quickly implement the education innovation he trained for, which enhances the speed of the education change and reduces the resistance of accepting the innovation.

The evidence is clear that teacher's professional development as an input of the teaching learning process, is a crucial element of this complicated process, and in some studies it surpasses other elements in the level of importance. A study reported by Greenwald (Greenwald et al 1996) indicated that student achievement increased more when more money was spent on teacher training than the same amount was spent on increasing the teacher's salary.

Given all these signs of the importance of the teacher as an input to the teaching learning process, the question is "does all teacher development enhance teacher teaching skill?" The answer is no.

There has always been teacher development and training but not all of them positively affected a teacher's teaching skill. There are a number of characteristics of effective teacher development. Literature that has examined staff development suggests some agreement on different components of effective staff development. Some of these components include:

1) Concentrating on the skills that have direct relation to the student's learning.
2) Providing practical and theoretical training.
3) Developing training activities on the basis of problems identified by teachers and administrators.
4) Providing training that evaluates teachers' strengths and weaknesses and act as a strong feedback for the teacher.
5) Supplying technical assistance to help teachers and administrators implement new strategies.
6) Ensuring administrators have support for, and involvement in, training at the school level.
7) Integrating continuous staff development activities into regular daily activities (Hawley et al 1985).

There is increasing literature on the importance of the teacher's role in the professional development process. Teachers need occasions "to reflect critically on their practice and to fashion new knowledge beliefs about content, pedagogy, and learners." (Darling-Hamond and McLaughlin 1995, p. 597). Some suggested facilitating teacher growth through professional dialogues with colleagues, collaborative curriculum development, and peer supervision and coaching (Monahan 1996). This is quite right because teachers are rich sources of practical instructional

knowledge, which they can exchange with each other within the school. This type of collegial exchange seems to further reinforce productive interaction, which leads to group problem solving, social support, and ongoing professional development (Feiman-Nemser and Floden 1986). In fact, some researchers think that the most effective forms of professional development take place when teachers have opportunities to work together and learn from each other throughout the day (Stigler and Hibert 1999).

Even traditional staff development models can be more effective if teachers are involved in planning and implementation, and if the content is linked to instructional problems the teacher is facing in the classroom (Zemmelman 1993).

This new teacher's role needs the support of school leadership in order to achieve its objectives. However, this way of teacher training also requires a strong leadership to organize it properly. (Rosenholtz and Smylie 1984). School principals should turn the school to a learning environment not only for students but also for teachers. The school system should be designed to encourage collegial interaction. School leadership should allocate different training resources like time, material, and proper organization for teachers to learn from each other and encourage them to teach each other. The literature suggests that learning from colleagues within the school is not found without the contribution and support of the school that concentrates on teachers' development and believes that improvement in teaching is a collective rather an individual enterprise (Little 1982).

School leadership should work to transform the school into a learning organization for the teachers, as it is for the student. Kober states that "the benefit of staff development are unlikely to be sustained unless schools become learning organizations in which good teaching can flourish." (Kober 1993, p. 66).

There are a number of steps to follow in establishing a learning organization. First, allocate time daily and weekly to enable teachers to work together as well as individually for professional development. Also, encourage school staff to work in a

collaborative way to develop a teacher development plan based on the real student needs. Another important step is to give teachers more decision-making authority in different school issues (Kober 1993). Finally, school leadership should provide teachers with required materials to implement the development plan.

In addition to learning from colleagues, there are some other learning opportunities for teachers outside their schools. External opportunities for teacher development are available in different formats. A teacher can take advantage of university courses, conferences, and workshops. However, those sources of teacher development have little evidence on their impact on the improvement of teacher performance and student learning. The main point in this issue is that themes of external learning sources are not directly related to daily school needs. External learning opportunities can be very valuable sources of new knowledge for improving teaching if there is a strong relationship between the school and the provider of the external training sources (Chapman et al 1993).

Teacher development in the Education Zone was not effective for many reasons. First, some teachers saw it as a traditional one, and it did not meet the real teachers' needs. Also, some of the development activities took place at times that are not appropriate for the male teachers. Some of teachers complained that teacher development programs do not consider teachers' individual differences. Finally, some of the teachers refused to discuss their weaknesses with the trainer and tended to hide them due to fear of affecting their annual performance assessment (Abu Dhabi Education Zone 1994).

The first major step taken by the Model School in relation to teacher development was allocating Thursdays of every week for these purposes (Internal Document No1 1994a). Students did not attend school on this day of each week. During this day teachers were involved in activities that were related to teachers' professional development such as workshops, lectures, model lessons, etc. Also, the Model School encouraged teachers to attend lessons by colleagues and discuss what went on during the period. Teachers in the Model School took a further step in terms

of teacher development. That was, the teachers work together in developing extra curricular material, which was rarely seen in other schools in the Education Zone.

5.4.1. Conclusion

In conclusion, research showed a strong relationship between teacher professional development and student achievement.

The following quote summarizes the crucial relationship between teacher development and student achievement:

" The most effective way to improve the achievement of a given student is to improve the quality of teaching that the student experiences. The teacher has a significant impact on efforts to change schools and on the nature of the student's experience, whatever the formal policies and curricula of a school or classroom might be. They keep gates through which students must pass to gain access to the learning resources available. Teachers allocate and manage students' time, set and communicate standards and expectations for students' performance, and in a multitude of other ways, enhance or impede what students learn." (Hawley and Rosenholtz 1984)

5.5. EDUCATION MATERIALS

The fourth major field of change in the Model School project is the field of education materials. From the beginning, the project leadership decided to provide teachers in the Model School with all education materials necessary for improving the teaching/learning process. This section explains the importance of the education materials and how they are introduced to the Model School. Also, it mentions, in general, the allocation of such materials in the other lower primary school in the Education Zone.

Education materials, in this thesis, refer to all of the equipment, materials and teaching aids that are used to enhance the effectiveness of the teaching/learning process in the school. They include textbooks, laboratory equipment and manuals,

library books, projectors, posters, VCR s, kits, software, CDs, other multimedia materials.

Education materials enhance the effectiveness of the teaching/learning process which eventually affects positively student achievement. Many teachers believe that education materials have the capacity to improve teaching and learning if they are effectively integrated with the taught topic and their design considers the student's age and his knowledge level used. Teachers usually use such education materials to enhance their quality of knowledge delivery to the student in order to increase the student's learning ability. Studies show that the use of the instructional material has a positive effect on the student's achievement level (Koumi 1991; Bates 1988).

Chapman et al do not only see them as tools for enhancing the student's achievement level but also a tool for enhancing the teacher's sense of professional efficacy and job satisfaction (Chapman et al 1993). The source of this satisfaction is clear; the instructional material helps the teacher achieve student learning which is his ultimate objective and source of motivation. Tyson's (1997) studies agree with Chapman's outcomes in the sense that such materials would improve curricula and significantly impact daily teaching practices.

Education materials make teaching easier and more effective in many ways. First, they help the teacher prepare for his lessons in a presentable way. The high quality of the education materials used by a teacher can help compensate for weakness in presentation. Second, teachers who use instructional material save time and effort. A lower primary teacher, for example, spends a lot of time in preparation for classes because he teaches four subjects, but with the proper use of ready-made education materials he will save valuable time. The same case applies to the science teacher who teaches a range of scientific concepts from chemistry to natural history, earth science, astronomy, and ecology. Also, a teacher can use these materials to show students things that are not easy for them to see, such as anatomy, creatures under the sea, space, etc. Using proper instructional material that is well integrated with the student level increases the learning motivation of young students (Koumi

1991). This motivation might also be increased with the implementation of interactive learning technologies.

The Education Zone study on National Student Achievement showed that teachers were complaining about the lack of education materials, which they thought is important for the teaching learning process (Abu Dhabi Education Zone, 1993). This may be one of the reasons for the Model School project leadership to form a special committee to study the teachers' needs for education materials (see Chapter Four). Education materials were very rare in the lower primary schools, and the schools did not have the financial ability to buy them. Some of the teachers have bought their own materials to prepare for the lessons.

The unique privilege allowing for the collection of fees from parents for the extra services provided at the school insured that abundant instructional material was available for the teachers of the Model School. In fact, the Model School was equipped with most of the teachers' needs.

Each classroom was furnished with a videocassette recorder, a TV, educational posters, a small library, a video camera, etc. The school has multimedia labs, an audiovisual library, and the science labs were equipped with hands-on experiment kits. The school was also provided with the latest art and music instructional equipment and materials.

5.5.1. Conclusion

Education materials are some of the most important resources for the teaching/learning process. It supports the teacher in delivering his instruction in a way that enhances student achievement. Many studies show the positive effect of the education materials on student achievement.

The Model School provided all of its teachers with most of their needs in order to enhance the student level of academic achievement. Even though teachers of the other lower primary schools in the Educational Zone believe in the importance of the instructional material to the teaching-learning process, their schools cannot

satisfy their needs due to lack of funds. This will eventually have to be addressed if the lessons from the Model School are to be implemented on education more generally.

5.6. TIME ALLOCATED FOR EDUCATION

Time is among the most important resources that have an impact on the quality of education. The allocation and use of time has been found to be related to the type and amount of student learning that occurs in school (Fuller 1987; Keith et al 1986; Rutter et al 1979). In regard to time in education, it is important to point out the difference between time allocation and time on task. *Allocated time* refers to the amount of time devoted to schooling. *Time on task* means the real time spent on learning activities. To clarify the difference we take the period as an example. If the studying period time is 45 minutes, then we say that there are 45 minutes allocated for the class period. Time on task, on the other hand, means the time in which students are engaged in learning activities within the period because some of the period time is usually spent on activities not related to the learning process, like attendance checking or dealing with discipline issues in the class. Time efficiency is strongly linked to the efficient use of instructional time within the classroom, which is determined more by class management than by instructional material used (Fuller 1987).

Research on time allocation and student achievement shows a strong relation between the two variables. There is a positive relationship between the total amount of the time spent by pupils on curriculum task and their academic achievement. This result supports the fact that homework is beneficial because it increases the time spent on educational tasks (Bennett 1982).

5.6.1. Time Allocation in the Model School

Time allocation is one of the major changes that were implemented in the Model School. Compared to the other governmental lower primary stage schools,

there was extra time allocated during the school year and extra time allocated for the school day (Internal Document No. 1 1994a). Therefore, students and teachers in the Model School attended more hours per day, and eventually more hours per year. Students attended five days a week, one day less than the other schools, and teachers attend six days like the other teachers. The extra day for teachers was allocated for training. The following pages present a comparison of the Model School and the other lower primary school in the Education Zone in terms of the school year, school day, homework time, and time on task.

5.6.1.1 School Academic Year

There were many studies supporting the argument that increasing the length of the academic year was positively correlated with student achievement (Walberg and Fredrik 1991). Also, out of 26 studies summarized by Smythe, 23 of them showed that adding to the school day or school week was positively related to student's achievement (Smythe 1987). The Model School system supported this argument. The Model School academic calendar started one week before the other schools and finishes normally with them (Internal Document No. 1 1994a). This period of time represents the period in which teachers work at their schools. The students' academic year differs from that of the teachers'. Lower primary stage students normally start summer vacation on the second week of May, which means that the teachers in the lower primary stage, who attend school until the third week of June, have no students. Normally some of them work in the examination committees that are formed by the Ministry of Education. The Model School has the advantage of an additional one-month due to teachers' vacation rules as compared to other schools in the lower primary stage. In this month the students in the Model School continued learning, having extra skills in languages (Arabic and English) and math and as well as practicing different types of activities. Therefore, the expanding of the academic year in the Model School did not cost any extra resources as far as school is concerned. Besides the extra four weeks at the end of the academic year, the Model School started one week before the other schools in the beginning of the year.

Normally the teachers and the administrators attend one week before students to prepare for the new academic year.

It can be concluded that the Model School has about five weeks more of allocated time than any other school of the same stage.

5.6.1.2 School Day

A normal school day, in any lower primary stage, starts at 7:30 a.m. and finishes at 12:15 p.m. However the school day in the Model School starts at the same time and finishes at 4:15 p.m., i.e. four extra hours allocated daily. Since the students in the Model School attended five days a week only, then the total hours allocated weekly for the students was 43 hours and 45 minutes. In the other schools the students attend a total of 27 hours and 45 minutes. This means that the allocated time for students in the Model School was 1.6 times more than the other schools.

5.6.1.3 Homework Time

There is evidence that homework has direct relation with student achievement (Bruce and Singh 1996). In their study of academic achievement of eighth-grade students, Bruce and Singh (1996) found that homework improved, not only the student's grades, but also their scores on standardized tests. An American study on time spent on homework and academic achievement revealed that there is a strong relationship between both variables, even after controlling the family background of the students (Keith et al 1986). More studies on homework found that there was a positive relation between homework and student achievement (Fuller 87 and Cooper 89).

Cooper (1994) listed a number of benefits attributed to homework. Some of the benefits are immediate effects on achievement and learning such as increased understanding and better critical thinking concept formation. Other benefits are long-term academic effects such as encouraging learning during leisure time and improving attitude toward school. Beside these benefits Cooper adds nonacademic

long-term effects attributed to homework such as greater self-direction greater self-discipline and better time organization (Cooper 1994).

In the Model School we believe in the importance of the students doing their homework at school. Studies indicated that student interaction with the homework at home is weak (Abu Dhabi Education Zone 1993). This might be related to the low achievement of many national students. Sometimes the homework does not indicate the real level of the student, because someone else might do it at home other than the student himself. Also, in some schools, homework is not efficient because some teachers do not correct every home assignment.

For these reasons we allocated 1.25 hours daily of the Model School time for the homework in school, to ensure the student himself did the homework under the supervision of the teacher (Internal Document No. 1 1994a).

Homework time was an extra time on task allocated in the school day for the students.

5.6.1.4 Time on Task and Time in Class

Time on task, as explained earlier, is the time a student spends engaged in learning activities at school. However, the relationship between time on task and achievement is even stronger than the relation between allocated time and achievement (Walberg and Fredrick 1991). It is difficult to calculate the exact time on task. For the sake of the comparison, the time in class will be used, which is the 40 minutes school period. In this case, break time and extra activity time at the Model School is excluded. Normal schools have 6 periods per day, i.e. 40 minutes times 6 equals 4 hours times 6 days a week (Saturday to Thursday) equals 24 hours time on task per week. Since Thursday is a 5 period day, then the total weekly time on task becomes 23 hours and 33 minutes. Whereas in the Model School the time on task per week is 25 hours and 20 minutes including 1 hour and fifteen minutes daily allocated for home work in the school from attending only five days a week (Saturday to Wednesday). The weekend in the Model School is two days Thursday

and Friday. This leads us to conclude that there are about two more hours of time on task allocated weekly for the Model School students.

In conclusion, major changes implemented in the Model School were in the fields of teacher motivation, student motivations, time allocation, teacher professional development, and education materials. These changes were introduced to make the Model School a better place where teaching and learning are concerned. These changes were chosen after reviewing previous studies and the local education context in which the Model School is established.

5.6.2. Issues Arising in the Model School Year One

The issues discussed in this section are based on a report about the model school after one year of operation (Internal Document No. 5 1995c), and on the author's perception of the progress of the project. The first year of the model school gave the Education Zone the opportunity to evaluate the experiment. The main sign of success in the first year was that the students liked the school, with most of those who came from other schools feeling that the model school was better than the previous one. It seemed that motivating the students at the model school had a positive affect on the school climate from the student's point of view. The other positive sign was that the parents were happy with the school, and most of those who had children in the right age group registered siblings at the Model School for the following academic year. However, the school was also faced with different problems as it had only been recently established.

In view of the above, and although in the beginning we planned to accept only first graders, we found ourselves obliged to enroll 2nd and 3rd grades, because there was no other lower primary stage school in the area. The 1st graders and 2nd graders proved to be more responsive than the 3rd graders. Accordingly, we transferred the 3rd graders (61 students) to another school at the end of the first academic year. However, another problem was the shortage of resources (books) and the absence of a full time librarian, which resulted in the lack of pupil training in the fields of

research and fact-finding. Furthermore, some of the teachers showed unwillingness to develop their teaching techniques. Hence, the Education Zone decided to adjust the teacher selection criteria so that the candidate must have excellent annual evaluation achieving about 90% of the full mark of evaluation report. Furthermore, he must presents one teaching lesson in a lecture to the committee.

Yet another problem that the Model School faced was the lack of sufficient time for training the teachers and developing their full professional skills. Since the school adopts the full day system (except Thursdays when the school day ends at 12), there was not sufficient time to train staff. Hence, we decided to adopt a five-day week (Saturday to Wednesday) and to make use of Thursdays to train teachers in order to improve their academic and professional skills.

Another problem was the lack of facilities (the gym, the swimming pool, etc.), which prompted us to think of building a new school in which the above facilities could be secured.

A third problem was that some parents were unaware and unable to take care of their children and to grasp the school's objectives to instill good conduct or to mange and change disciplinary misconduct.

After careful consideration, the committee decided that the deficiency in the existing syllabus did not go along with the school objectives and affected the teachers' creativity. As a result, we added extracurricular activities and made extra efforts to improve learning techniques.

Furthermore, the absence of computer software in Arabic for the lower primary level distracted us from properly achieving the goal of teaching computer literacy. As a consequence we've managed to provide special programs that fit our pupils' levels and ages.

In addition, the teachers lacked competence in using computers, so we provided them with a training course. Due to the absence of a clear scientific program for the outdoor activities, we asked our teachers to think of an appropriate

program that would help the pupils acquire useful skills. Financially, the school was unable to satisfy its needs collected from the pupils' fees. Consequently, we resorted to the official authorities for support.

Finally, we lacked the proper support from some officials in the Ministry of Education defending the traditional way of teaching and who were unwilling to accept any idea of change. Fortunately, we've been able to overcome these obstacle thanks to the continuous support from the part of the political rulers who encourage the improvement and development of teaching.

Chapter Six

SELECTION OF TEACHERS AND ALLOCATION OF STUDENTS TO THE MODEL SCHOOL

In the previous chapter I mentioned the major changes that were implemented in the model school. They are in the fields of teacher motivation, student motivation; time allocated for education, teacher professional development, and education materials.

Beside those major changes, one may think that there are some other variables that play certain roles in enhancing the students' achievement level in the model school. Such factors are: teachers' selection, student selection, and class size. In this section, I will try to demonstrate that these factors did not put the model school at an advantage over other schools in the study.

I will start my argument with the main element that affects student learning, namely the teacher.

6.1. TEACHERS' PERFORMANCE REPORT

One of the main criteria for selecting a teacher for the model school was the performance report. Usually, the supervisor and the school principal write this report at the end of each academic year. Both the supervisor and the principal visit the teacher at least three times a year in order to evaluate his performance. The performance report consists of sections related to the teacher's personal and

professional skills. Excellent teachers were given 90% or more. In the first year of the model school, we only selected teachers with a performance report of 90% or more thinking that these would be the best teachers in the Zone who could improve the quality of the school and the students' performance. This proved to be wrong. At the end of the second year more parents wanted to send their children to the model school. We could not find enough teachers with excellent performance reports who were interested in joining the model school; therefore we decided to select teachers with performance reports of less than 90%.

At the end of the third year, we discovered that the performance of some of the teachers who were selected because they had excellent reports had declined and the performance of the teachers who were selected with reports less than 90% had increased (Internal Document No. 4 1995b). This led us to conclude that the model school system motivates teachers to perform better and that it is not the initial standard of the teacher as assigned by the performance report that is the predominant factor. Table 6.1 shows how the teachers' performance in the model school improved.

Table 6.1: Teacher Performance Improvement in the Model School

REPORT	90 and Above						Less Than 90					
SUBJECT	Class	Class	Class	Eng.	Eng.	Eng.	Class	Class	Class	Eng.	Eng.	Eng.
TEACHER AGE SPAN	30-35	36-40	> 40	30-35	36-40	> 40	30-35	36-40	> 40	30-35	36-40	> 40
IMPROVED	1		4	1			1	3		3	3	
DECLINED		3	10	1		4	1		1			
SAME		1		1			2					

Table 6.1 also classifies teachers into two groups; those who were chosen for the model school with performance reports of 90% or more, and those who were selected with performance reports of less than 90%. Within each group teachers are classified according to subject and age. There were two groups of teachers: the English teacher and the class teacher. The table also shows the teachers' performance reports status and whether it improved, declined or stayed the same.

The numbers plotted in the table represent the number of teachers. The total number of teachers who taught in the model school in the first four years of the experiment is 43. Fourteen of them are English teachers and 29 are class teachers. I collected data for 40 of them. For another two class teachers and one English teacher, data was not available.

Table 6.2: Teacher Improvement Status

	90 and Above	Less Than 90
Improved	23%	71%
Declined	69%	14%
Same	8%	14%

Out of the 40 teachers, 26 had performance reports of more than 90% based upon the selection criteria applied at the beginning of the experiment of the model school. The rest had less than 90% in their performance reports but were selected on the basis of other factors, mainly personality, age, and willingness to develop schools. It turned out that the second group's performance became better within the model school system. Sixty-nine percent (69%) of the first group's (who had 90% and above performance report before joining the model school) performance reports declined and some of them were transferred to other schools as a result of low performance. Twenty-three percent (23%) of them improved and 8% showed no change. In the second group (who had less than 90% in the performance report before joining the model school) only 14% of the teachers' performance reports declined, 14% remained the same, and 71% of them improved. Also, it seems that age has some effect on the teachers' performance in the model school.

If we compare both groups (based on their ages), we find that 69% of the first group is over 40 years old whereas only 7% of the second group is over forty. Also, all the teachers who were transferred to other schools due to their low performance in the model school were over 40 years old and 61% of those whose performance declined were over 40 years old. The conclusion of the previous analysis is stated in a number of points. First, the teachers who worked in the model school were not the

best ones in the Abu Dhabi Educational Zone when they joined the school. Second, younger teachers tend to be more understanding of the model school system. Third, training provided in the model school has more of an effect on the younger teachers. Fourth, it seems that the elder teachers tend to resist the changes in the model school system.

6.2. TEACHERS' EXPERIENCE AND QUALIFICATIONS

The other two factors, which may be related to the improvement of the student's achievement, are teacher experience and teacher qualifications. In this section I will compare the experience and qualification of the model school's teachers to those in the sample schools. The purpose of this comparison is to find out which group of teachers is more qualified and more experienced. Teachers' years of service in schools has been found by some studies to have a moderate relationship with a student's performance (Fuller 1987). The significance of this factor remained even after controlling the students' social background. Table 6.3 summarizes the teachers' experience in the model school and each one of the sample schools

Table 6.3: Average Teaching Experience

School Name	Teachers' Avg. Experience	Order of the Math Test Result
Saad	6	9
Ansar	6.8	2
Ibn Katheer	6.9	13
Mosab	7	6
Abu Dar	7.5	7
Wathba	8.75	12
Zaid	9	8
Model S.	9.4	1
Farabi	11.2	10
Bin Qasim	12.9	4
Ibn Otaiba	14.5	3
Al Ameen	15	4
Al Mamoon	15	10
General Average	10	

The 13 schools mentioned in the table 6.3 are all of the lower primary schools that have male teachers in the Abu Dhabi Education Zone. Table 6.3 shows the teachers' average years of experience is 10 years. Al Ameen and Mamoon schools have the highest average of 15 years, and Saad has teachers with the lowest average years of teaching experience. The model schoolteacher's average experience is 9.4, which is close to the Education Zone's average. This means that teachers at the model school don't have more teaching experience than the average, which might have led to an inference that they are better than the other teachers because they have more experience.

