



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH
Volume 12 Issue 14 Version 1.0 Mar 2012
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Students, Teachers, and Organizational Capacities' Impact on Overall Students Performance in Mafraq Governorate

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Keywords : *student's performance, teachers organizational, capacity, higher education, impact, inputs, outputs, market, Mafraq, Jordan.*

GJMBR-B Classification: *FOR Code:150499 JEL Code:P46, R48, O47*



STUDENTS, TEACHERS, AND ORGANIZATIONAL CAPACITIES IMPACT ON OVERALL STUDENTS PERFORMANCE IN MAFRAQ GOVERNORATE

Strictly as per the compliance and regulations of:



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I. INTRODUCTION

The relationship between human capital and economic growth is highly conditioned by the quality and distribution of education in the labor force. Investing in more and better-distributed education in the labor force helps create conditions that could lead to higher productivity and higher economic growth. Most developing countries, including those in MENA, have committed substantial resources over the last 40 years to expand and improve their education systems (Galal, 2008). The main shortcoming of past efforts lies in the weak link between the improvements in

the level, quality, and distribution of human capital and economic growth, income distribution, and poverty reduction. This case is further reinforced by the lack of readiness of most education systems in MENA to deal with globalization and the increasing emphasis on knowledge in the development process, the region's enormous youth bulge, and the additional financial resources required expanding higher levels of instruction, having essentially achieved full enrollment at the primary level (World Bank, 2004).

Neither growth rates nor education appear to have contributed to the low poverty levels of the region. The main reasons for low poverty rates in the MENA seem to be actively pursued redistributing income through various mechanisms: (1) relatively moderate and somewhat declining inequality of income distribution, so whatever growth rates in GDP per capita occurred, they contributed to higher consumption per capita for the poor despite slower economic growth rates; and (b) income support programs by the state to the poor families such as Jordan. Jordan poverty rates fell despite low economic growth in the 1990s. Further, poverty rates are lower in East Asia and MENA than in Latin America, and are declining within countries in MENA that have had more rapid rates of growth. These policies seem to have had a much more direct effect on reducing poverty than educational investment policies because they directly affect the incomes of lower-income families rather than depending on the indirect effects of educational investment (Galal, 2008).

In Jordan, the Ministry of Higher Education gave higher education sector its attention during the last two decades as its perceived role in the comprehensive development of industrial, commercial, business, agricultural, and health sectors. The development of higher education sector has been on content, programs, and pedagogy that control quality and quantity. The development focused on international standards that provide competitiveness of graduates at the regional and international level. Seven cores of focus were adapted that included: university management; admission procedures and equal opportunities; accreditation and quality assurance; scientific research, development and graduate studies; IT and technology skills; funding; and learning environment. Evaluation and assessment as initiatives for higher education

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development in Jordan is considered to be a central core for quality assurance. However, to realize the importance of such vision it is important to focus on the base of education at the school level. To match these goals, the Ministry of Education was accredited the ISO9001 for Management and Quality Assurance in its educational and other activities that targeting the development of human resources (teachers and students) at the school level (National Strategy for Higher Education and research, years 2007-2012).

How such implemented development plans can be adopted to local communities that are the most in need for socio-economic sustainable development like the Governorate of Mafrq. Such vital development includes the simplest executive jobs to the most complex management ones required.

a) *Importance and Significance of the Study*

Statistics of 2004 show that applied science majors are not established in schools within the dispersed human settlements of Mafrq Governorate from the urban center, Mafrq City. Additionally, the further settlements are from the capital city Amman, the less such majors are offered to local communities. Whilst, such majors qualify high school students to be accepted to applied science majors at the university level such as agriculture, arid land development, resources management, engineering, architecture, nursery, and medicine that are believed to be the most needed by the local market in Mafrq Governorate (Department of Statistics, 2004).

Being the first of its kind, the present study emphasizes the role of human resources development at the educational institutions level in providing qualitative and competitive graduates to Mafrq Governorate market. Such investment can enhance socio-economic security for the local community. This research can be a model for local communities with socio-cultural and economic limitations. The researchers are expected to gain more expertise in the development and evaluation of educational systems and pedagogy, and their relation to market needs.

Goals of the study are to diagnosing the relevance of inputs and outputs of higher education that will make Mafrq Governorate dependent on its own human resources. The study outcomes will provide a set of guidelines towards making educational environments more efficient.

II. LITERATURE REVIEW AND THEORY

a) *Challenges Facing Education Sector*

The conditions under which education systems contribute to economic and social development have changed and this argues for considering alternative paths of education development. For many developing countries, an abundant supply of low-wage, unskilled labor used to be a route to rapid growth and national

prosperity, but this is no longer so. Several new challenges have been introduced: (1) Globalization and the increasing importance of knowledge in the development process to excel in a more competitive environment. (2) Clients to be served by the education system have also changed. (3) The number of eligible students seeking post-compulsory education is expected to increase considerably over the next decades. (4) The education systems will need to become more effective in transmitting skills and competencies to all. (5) Facing these new challenges will be costly (Galal, 2008).

In an ever-changing labor market, students, graduates and postgraduates have to be prepared in accordance to the existing demands. Through the centuries, universities have shown that they are able to adapt to new challenges. Because of this ability, universities have been able to survive as institutions of knowledge and learning. Presently universities are challenged by other knowledge producers, by other education providers, by new technologies and finally by students and employers (Weimer, 2000). Also, the tendency of economies and businesses to operate globally is clearly increasing. The job market not only looks for skilled specialists in a particular field but more and more they require additional skills, such as languages, ICT knowledge, and soft skills. Universities provide organizational means searching new methods of collaboration with partners in economy. Collaboration may provide, with very important feedback information, help to respond to the demands of employers and change or development of study programs, as well as teaching and learning strategies (Valiulis, 2003). Specialization is to be encouraged as to study any subject may have an educational value for those who can benefit from it quite apart from the intrinsic merit of the particular course (Robbins, 1963).

b) *Challenges Facing the Education Sector in Jordan*

- i. Globalization and Knowledge Economy: The contribution of education and human resources to the overall index is significant in Jordan. The individual needs of the students are not commonly addressed in the classroom; there is little consideration of individual differences in the teaching-learning process. Current pedagogical practices lack support for weak students, although Jordan appears to be making additional investments in this area. In addition, Jordan's education system is one of the region's most flexible in Vocational Education and Training (VET) (Galal, 2008). In 2000, the Jordanian Higher Education Accreditation Council was established along with methods to conduct internal and external evaluation of university programs. Jordan possesses education systems that exhibit better engineering, more aligned incentives, and greater

- public accountability than some countries in the region (Galal, 2008).
- ii. Education Finance: Jordan allocates less than 15 percent of their budget to education. In the 1980s, Jordan constructed science labs and libraries in rented and government-owned facilities to improve the teaching of science. In the late 1980s, Jordan introduced information system to improve decision making at the central and governorate levels. In Jordan, services were contracted out to the private sector since 2000 (e.g., development of curricula and pedagogical tools, teacher trainings, and installation of ICT equipment) (