It can be concluded from the previous table that the students' test results (for more detail in Math results see Chapter Eight) is not clearly affected by the teachers' experience. Tests scores order does not match the teachers' experience order

The other variable that proved by many studies to have a direct relationship with students' achievement levels is the teachers' qualification. Studies indicate that teachers with more post secondary education have more effect on the students' achievement (Fuller 1987). Fortunately, the Ministry of Education recruits for the lower primary stage teachers with the same qualifications, i.e. two-year diploma holders after the high school. Hence, there is no difference in the teachers' qualifications between the model school and the sample schools.

6.3. STUDENT SELECTION

Student selection criteria in the model school were the same in the sample schools. Both school systems follow the Ministry of Education's policy of admitting students. However, the model school differed in the fact that it only admitted UAE nationals who are not experiencing slow learning problems. In other words, the school admits UAE students with no learning disabilities. In fact, and like most of the lower primary stage schools, there was one class in the model school designated for slow learners at the beginning of the experiment. However, in the second year we stopped admitting new slow learner students, because a lot of parents wanted to

send this particular category to the Model School, and we had no room to accommodate for students with such needs. In the second year, the class with learning deficiencies, accompanied by their teachers, was transferred to a nearby school.

It is also worth mentioning that the model school policy was to enroll only first graders. However, due to the increasing pressure of the parents wanting to have their children join the school, we accepted a few second and third graders. The number of the students enrolled in other than grade one decreased. In the academic year 1997/98 less than 5% of the new students admitted were in other than grade one. This percentage even decreased to less than 1% in the academic year 1998/99 (Internal Document No. 6 1997). The student's background or the level of the parents' education was proven by many studies to have a strong relationship with students' performance. However, in the model school these two factors are of less importance in the student's achievement level, because the students depended completely on the school in regard to the academic performance. Students in the model school spent more time with their teachers than with their families. They also did their homework at school, and they did not take any books home except on the weekend to show their parents their performance for that week. Even during the exams periods, the school holds reviewing sessions for all of the students.

6.4. Class Size

For teachers, a smaller class means more teacher-student interaction; it also allows continuous evaluation of students and provides greater flexibility in teaching strategies. For school administrators, it means a reduction of teacher's administrative responsibilities and allows for allocating more time to instructionally relevant activities. Small classes may also minimize discipline problems, because teachers can control a smaller group easier. However, at the same time, the cost of smaller classes is high. Smaller classes require building more classrooms and recruiting more teachers (Finn and Achilles 1990). A study conducted in Tennessee in the

USA, which included 7000 students in 79 schools, showed that in both reading and mathematics, students in small classes performed significantly better than students in regular classes (Nye 1992). A study held in Colombia on a Science achievement test among 837 urban students, found that smaller classes of the primary level were significantly related to high achievement (Arriagada 1981).

However, in his review of 21 studies, Fuller (1987) found that only 10 studies showed direct relation between class size and achievement. In fact, five additional studies indicated that students working within larger classes performed at high levels. Most studies reviewed by Fuller reported no effect from variation in class size. Also, "in most situations, lowering class size with intent of raising achievement is not an efficient strategy " (Fuller 1987, pp. 76). Some of the studies demonstrated a positive relationship between smaller classes and student achievement in one geographic area but not in another area (Dewhurst 1993). Findings of another study on primary schools indicated that although students have more chance to interact with the teacher, they tend to wait longer, and this cancels out the advantage over large classes (Galton 1996). An international comparison of students' progress in math and science revealed that students in South Korea led the international performance league with an average class size of 45 for nine-year old students (Dewhurst 1993). It can be concluded that the issue of the class size in relation to student achievement is debatable. However, it is clear that class size cannot be considered independently of other classroom variables like, for example, teacher instructional methods. Teachers who were used to applying instructional methods for a larger class would not benefit smaller classes. It seems that the result of the achievement test was in favor of the argument that there was no clear relationship between the class size and the student achievement.

The following table presents the sample schools in order by average class size, while in the second two columns are the Arabic and Math achievement results are presented. I chose Arabic and Math tests results to be the base of this comparison because these two subjects require more skill than the other subjects. The figures

shown on Arabic test and Math test columns of the following table represent the order of the test results. One (1) represents the best result and 12 represents the worst result. The result is calculated based on the percentage of students who receive 70% or more on the test.

Out of the 12 schools only two schools have a class size order similar to the Arabic test order. For the Math test the case is even worse in regard to the support of the argument that class size has a relationship to student achievement. The class size order and the Math test result order have no similarity for any one of the sample schools. In conclusion, there is no strong evidence from the literature or from the achievement test results that there is any relationship between student achievement and class size. Therefore, the class size variable will not be included in the thesis variables.

Table 6.4: Math & Arabic Tests' Results Compared to Class Size

No.	School Name	Average Class Size Order	Arabic Test Order	Math Test Order
1	Ibn Otaiba	21.4	1	2
2	Wathba	22.8	7	11
3	Mosab	25	6	5
4	Abu Dar	25.3	5	6
5	Al Mamoon	25.6	11	9
6	Zaid	25.8	7	7
7	Saad	26.5	7	8
8	Al Ameen	27.6	3	3
9	Ibn Katheer	27.7	12	12
10	Bin Qasim	28.8	4	3
11	Al Ansar	29.9	10	1
12	Al Farabi	31.7	1	9

In conclusion, if we compare the model school to the other lower primary schools in the Abu Dhabi Educational Zone, we can see differences in many ways. Some of the changes are clearly related to the students' achievement level, such as changes that are related to the teacher motivation, student motivation, time allocated for education, teacher professional development, and education materials.

However, it is argued that changes that are associated to teacher experience and qualification, student selection, and class size did not make the model school better in terms of the students' academic performance.

Chapter Seven

METHODOLOGY

7.1. INTRODUCTION

This thesis is based upon a case study in which a model school is planned, established, monitored and evaluated. To find out how and why the model school was successful, I have to evaluate the students' academic achievement and explored the reasons why it was successful after four years of operation (1994/95 to 1997/98). The thesis includes two strands. Strand one aims at evaluating students' academic achievement and strand two aims at evaluating major changes implemented in the model school system through teachers' perceptions. Both strands will be applied to the model school system and compared to a sample of lower primary stage schools' system in the Abu Dhabi Educational Zone.

Both systems will be explained in detail to show similarities and differences. The result of an *attainment test*, which will be used to assess the academic level of the students, is the database of *strand one*. Data collection for *strand* two was mainly through a *questionnaire* that was given to teachers from both school systems. The result of both studies is used to compare the model school system to other lower primary stage schools' systems in Abu Dhabi Educational Zone.

For several reasons, the thesis is limited to the third grade students and teachers. First, third grade is the last year of the lower primary stage. Students who completed this stage are considered the output of this stage. Second, students at the model school have three years under the model system, so it is enough time to explore the effect of the system on the students. Third, the lower primary stage is an

important stage because it is the first three years of the child's education, and most likely, the performance in the following years will depend on it.

It should be mentioned again that the thesis refers to the educational zone comprehensive study (Abu Dhabi Education Zone 1993), which one might argue is not academically sound, particularly in terms of the sampling procedure applied (see Chapter Four). This comprehensive study nevertheless raised issues, which were of concern to the education zone at that time and therefore provided the areas, which I investigated. Also, conversations during formal and informal meetings with teachers, supervisors, school principals and parents supported the view that the issues highlighted in the comprehensive study should be examined.

This methodology will cover the following areas: the use of the case study, my position as a researcher, the research questions, strand one, and strand two. The chapter will be concluded with how the data is organized.

7.2. The Case Study Methodology

As mentioned in the beginning, this thesis is based upon a case study methodology. Yin (1989) divided social science researches into five methodologies: surveys, experiments, histories, the analysis of archival information (as in economic studies), and case studies. There are three conditions that distinguish between the five methodologies. The conditions are the type of research questions, the extent of control an investigator has over actual behavioral events, and the degree of focus on contemporary as opposed to historical events (Yin 1989).

As far as this thesis is concerned, the questions to be answered are "why" and "how" questions. Three of the five traditional research methodologies mentioned earlier are able to answer the two questions. They are the case study, experiment, and history methodologies. The surveys and the analysis of archival information methodologies have limited value in answering "why" and "how" questions.

The direct observation of the event is one source of evidence used in this thesis, which is not applied in the histories methodology. Also, because it deals with contemporary phenomenon, the history methodology is not applicable. Yin (1989) describes experimental methodology as being laboratory-based examination of hypothesis under controlled conditions. This study, on the other hand, is an examination of variables in a social setting.

Therefore, the appropriate methodology to carry out this thesis is the case study methodology.

A case study is defined as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evidenced; and in which multiple sources of evidence are used" (Yin 1989, p.23).

There are some other aspects of the case study methodology, which made it appropriate for this study. First of all, there are many variables involved in this thesis, which can appropriately be studied by case study methodology. The variables are the five major changes implemented in the model school. These changes are clustered in five major fields and are teacher motivation, student motivation, teacher professional development, education materials, and time allocated for education (See Chapter Five). Second, case studies can describe and analyze the phenomena, in this case the model school, over a long period of time, enabling a longitudinal comparison with other schools not involved in the experiment. Third, case studies can give a clearly detailed description of the phenomenon under study, which I think is necessary in order to help researchers understand the system of the model school since it has never been studied intensively before.

As any other research design, case studies have weaknesses and strengths. Their main strengths are presented in the following:

"The case study offers a means of investigating complex social units of multiple variables of potential importance in understanding the phenomena...the case

study results in a rich and holistic account of phenomena. It offers insight and illuminates meanings that expand its reader experiences" (Sharan 1988, p.33).

The main and unique strength a case study has is that it allows the researcher to deal with a variety of evidence such as documents, interviews, and observations. The literature show that a major weakness of a case study methodology is that it can be influenced by the biased views of the researcher (Guba and Lincoln 1981).

The other weakness of the case study methodology is that it is not possible to generalize from the output of a single case. This is a valid argument. However "case studies, like experiments, are generalisable to theoretical proposition and not to populations or universe" (Yin 1989, p.20).

Another limitation of the case study methodology is that it is expensive in time and money. Most of its cost comes from the time and effort it consumes. However, applying some techniques to reduce the cost and time a case study consumes may decrease the negative effects of this limitation. Proper data management and the use of the new technology are two of these techniques.

7.3. My Position as a Researcher

As far as the methodology of this thesis is concerned, it is necessary to present the effect of my position as the Director of Abu Dhabi Educational Zone in the establishment of the model school and my role as a change agent.

As I mentioned, there was a high demand by the society for better educational services. Therefore, my main concern was establishing a model school in which I could test a number of theories, which I believed would lead to a higher quality of education. Therefore, I involved myself from the beginning in planning and supervising the model school management and evaluating the school system. I used my position to give the project of the model school the political, technical and financial support that it needed. Technically, I facilitated the transition of the required teachers and administrative staff from their schools to the model school

when needed. In order to reduce the side effects of the change resistance caused by some senior officials in the ministry of education, I sought political support from the local government of Abu Dhabi. The local authority then provided me with funds and resources to sustain the experiment of the model school to improve the quality of its services. Furthermore, I had the advantage of my relationship with the Dean of the Education Department at UAE University to arrange teacher and student visits to the model school to observe the school system and evaluate it.

The long school day, which finishes three hours after my work, provided me with the opportunity to continuously follow the school. Also, having my home next to the school was convenient for daily observations. Moreover, my position helps to a large extent in carrying out this study in many ways. First, I had easy access to the data needed. All of the data on the education history of the UAE was available in the Education Zone's library and archive, which made it easy for me to sort and choose the data I needed. Furthermore, designing the students' tests and scoring them would not have been possible without the help of the teachers in the schools lower primary stage and supervisors who worked under my authority.

Also, applying the questionnaire was not an easy task without official letters that I sent to school principals asking them to ease the role of the supervisors in administering the questionnaire. Finally, easy access to the computer section at the Education Zone, where I spent a long time organizing the data collected from the student's achievement test and from the questionnaires, helped to speed up data organization used for the analysis.

In short, for the model school experiment I acted as the founder, supervisor and, by conducting this research, evaluator, which gives me a unique opportunity as a researcher, and at the same time influences the methodology that shapes the study.

7.4. RESEARCH QUESTIONS

This thesis aims at comparing students' academic attainment at the model school and other sample schools and examining the effects of changes implemented in the model school on student attainment. To achieve this aim the thesis includes two strands. Strand one tests the academic attainment level at the model school and other sample schools and then compare the test scores in order analyze which group of students has higher attainment. Strand two tests teachers' perception of whether the changes implemented in the model school affected the students' attainment level.

The changes to be examined in strand two are in the fields of student motivation, teacher motivation, time allocated for education, teacher professional development, and educationl material. Of course there are many factors, which may affect the students' academic performance; however, the previous five major fields were especially important for the Educational Zone. Their importance is due to many reasons. First of all, most of the researches conducted in the Educational Zone examining the students' performance level refer to them. Also, teachers in the Education Zone mention the same factors when discussing the obstacles they face when dealing with students' academic level.

In this thesis, the five factors are tested by asking the following questions:

1) How does teacher motivation affect students' academic achievement?

2) How does student motivation affect student academic achievement?

3) How does the time allocated for education, affect student academic achievement?

4) How does the level of learning resources, beyond what is typically provided to schools, affect student academic achievement?

5) How does the training method applied in the model school lead to an improvement in teacher competency?

It should be stated that the above-mentioned factors are interrelated, and isolating each factor is done in order to simplify the analysis.

The dependent variable is the student's achievement, and will be discussed in strand one, and the independent variables are the changes that took place at the model school, and will be discussed in strand two. There are many changes adopted by the model school system; however, all of them were introduced in order to motivate the teacher to teach better and for the student to learn more.

7.5. STRAND ONE: STUDENTS' ACHIEVEMENT TESTS

7.5.1. Introduction

The purpose of the achievement test, as far as it concerns this study, is to acquire a numerical view about the level of student achievement in the schools under this study. Achievement tests are widely used in the UAE in measuring educational outcomes. Achievement means "the knowledge, understanding, and skills acquired as a result of specified educational experiences" (Brown 1981, p.2). Strand one aims at knowing how much knowledge, understanding, and skills have been acquired by the lower primary stage students in the schools covered by this study. Measuring student achievement helps us obtain data that is useful in evaluating the teaching/learning process under each school system. However, strand one's final goal is to explore which schools have higher achievement scores in each one of the five subjects in which the students will be tested. Thus, the information obtained from the achievement test will serve as a comparison tool between the model school and the rest of the sample schools.

In order to insure accurate measurement, an achievement test should possess certain characteristics (Brown 1981). First of all, the test should measure what is taught to the students in the school. This is the most important characteristic. That is, each important area should be covered in the test in proportion to its importance.

Finally, the test takers should be treated equally in terms of the time allowed for the test, the amount of directions related to the test received by the takers, and the conditions under which the test is performed. Researchers should be aware of the limitations of the achievement tests. Some of the achievement tests, especially those which contain only multiple choice questions, do not test all of the skills that need to be tested due to the limitations of the multiple choice questions. Also, some teachers concentrate on the type of skills and information that usually appears in the achievement test, and they don't focus on other important parts of the subject they are teaching. Another limitation of the achievement test is that they are biased against some students that have certain background. This specific limitation appears when the test is design- based upon the academic level of the majority of the students of the same background. Achievement tests are limited to assessing the academic level only; they are not assessing the social and emotional development of the students, which are an essential part of the student's development (Serow and Jackson 1983). Further, achievement tests concentrate on subjects that are not considered very important to some teachers; this can make the test result inaccurate. The test was designed by a group of specialized lower primary stage supervisors who have been designing such tests for many years. The test was designed to focus on the key skills taught to the students; therefore, different types of questions are used to measure the students' performances. In the test there are short answer questions, true/false questions, multiple-choice questions, essay questions, and problem solving questions. The teachers have no time to concentrate their instruction on any parts of the material that they might think would appear in the test, because they were only informed about the test one day before. The supervisors who designed the test represent all sample schools; therefore, the test is not biased against any student in terms of his social area. Finally, the test covers only the material they covered in the school curriculum.

7.5.2. Test Procedure

Students were tested in the five subjects of Islamic Studies, Arabic, English, Math, and Science, which are all of the subjects, taught at this stage. The test was given during the second half of the second semester to ensure that students have covered as much as possible of third grade material. Supervisors from the Educational Zone oversee the test procedures in each school. Students were tested in three subjects the first day and the other two subjects on the second day. All tests started at the same time. Finally, testing the students in all five subjects, not just some of them, provides the study with a better evaluation of the teaching/learning process that takes place at the schools, and insure that all teachers, regardless of their specialty subject, are teaching the full range of the agreed curriculum. In addition, to achieve maximum confidentiality, teachers who scored the tests were from the lower primary girls' schools.

7.5.3. Sampling: Study Population

There are two types of populations from which samples were chosen: school population and student population. There was a sample of schools selected from the lower primary stage school population. From the sample schools, a sample of third grade students was selected. In order to select an identical sample from the model school, lower primary girls' schools and lower primary boys' schools taught by female teachers will be excluded from the study population. Also, slow learner students will be excluded from the study sample, because the model school did not have classes for slow learners.

7.5.4. School Population

There are 16 boys' lower primary stage schools in the Abu Dhabi Educational Zone in which male teachers are teaching, including the model school, who had no direct dealing with the model school.

7.5.5. Student Population

There are 2,047 third grade boy students who have male teachers at the Abu Dhabi Educational Zone including 115 third grade students from the model school.

7.5.6. School Sample

Out of the sixteen schools including the model school, twelve schools were selected, representing different geographical and social areas. The other three were not selected because their staff was engaging in final examinations.

The school's sample represents 80% of the population. The schools included Al Amin, Al Mamoon, Al Ansar, Al Farabi, Abu Dhar, Ibn Kathir, Musab, Abdulla Otaiba, Ibn Al Qasim, Saad, Al Wathba, and Zaid.

7.5.7. Student Sample

A total sample of four hundred and fifty-three (453) students were selected from the third grade student population at the twelve schools. A committee of supervisors visited each of the sample schools and randomly picked students' names from the school list. The sample represents 23% of the student population, excluding the model school. The following table shows the student number from each one of the sample schools.

Table 7.1: Number of Student Samples from Other Schools

School Name	Amin	Mamoon	Ansar	Farabi	Abu Dar	Ibn Kathir	Musab	Ibn Otaiba	Ibn Qasim	Saad	Wathba	Zaid	Total
Student Number	34	62	64	26	33	21	37	36	30	24	38	48	453

7.5.8. Model school sample

All 115 in the student population are selected.

7.6. STRAND TWO: EVALUATION OF THE CHANGES IN THE MODEL SCHOOL FROM THE TEACHERS' PERCEPTION

As mentioned earlier, this thesis is aimed at exploring how effective the model school system is based on the students' academic achievement. Strand two compares the teachers' perception of the model school system to other schools' systems with relation to the students' achievements (strand one). Although many changes were introduced at the model school, strand two will concentrate on five major fields. The five fields are teacher motivation, student motivation, education materials, time allocated for education, and teacher professional development (see Section 4.5.7). Strand Two will test the effect of those changes on the students' academic achievement. Issues presented in the questionnaire will test those five independent variables. The five changes were introduced based upon previous studies carried out in the Abu Dhabi Educational Zone (see Chapter 4).

Strand two aims at testing the five independent variables together and attempts to discover the relation between the independent variables and the dependent variable and the strength of this relation.

7.6.1. Study Instrument

The instrument used in collecting data in strand two was a questionnaire. Closed questions were used in the questionnaire. There are several reasons as to why closed questions were applied. First of all, they do not consume much of the respondent's time. He can finish in a reasonable period of time without losing a great deal of his motivation to respond to the questionnaire questions. Second, closed questions are easier to code. It is simple to group the responses to closed questions into manageable categories. Finally, unlike open questions, closed questions are accepted more by respondents who don't usually give detail answers to the open-ended questions.

The main disadvantage of the closed questions is that the respondent might not find enough alternatives from which to choose (Vaus 1996). Questionnaires have

some limitations. Sometimes they are not taken seriously, some questions are vague, or some questions are left unanswered. However, I did my best to reduce these limitations by motivating the teachers to take the questionnaire seriously, and, the questions were piloted to identify any lack of clarity before distribution of the questionnaire.

7.6.2. Pilot study

In order to insure that the questionnaire served its purpose, I conducted a pilot study. The purpose of the pilot testing was to assess with respondents the questionnaire on a smaller scale before it was applied to the sample population. Pilot tests provide the researcher with many helpful assessments (Vaus 1996). First of all, the pilot test checks if the questions in the questionnaire are clear for the respondents. Second, researchers who apply a multiple-choice question or scaled answers can review if the range of the response alternative is sufficient or not as some of the respondents might feel that they have answers other than the choices provided in the questionnaire. Third, a pilot test provides a good opportunity for finding out if the time consumed in responding to the questionnaire is suitable for the respondent. Finally, by pilot testing we can assess the way the questionnaire procedure is administered.

This gives the researcher an opportunity to improve the way the questionnaire is administered. In order to get the best result from the pre-testing of the questionnaire, the pilot testing should be conducted on a small sample of the study sample.

As far as this questionnaire is concerned it was pre-tested on eight teachers from a lower primary stage school. Their valuable input was taken into consideration when I reviewed the questionnaire before it was applied on the sample population

7.6.3. Questionnaire Construction

The questionnaire (see Appendix A) included 107 issues that represent most of the educational changes that were introduced at the model school (see chapter 4). There are two questions assigned to each issue: question A and question B. Question A is "What degree of priority is given by your school to this issue?" Question B is " To what extent does the priority of the issue have a positive impact on the teaching/learning process at your school?" There are two reasons for constructing the questionnaire with two questions for every issue. One reason is to confirm the teachers' perception, and the other is to ease answering the questionnaire. Having two related questions confirms the teacher perception on each issue. The degree of priority given to the issue (answer to question one) has a relation with the positive impact on the teaching learning process (the second question). The answers helped in figuring out if the response was rational or not. This point will be explained in detail later in this section. Another rationale behind constructing the questionnaire with two questions is that it makes the responding easier and shorter. Easier in a sense that the respondent will read the issue one time and answer two questions, thus making the questionnaire shorter.

The responses are presented in terms of degrees in order to help figure out the level of priority. For questions that accept a yes/no answer, most of the answers are expected to be 'yes' because all of the issues have direct relation with students' achievement and the rational school administration should give some sort of importance to the issues which will lead to the positive response. The issues are divided into seven main categories: teacher related issues, student related issues, school administration related issues, curriculum related issues, family related issues, supervision related issues, and general issues. Some of the issues are applied only at the model school, for example, issue number 3 which is about designating one day of the week for teachers' training. Issue number 14, which is about raising teachers' salaries, is also applied only at the model school.

The questionnaire is constructed with a four-category response scale. That is, for each issue in the questionnaire the respondent, in this case the teacher is going to choose one of four categories to respond to. The answers to the two questions are either very high, high, low or very low. To make the statistical treatment easier, the answers change to 1, 2, 3, and 4 respectively. The purpose of choosing even numbers for the answers is to avoid the middle answers. The response on each issue is formed as a set of answers since there are two answers for the same issue, one for question A and the other for question B. Therefore, there are 16 possible set of answers. They are (1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), (3,4), (4,1), (4,2), (4,3), and (4,4). It is clear that answers (1,1), (2,2), (3,3), and (4,4) are more likely to occur because of the logical relation between question A and question B. For example, high degree of priority leads in most cases to high degree of positive impact, and low degree of priority does not lead to high degree of positive impact, however, it leads to low degree of positive impact. Therefore, it is not likely to have possible sets of answers like (4,1) or (4,2).

Due to the time limitation and the distance between the sample schools, a committee of 13 supervisors was formed to look after the procedures of administering the questionnaire. Each one was directed to one of the schools. The day before administering the questionnaire, I held a meeting with them to discuss the best ways of applying the questionnaire. I explained to the committee every issue and question in the questionnaire, and the way it should be handled. I gave each one of them two letters; one for the school head master asking him to facilitate the questionnaire administration, and the other one to the respondent thanking him for his valuable participation and encouraging him to be precise and fair. The questionnaire targeted all of 90 lower primary stage teachers in the sample schools; however, only 83 showed up, as the rest were busy working in the final examination committees.

Along with the questionnaire, a handout of a detailed explanation of how the model school system works was given to each teacher to read before applying the questionnaire. The reason for this was because some of the issues presented changes that are applied only at the model school, with which some of the teachers from other schools were not familiar.

7.6.4. Study Population

Since the model school system is to be compared to other school systems, we chose schools which taught the same age range as the model school. Therefore, the study population was all of the third grade male subjects teachers. Only third grade teachers are selected, because the achievement test was applied on a sample of third grade students only. Thus teachers of the same students sample will be responding to the questionnaire which will give the study more accurate evidence. One important issue related to the sampling of the study is that only male teachers were selected in the sample. The reason was there were three schools in the education zone in which female teachers were teaching boys. And, it was not possible to include those schools in the population because they were not similar as far as the teachers' sex is concerned. Therefore, the total population is 90 teachers, including the model schoolteachers.

7.6.5. Study Sample

Seventy-four teachers from the sample schools were available when the questionnaire was administered. This number is equal to 92% of the total population. In addition, all nine of the third grade teachers from the model school participated.

7.6.6. Initial Data Organization

Data from the questionnaire has been reorganized based on the five independent variables: teacher motivation, student motivation, time allocated for education, teacher professional development, and education materials. Issues presenting those five variables in the questionnaire will be grouped together and

analyzed as one variable. The analysis resulting from the independent variable for the model school will be compared with the results from the rest of the schools. Next, the same analysis technique is applied to each school to discover the type and strength of the relation to the dependent variable.

Chapter Eight

STRAND ONE: STUDENTS' ACHIEVEMENT TESTS

This chapter includes one of the two studies in this thesis. It is the study of testing the students of the model school and a random sample of the students in the other lower primary schools in five subjects. The study consists of a description of the study, including how data is collected and organized, and the result of the study.

In strand one students were tested in five subjects, which include Islamic Studies, Arabic, English, Math and Science. The purpose of this test is to find out if the model school system has an effect on the students' achievement level. The tests were designed by a group of lower primary stage supervisors and took place in the second half of the second semester to ensure that students learned as much as possible of third grade material as outlined in Chapter Seven. The sample consists of 12 lower primary stage boys' schools and the lower primary stage in the model school. The total number of the students is 453 from the sample schools and 115 from the model school.

8.1. DATA ORGANIZATION

Table 8.1 shows the number of the students from each one of the sample schools.

Table 8.1: Number of Students in Sample Schools

School Name	Amin	Mamoon	Ansar	Farabi	Abu Dar	Ibn Kathir	Musab	Ibn Otaiba	Ibn Qasim	Saad	Wathba	Zaid	Total
Student Number	34	62	64	26	33	21	37	36	30	24	38	48	453

The purpose of data organization of the students' achievement is to convert the students test results into a readable form to compare the test results of the sample schools with the test results of the model school. Data organization was organized into three steps.

8.2. Data Analysis of the Model School and the Sample School

The first step started after the tests were scored. The total marks of each subject were divided into 11 intervals 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, 90-99, and 100. The reason for introducing these intervals was to have a clear picture of where the scores were clustered. In other words, instead of just calculating the general average score, which might be misleading, schools can be compared in a more meaningful way. The frequency of times each score falls in each interval was then calculated. This was applied for the 12 sample schools and the model school.

Table 8.2 shows a sample of how the number of scores was divided among the 11 intervals. The upper row of the table represents the 11 intervals. Below the intervals row there are five rows representing the frequency of scores in every interval for each subject shown in the first column. The last column in the table indicates the total number of students who took the achievement test of the given subject.

Table 8.2: Model School Scores' Intervals Table

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100	Total
Islamic	0	0	0	0	1	2	2	8	14	73	15	115
Arabic	0	0	0	0	0	4	3	12	28	67	1	115
English	0	0	0	0	1	5	5	12	26	51	15	115
Math	0	0	0	0	0	1	3	15	30	58	8	115
Science	0	0	0	0	0	2	5	9	16	74	9	115

To explain the table 8.2 indications, the math test of the model school is used as an example. The math scores in the previous table indicated that there were no

students who have scored in the intervals 0-9, 10-19, 20-29, 30-39, and 40-49. In the interval 50-59 there is only one student who has a score between 50 and 59. And, most of the scores are between 90 and 99.

In the second step the number of scores into was converted percentages, in order for the score results to be eligible for comparison between schools, since the number of students who took the achievement test vary from one school to another. The conversion was done by dividing the number of scores of each subject in each interval by the total number of the students who took the test. The percentage clarified the percentage of students who obtained each score. Table 8.3 is the same as the previous one but the frequencies are converted into percentages.

Table 8.3: Model School Percentages' Intervals Table

	0-9	10--19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100	Total
Islamic	0%	0%	0%	0%	1%	2%	2%	7%	12%	63%	13%	100%
Arabic	0%	0%	0%	0%	0%	3%	3%	10%	24%	58%	1%	100%
English	0%	0%	0%	0%	1%	4%	4%	10%	23%	44%	13%	100%
Math	0%	0%	0%	0%	0%	1%	3%	13%	26%	50%	7%	100%
Science	0%	0%	0%	0%	0%	2%	4%	8%	14%	64%	8%	100%

The third step was calculating the average percentage of scores that fall within each interval for every subject. This step was done twice: once for the sample schools and the other for the model school. The result of the third step was put into the same table, from which a graph was drawn to make the presentation easier.

The following five tables (tables 8.4 to 8.9) and graphs (Figures 8.1 to 8.5) are the results of the third step. They represent a general overview comparison of the model school students' achievement test with the sample schools' achievement test. Each table consists of columns that represent the eleven score intervals and rows which show the two school systems. The tables indicate the percentage of students who have scored which fall under each one of the scores intervals. The graphs display the data in the tables in a columns format to make the comparison between the two school systems visible. The model school is indicated by the dotted bar and the sample schools is indicated by the black bar.

Since there is a lot of data that can be inferred from the percentages which appear in the table and the graph, the data of each table and graph is limited to the following:

1) The percentage below and above 50%.

2) The mode percentage.

3) The percentage of full grades (100).

4) The percentage of scores which falls above and below the 80 % interval.

These pieces of information are sufficient to indicate which of the schools' systems have students with higher achievement scores. The letters M.S in the table refers to the model school and S.S refers to the sample schools.

Table 8.4: Islamic Studies Test

	0-9	10--19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
M.S	0%	0%	0%	0%	1%	2%	2%	7%	12%	63%	13%
S.S	1%	2%	4%	4%	6%	8%	15%	15%	22%	22%	1%

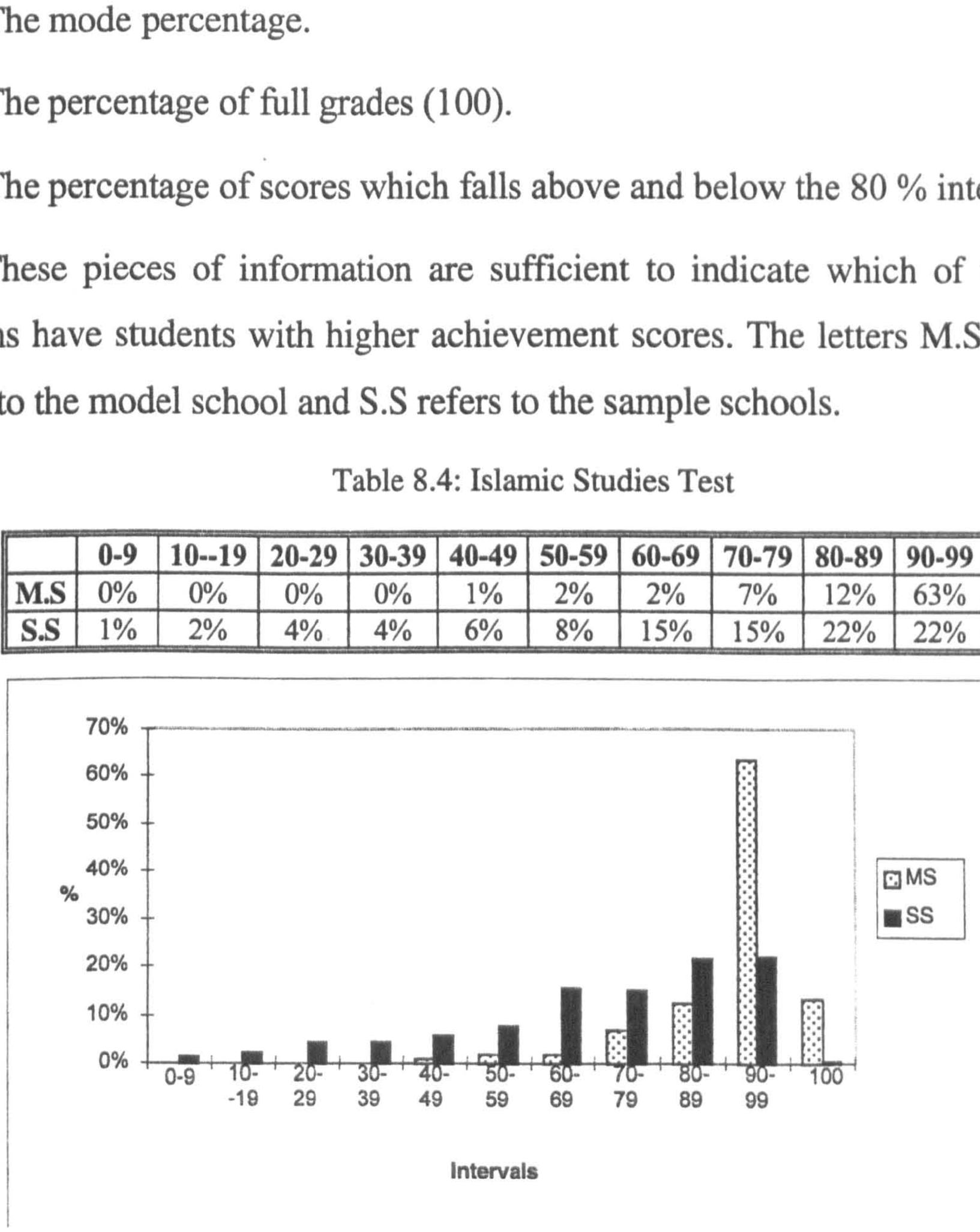


Figure 8.1: Islamic Studies Test Comparison

M.S refers to model school and is indicated by the dotted columns. S.S refers to the sample schools and is indicated by the black columns.

In the Islamic Studies test 17% of the students in the sample schools received scores less than 50 whereas only 1% of the model school students achieved scores less than 50. Also, 83% of the sample schools' students received scores more than 50 whereas 99% of the model school students received 50 or more. This indicates

that the number of weak students in Islamic Studies in the sample schools was greater than in the model school which eventually means that there are more students with higher scores in the model school. The mode of the sample schools fall in the 80-89 and 90-99 intervals by 22% for both intervals, whereas the model school mode falls in the 90-99 interval by 63%. The percentage of scores falling in the 80 and higher interval is 45% in the sample schools and 88% in the model school. In addition, 1% of the sample schools' students got the full mark in the Islamic Studies test, whereas 13% of students in the model school got a full mark. It can be concluded that students in the model school were far better than students in the sample schools in the Islamic Studies achievement test.

Table 8.5: Arabic Test

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
M.S	0%	0%	0%	0%	0%	3%	3%	10%	24%	58%	1%
S.S	0%	3%	4%	7%	7%	12%	14%	17%	19%	16%	1%

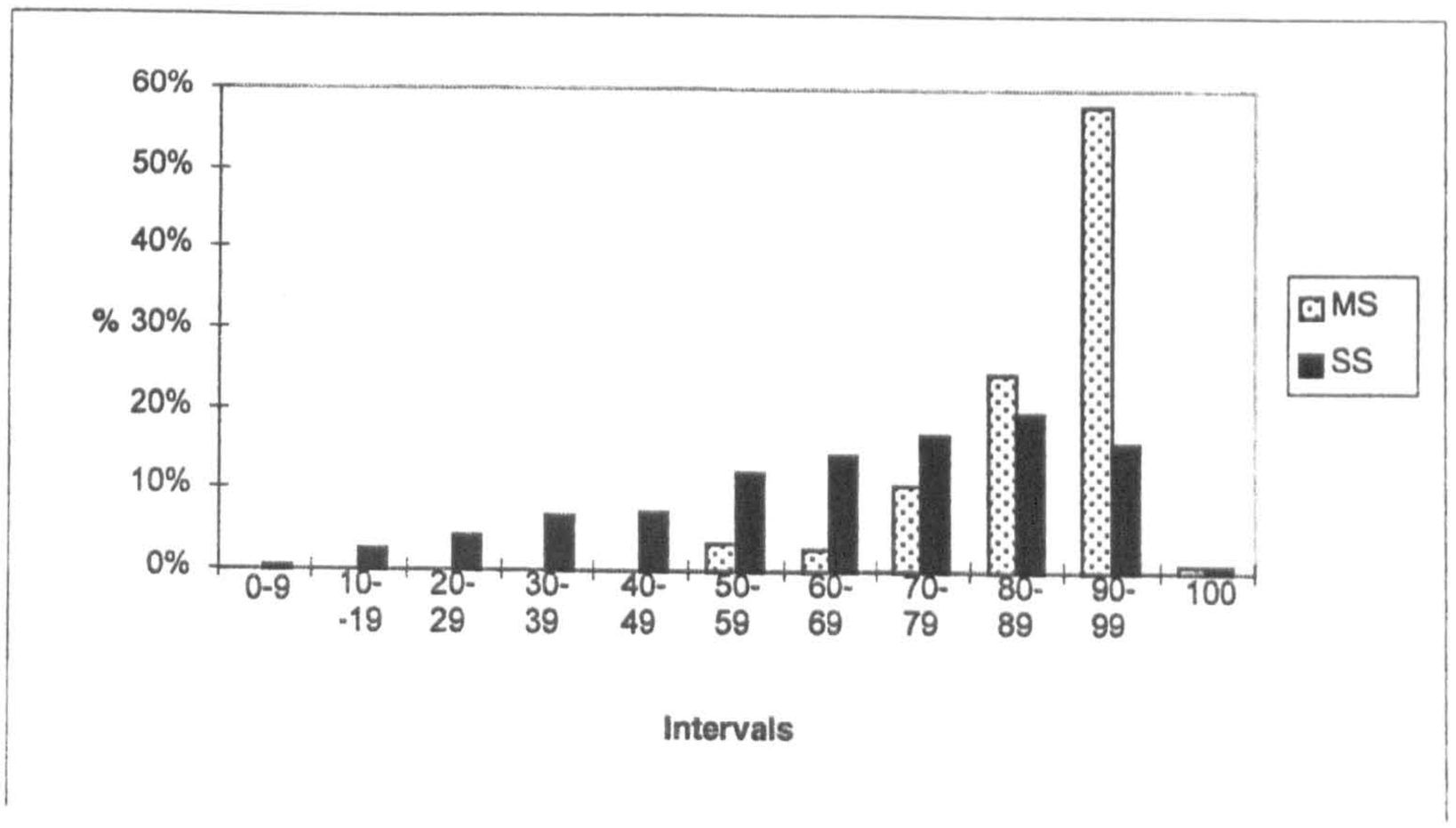


Figure 8.2: Arabic Test Comparison

M.S refers to model school and is indicated by the dotted columns. S.S refers to the sample schools and is indicated by the black columns.

In the Arabic test 21% of the students of the sample schools scored less than 50, whereas 0% of the model school students scored less than 50. Also, 79% of sample schools' students scored more than 50, whereas 100% of the model school

students scored 50 and above. This indicates that the number of weak students in Arabic in the sample schools was higher than in the model school, which eventually means that there are more students with higher scores in the model school. The mode of the sample schools fall in the 80-89 interval by 19%, whereas the model school's mode falls in the 90-99 interval by 58%. The percentage of the scores which fall in the 80 and above interval is 36% in the sample school and 83% in the model school. In addition, 1% of both schools got the full mark in Arabic. It can be concluded that students in the model school scored higher grades than those in the sample schools in the Arabic achievement test.

Table 8.6: English Test

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
M.S	0%	0%	0%	0%	1%	4%	4%	10%	23%	44%	13%
S.S	1%	4%	9%	12%	15%	13%	13%	13%	11%	7%	1%

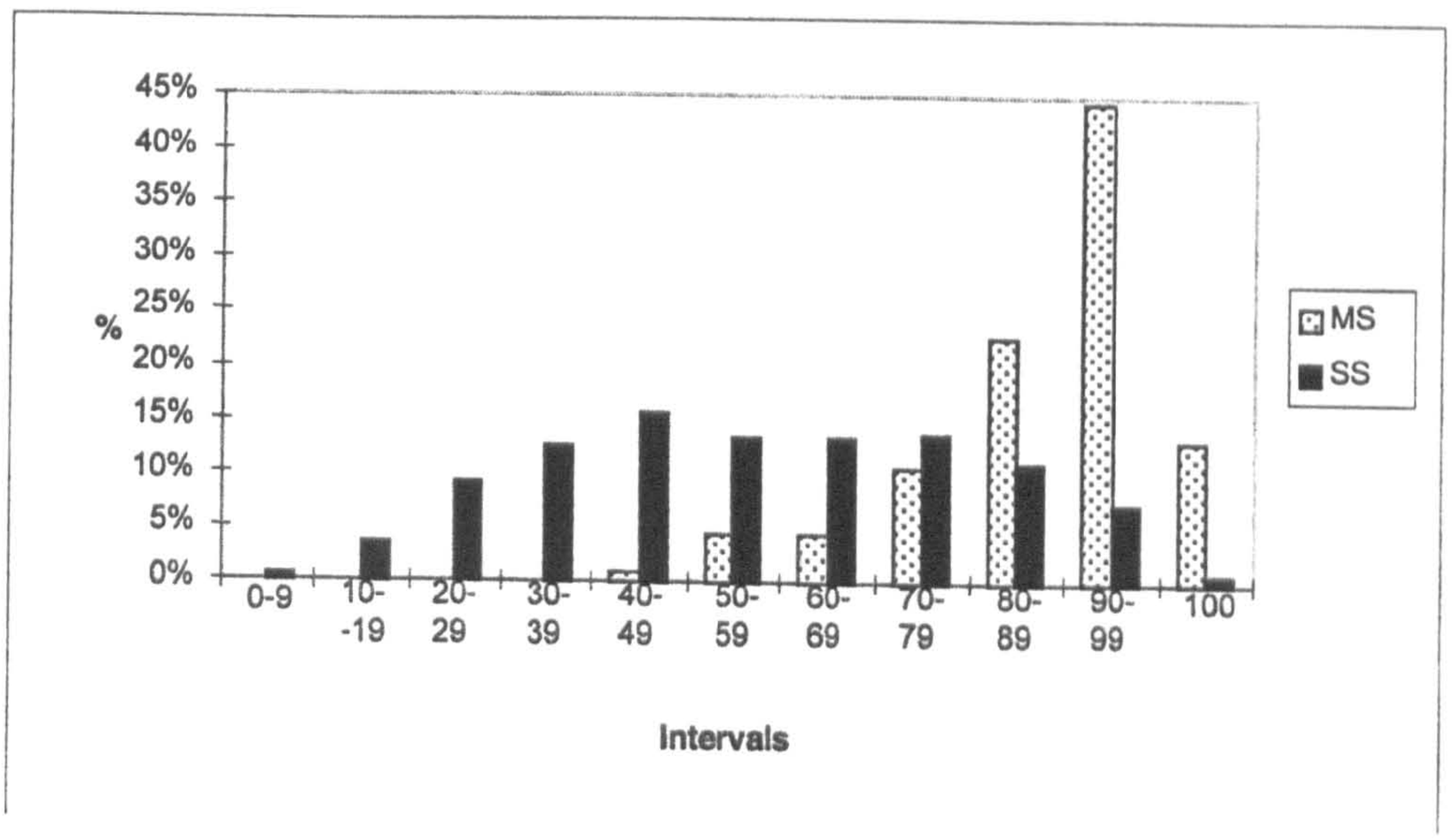


Figure 8.3: English Test Comparison

M.S refers to model school and is indicated by the dotted columns. S.S refers to the sample schools and is indicated by the black columns.

In the English test 41% of the students in the sample schools scored less than 50, whereas only 1% of the model school students scored less than 50. Also, 59% of the sample school students scored more than 50, whereas 99% of the model school students scored 50 or more. This indicates that the number of weak students in

English in the sample schools was bigger than in the model school, which eventually means that there are more students with higher scores in the model school. The mode of the sample schools falls in the 40-49 interval (15%) whereas the model school mode falls in the 90-99 interval (44%). The percentage of scores falling in the interval of 80 and higher is 19% in the sample schools and 80% in the model school. And 1% of the sample school students got the full mark on the English test, whereas 13% of the model school got the full mark. It can be concluded that students in the model school achieved higher scores than those in the sample schools in the English achievement test.

Table 8.7:Math Test

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
M.S	0%	0%	0%	0%	0%	1%	3%	13%	26%	50%	7%
S.S	1%	2%	6%	11%	12%	14%	17%	15%	15%	7%	0%

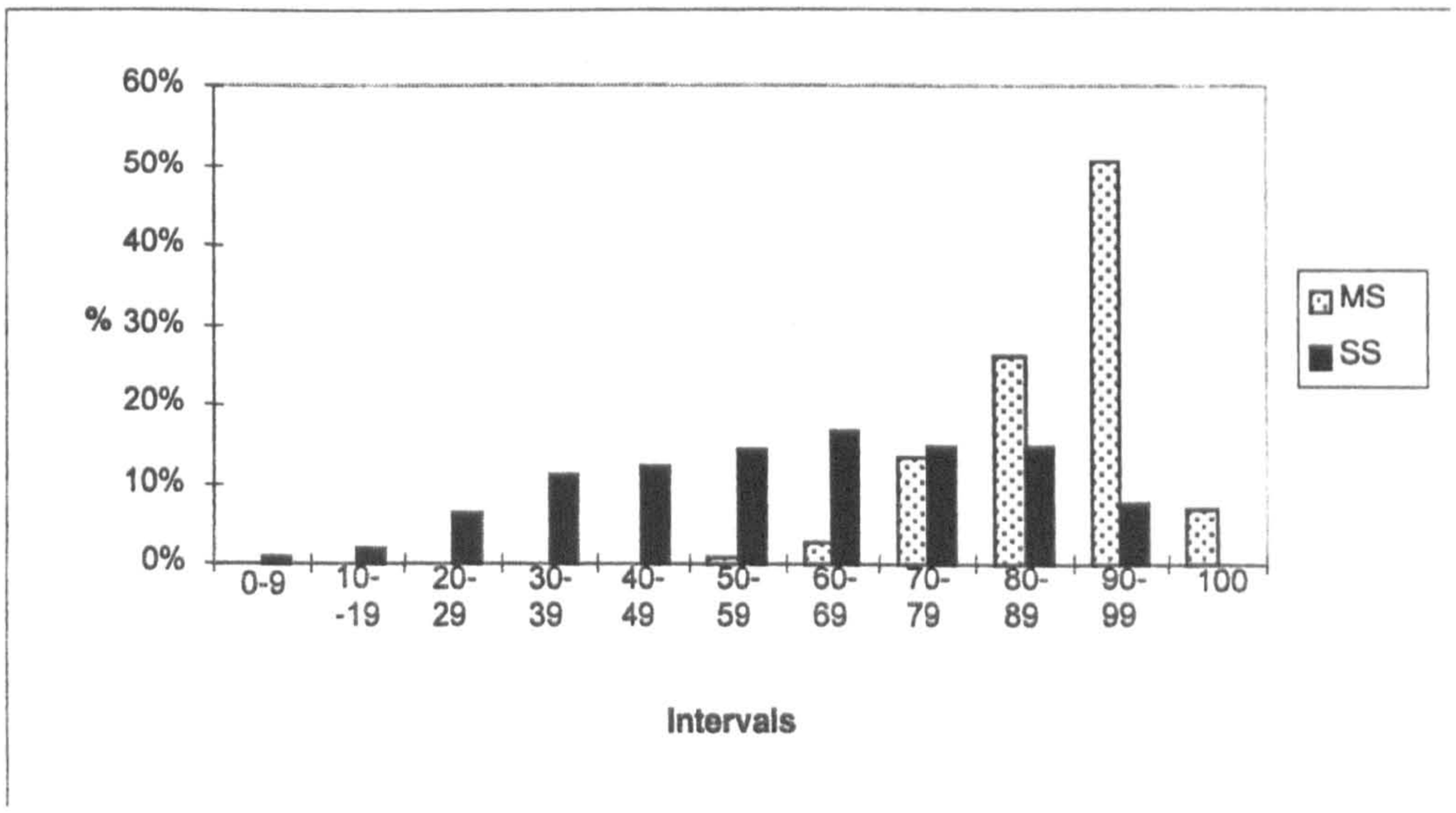


Figure 8.4: Math Test Comparison

M.S refers to model school and is indicated by the dotted columns. S.S refers to the sample schools and is indicated by the black columns.

In the Math test, 32% of students in the sample schools scored less than 50, whereas 0% of the model school students scored less than 50. Also 68% of the sample school students scored more than 50 whereas 100% of the model school students scored higher than 50. This indicates that there were more weak students in

the math subjects in the sample schools than the model school, which eventually means that more students scored higher grades in the model school. The mode of the sample school falls in the 60-69 interval (17%), whereas the model school mode falls in the 90-99 interval (50%). The percentage of scores that falls in the 80 and above interval is 22% in the sample schools and 83% in the model school. And 0% of the sample school students got the full mark in the math test, whereas 7% of the model school got the full mark. It can be concluded that the students in the model school achieved higher grades than the students in the sample schools in the math achievement test.

Table 8.8: Science Test

	0-9	1019	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100
M.S	0%	0%	0%	0%	0%	2%	4%	8%	14%	64%	8%
S.S	0%	1%	3%	8%	12%	11%	15%	16%	22%	11%	2%

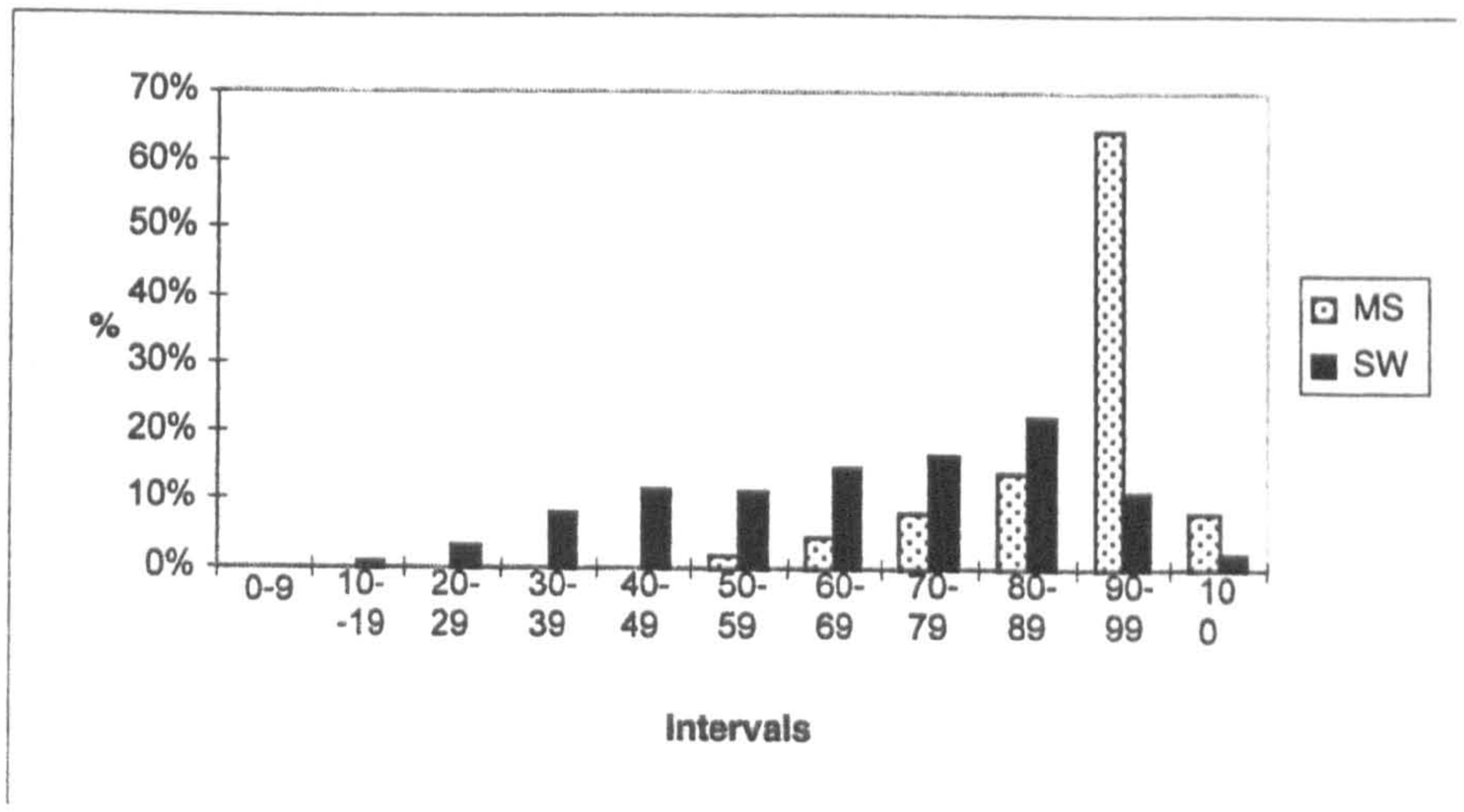


Figure 8.5: Science Test Comparison

M.S refers to model school and is indicated by the dotted columns. S.S refers to the sample schools and is indicated by the black columns.

In the Science test 24% of students in the sample schools scored less than 50, whereas 0% of the model school students scored 50. And 76% of the sample schools students scored more than 50, whereas 100% of the model school students scored 50 or more. This indicates that the students' achievement was lower in Science in the sample schools than the model school, which eventually means that model school

students scored higher grades. The mode of the sample schools falls in the 80-89 interval (22%) whereas the model school mode falls in the 90-99 interval (64%). The percentage of scores that fall in the 80 and above interval 80 is 35% in the sample schools and 90% in the model school. And, 2% of the sample school students got the full mark in the Science test, whereas 8% of the model school students got the full mark. It can be concluded that the students in the model school scored higher grades than the students in the sample schools in the Science achievement test.

8.3. COMPARING TEST SCORES ABOVE 80%

When the 13 schools included in this study are compared based upon the percentage of students having scores of 80% or higher, it is found that the model school has the highest ratio. Table 8.9 and Figure 8.6 show the percentage of the students who have 80% or higher in each subject compared to the model school.

Table 8.9: Student Score Percentages

	S. School	Sample School	Model School
Islamic S.	Ibn Otaiba	58%	89%
Arabic	Ibn Qasim	57%	84%
English	Ibn Qasim	47%	80%
Math	Ansar	48%	83%
Science	Musab	58%	86%

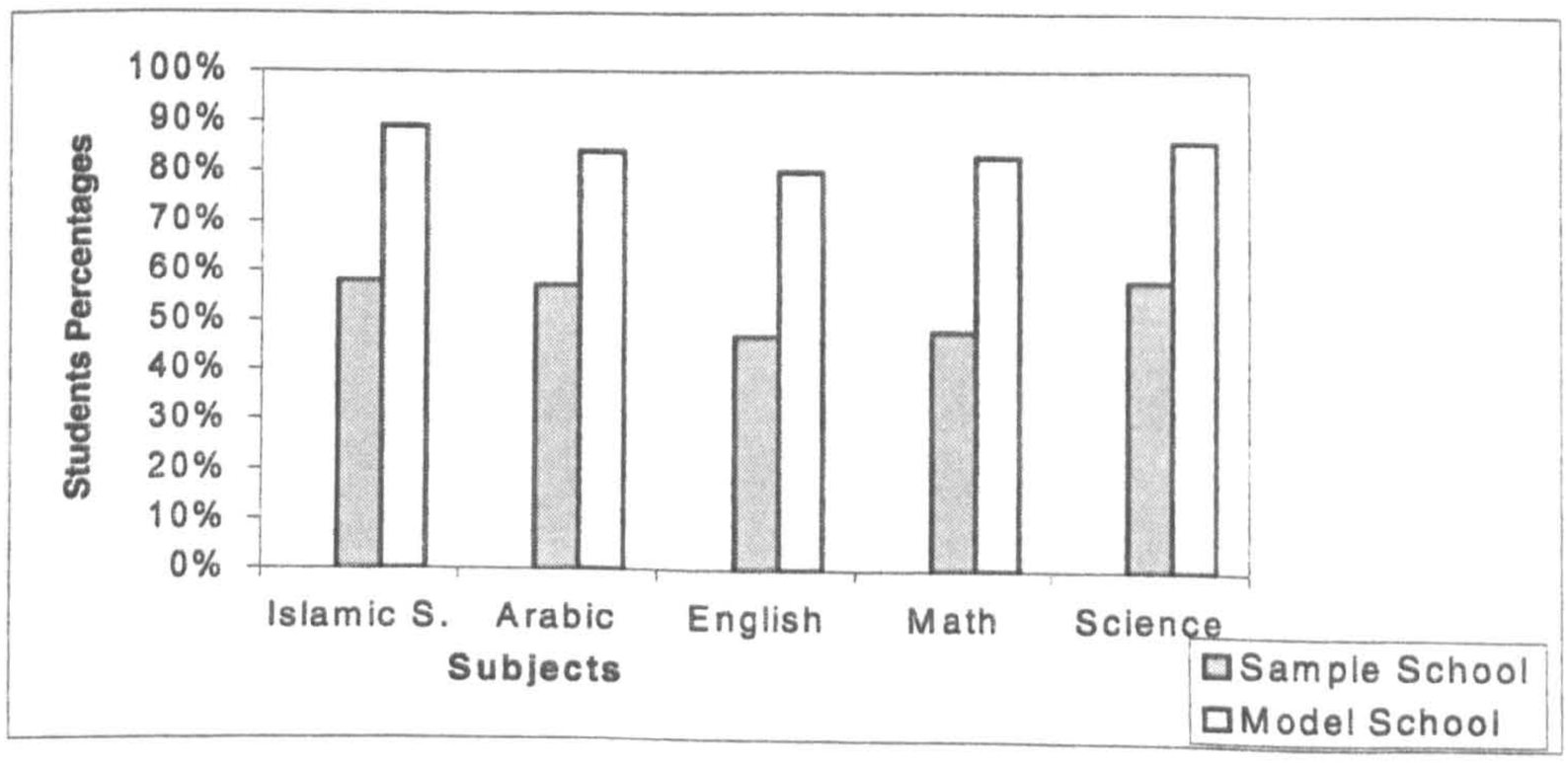


Figure 8.6: Comparison of Student Score Percentages

In the Islamic studies test, Ibn Otaiba School had the highest percentage (58%) in the 80 or higher interval. In the model school, on the other hand, 89% of its students scored 80 or higher in the Islamic studies test. In the Arabic test, 57% of students in the Ibn Qasim School scored 80 or higher. In the model school, on the other hand, the percentage is 84% on the Arabic test. In the English test, 47% of students in the Ibn Qasim School scored 80 or higher. 80% of students in the model school, on the other hand, scored 80 or higher. In the Math test, Ansar School has the highest percentage of students among the sample schools with 47% of its students scoring 80 or higher. The model school on the other hand had 83% of its students who scored 80 or higher in the Math test. In the Science test Musab School has the highest percentage of students among the sample schools scoring 80 or higher. The model school on the other hand has 86% of its students who scored 80 or higher in the Math test. In conclusion, by looking at the achievement test results it is clear that the students at the model school performed far better than students in the sample schools in all of the subjects.

Chapter Nine

STRAND TWO: TEACHERS' PERCEPTIONS OF THE CHANGES IMPLEMENTED IN THE MODEL SCHOOL

9.1. INTRODUCTION

Strand two of this thesis explores the teachers' perception on five major areas in their schools that affect the student attainment level (see Chapter Seven: Methodology). The areas include teacher motivation, student motivation, teacher professional development; time allocated for education, and education materials.

Since the data collected is large the chapter divides data organization into two stages. In stage one the data goes through a number of steps until it is presented in a format required for the second stage of data organization.

Since the first question in the questionnaire is testing the *priority* of the issue and the second examines the *positive impact* of the selected priority level on the teaching/learning process, stage two describes the Priority/Impact Model that analyzes the result of the questionnaires. Then, the Priority/Impact Model is applied on the general result of the model school questionnaires and the other sample schools' questionnaires.

The final section of this chapter examines each of the five areas mentioned earlier. All of the responses on each of the five areas are gathered in one table that is called the "Proportion Table". The content of the proportion table is used in

applying the Priority/Impact Model. Then, after the analysis of each one of the five areas there is a brief conclusion. At the end of this chapter there is a general comparison between both school systems based on the five areas of the study from which a general conclusion of the whole chapter is inferred.

Data Organization

The amount of data collected from the questionnaires is very great; therefore, the process of organizing the data was done in two major stages. Before going through data organization, it is crucial to understand the way data is organized and formatted.

Data Size and Format

There are 83 questionnaires; each contains 107 issues and each has two questions (A and B). Table 9.1 shows a simple layout of the questionnaire. The two questions are in the upper left and right squares. The 107 issues are presented in the middle section throughout the questionnaire. On the left and right sides of the issues are the degrees of priority and impact.

Table 9.1: Sample of Questionnaire

(A) What degree of priority is given to this issue by your school?					**(B)** To what extent does the priority given to this issue have a possitive impact on the teaching-learning process at your school?			
Degree of Priority				The issues	Degree of Impact			
V.H	H	L	V.L		V.H	H	L	V.L
				(1) Time allocated for professional development.				
				(2)…				
				(3)…				
				(107)…				

There are 17,762 pieces of information available for this part of the thesis: 83 (questionnaires) * 107 (issues) * 2 (questions) = 17,762. The critical part of the

questionnaires' responses is that there are two questions repeated for each of the 107 issues, and there is an answer scale of four degrees: very high, high, low, and very low (see the previous table). The scale is converted into numbers from 1, 2, 3, and 4 respectively to make the analysis easier. Therefore, each issue will have two responses (answers) -- one for question A and the other for question B -- which are presented in a set format. For example, if the response for question A is V.H. (very high) and the response for question B is H (High), then the answer set is (V.H., H). To make it easier for analysis, the numbers are used and this set becomes (1,2). Because the scale is 1 to 4 for each question, then the answer set will be one of the following 16 possible sets of answers: (1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), (3,4), (4,1), (4,2), (4,3) or (4,4).

As a result of the large amount of data collected from the questionnaires, data organization for this study is divided into two stages. Stage one aims at figuring out the percentage of each of the 16 possible sets of responses to the total number of responses for the two groups, the model school and the rest of the sample schools, separately. In the second stage data are organized based on the Priority/Impact Model (see table 9.4), which is developed to analyze the final data.

9.2. STAGE ONE

The following steps are applied on the questionnaires' outcomes or responses for both the model school and the sample schools (see tables 9.2 and 9.3):

Working out the answers of the first question (A) for all of the issues, which represent the first element of the answer's set.

Working out the answers of the second question (B) for all of the issues, which represent the second element of the answer's set.

Combining the two answers of each issue to form one set.

Calculating the frequencies of each set of answers for the same issue for all the questionnaires and group them in a *recurrence table*. For example, the following

table is a *recurrence table* for the resource allocation issue of the sample schools, excluding the model school. The upper row represents the 16 possible responses, and the lower row indicates the number of times each set occurs. To illustrate, set (1,1) means that teachers perceive that only five of the resource allocation issues are given very high priority and have a very high positive impact on the teaching/learning process. Set (3,4), on the other hand, indicates that only one issue of the resource allocation is given low priority and has a very low positive impact on the teaching-learning process.

Table 9.2: Recurrence Table

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
Freq.	5	2	0	0	6	21	2	0	4	10	19	1	0	4	1	6

Calculating the percentage of frequencies of each set of answers on each issue and group them in a *proportion table*. The proportion table is similar to the recurrence table; however, the second row represents a percentage instead of a number. The percentage comes from dividing the frequency by the total number of the questionnaires.

Table 9.3: Proportion Table

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
%	6.3	2.4	0.0	0.4	6.7	25.7	2.8	0.6	5.3	12.4	23.2	1.8	0.0	4.7	1.2	6.7

9.2.1. Sets Interpretation

Each of the sets has an interpretation based upon the scale's degree of each of the two questions. The interpretation of each set as follows:

1. Set (1,1): Very high priority; very high positive impact

This means that in the view of the teacher the school administration, within its resources, gave this issue a very high degree of priority, which resulted in a very high degree of positive impact on the teaching/learning process. It is expected that schools with more issues falling into this category (1,1) tend to be more efficient and most likely will have students with higher achievement scores.

2. Set (1,2): Very high priority; high positive impact

This means that in the view of the teacher the school administration gave this issue a very high degree of priority, which resulted in a high degree of positive impact on the teaching/learning process.

This might indicate one of two things: -

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching/learning process.

b) The school gave inappropriate priority to this issue, which resulted in the lower degree of positive impact on the teaching/learning process.

3. Set (1,3): Very high priority; low positive impact

This means that in the view of the teacher the school administration gave this issue a very high degree of priority, but it resulted in a low degree of positive impact on the teaching/learning process.

This might indicate one of two things: -

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching/learning process.

b) The school gave inappropriate priority to this issue, which resulted in a lower degree of positive impact on the teaching/learning process.

4. Set (1,4): Very high priority; very low positive impact

This means that in the view of the teacher the school administration gave this issue a very high degree of priority, which resulted in a very low degree of positive impact on the teaching-learning process.

This might indicate one of two things: -

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching-learning process.

b) The school gave inappropriate priority to this issue, which resulted in the lower degree of positive impact on the teaching learning process.

5. Set (2,1): High priority; very high positive impact

This means that in the view of the teacher the school administration gave this issue a high degree of priority that resulted in a very high degree of positive impact on the teaching/learning process. Issues falling in this category have a degree of positive impact on the teaching/learning process that is higher than the degree of priority given to the issue. This indicates that there are external forces, other than the school administration, that are participating in the positive impact.

6. Set (2,2): High priority; high impact

This means that in the view of the teacher the school administration gave this issue a high degree of priority, which resulted in a high degree of positive impact on the teaching/learning process. This indicates that the school administration gave the issue the degree of priority it deserves, which resulted in the degree of positive impact at which the school is aiming. A school which has most issues falling in the (2,2) category is expected to have an efficient administrative system; however, it is less efficient than a school that has more issues falling in the (1.1) category.

7. Set (2,3): High priority; low impact

This means that in the view of the teacher the school administration gave this issue a high degree of priority, which resulted in a low degree of positive impact on the teaching/learning process.

This might indicate one of two things:

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching-learning process.

b) The school gave inappropriate priority to this issue, which resulted in the lower degree of positive impact on the teaching learning process.

8. Set (2,4): High priority; very low impact

This means that in the view of the teacher school administration gave this issue a high degree of priority, which resulted in a very low degree of positive impact on the teaching/learning process.

This might indicate one of two things: -

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching/learning process.

b) The school gave inappropriate priority to this issue, which resulted in a lower degree of positive impact on the teaching/learning process.

9. Set (3,1): Low priority; very high impact

This means that in the view of the teacher the school administration gave this issue a low degree of priority that resulted in a very high impact on the teaching/learning process. Issues falling in this category have a degree of positive impact on the teaching/learning process that is higher than the degree of priority given to the issue. This indicates that there are external forces, other than the school administration, which participated in the positive impact.

10. Set (3,2): Low priority; high impact

This means that in the view of the teacher the school administration gave this issue a low degree of priority that resulted in a high degree of positive impact on the teaching/learning process. Issues falling in this category have a degree of positive impact on the teaching/learning process that is higher than the degree of priority

given to the issue. This indicates that there are external forces, other than the school administration, participated in the positive impact.

11. Set (3,3): Low priority; low impact.

This means that in the view of the teacher the school administration gave this issue a low degree of priority that resulted in a low degree of positive impact on the teaching/learning process. This indicates that the school administration gave the same degree of priority it deserved and attained the degree of positive impact at which it was aiming. A school with most issues falling in the (3.3) category is less efficient than a school with most issues fall in the (2,2) category.

12. Set (3,4): Low priority; very low impact

This means that in the view of the teacher the school administration gave this issue a low degree of priority that resulted in a very low degree of positive impact on the the teaching learning process.

This might indicate one of two things: -

a) The school gave the appropriate priority to this issue, but due to lack of resources (e.g. deficiency of expertise) could not achieve the appropriate degree of positive impact on the teaching/learning process.

b) The school gave inappropriate priority to this issue, which resulted in the lower degree of positive impact on the teaching/learning process.

13. Set (4,1): Very low priority; very high impact.

This means that in the view of the teacher the school gave this issue a very low degree of priority that resulted in a very high degree of positive impact on the teaching/learning process.

Issues falling in this category have a degree of positive impact on the teaching/learning process that is higher than the degree of priority given to the issue. This indicates that there are external forces, other than the school administration, participating in the positive impact.

14. Set (4,2): Very low priority; high impact

This means that in the view of the teacher the school administration gave the issue a very low degree of priority that resulted in a high degree of positive impact on the teaching/learning process. Issues falling in this category have a degree of positive impact on the teaching-learning process that is higher than the degree of priority given to the issue. This indicates that there are external factors, other than the school administration, participating in the positive impact.

15. Set (4,3): Very low priority; low impact

This means that in the view of the teacher the school administration gave this issue a very low degree of priority that resulted in a low degree of impact on the teaching/learning process. Issues falling in this category have a degree of positive impact on the teaching-learning process that is higher than the degree of priority given to the issue. This indicates that there are external forces, other than the school administration, participating in the positive impact.

16. Set (4,4): very low priority; very low impact

This means that in the view of the teacher the school administration gave this issue a very low degree of priority that resulted in a very low degree of positive impact on the teaching/learning process. This indicates that the school with most issues falling in the (4.4) category is expected to have the least efficient administrative system.

9.3. STAGE TWO

The Priority/Impact Model was developed specifically to analyze the questionnaire results. The resulting from this research model proved to be versatile in interpreting the results of the proportion table, which is mentioned in the fifth step in the first stage. The name of the model, Priority/Impact, came from what each of the elements in the answer set really represents. As stated earlier, the first element represents the answer on question (A) which reflects the *priority* the school gives to

the issue; and the word *impact* came from the second question (B) which reflects the positive impact of the issue on the teaching/learning process.

9.3.1. Describing the Priority/Impact Model

Table 9.4 shows 16 possible sets of answers. On the upper row of the model the four-degree scale of the priority is positioned, which decreases as we move from left to right. Down the left column of the model, the four-degree impact scale is positioned, which decreases as we move upward to down. The first number in each set represents the horizontal line or the degree of priority presented by question (A) in the questionnaire, and the second number in the set represents the vertical line or the degree of impact presented by question (B) of the questionnaire. The shaded sets represent the diagonal, which has an important implication that will be explained later.

Table 9.4: The Priority/Impact Model

Priority →		VH	H	L	VL
↓ Impact		1	2	3	4
VH	1	**(1,1)**	(2,1)	(3,1)	(4,1)
H	2	(1,2)	**(2,2)**	(3,2)	(4,2)
L	3	(1,3)	(2,3)	**(3,3)**	(4,3)
VL	4	(1,4)	(2,4)	(3,4)	**(4,4)**

VH = Very High, H = High, L = Low, VL = Very Low

The model demonstrates the relationship between the priority and the positive impact of the questionnaire issues. The rows in the model (see Table 9.4) represent the degree of priority, from the teachers' perception, which were given to the issues where the columns represent the positive degree of the impact of the issues in the teaching/learning process. The degree of priority decreases as we move from left to right which means that 1 is the highest and 4 is the lowest, or as per the questionnaire scale, where 1 means very high and 4 means very low. The degree of

positive impact, which is represented by the columns, decreases as we move downward the model.

Responses on the model are divided into three groups based on their position from the diagonal. The first group of responses is located above the diagonal, the second group of responses is located on the diagonal, and the third group of responses is located below the diagonal. Each one of the three groups has a special indication, which is explained in more detail in the following section.

9.3.1.1 The first group of responses (above the diagonal):

Responses (2,1), (3,1), (4,1), (3,2), (4,2), and (4,3) are located above the diagonal as shown in table 9.5.

Table 9.5: Reponses Above the Diagonal

Priority →		VH	H	L	VL
↓ Impact		1	2	3	4
VH	1	(1,1)	**(2,1)**	**(3,1)**	**(4,1)**
H	2	(1,2)	(2,2)	**(3,2)**	**(4,2)**
L	3	(1,3)	(2,3)	(3,3)	**(4,3)**
VL	4	(1,4)	(2,4)	(3,4)	(4,4)

VH = Very High, H = High, L = Low, VL = Very Low

The shaded cells in the above table surround the six responses. Responses (2,1), (3,1), (4,1), (3,2), (4,2), and (4,3) show, in different degrees, that the teachers perceive that the school gives a lower degree of priority to the issues that have a higher degree of positive impact. In other words, there are some other factors, other than the school system, which causes an increase in the degree of positive impact on the teaching/learning process. It is not clear what these factors are. However, because of the qualitative nature of this study, and because it represents perceptions, this is not normal. Also, the percentage of such responses in the model school questionnaire and in the rest of the sample is not very high; it is 20%.

9.3.1.2 The second group of the responses (on the diagonal):

Responses located on the diagonal are crucial to the data analysis because of two reasons, table 9.6.

Table 9.6: Responses on the Diagonal

Priority →		VH	H	L	VL
↓ Impact		1	2	3	4
VH	1	**(1,1)**	(2,1)	(3,1)	(4,1)
H	2	(1,2)	**(2,2)**	(3,2)	(4,2)
L	3	(1,3)	(2,3)	**(3,3)**	(4,3)
VL	4	(1,4)	(2,4)	(3,4)	**(4,4)**

VH = Very High, H = High, L = Low, VL = Very Low

First, responses on the diagonal which are represented by the sets (1,1), (2,2), (3,3), and (4,4), represent the normal relation between the degree of priority given to the issues and the positive degree of impact. In other words, if the school gives a high degree of priority to an issue, then the degree of the positive impact of the issue on the teaching/learning process is expected to be high. That is, the degree given to the priority is similar to the degree given to the positive impact. Second, it is expected that most of the responses be positioned on the diagonal because they represent the real performance of the school system. As we go up the diagonal, the issues are given a higher degree of priority and have a higher degree of positive impact. This means that in the view of the teacher the school system is more effective as we go up on the diagonal and less effective as we go down. Therefore, (1,1) represents the highest effectiveness and (4,4) represents the lowest effectiveness.

9.3.1.3 The third group of the responses (below the diagonal):

Responses (1,2), (2,3), (3,4), (1,3), (2,4), and (1,4) are located below the diagonal table 9.7.

Table 9.7: Responses Below the Diagonal

Priority →		VH	H	L	VL
↓ Impact		1	2	3	4
VH	1	(1,1)	(2,1)	(3,1)	(4,1)
H	2	**(1,2)**	(2,2)	(3,2)	(4,2)
L	3	**(1,3)**	**(2,3)**	(3,3)	(4,3)
VL	4	**(1,4)**	**(2,4)**	**(3,4)**	(4,4)

VH = Very High, H = High, L = Low, VL = Very Low

The shaded cells in the above table surround the six responses in this group. The responses indicate that the school system gives some priority to the issue, but the degree of positive impact is less than the degree given to the priority. In other words, this means that the school works hard to achieve a higher degree of positive impact; however, the resources available are not sufficient. The degree of the lack of resources increases as we move below the diagonal.

9.3.1.4 Features of the Normal Priority/Impact Model:

1) Most of the responses are positioned on the diagonal.
2) The total percentage of the responses is 100%.
3) The percentage of the responses declines as the responses move above the diagonal.
4) The percentage of the responses declines as the responses move below the diagonal.

9.3.2. Applying The Priority/Impact Model on the Questionnaires' General Results

Before applying the priority/impact model on the five areas of this study, in the following the model is applied on the general responses of the questionnaires of the

model school and the sample schools. The purpose of this application is to give me a broader comparative view of the two school systems as a whole.

9.3.2.1 Model School

The following Occurrence/Proportion table (9.8) combines the response occurrence and the response proportion of the model school questionnaires. The first row (Set) represents the 16 possible sets of answers, the second row (Resp.) represents the number of times each set occurs, and the third row (%) represents the proportion of the occurrences.

Table 9.8: Model School Occurrence/Proportion Table

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
Resp.	490	36	1	0	84	209	4	0	35	46	13	2	0	22	0	5
%	51%	4%	0%	0%	9%	22%	0%	0%	4%	5%	1%	0%	0%	2%	0%	1%

Data in Table 9.8 is used in applying the Priority/Impact Model for the model school. The four features of the normal Priority/Impact Model are available in Table 9.9.

Table 9.9: Priority/Impact Model for the Model School

Priority →		VH	H	L	VL
↓ Impact		1	2	3	4
VH	1	**51%**	9%	4%	0%
H	2	4%	**22%**	5%	2%
L	3	0%	0%	**1%**	0%
VL	4	0%	0%	0%	**1%**

VH = Very High, H = High, L = Low, VL = Very Low

First, most of the responses are positioned on the diagonal (75%). Second, 99% of the total responses are presented, which is almost 100%; 1% is left over because of the rounding errors of the percentages. Then, percentages decline as we move above or below the diagonal.

9.3.2.2 Interpretation of the Priority/Impact Model:

As stated earlier, there are three groups of responses: above the diagonal, on the diagonal, and below the diagonal. Each group has its own interpretations. The three groups are interpreted in the following section.

***Above the diagonal*:** 20% of the responses are located above the diagonal and represent the issues that the model schoolteachers perceive is influenced by external factors other than the school administration.

***On the diagonal*:** The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 73%. Fifty-one percent (51%) of the total responses on the diagonal are very high positive impact which is located on the (1,1) set, and 22% are only high positive and is located on the (2,2) set of the model. This means that teachers in the model school perceived that 51% of all issues in the questionnaire are given very high priority by the school administration and result in a very high positive impact on the teaching/learning process; whereas 22% of the issues have fewer positives and is given high priority, which resulted in a high positive impact on the teaching/learning process. One percent (1%) of the issues perceived by the teachers in the school is give low priority, which the teacher believed had a low positive impact on the teaching/learning process at the model school. Also, 1% was perceived as having a very low priority, which the teacher believed had a very low positive impact.

***Below the diagonal*:** Only 4% of the responses is located below the diagonal. It indicates that the teachers perceive that the model school tried to make 4% of the issues have more positive impact but the available resources were not sufficient.

9.3.2.3 Other Schools in the Sample:

The following Occurrence/Proportion table (9.10) combines the response occurrence and the response proportion of the other sample schools' questionnaires.

Table 9.10: Sample Schools Occurrence/Proportion Table

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
Resp.	1121	244	27	31	585	2420	191	19	235	654	1143	90	0	369	129	531
%	14%	3%	0%	0%	8%	31%	2%	0%	3%	8%	15%	1%	0%	5%	2%	7%

Data in Table 9.10 is used in applying the Priority/Impact Model for the other sample schools. The features of the normal Priority/Impact Model are available in Table 9.11

Table 9.11: Priority/Impact Model for the Sample Schools

	1	2	3	4
1	**14%**	8%	3%	0%
2	3%	**31%**	8%	5%
3	0%	2%	**14%**	2%
4	0%	0%	1%	**7%**

First, most of the responses (66%) are positioned on the diagonal. Second, only 98% are represented because of the rounding errors of the percentages. Then, the percentages decline as we move above or below the diagonal. Twenty-six percent (26%) are positioned above the diagonal.

9.3.2.4 Interpretation of the Priority/Impact Model:

The three groups of responses, above the diagonal, on the diagonal, and below the diagonal are interpreted in the following section.

***Above the diagonal*:** Twenty-six percent (26%) of the responses are located above the diagonal and represent the issues that the schoolteachers perceive are influenced by external factors other than the school administration.

***On the diagonal*:** The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 45%. Fourteen percent (14%) of the total responses that are positioned on the diagonal are very high positive which is located on the (1,1) set and 31% are only high positive and located on (2,2) set of the model.

This means that teachers in the sample school perceive that 14% of all issues in the questionnaire is given very high priority by the schools system and result in a very high positive impact on the teaching/learning process. And 31% of the issues are given lower positives and high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

Twenty percent (20%) of the responses are located in the lower section of the diagonal, which represent low and very low priority given to this percentage of issues, which the teacher believes, has a low or very low positive impact.

***Below the diagonal*:** Only 5% of the responses are located below the diagonal. It indicates that the teachers perceive that the sample schools tried to make 5% of the issues have more of a positive impact; however, the available resources were not sufficient.

9.3.3. Conclusions

From the implementation of the Priority/Impact Model on the two school systems, the model school and the other sample schools, we can only infer one general conclusion because of one main reason. Namely that, every proportion that appears in each of the two Priority/Impact Models represents more than one factor; therefore, it does not reflect one clear trend. The only clear conclusion is related to the responses on the diagonal. Table 9.12 summarizes the diagonal responses of the priority/impact model for both the model and the sample schools.

Table 9.12: General Summary Result Table

	(1,1)	(2,2)	(3,3)	(4,4)
Model S.	51%	22%	1%	1%
Sample S.	14%	31%	15%	7%

Table 9.12 shows that, in general, the model school's teachers perceive that 73% [sets (1,1) & (2,2)] of the issues are treated with, at least, high priority while, only 45% is treated, at least, with high priority in the other sample schools. This by

itself gives us a strong indication, from teachers' perception, that the model school system is more effective than the other sample schools, because its priorities have higher positive impact on teaching learning process. Another evidence supporting this judgment is the outcome of Strand one, the students' attainment test, which shows that model school students' scores are higher than the other sample schools. At this point we can say that the model school system, *in general,* improves students' academic achievement more than the other sample schools.

However, it is not clear yet what the major factors are that cause this improvement in the attainment level. The next section examines the five major changes in the model school. The thesis suggests that all of them, plus time allocated for education, are the dominant reasons behind the model school's improvement over the other sample schools.

9.3.4. Applying The Priority/ Impact Model on Each of the Five Change Areas

In this section all of the teachers' responses on the issues related to the five major areas of the thesis (teacher motivation, student motivation, teacher professional development, education materials, and time allocated for education) are organized in a percentile form and gathered in five "proportion tables" (see table 9.13). Each one of the five proportion tables consists of a row representing all of the 16 possible sets of responses and a column representing the model school (MS) and the other sample schools (SS). The proportion tables are filled with the percentages of responses on each set of answers for each of the five areas. Then, the data of the proportion table is used in applying the Priority/Impact Model (see table 9.14) of the model school and the sample schools separately.

The next step is interpreting the Priority/Impact Model outcome. At the end of the analysis of each of the five major areas, a conclusion is inferred from the outcome of the Priority/Impact Model. Finally, a general inference is concluded from the findings of the five tested areas.

9.3.4.1 Teacher Motivation Issues:

Teacher motivation issues for the model school (MS) and the sample school (S.S) are demonstrated in the following response table.

Table 9.13: Proportion Table Related to Teacher Motivation Issues

set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
MS	43.9%	3.8%	0.3%	0.0%	9.6%	25.7%	0.3%	0.0%	3.8%	6.7%	3.8%	0.6%	0.0%	1.5%	0.0%	0.0%
SS	15.9%	2.8%	0.3%	0.3%	8.0%	32.4%	2.1%	0.1%	2.8%	8.3%	14.4%	1.3%	0.0%	4.5%	1.0%	5.7%

9.3.4.2 Priority/Impact Model – The Model School

After converting the model school data in Table 9.13 into the Priority/Impact Model, the model becomes as shown in table 9.14.

Table 9.14: Priority/Impact Model for the Model School for Teacher Motivation Issues

	1	2	3	4
1	**43.9%**	9.6%	3.8%	0.0%
2	3.8%	**25.7%**	6.7%	1.5%
3	0.3%	0.3%	**3.8%**	0.0%
4	0.0%	0.0%	0.6%	**0.0%**

The general rules of the model are compatible with the model school's model. First of all, most of the responses (73.4%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentage declines. The lowest percentage above the diagonal is the farthest, which is (4,1), and has 0% of responses. If we go below the diagonal we will see that the farthest set represents the lowest percentage, which is equal to 0% of the responses. Third, 100% of the responses are represented in the model.

9.3.4.3 Interpretation of the Priority/Impact Model

Teachers' perceptions in the model school toward teacher motivation issues are divided into three groups based on the location of the responses in the

Priority/Impact Model. The first group of the responses is located *above the diagonal*, the second group of responses is located *on the diagonal*, and the third group of responses is located *below the diagonal.*

Above the diagonal: 21.6% of the total responses are located above the diagonal. It indicates that teachers in the model school perceive that 21.6% of the issues is influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 73.4% of the total responses. This group of responses is crucial to the data analysis, because it represents the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 5% of the total responses. This indicates that the teachers perceive that the school administration in the model school gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.4.4 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 69.6%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 43.9 % of the total responses on the diagonal are very high positive impact which are located on the (1,1) set, and 25.7% are only high positive impact and are located on set (2,2) of the model. This means that teachers in the model school perceive that 43.9% of the issues related to teacher motivation are given very high priority by the school system and cause a very high positive impact on the teaching/learning process. Also 25.7% of the issues are given high priority which results in a lower positive impact.

9.3.4.5 Priority/Impact Model – Sample Schools

After converting the sample schools data in Table 9.13 into the Priority/Impact Model, the model becomes as shown in table 9.15.

Table 9.15: Priority/Impact Model for Sample Schools for Teacher Motivation Issues

	1	2	3	4
1	**15.9%**	8.0%	2.8%	0.0%
2	2.8%	**32.4%**	8.3%	4.5%
3	0.3%	2.1%	**14.4%**	1.0%
4	0.3%	0.1%	1.3%	**5.7%**

The general rules of the model are compatible with the sample schools model. First of all most of the responses are positioned on the diagonal (68.4%). Second, if we move above or below the diagonal, the percentages decline. The lowest percentage above the diagonal is the farthest, which is (4,1) and equals 0.0%. If we go below the diagonal, we will see that the farthest set represents the lowest percentage, which is equal to 0.3%. Third, 100% of the responses are represented in the model.

9.3.4.6 Interpretation of the Priority/Impact Model

***Above the diagonal*:** 24.6% of the total responses are located above the diagonal. It indicates that teachers in the sample schools perceive that 24.6% of the issues is influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 68.4% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 6.9% of the total responses. This indicates that the teachers perceive

that the school administration in the sample schools gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.4.7 Diagonal Responses

The percentage of total responses positioned in the upper portion of the diagonal (1,1) and (2,2) is 48.3%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 15.9% of the total responses on the diagonal are very high positive which are located on the (1,1) set and 32.4% are only high positive and are located on (2,2) set of the model. This means that teachers in the sample schools perceive that 15.9% of the issues related to teacher motivation are given very high priority by the school system and cause a very high positive impact on the teaching learning process. And 32.4% of the issues are treated as lower positives and are given high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

9.3.4.8 Conclusions

By comparing the outcomes of the Priority/Impact Model of both school systems on teacher motivation issues, I can conclude the following points:

1) From the responses above the diagonal, it can be said that almost both school systems have a low dependency on external factors that affect teacher motivation. Only 21.6% and 24.6% of the teacher motivation issues are located above the diagonal for the model school and the sample schools respectively. This is an expected outcome in a system where teachers in the Abu Dhabi Education Zone schools are usually led, directed, and motivated by the school administration.

2) The model school treats teacher motivation issues with more priority than the sample schools. That is clear from looking at sets (1,1) and (2,2) of both diagonals.

3) Both school systems have almost the same percentage of issues (21.6% for the model school and 24.6% the sample schools) below the diagonal, which means both systems lack some expertise in motivating teachers. From my own observations, the model school implements traditional ways of motivating teachers that are usually used in the schools, except that teachers in the model school receives a higher salary.

Generally, it can be said that the sample schools' system does not give enough priority to the teacher motivation issues, which may support the decline of the student's achievement tests. The model school system, on the other hand, gave very high priority to the teacher motivation issues, which may help in improving the teacher's effectiveness and eventually increased the student's achievement performance.

9.3.5. Student Motivation Issues

Student motivation issues for the model school (MS) and the sample schools (SS) are demonstrated in the following response table.

Table 9.16: Proportion Table Related to Student Motivation Issues

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
MS	66.7%	5.1%	0.0%	0.0%	5.8%	13.6%	0.7%	0.0%	2.4%	3.1%	0.3%	0.0%	0.0%	2.4%	0.0%	0.0%
SS	12.6%	3.4%	0.3%	0.5%	8.2%	28.1%	2.6%	0.7%	2.9%	9.7%	15.0%	1.0%	0.0%	4.7%	2.3%	7.9%

9.3.5.1 Priority/Impact Model – The Model School

After converting the model school data in Table 9.16 into the Priority/Impact Model the model becomes as shown in table 9.17.

Table 9.17: Priority/Impact Model for the Model School for Student Motivation

	1	2	3	4
1	**66.7%**	5.8%	2.4%	0.0%
2	5.1%	**13.6%**	3.1%	2.4%
3	0.0%	0.7%	**0.3%**	0.0%
4	0.0%	0.0%	0.0%	**0.0%**

The general rules of the model are compatible with the model school's model. First of all, most of the responses (80.6%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0% responses. Third, 100% of the responses are represented in the model.

9.3.5.2 Interpretation of the Priority/Impact Model

Above the diagonal: 13.7% of the total responses are located above the diagonal. They indicate that teachers in the model school perceive that 13.7% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 80.6% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later on the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 5.8% of the total responses. This indicates that the teachers perceive that the school administration in the model school gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.5.3 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 80.3%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching learning process. 66.7 % of the total responses on the diagonal are very high positive which are located on the (1,1) set and 13.6% are only high positive and are located on the (2,2) set of the model. This means that teachers in the model school perceive that 66.7% of the issues related to student motivation are given very high priority by the school

system and cause a very high positive impact on the teaching learning process. And 13.6% of the issues are treated with lower positives and is given high priority, rather than *very* high, which causes a high positive impact on the teaching learning process.

9.3.5.4 Priority/Impact Model – Sample Schools

After converting the sample schools data in Table 9.16 into the priority/impact model, the becomes as shown in table 9.18.

Table 9.18: Priority Impact Model of the Sample Schools for Student Motivation Issues

	1	2	3	4
1	**12.6%**	8.2%	2.9%	0.0%
2	3.4%	**28.1%**	9.7%	4.7%
3	0.3%	2.6%	**15.0%**	2.3%
4	0.5%	0.7%	1.0%	**7.9%**

The general rules of the model are compatible with sample schools model. First of all, most of the responses (63.6%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0.5% responses. Third, 100% of the responses are represented in the model.

9.3.5.5 Interpretation of the Priority/Impact Model

Above the diagonal: 27.8% of the total responses are located above the diagonal. It indicates that teachers in the sample schools perceive that 27.8% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 63.6% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 8.5% of the total responses. This indicates that the teachers perceive that the school administration in the sample schools gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.5.6 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 40.7%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 12.6% of the total responses on the diagonal are very high positive which are located on the (1,1) set, and 28.1% is only high positive and are located on the (2,2) set of the model. This means that teachers in the sample schools perceive that 12.6% of the issues related to student motivation are given very high priority by the school system and cause a very high positive impact on the teaching learning process. And 28.1% of the issues are treated with lower positives and given high priority, rather than *very* high, which causes a high positive impact on the teaching learning process.

9.3.6. Conclusions

By comparing the outcomes of the Priority/Impact Models of both school systems on student motivation issues the following can be concluded:

1) From the responses above the diagonal (27.8% and 13.7% for the model school), it is clear that the sample schools depend twice as much than the model school on external factors for student motivation. This is an efficiency sign that the model school depends on its resources in motivating its students.

2) The model school cares more about the motivation of its students, almost twice as much as the sample schools. More than 80% [see set (1,1) & (2,2)] of the issues are given at least high priority, which have at least high positive impact on the teaching learning process.

9.3.7. Teacher Professional Development Issues

Teacher's development issues for the model school (MS) and the sample schools (SS) are demonstrated in the following response table.

Table 9.19: Response Table Related to Teacher Professional Development

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
MS	49.1%	3.8%	0.0%	0.0%	9.4%	28.3%	0.0%	0.0%	0.0%	9.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SS	9.3%	1.6%	0.5%	0.2%	6.0%	26.9%	1.6%	0.2%	4.2%	7.0%	17.2%	1.6%	0.0%	6.7%	5.6%	11.4%

9.3.7.1 Priority/Impact Model – The Model School

After converting the model school data in Table 9.19 into the Priority/Impact Model becomes as shown in table 9.20.

Table 9.20: Priority Impact Model of the Model School for Teacher Professional Development

	1	2	3	4
1	**49.1%**	9.4%	0.0%	0.0%
2	3.8%	**28.3%**	9.4%	0.0%
3	0.0%	0.0%	**0.0%**	0.0%
4	0.0%	0.0%	0.0%	**0.0%**

The general rules of the model are compatible with the model school's model. First of all, most of the responses (77.4%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentage tends to decline. The farthest set above the diagonal, which is (4,1), has 0% of responses. The farthest set below the diagonal, which is (1,4), has 0% of responses. Third, 100% of the responses are represented in the model.

9.3.7.2 Interpretation of the Priority/Impact Model

Above the diagonal: 18.8% of the total responses are located above the diagonal. It indicates that teachers in the model school perceive that 18.8% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 77.4% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 3.8% of the total responses. This indicates that the teachers perceive that the school administration in the model school gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.7.3 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 77.4%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching learning process. 49.1% of the total responses on the diagonal are very high positive which are located on the (1,1) set, and 28.3% is only high positive and is located on (2,2) set of the model. This means that teachers in the sample schools perceive that 49.1% of the issues related to teacher professional development are given very high priority by the school system and cause a very high positive impact on the teaching/learning process. And 28.3% of the issues are treated as lower positives and given high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

9.3.7.4 Priority/Impact Model – Sample Schools

After converting the sample schools data in Table 9.19 into the priority/impact model, becomes as shown in table 9.21.

Table 9.21: Priority Impact Model of the Sample Schools for Teacher Professional Development

	1	2	3	4
1	**9.3%**	6.0%	4.2%	0.0%
2	1.6%	**26.9%**	7.0%	6.7%
3	0.5%	1.6%	**17.2%**	5.6%
4	0.2%	0.2%	1.6%	**11.4%**

The general rules of the model are compatible with the sample schools model. First of all most of the responses (64.8%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tends to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0.2% responses. Third, 100% of the responses are represented in the model.

9.3.7.5 Interpretation of the Priority/Impact Model

Above the diagonal: 29.5% of the total responses are located above the diagonal. It indicates that teachers in the sample schools perceive that 29.5% of the issues is influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 64.8% of the total responses. This group of responses is crucial to the data analysis because it represents the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 5.7% of the total responses. This indicates that the teachers perceive that the school administration in the sample schools gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.7.6 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 36.2%, which represent the percentage of issues that have at least high priority and high positive impact on the teaching learning process. 9.3% of the total responses on the diagonal are very high positive which are located on the (1,1) set and 26.9% are only high positive and is located on the (2,2) set of the model. This means that teachers in the sample schools perceive that 9.3% of the issues related to teacher professional development are given very high priority by the school system and cause a very high positive impact on the teaching/learning process. And 26.9% of the issues are treated with lower positives and given high priority, rather than *very* high, which cause a high positive impact on the teaching/learning process.

9.3.7.7 Conclusions

By comparing the outcomes of the Priority/Impact Models of both school systems on teacher professional development issues following can be concluded.

1) Responses above the two diagonals show that 18.4% of teacher professional development issues in the model school and 29.5% in the sample schools depend on external factors. This may reflect the actual case because the teacher professional development system in the Abu Dhabi Education Zone is always the Education Zone's responsibility. However, the Education Zone encouraged the model school to design and implement its own teacher professional development program.

2) The model school gives more attention to teacher professional development than the sample schools. Sets (1,1) and (2,2) of the responses on the two diagonals demonstrates this fact. 77.3% of the responses of the model school are on sets (1,1) and (2,2) while only 36.2% are for the sample schools.

9.3.8. Education materials Issues

Education materials issues for the model school (MS) and the other sample schools (SS) are demonstrated in the following response table.

Table 9.22: Response Table Related to Education materials Issues

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
MS	61.9%	3.2%	0.0%	0.0%	6.3%	20.6%	4.8%	0.0%	0.0%	1.6%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
SS	6.3%	2.4%	0.0%	0.4%	6.7%	25.7%	2.8%	0.6%	5.3%	12.4%	23.2%	1.8%	0.0%	4.7%	1.2%	6.7%

9.3.8.1 Priority/Impact Model – The Model School

After converting the model school's data in Table 9.22 into the Priority/Impact Model it becomes as shown in table 9.23.

Table 9.23: Priority Impact Model of the Model School for Education Materials Issues

	1	2	3	4
1	**61.9%**	6.3%	0.0%	0.0%
2	3.2%	**20.6%**	1.6%	0.0%
3	0.0%	4.8%	**1.6%**	0.0%
4	0.0%	0.0%	0.0%	**0.0%**

The general rules of the model are compatible with the model school's model. First of all, most of the responses (84.1%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0% responses. Third, 100% of the responses are represented in the model.

9.3.8.2 Interpretation of the Priority/Impact Model

Above the diagonal: 7.9% of the total responses are located above the diagonal. It indicates that teachers in the model school perceive that 7.9% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 84.1% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 8% of the total responses. This indicates that the teachers perceive that the school administration in the model school gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.8.3 Diagonal Responses

The percentage of total responses positioned in the upper portion of the diagonal (1,1) and (2,2) is 82.5%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching learning process. 61.9 % of the total responses on the diagonal are very high positive which are located on the (1,1) set and 20.6% are only high positive and is located on (2,2) set of the model.

This means that teachers in the model school perceive that 61.9% of the issues related to education materials are given very high priority by the school system and cause a very high positive impact on the teaching/learning process. And 20.6% of the issues are treated with lower positives and is given high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

9.3.8.4 Priority/Impact Model – Sample Schools

After converting the sample schools data in Table 9.22 into the Priority/Impact Model, the model looks as follows:

Table 9.24: Priority/Impact Model of the Sample Schools for Education Materials Issues

	1	2	3	4
1	**6.3%**	6.7%	5.3%	0.0%
2	2.4%	**25.7%**	12.4%	4.7%
3	0.0%	2.8%	**23.2%**	1.2%
4	0.4%	0.6%	1.8%	**6.7%**

The general rules of the model are compatible with the sample schools. First of all most of the responses (61.9%) are positioned on the diagonal. Second, if we move above or below the diagonal, the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0.4% responses. Third, 100% of the responses are represented in the model.

9.3.8.5 Interpretation of the Priority/Impact Model

Above the diagonal: 30.3% of the total responses are located above the diagonal. It indicates that teachers in the sample schools perceive that 30.3% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 61.9% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 8% of the total responses. This indicates that the teachers perceive that the school administration in the sample schools gives those issues more

priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.8.6 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 32%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 6.3% of the total responses on the diagonal are very high positive which is located on the (1,1) set and 25.7% are only high positive and located on the (2,2) set of the model. This means that teachers in the sample schools perceive that 6.3% of the issues related to education materials are given very high priority by the school system and cause a very high positive impact on the teaching/learning process. And 25.7% of the issues are treated with lower positives and are given high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

9.3.8.7 Conclusions

By comparing the outcomes of the Priority/Impact Models of both school systems on education materials issues the following can be concluded

1) The responses above both diagonals are a clear sign of the condition of education materials in both school systems. Only 7.9% of the model school issues depend on external factors while 30.3% of the issues of the sample schools depend on external factors. As mentioned earlier, the model school is the only school in the Education Zone that collects fees from students, which are used in the development of all school aspects. The sample schools depend mainly on the materials allocated by the Educational Zone, which covers only the schools' main basic needs.

2) The responses of the upper portion of the two diagonals indicate that the model school gives more than double the priority than the sample schools to education materials issues. 82.5% of the responses are on the upper portion of

the diagonal [sets (1,1) and (2,2)] of the model school and only 32% for the sample schools.

9.3.9. Time Allocated for Education Issues

Time allocated for education issues for the model school (MS) and the schools of the sample (SS) are demonstrated in the following response table.

Table 9.25: Response Table Related to Time Allocated for Education Issues

Set	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)	(3,1)	(3,2)	(3,3)	(3,4)	(4,1)	(4,2)	(4,3)	(4,4)
MS	61%	6%	0%	0%	0%	11%	0%	0%	6%	11%	0%	0%	0%	6%	0%	0%
SS	8%	3%	0%	0%	3%	21%	2%	0%	2%	11%	19%	0%	0%	10%	5%	16%

9.3.9.1 Priority/Impact Model – The Model School

After converting the model school's data in Table 9.25 into the Priority/Impact Model the model becomes as shown in table 9.26.

Table 9.26: Priority/Impact Model of the Model School for Time Allocation Issues

	1	2	3	4
1	**61%**	0.0%	6%	0.0%
2	6%	**11%**	11%	6%
3	0.0%	0.0%	**0.0%**	0.0%
4	0.0%	0.0%	0.0%	**0.0%**

The general rules of the model are compatible with the model school's model. First of all, most of the responses (72%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0% responses. Third, 100% of the responses are represented in the model.

9.3.9.2 Interpretation of the Priority/Impact Model

Above the diagonal: 23% of the total responses are located above the diagonal. They indicate that teachers in the model school perceive that 23% of the issues influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 72% of the total responses. This group of responses is crucial to the data analysis because it represent the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 6% of the total responses. This indicates that the teachers perceive that the school administration in the model school gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.9.3 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal (1,1) and (2,2) is 72%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 61% of the total responses on the diagonal are very high positive which located on the (1,1) set and 11% is only high positive and located on the (2,2) set of the model. This means that teachers in the model school perceive that 61% of the issues related to time allocated for education are given very high priority by the school system and causes a very high positive impact on the teaching learning process. And 11% of the issues are treated with lower positives and given high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

9.3.9.4 Priority/Impact Model – Sample Schools

After converting the sample schools data in Table 9.25 into the Priority/Impact Model the model becomes as shown in table 9.27

Table 9.27: Priority/Impact Model of the Sample Schools for Time Allocation Issues

	1	2	3	4
1	**8%**	3%	2%	0.0%
2	3%	**21%**	11%	10%
3	0.0%	2%	**19%**	5%
4	0.0%	0.0%	0.0%	**16%**

The general rules of the model are compatible with the sample schools model. First of all, most of the responses (64%) are positioned on the diagonal. Second, if we move above or below the diagonal the percentages tend to decline. The farthest set above the diagonal, which is (4,1), has 0% responses. The farthest set below the diagonal, which is (1,4), has 0% responses. Third, 100% of the responses are represented in the model.

9.3.9.5 Interpretation of the Priority/Impact Model

Above the diagonal: 31% of the total responses are located above the diagonal. It indicates that teachers in the model school perceive that 31% of the issues are influenced by external factors other than the school administration.

On the diagonal: The second group, which consists of the responses on the diagonal, represents 64% of the total responses. This group of responses is crucial to the data analysis because it represents the teachers' perceptions on how the school system treated the issues within its resources. The implication of this group is discussed in more detail later in the section of *Diagonal Responses*.

Below the diagonal: The third group of responses is located below the diagonal and represents 5% of the total responses. This indicates that the teachers perceive that the school administration in the sample schools gives those issues more priority, but, because the resources were not sufficient, the impact on the teaching/learning process was less positive.

9.3.9.6 Diagonal Responses

The percentage of total responses positioned on the upper portion of the diagonal [(1,1) and (2,2)] is 29%, which represents the percentage of issues that have at least high priority and high positive impact on the teaching/learning process. 8% of the total responses on the diagonal is very high positive which are located on the (1,1) set and 21% are only high positive and located on the (2,2) set of the model. This means that teachers in the sample schools perceive that 8% of the issues related to time allocated for education are given very high priority by the school system and cause a very high positive impact on the teaching learning process. And 21% of the issues are given lower positives and high priority, rather than *very* high, which causes a high positive impact on the teaching/learning process.

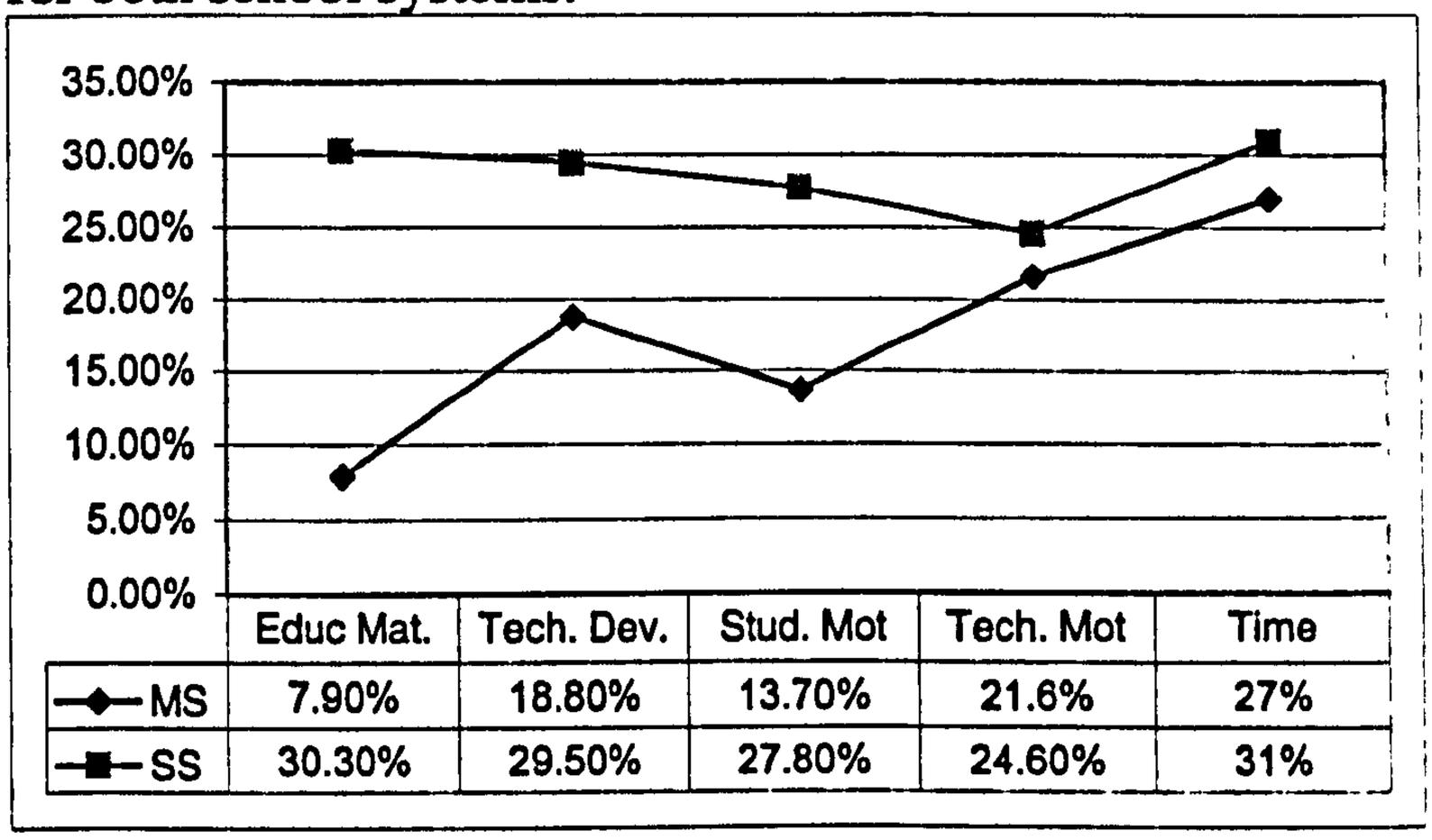
9.3.9.7 Conclusions

Extra time allocated for education is one of the unique features of the model school (see Chapter 5). It is the only school in the Education Zone that dedicates extra times for doing homework at school and for daily after school activities. When the outcomes of the Priority/Impact Models of both school systems on time allocated for education issues is compared, we notice that from the teachers' perception, the model school has better utilization of time allocated for education than sample schools.

9.4. GENERAL CONCLUSIONS OF THE CHAPTER

The last section of this chapter is dedicated to inferring conclusions by comparing the five major change areas of both school systems. Again the comparison is based on the three groups related to the diagonal, above the diagonal, on the diagonal, and below diagonal. The second group is divided into two sub-groups: the upper portion and the lower portion. Responses ***above the diagonal*** mean that there are external factors affecting the issues other than the school

administration. Figure 9.1 represents the percentage of responses, which fall below the diagonal for both school systems.



	Educ Mat.	Tech. Dev.	Stud. Mot	Tech. Mot	Time
MS	7.90%	18.80%	13.70%	21.6%	27%
SS	30.30%	29.50%	27.80%	24.60%	31%

Figure 9.1: Responses Above the Diagonal

Figure 9.1 shows that teachers in the sample schools perceive that their schools depend more on external factors for issues related to all of the five change areas (education materials, teacher professional development, student motivation, teacher motivation, and time allocated for education) than the model school. Out of these five areas, education materials and time allocated for education, are the highest in terms of external dependability. Teachers in the sample schools perceive that 30.3% of education materials issues depend on external factors, while only 7.9% of the issues are perceived by the model school teachers to depend on external factors. This clearly reflects the fact that the model school has its own financial resources obtained from the students' fees, which is not available for the sample schools.

It is clear from the previous Figure 9.1 that there is no big difference between the two school systems in terms of the teachers' perceptions on the issues related to teacher motivation; the difference is 3%. This means that both school systems depend on external factors on motivating their teachers.

Time allocation issues, in both school systems, have the highest percentage among the five change areas. This means that schools have the least control over

time allocation issues. This is true because the Education Zone decides the length of time allocated for education and not the schools themselves.

Responses on the diagonal reflect the normal relation between the priority given to the issue and the positive impact of the issue on the teaching/learning process. That is if, for example, a *high* priority is given to an issue, it is expected, in a normal situation, that it will result with a *high* positive impact on the teaching/learning process. If the priority is *low* then the positive impact is *low* and so on. Responses on the ***upper portion of the diagonal***, which is represented by Figure 9.2, reflect the issues that have at least a high positive impact on the teaching/learning process.

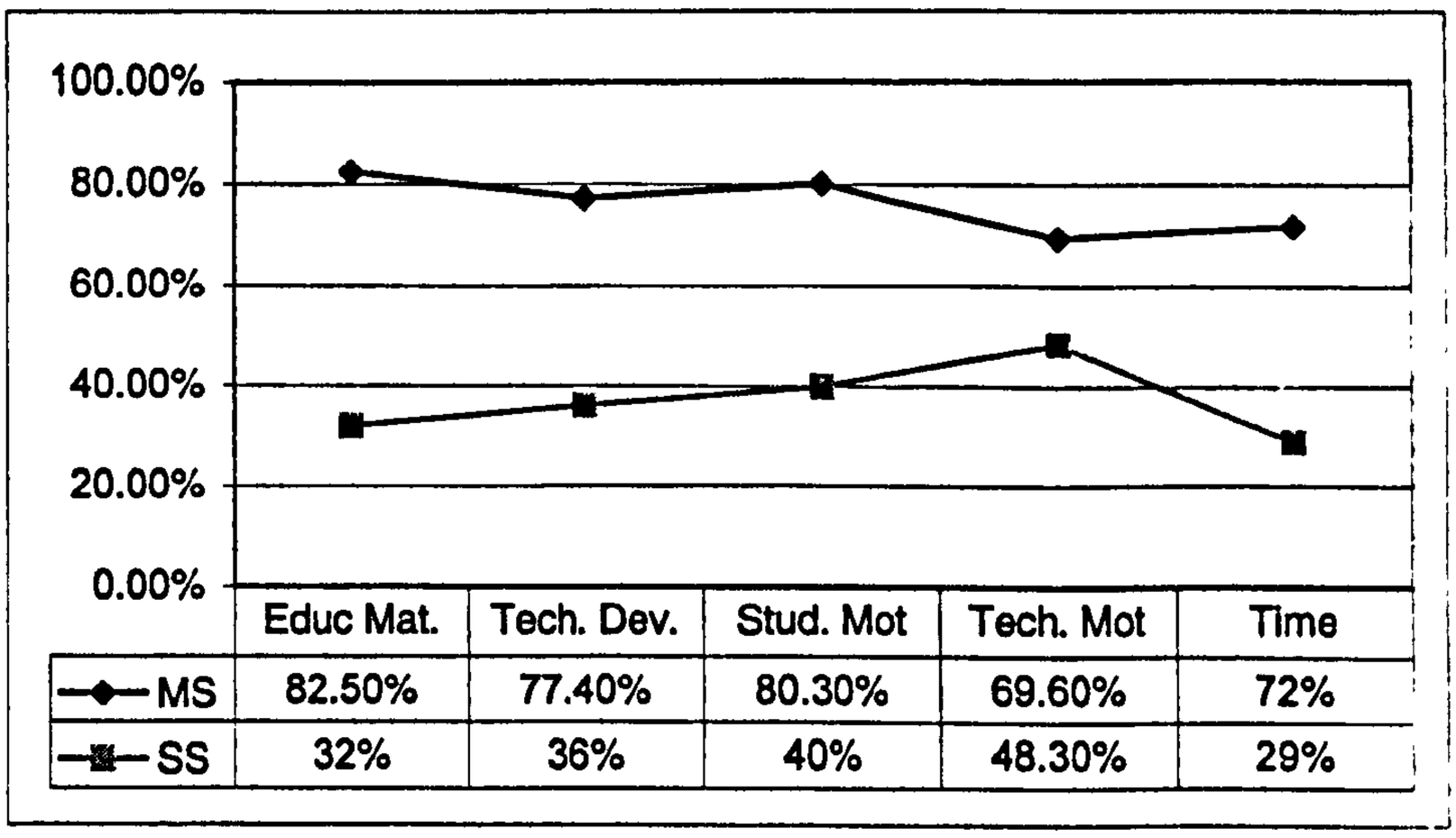


Figure 9.2: Responses on the Upper Portion of the Diagonal

The graph of figure 9.2 shows that, from teachers' perceptions, all of the five change areas have a higher positive impact in the model school than in the sample schools. The highest difference is in the field of education materials, which is higher by more than 50% and the least higher by about 20%. In the rest of the change areas the model school is higher by about 40%. These differences in the upper portion of

the diagonal indicate, generally, that the model school is more effective because it has more positive impact on the teaching/learning process. Teachers perceive that this effectiveness is higher in the field of education materials and lower in the field of teacher motivation.

Issues that have responses on ***the lower portion of the diagonal*** are perceived by teachers to have lower priority and lower positive impact on the teaching/learning process. Figure 9.3 shows that a very small percentage of issues of the four fields of change perceived by the model schoolteachers are treated with low priority and have low positive impact. On the other hand, teachers in the sample schools perceive that their schools have an average of 27% of the issues with lower priority, which result in a lower positive impact on the teaching-learning process.

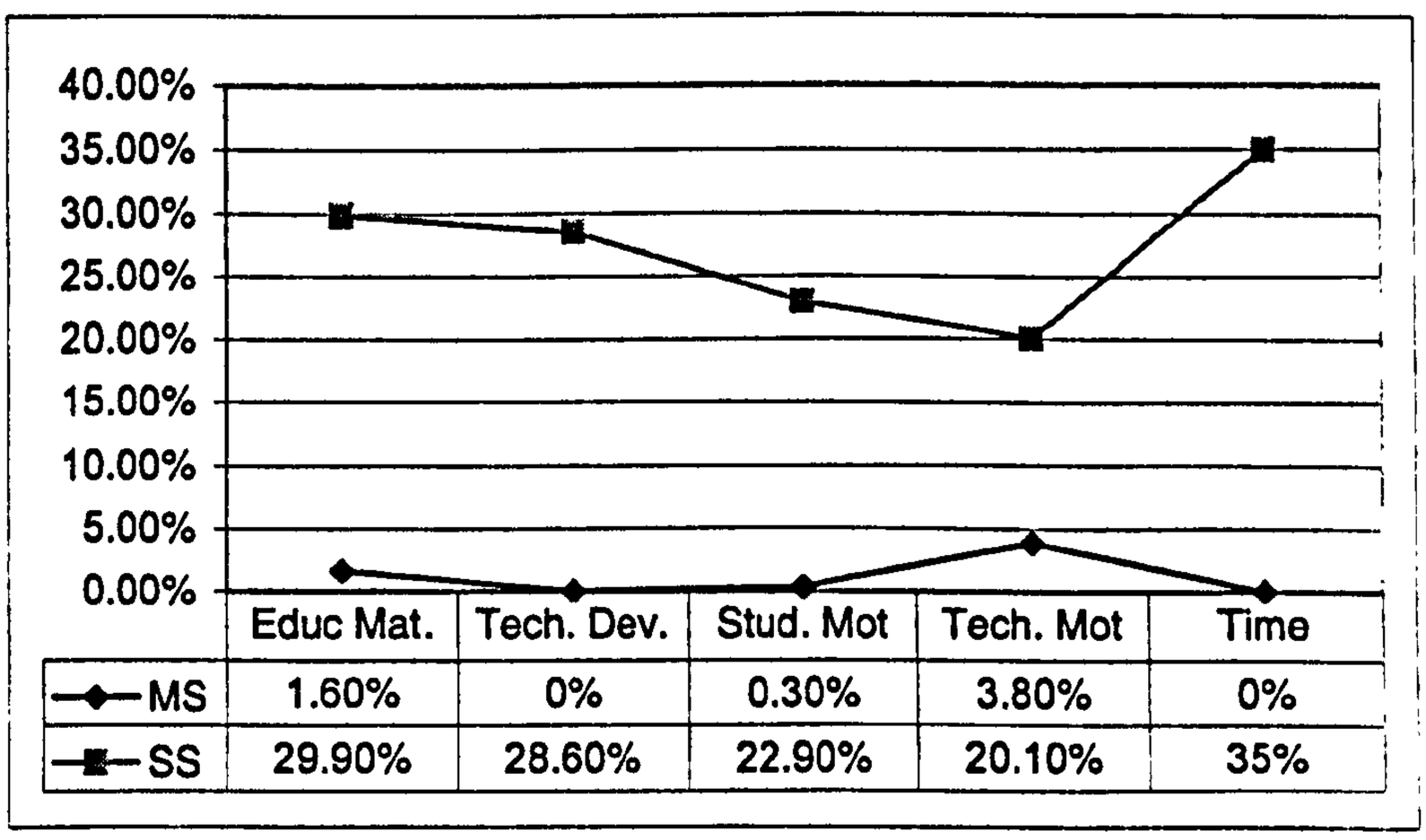
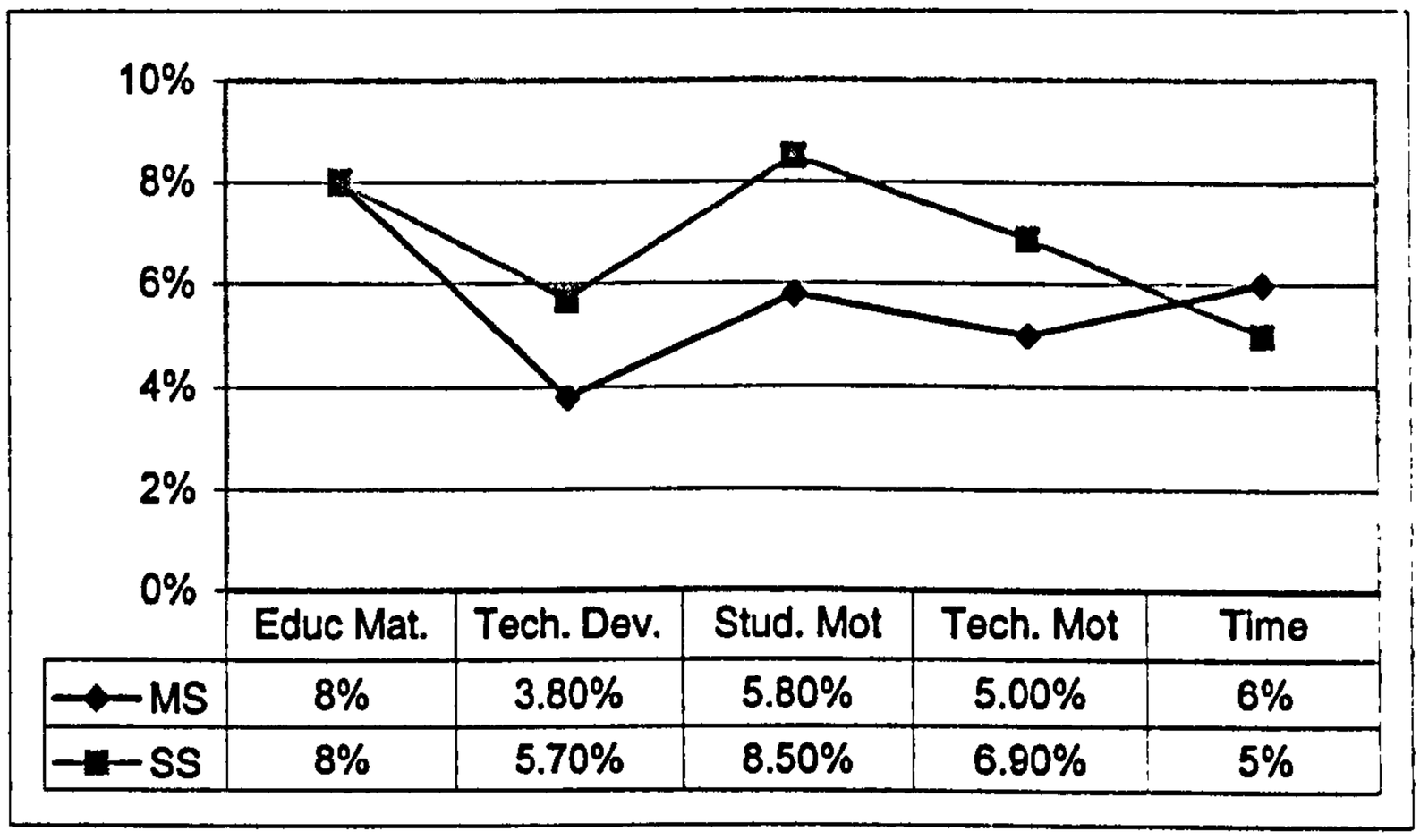


Figure 9.3: Responses on the Lower Portion of the Diagonal

If we look at all the responses below the diagonal as shown below in Figure 9.4, we notice that the percentages of the responses of all of the change fields are below 10%. This is an expected percentage because the schools give priority to these issues; however, the positive impact on the teaching/learning process is lower than the designated level of priority.



	Educ Mat.	Tech. Dev.	Stud. Mot	Tech. Mot	Time
MS	8%	3.80%	5.80%	5.00%	6%
SS	8%	5.70%	8.50%	6.90%	5%

Figure 9.4: Responses Below the Diagonal

Chapter Ten

Discussion on the Relevance of Current Literature on Educational Change to the Educational System in the UAE

10.1. INTRODUCTION

Chapter 3, "The Theoretical Background, A Review of the Literature" and chapter 5, "Major changes Introduced in the Model school Project" have discussed many theories in the fields of education change management, teacher-motivation, and teacher professional development. Many of these theories are of great importance to improving education. Of course all of the theories are discussed within a Western educational context; however many of them can be implemented in the UAE education system with some arrangements to fit the local context. It is mentioned in chapter two that education in the UAE has improved quantitatively but not qualitatively (see page 16). That is, the numbers of students and schools have increased drastically, while the quality of education has not improved. Therefore, education in the UAE requires change to improve its output to meet the economic and social challenges of the new century.

In this chapter, I have selected some of these theories, which I think can help in improving education in the UAE and some other countries that apply a similar education system. The theories cover a number of aspects in the field of education change management including: education change leadership and its roles, major challenges and problems facing education change, decision making processes, teacher-motivation, and teachers' professional development.

This chapter starts by summarizing the theories from the literature discussed in this thesis then relates it to the education system in the UAE. My comments are added when necessary.

10.2. Leadership and Education Change

10.2.1. Single Verses Team Leadership

Education literature tends to discuss team leadership rather than single leadership in managing education change projects (Mortimore et al 1988). More specifically, literature discusses the importance of the participation of the school staff along with the central education authority in the planning and implementation of education change projects (Duttweiler and Hord 1987, Coleman and La Rocque 1990 and Busick and Inos 1994).

Also much of the literature emphasizes the significance of including members in the change leadership team who are closer to the place where the change is implemented-that is, close to the school (Murphy 1999). If we look at the education system in the UAE, we will find that it is more like a single leadership. There is no real participation of the school staff in the education change process except in the implementation phase. Even the implementation process is usually planned and designed from the UAE's central education authority which is the Ministry of Education. School staff who are closer to the implementation place (the school) are not consulted. Research in the model school demonstrated that where team work and shared decision-making were possible, there were identifiable benefits to ownership and to morale which supported the overall change strategy leading to school improvement (see section 3.6). It can be concluded from the literature that in order to obtain successful implementation of an effective education innovation, the Ministry of Education in the UAE or any country that applied a centralized education system should let school staff, and mainly teachers, participate in the

education change leadership and management. The method of participation should be at least by consultation or, preferably, by involving the teachers, especially in the school where the education innovation is going to be piloted, as members of the change team which is responsible for planning and implementing the change.

10.2.2. Leadership Major Roles

Literature explains certain roles that change leaders should perform in order to achieve the change objectives. Also, the literature discusses specific roles of change leaders such as the head of the school, the local education authority, and the Department for Education and Skills. In the UAE this would equate to the school principal, an education zone director, and the minister of education. This section reviews the major roles of change leaders and the later section discusses the specific roles of change leadership in the UAE.

There are four major roles any change leadership should perform. The first role is identifying education problems and deciding that change is required. The second is developing a change team that is committed to the change objectives. The third is developing a vision, with the change team, of what objectives to achieve and how they are to be achieved. The final major role is providing continuous support to the change team to keep them motivated (David 1989, Kotter 1996, Louis and Miles 1990, and Fullan et al 1992,).

The Ministry of Education in the UAE usually performs the first two roles, which are identifying education problems and building change teams; however it does not perform the other two roles as effectively as the first two. The Ministry limits the process of developing a vision of what to change and how to change it to its own staff, and it does not always include school staff. This issue is discussed later in this chapter under the heading "Decision Making Process". The last role is related to providing continuous support to the change process. Support in this context means all activities that keep change team members working enthusiastically to achieve the change objectives. Previous experience shows that the Ministry's

support diminishes as time passes. The main reason behind the reduction of the ministry's support to the change process is due to the lack of resources and commitment. The Ministry should allocate enough resources for the innovation and assign them to a committed team. If it can be argued that teachers and school principals are very good sources for consultation on the resources required for education innovations implemented in the school, then it follows that centrally directed resourcing is unlikely to succeed. Similarly, if the Ministry of education, as a central authority, can not provide the proper support for the change team, that is inevitably a weak model for implementing the change because the risk of the failure is high.

10.2.3. Roles of the Major Participants of Change Leadership Team

As said earlier, literature stresses that education change leadership should include school staff including teachers and school principals along with the local and the central authority. In the following section I will point out how the literature relates to the UAE roles of the school principal, the teacher, the director of the education zone and the Ministry of Education.

<u>School principal</u>

A school principal is crucial to the change process specially if the change project is going to be implemented within his school (Duttweiler & Hord, 1987, Fullan, 1991; Hansen & Smith, 1989). Beside the general major roles mentioned earlier, a school principal has to play certain roles to ensure the success of the implementation of the education innovation. First of all, he should communicate the school vision with school staff. Second, deal with conflict that usually occurs during the change process (Madden, Livingston, & Cummings 1998). Third, a school principal needs to play the role of the change facilitator, not "manager of status quo" because a lot of education change processes fail because of the principal's resistance to change (Frederick, 1992). This specific role will make him a strong advocate for

the change process and will utilize all of his efforts to implement the change in a successful way. Fourth, a school principal needs to create a school community attitude of collaboration and trust among school staff (Murphy & Louis, 1999). Fifth, a school principal should empower teachers and share power with them (Wasley, 1989). Finally he should help teachers improve their professional skills (see Professional Development in this section).

It can be summarized from the literature that the school principal is a major player in any change process that takes place in the school. This means that he may lead the change process within his school and he can do many things to serve the change process including the participation in deciding what is to be changed and how, create teams, solve problems, provide the required support etc. As in any other country, school principals in the UAE are a big asset for any change process but, unfortunately, they are not utilized efficiently. There are a number of reasons why the education system in the UAE is not efficiently benefiting from the school principal. First of all, he is not trained as a change facilitator. Second, usually he is not involved the planning of the change process, he is only involved in the implementation of the innovation as designed by central authority. Third, he does not have the needed empowerment to make effective changes in the school; most of them tend to stick on the direction of the Ministry of Education without going beyond it. Some principals have courage to try to introduce innovative changes to their school, however the innovations do not spread to other schools if the central authority is not supporting it. Research in the model school made it clear that where the principal was encouraged to act as a change facilitator, and supported in doing so in a collegial climate, changes were more efficiently accomplished, and better institutionalized (see Section 3.7).

The Ministry of Education should give the position of a school principal more importance to serve the education change process through hiring school principals who are creative, willing to change, and are risk takers. Also, school principals should be given more authority in running the schools with more resources including

a professional training for being change facilitators rather than "managers of status quo". One final thing a school principal should do in the UAE in order to improve the quality of education in his school, is empowering teachers through sharing power with them as recommended in Leithwood & Jantzi, (1990).

Director of the Education Zone

The education zone in the UAE is an institution that falls between the Ministry of Education and the schools. It is similar to what is called in some western countries the "education district". Literature shows the importance of the leadership of the local authority in bringing about change and improvement in the schools (Coleman & LaRocque, 1990).

The director of the "education zone" can play essential roles that help in the education change process. First of all, he can create a culture of change within the education zone where he can develop an atmosphere that encourages schools to change through delegating responsibilities to the principals and challenging them to create innovative education ideas (Paulu 1988). Second, he can allocate the best human resources and build out of them change teams (Murphy and Hallinger 1986). Third, he can allocate the resources required for the change process. These resources include money, time, material, and over all provide change teams with political support (Murphy and Hallinger 1986). Finally, the director of the education zone can communicate his vision of education change to gain the required support from the community and the ministry of education. Research in the model school showed that where the director of the education zone allocated required resources for the school to introduce innovative projects, changes were more likely to occur.

The problem with a centralized education system, such as in the UAE, is that the director of education zone is not empowered enough to play the roles indicated in the literature. I think involving education zone directors in the planning and

implementing education change projects will help the Ministry of Education in overcoming change challenges. The importance of the Director of the education zone is to urge the Ministry of Education to hire highly qualified directors to lead the change process and provide them with the needed professional development, specially in the fields of managing change.

Teachers

Teachers are the closest people to the students who are the ultimate beneficiaries of education change; therefore, it is crucial to consider the teacher's role in the change process (Busick and Inos 1994). Teachers are more aware of the student needs and conditions than any other staff in the whole education system. From this we can say that teachers should participate in the leadership of the change process, if change leaders wish to have a positive impact on the teaching/learning process at classroom level. It is essential that teacher-leadership and administrative-leadership work in collaboration to implement an effective education change (Miller, 1998). The model school project made it clear that where teachers participated in the school leadership, the teaching-learning process was more efficient.

Ministry of Education

The Ministry of Education in the UAE is the central education authority and the minister of education has, almost, full authority to manage education in the country. Education zones and schools follow the direction of the ministry whether they believe in it or not. The Ministry of Education in the UAE is equivalent to the Department of Education and Skills in the UK. Literature makes it clear (Schlichty 1994) that central education authority should work together with schools in order to

handle effective education change. As mentioned earlier, in the UAE the Ministry has almost all of the authority and at the same time it is very far from what is going on in the classrooms. Maybe this is one of the major reasons why education innovation initiated by the ministry is less effective. Previous experience shows that rules and mandates from the central authority did not bring effective education change (Fullan and Stieglbauer 1991). Research in the model school showed that where the Ministry of Education gave more authority to the education zone and to the schools to introduce education change projects, staff in both institutions were more motivated.

Literature discusses a number of strategies that help in enhancing the collaborative decision making process among the Ministry of Education, education zones, and schools (Schlechty 1994). First, the three institutions should develop a shared understanding of the problems facing education which give rise to the need for the change. Second, the central authority should produce a vision of what is to be done and how and this vision should be accepted and supported by the education zones and most of the schools. Finally, central education authority should encourage innovation and support to educational change projects.

10.3. Problems and Challenges Facing Education Change

Researchers indicate that problems are a normal part of the education change process (Fullan et al 1992). In this section I will discuss three of the major challenges and problems encountered in the education change process which are reflected in the education change literature and which have been relevant in the UAE. The discussion includes possible strategies for dealing with each of them. The problems and challenges are the "implementation dip", resistance to change, and institutionalization of the education innovation. Of course those are not the only problems that may cause an education change to fail; there are other possible reasons for the failure (see page 85). However these are often experienced even if the education change was effectively planned and resourced.

10.3.1. Implementation Dip

The first change problem is the "implementation dip". Literature warns change leaders about this hidden problem that appears during the implementation phase (Busick and Inos 1994). "Implementation dip" occurs when individuals, who are the target of the change project, have abandoned ineffective practices but have not acquired the new strategies. This critical problem happens when things during the change process are expected to be better but actually get worse.

Change leaders should deal with it carefully because many education innovations die in the face of the "implementation dip". In order to eliminate the side effects of the "implementation dip", change leaders should take a number of actions. First of all, they should inform those who participate in the change project about the expected difficulties during the implementation process. Second, change leaders should provide the training required for implementing the innovation. Third, change leaders need to stay close to those who implement the innovation in order to asses them when necessary. Of course such difficult matters require patience and persistece from the change leaders. Due to the large number of education innovations implemented in the model school, a lot of resources were allocated for easing the negative result of the "implementation dips". Change leaders of each innovation implemented in the model school were standing by to deal with any implementation problem. Research in the model school showed that where the change team was prepared for the implementation dip with patience and persistence, side effects of the implementation dip were easier to be controlled. (3.6.14 page 64).

10.3.2. Resistance to Change

Resistance to change is considered as one of the major causes of the failure of education change (see page 86). Education change literature discusses different aspects of resistance to change. One important aspect about the resistance to change is that it is a natural part of the change process. And, it can be beneficial to the change leadership. Therefore it is worth studying the reasons behind the resistance to

change. Literature shows many strategies in dealing with resistance to change (see page 92).

Strategies for minimizing resistance to change:

1. Be aware of the change process's difficulties
2. Encourage teacher participation in the change process
3. Enlist change leaders' support
4. Understand change from the teachers' perception
5. Encourage trust and risk taking in the school
6. Focus on and reward what is important
7. Introduce achievable education change
8. Eliminate barriers to change

Research in the model school showed that if certain conditions were met, resistance to change was less difficult, viz: teacher participation in the change process (p.92), teacher professional development (Sect.5.4 p.133 foll), allocation of the necessary resources (p.133), and the awareness of the change difficulties (list as above)

Most of the education innovations in the UAE are planned centrally in the Ministry of Education without consulting teachers in the schools. Excluding teachers from participating in the decision process of the education change projects is the major reason behind teachers' resistance to implementing innovative education projects. Other causes of teachers' resistance to a change like for example; lack of support, lack of rewards, and lack of an effective implementation plan are applicable in the UAE. Therefore, the Ministry of Education should consider applying the strategies above for minimizing resistance to change throughout the change process. Another important note I would like to stress here is that some resistance is useful, therefore it is worth listening to the opposition which provide a countervailing force. The Ministry of Education will save a lot of time and efforts if it listens to teachers' comments before implementing any new education project.

10.3.3. Institutionalization of the Educational Change Project

One of the major challenges facing education change leaders is making the education innovation part of the system. Previous experiences show that, only a small number of well-implemented changes continue to the institutionalization stage (Fullan and Stieglbauer 1991). This indicates that a lot of resources are wasted without real benefit. A list of reasons why education innovation is not institutionalized is discussed in page 85. The list includes reasons related to the nature of the change project like speed of the implementation, difficulty and ambiguity of the change. Others are related to poor reaction to the education change's complex problems and lack of support from central authority. Resistance to the change is another reason why education change projects are not institutionalized in the school system. Also, the shifting of the change leaders before incorporating the change into the school system may impede the change becoming part of the school system. This indicates that change leaders should carry on supporting the new project and keep contact with the change team until the institutionalization phase which demonstrates the characteristics that are discussed at page 70. Literature urges that any pilot education project should be evaluated carefully before implementing it in a larger scale, and change leaders should consider that incorporating an innovation in a single school is different from incorporating it in all schools. Institutionalizing an innovation in all schools requires more resources and effort. Therefore, change leaders should consider the difference between introducing an innovation as a pilot project and introducing it as a comprehensive one. Another essential issue the literature raises concerning implementation of a comprehensive change after a pilot project is the issue of the difference of the organizational culture of each school (see page 87). The point here is that if an innovation is successfully institutionalized in a school this does not mean it can be implemented in another school. The reason for this is that each school has its own internal organizational culture, which needs to be considered before the implementation of the new project. This has been an important consideration in this innovation, since it was the

intention to extend the model school project to the other schools in the UAE. We have learned from the model school project that where education change projects were carefully implemented, there was high chance of project institutionalization within the school system.

10.4. DECISION MAKING PROCESS

Who decides about introducing an innovation in the education system? Is it the central education authority alone, or school staff alone, or do both of them share the decision? This question is very critical to the education change process in the UAE. Literature suggests that the best approach to education change decisions is made in collaboration between the central authority and the school (Darling Hamond 1998).

Mandates from the central authority do not bring effective education change (Fullan et al 1992). Also, successful education innovation applied in the school does not spread to other schools without the intervention of the central education authority. Research in the model school showed that, where teachers were allowed to participate in the decision making process, there was a boost in the teachers' involvement in school improvement process. (Section 9)

In the UAE educational change is most successful when schools, education zones, and the Ministry of Education are actively engaged with each other (Fink and Stoll 1998). This indicates that teachers, school principals, and supervisors along with the central authority staff should participate in any decision process related to any educational change project. The Ministry of Education needs to develop a system of decision making processes where it can benefit from the thought and experience of those who work in the school where they interact daily with the students, who are the ultimate beneficiaries of any education change. If the Ministry of Education practises sharing decisions it will gain some other benefits. First, involving teachers and school administrators in the decision making process will enhance their motivation levels (NAAEN 1999). Also, allowing school staff to

participate in the education change planning will make them more committed to the new project and their resistance to change will be lower.

10.5. TEACHER MOTIVATION

In addition to the teacher's motivational issues discussed in chapter 5, American literature discusses a number of relevant sources of effective teacher motivation methods (NAAEN 1999, Zemmelman et al 1993, NFIE 1996, Rosenholtz 1989, and NNCES 1997). They are: shared decision-making, professional development, proper evaluation and feedback, and parental support (see page 123).

According to these studies, these sources of teacher motivation have a lot of advantages. Participating in the school decision making process motivates the teacher, increases his sense of ownership and empowerment, makes him responsible for the outcome and committed to the school's objectives, and makes him feel that the school principal recognizes him.

Professional development helps the teacher deal with education challenges with more confidence, which keeps him highly motivated.

Providing the teacher with effective feedback about his performance helps in motivating him because he knows where he stands. Parental support for the teacher plays an essential role in motivating the teachers because this support provides him with an additional force to influence the student.

These four major elements lead to teacher satisfaction only if the teacher's basic requirements such as a reasonable salary, availability of instructional material, and student discipline are met. Research in the model school showed that where teachers were provided with effective professional development, a chance to participate in the decision making process, accurate performance feedback, and parental support, teachers were highly motivated to improve their level of teaching performance.(page 123 foll)

The Ministry of Education in the UAE is applying the merit pay and career ladder reward programs as tools for teacher motivation. These types of external incentives do not sufficiently satisfy teachers (NAAEN 1999). Such extrinsic rewards are important to keep the teacher working. However, they will not motivate him to improve his level of performance in the classroom or make him more creative (Oliver et al 1988). Sharing decision-making and professional development are discussed in this chapter. But studies also show that proper evaluation and feedback are sources of teacher-motivation (Rosenholtz 1989). In the UAE teachers are visited by the supervisors on an average of three times a year. The supervisor gives a written report about the teacher's performance. At the last visit the supervisor evaluates the teacher and writes a performance report which is kept at the education zone. The teacher himself is not allowed to look at his report. This method of teacher's evaluation causes discouragement among teachers in the UAE (Abu Dhabi Education Zone 1993). The Ministry of Education in the UAE needs to reconsider its method of teacher evaluation by providing the teacher with information about his performance in order to develop his performance and motivation.

The last method of teacher-motivation that this education literature often refers to is parental support for teachers. Parental support is a tool for reducing the burden for the teacher (see page 125). School principals in the UAE complain about the weak home-school relationship and this causes negative effects on the student performance level (Abu Dhabi Education Zone 1993). A school leader in the UAE needs to create a school culture where parents can give their support to the teacher.

One final important thought about teacher-motivation in the UAE is related to teachers' contracts. The contracting method for teachers in the UAE is discouraging non-UAE teachers from coming up with education innovations and does not motivate them to involve themselves in long running education change projects. This is because they are awarded only one-year contracts. This causes instability in the job because he does not know if he will stay for another year until the last month of the current academic year. I suggest that the Ministry of Education should award

them at least three-year contracts to allow them be more productive and more creative.

10.6. TEACHER PROFESSIONAL DEVELOPMENT

Literature shows a number of characteristics of effective teacher professional development (see page 135). Effective teacher professional development should be linked to academic and discipline problems identified by teachers, integrated into regular daily activities of the school, covering practical as will as theoretical aspects, based on an efficient evaluation of the teacher's strength and weaknesses, and planned and implemented with teachers' involvement.

Teachers' implementation of professional development can take different forms including professional dialogue with colleagues, collaborative curriculum development, and peer supervision and coaching (Monahan 1996). Literature points out that a school principal needs to play extra roles to fulfil the effective teacher professional development (Kober 1993). The new roles aim at turning the school to a learning environment not only for students but also for teachers. To turn a school to a learning environment, literature suggests a number of steps a school leader needs to take. The first step is allocating time daily and weekly to enable teachers to undertake professional development. Second, encouraging school staff to work in a collaborative way to develop a teacher-development plan based on the real student needs. Third, providing teachers with required materials to implement the development plan and allowing teachers more decision-making authority in different school issues. The last step a school leader needs to take is giving teachers more decision-making authority in professional development issues in the school (Kober 1993). The experience of the model school proved that where there was professional collaboration and cooperation among teachers and a strong professional support from the school principal, there was an improvement in the teachers' instructional skills.(Section 5.4)

Unfortunately, most of the processes for effective teacher professional development are not applied in the UAE. Teachers are rarely involved in the design of the training plan, professional development is not part of the school daily activities, and professional development is not one of the major responsibilities of the school principal. Teacher professional development in the UAE is managed centrally by the Ministry of Education or by the Education Zone. The managing arm for both the Ministry and the Education zone are the subject supervisors. Each supervisor supervises at least 60 teachers. This number of teachers impedes the supervisor from looking after the exact needs of professional development for each teacher. Therefore, the supervisor decides the general training requirements based on his views, not based upon the teachers' requirements. The supervisor's workload and his way of managing professional development makes teachers in the UAE think that the supervisor's role is not meeting their needs (Abu Dhabi Education Zone, 1994).

The other characteristic of effective teacher professional development, which is integrating professional development into regular daily activities, is not applied in the UAE education system. Most of the teacher training in the UAE is held after work; that is during their rest time and family time. The logic behind this is that teachers are busy during the school day. Teachers regularly complain, especially female teachers who look after their children. I think the importance of teacher professional development and improving competency is worth allocating part of the school day for this purpose.

The supervisor who works on improving the teacher's capacity to teach visits the teacher in the UAE schools on average three times a year and spends with him average two hours. Of course this time is not enough to create competent teachers. Therefore, involving teachers in their own collaborative professional development through peer supervision and coaching will be efficient cost-wise and time-wise. Each school has a number of highly professional teachers who can benefit their colleagues.

Professional development should be one of the major responsibilities of the school principal.

Involving teachers in the professional development process and integrating it into the regular school activities requires a new role for the school leader, which is not available in the UAE schools.

Literature discusses the role of the school principal in turning the school to a learning environment for the teacher. Unfortunately, the school principal in the UAE is not accountable for improving teachers' competency. It is the supervisor's responsibility who, as said earlier, visits the teacher about three times in the whole academic year. I suggest that a school principal should be responsible for teacher's professional development in his school. He can organize it by allocating time and resources with teachers' help. It is they who should decide what are their exact training needs based on the students' academic and discipline requirements. Of course the new principal's role will not cancel the supervisor's role. In fact the supervisor will be one of the major resources for teacher professional development.

In conclusion, Western education literature includes many theories that can serve in the improvement of any education system. It only requires researchers to search for what is appropriate for their education system and implement it in a way that fits the education system. The UAE is one of the developing countries that needs the latest thought in different aspects of life, including education. What I have written in this chapter is an attempt to discuss the possible transfer of some of the theories in the field of education change management, which are rarely discussed in the Arabic education literature, for the benefit of the local decision makers.

Chapter Eleven

CONCLUSION AND RECOMMENDATIONS

11.1. INTRODUCTION

This thesis is about an education innovation implemented in the Abu Dhabi Education Zone in the United Arab Emirates. The innovation is a model school project, which contains a number of innovative changes.

Chapter Two of the thesis covers the environment in which the model school project is established, that is, the background of the UAE as a country and its educational system. The main factor that affects social life in the UAE is the huge economic development which has occurred in the past thirty years. UAE population has increased more than four times in the period between 1975 and 1995, and it produces more than 2 million barrels of crude oil daily

Unfortunately, education in the UAE is affected quantitatively and not qualitatively. That is the country has experienced a tremendous development in the number of students, and eventually in teachers and schools which is reflected by the economic development. The number of students between the year 1975 and 1995 has increased by more than five times (see Chapter Two). The quality of education, on the other hand, has not advanced as much as the economy. Major elements of the education system, e.g. teaching methods, textbooks, assessments and education management have not undergone a significant education change that matches the economic development of the country.

The gap between the economic development and the quality of educational development pressures the educational leadership in the UAE to improve the quality of educational services provided in the governmental schools throughout the country. Although the Ministry of Education in the UAE set ambitious educational goals as stated in its educational policy (see Chapter Two), its limited resources and its traditional way of managing education act as barriers against any major quality improvement projects in the educational system.

As a response to the poor condition of education in the UAE, the educational leadership in the Abu Dhabi Educational Zone took further steps toward improving the education quality in the Education Zone. These steps included diagnosing the situation and searching for solutions. The outcomes of the field researches and observations were strongly in favor of making changes in the school system (see Chapter Four). The Education Zone set objectives that were higher than the normal ones but never went beyond the UAE educational policy objectives. The strategy to reform the education system in the Abu Dhabi Education Zone was to start from the lower primary stage (grade one to grade three) onward.

To meet the objectives of this strategy, the Education Zone established a model school in which a number of education innovations were implemented (see Chapter Four). The model school admitted students only from grade one, the same students moved to the upper grades each year. Based on the studies of research and observations, major changes introduced in the model school were in the fields of teacher motivation, student motivation, teacher professional development, education materials and time allocated for education.

In order to smoothly implement the model school project, the education change leadership applied a planned change process. The change process was based on Fullan's education change model, which includes three major phases: the initiation phase, the implementation phase, and the institutionalization phase (see Chapter Three).

Before implementing the model school project, the change leadership of the model school project studied different aspects of the change process from a previous change experiment, which included factors influencing the change process, conditions of successful education change, reasons for education change failure, resistance to change, and the leadership's role. The detailed discussion of these aspects of the change process and their relationship to the model school project were explained in Chapter Three of this thesis.

Before evaluating the education changes implemented in the model school, the thesis compared the model school to the schools of the same grade level in the Abu Dhabi Education Zone. The comparison aimed at proving that there are no major changes that would affect student achievement and implementation in the model school other than the five major changes mentioned earlier. The comparison focuses on the teachers' performance report, teacher experience and qualifications, student selection method, and class size in both the model school and the other lower primary schools in the Abu Dhabi Education Zone. The result of the comparison showed no significant difference between the model school and other lower primary schools in the fields of teachers' performance report, teacher experience and qualifications, student selection method, and class size.

This thesis deals with the model school as a case study (see Chapter Seven) and tries to answer five research questions. These questions are:

1) Does teacher motivation have an effect on the students' academic achievement?
2) Does student motivation have an effect on the students' academic achievement?
3) Does the time allocated for instruction have an effect on the students' academic achievement?
4) Does the level of education materials beyond what is currently provided to schools have an effect on the students' academic achievement?
5) Does the professional development method currently applied in the model school lead to an improvement in teachers' competency?

The five questions deal with five major change variables: teacher motivation, student motivation, teacher professional development, education materials, and time allocated for education. As discussed in Chapter four, they were chosen based on the review of the published literature on effective education, in addition to the author's perception and experiences through the local researches conducted in the Abu Dhabi Education Zone, and the feedback from school principals and teachers (see Section 4.5.7). As mentioned earlier, the other factors which usually affect students' academic attainment level, like teacher's experience and qualifications, student selection method, and class size are excluded because studies show that there are no significant differences between the model school and the schools in the Educational Zone in these areas.

To answer the five questions, the thesis includes a survey of the literature and two strands. The survey of the literature covers change management issues and the five areas of strand two are teacher motivation, student motivation, education materials, teacher professional development, and time allocated for education.

The two strands cover two studies. Strand one's objective is to test the students' attainment level in all of the taught subjects (Islamic studies, Arabic, English, Math, and Science). The test results in strand one show that the scores the model school students have achieved are higher than scores from students in the sample schools in all of the tested subjects (see Chapter Eight).

Strand two evaluates the model school system from the teachers' perception. Teachers are given a list of issues, including issues related to the five variables of the thesis (teacher motivation, student motivation, education materials, teacher professional development, and time allocated for education), and are asked to answer two questions on each issue. Question one is, "What degree of priority is given by your school to this issue?", and question two is, "To what extent does the priority given to this issue have a positive impact on the teaching/learning process at your school?" The researcher analyzes issues that are related to the five major changes in the model school using the Priority/Impact Model (see Chapter Nine).

The result of the analysis shows that the teachers perceive that teacher motivation, student motivation, teacher professional development, education materials, and time allocated for education are given higher priority in the model school than in the sample schools. Also, teachers perceive that the priority given has more of a positive impact on the teaching/learning process in the model school than in the sample schools.

If the results of both strands are combined together, we can see that in the school where the students' academic achievement (strand one) is higher, teachers perceive that the five major changes (strand two) are given higher priority. This indicates that from the teachers' perception, changes in the five fields, and implementation in the model school, all have led to the improvement in the students' achievement level.

Hence, it is not easy to separate out the individual impact of real change of the five areas of major change reflected in the five research questions, because it is not possible to measure the effect of each of the five variables (teacher motivation, student motivation, education materials, teacher professional development, and time allocated for education) on the students' achievement level. However, we can say that the five variables combined together have cause a the higher achievement level in the model school.

11.2. THE SIGNIFICANCE OF THE THESIS

The importance of this study lies in on a number of areas. These areas are: the research into the unique development of the model school project; the out put of the model school; the way the model school was managed; the application of the literature covered by the study to the UAE; and the fact that it is the first study evaluating the model school system for school improvement in the UAE.

The first area of research, which makes this study significant, is related to the fact that the nature of the model school is unique. There are many factors that

contribute to this uniqueness. First of all, the model school is the first school of this kind in the UAE to implement a number of education changes in the fields of teacher motivation, student motivation, teachers' professional development, educational resources, and time allocated for education. Second, the model school is the first governmental school to receive fees from parents, on a regular basis, to pay for its services. Third, the model school represented the first serious involvement of a local government in an education project in the UAE. The third factor that makes the model school project unique is that it was initiated from the education zone not from the Ministry of Education. The final factor is that, the model school was planned and implemented locally without any help from any foreign experts.

The second area of research which makes this study significant is related to the output of the model school, demonstrating a model for school improvement in the UAE system and culture. Chapter eight of this thesis shows that the model school proved to be more effective in improving students' attainment when compares to the other schools in Abu Dhabi education zone.

The third area of significance is the role of the school leadership in the UAE. The way the model school is managed is different to that of other schools in the education zone because the school is given authority in spending money, changing its curriculum, and teacher recruitment.

The relationship of the literature covered by this study is to the UAE is another factor that make it an important study. The literature content of this thesis is rarely found in Arabic references. The thesis discusses implementing some of the theories, which are of a Western origin, in the context of the UAE (see chapter 10).

11.3. RECOMMENDATIONS

Based on the education situation in the United Arab Emirates and the model school project which was implemented in the Abu Dhabi Education Zone, as it has been described in this thesis, I propose several recommendations. The

recommendations are about how the education system in the UAE, specifically those areas identified in the model school experiment, can better meet the current needs of the UAE student. The recommendations are divided into four categories: 1) school , 2) Ministry of Education, 3) Education Zone, and 4) general

11.3.1. School

1. A school should use intrinsic motivation along with extrinsic motivation to improve student's personal and academic skills. See page 130.
2. A school should use intrinsic methods such as empowerment, allowing the participation of the decision making process, allocating the required instructional material, parental support, and effective professional development to motivate its teacher to improve his performance. See pages 124 and 125.
3. A school should inform newly recruited teachers of the school vision and its work environment and set specific goals for them. See page 77.
4. A school should develop a strategy that makes parents more efficient in integrating their role at home with the school's role. See page 125.
5. A school should encourage teachers' leadership and creativity to come up with education innovations that help in solving the school problems. See page 83.
6. A school should develop the training skills of their teachers in order for each one of them to be a trainer in his or her subject. See page 133.
7. A school should develop an effective system that helps parents monitor the performance of the school and provide the needed support. See page 125.
8. Teachers in the education zone should be allowed to participate in the educational decision making process, especially when the decision is related to the education process in the school. See page 80.
9. A school leadership should improve the sense of collegiality and teamwork among the teachers to increase the school's efficiency. See pages 82.
10. Teachers should develop their research skills in order to deal with educational problem in a scientific way. See page 74.

11.3.2. Ministry of Education

11. The Ministry of Education should give more authority to education zones to develop, initiate, and implement education innovation. See page 76.
12. The Ministry of Education should select qualified education zone directors who can lead change teams. See page 95.
13. The Ministry of Education should appoint education zone's directors, who are creative and supportive of the education innovation. See page 96.
14. The Ministry of Education should establish a vision for the education output and a vision of the process of achieving the output. From the Ministry's vision each education zone and each school develops its vision. The leadership of the three institutions (the ministry, the education zone, and the school) must involve as much as possible of the staff in developing the vision. See page 76.

11.3.3. Education Zone

15. Education zones encourage schools to come up with innovations that help in solving student performance. See page 76.
16. Education zones leave professional development decisions to the model schools because they know their professional development requirement. See page 136.

11.3.4. General

17. The three institutions (the Ministry, the education zone, and the schools) should set clear goals in coordination with each other and with the participation of those who are going to participate in achieving the goals. See page 101.
18. When implementing the model school project in any other place, change leaders should consider the difference in environment of the new place. See page 101.
19. Get the advantage of the higher education institution in implementing education innovation, planning or evaluation, and staff development. See page 84.
20. Education change leadership considers dealing with positive and negative resistance to change when implementing any change. See page 90.

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7. Internal Document No. 7, (1998) Al Gazali Model School Students' Registry.

Appendix A . The Questionnaire

United Arab Emirates
Ministry of Education
1997/ 1998

Teacher perception of the issues influencing effective teaching and learning in the lower primary schools

Presented By:
Eissa Khalifa Al Suweidi
Director of the Abu Dhabi Educational Zone
June 1998

A Survey ...
*(Put a tick in the box corresponding to your choice).**

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				1. THE TEACHER **Professional and Academic Aspects** **The school system:**				
				1.Helps you to develop yourself professionally through exchanges with others.				
				2. Provides you with sufficient professional training.				
				3. provides you with sufficient time for training programs.				
				4. Provides you with beneficial educational experiments.				
				5. Provides you with educational and scientific resources.				
				6. Provides you with the required teaching aids.				
				7. Helps you attain the goals through team work/planning.				
				8. Helps you prepare the worksheets and the teaching aids required.				
				9. Provides the use of varied and meaningful methods.				
				10. Provides the use of varied and meaningful assessment methods.				
				11. Helps you take account of students' individual differences.				
				12. Establishes interaction, activity and participation during the learning process.				
				13. Helps the teacher improve his performance.				
				14. A salary raise of 50%				
				15. Others ' trust in you.				
				16. The way of dealing with the school principal.				
				17. The kind of relationship with your colleagues and the extent to which you benefit from their experience.				
				18. The kind of relationship with your students.				
				19. The support of the parents and the local community.				
				20. The cooperation of the administration in solving the teacher's problems.				
				THE TEACHER: Administrative Aspect **The teacher's performance is affected by:**				
				22. The number of teaching periods.				
				23. The length of the school day (making use of the available time)				
				24. The required tasks and responsibilities.				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				25. The available training opportunities and training requirements.				
				26. The empowerment given to the teacher.				
				27. The suitability of the school building to the duties required from the student.				
				28. Encouraging teachers to benefit from one another.				
				* The teacher: other necessary issues within this category: A: _____ B: _____				
				2. THE LEARNER **The school system:**				
				29. Helps in motivating the student.				
				30. Helps the student perform his duties.				
				31. Enhances the positive attitude of the student.				
				32. Provides the students with suitable educational activities.				
				33. Enhances the spirit of cooperation and teamwork.				
				34. Establishes the leadership behavior on the part of the students.				
				35. Develops the student's personality regarding the teaching / learning process.				
				36. Develops the student's positive attitude towards the school.				
				37. Encourages the student's activity and self - study.				
				38. Encourages the student's ability to read and sum up.				
				39. Motivates the students by displaying outstanding drawings and works.				
				40. Develops a negative feeling towards the school.				
				41. Instills moral values (performing prayers collectively on time)				
				THE LEARNER: Learner/System Relationship **The school system:**				
				42. Lessens student's absence for no plausible reasons.				
				43. Increases students' absence for no plausible reasons.				
				44. Adequacy of the time spent at school (working on consolidation assignments at school).				
				45. Develops a student's balanced personality.				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				46. Develops collective properties and preserves the common goods.				
				47. Involves the students in taking their own decisions.				
				THE LEARNER : the learner/teacher relationship **The school system helps you:**				
				48. Establish student's positive behavior towards the teacher.				
				49. Define the kind of students' behavior towards the teacher.				
				50. Determine the learner/teacher relationship.				
				51. Invest the cooperative learning methods, self-study and worksheets.				
				52. Provide enough instructional material to you.				
				53. Fulfill the tasks in cooperation with the students.				
				54. Use the appropriate language when dealing with the students inside/ outside the classroom .				
				THE LEARNER: the learner/school relationship **This relationship develops according to:**				
				55. The student's respect for the school rules and regulation.				
				56. The impact of school activities practiced by the students in the school environment.				
				57. The impact of discussed and fulfilled ideas/projects aiming at improving the student's creative thinking.				
				58. The student's participation in organizing and administrating some morning assemblies.				
				59. The student's access to many educational activities fit to their likes during the break. (sports, library, computer, etc.).				
				60. The suitability of the school building to the duties required from the student.				
				61. Providing individual lockers to enhance students' role in preserving collective and private properties				
				The learner: the learner's relationship with his family.				
				62.The parents' awareness of the importance of the school role (learners' behavior at home)				
				63. Readiness for cooperation and support both to the school and teachers on the part of the parents				
				64. Parents follow up their child educational progress.				
				* The learner: other necessary issues within this				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				respect. A: _____ B: _____				
				3.THE SCHOOL ADMINISTRATION: Aptitudes and adequacy				
				65. The school administration's ability to make the required changes				
				66. The school administration's ability to implement their duties and achieve their aims				
				67. The school administration's ability to provide instructional material.				
				68. Effectiveness of the school administrative staff				
				69. The administrative staff's professional aptitude				
				70.The teacher's participation in planning and taking collective decisions related to subjects taught				
				71. The school administration deals with other staff in a democratic way.				
				THE SCHOOL ADMINISTRATION: The relationship between the school administration and the available equipment.				
				72. The school administration's ability to utilize the available resources.				
				73. The school administration's ability to benefit from the school building				
				74. The impact of crowded classes on the students achievements.				
				THE SCHOOL ADMINISTRATION: The relationship between the school administration and the components of the educational system				
				75. Caring about the teacher's personal concerns				
				76. Caring about the student's achievement and personal development.				
				77. The relationship between the school administration and the teacher				
				78. Communication between the school administration and the educational zone				
				79. Providing the necessary school needs when required.				
				80. Allocating each Thursday as for teacher's professional development.				
				81. The suitability of the summer vacations for students. (timing and length)				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				THE SCHOOL ADMINISTRATION: The relationship between the school administration and supervision				
				82. The quality of coordination between the school principal and the supervisors.				
				83. The efficiency of the supervisor's role				
				THE SCHOOL ADMINISTRATION: The relationship between the school administration and the teacher				
				84. Effectiveness of teachers' training programs.				
				85. Monitoring teachers' performance				
				86. Monitoring students' achievement.				
				87. Adopting education innovations suggested by the teachers				
				88. The administration's discrimination between teachers for no plausible reasons				
				THE SCHOOL ADMINISTRATION: The relationship between the school administration and the learner				
				89.The quality of the educational activities devised by the school for the students				
				90. The role of the school administration in attracting students to school				
				91. The effectiveness of the social worker's role in solving students' problems				
				The school administration: other necessary issues within this respect: A: _____ B: _____				
				4.THE CURRICULA				
				92. The effectiveness of the text book to fulfill the curricular aims				
				93. The effectiveness of the extra curricular programs in reinforcing the syllabus				
				94. the effectiveness of the teacher's manual in guiding teachers to achieve the syllabus aims				
				95. The efficacy of the syllabus in developing positive students' behavior.				
				96. The syllabus effectiveness to cater for the students' needs.				
				97. The teachers' role in carrying out the syllabus and				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				achieving their aims.				
				The curricula: other necessary issues within this respect: A: _____ B: _____				
				5. THE FAMILY AND THE LOCAL COMMUNITY				
				98. Effectiveness of the parent's concern with the educational achievements of the students and their behavior				
				99. The parents' support to the teachers and the school administration				
				100. Parents' attitude towards educational issues concerning their children				
				101. The effect of house servants and foreign nurses on children				
				The family and the local community : other necessary issues within this respect: A: _____ B: _____				
				6. THE MATERIAL ASPECT				
				102. Catering for school needs and other educational requirements				
				103. The impact of stopping teachers' periodic allowances on their performance.				
				104. The effect of private lessons on students and their parents				
				The material aspect: other necessary issues within this respect: A: _____ B: _____				
				7. THE SUPERVISION TOOLS IN USE				
				105. The appropriateness supervisors monitoring and evaluation methods.				
				106. The efficacy of communication between supervisors and teachers				

(A) What degree of priority is given to this issue by your school?				The field, its components and issues	(B) To what extent does the priority given to this issue have a positive impact on the teaching-learning process at your school?			
V. pos.	Pos.	Neg.	V. Neg.		V. pos.	Pos.	Neg.	V. neg.
				107. The effectiveness of the supervisors' suggestions and instructions to improve the teachers' performance and the students' achievements				
				Supervision tools in use: other necessary issues within this respect: A: _____ B: _____				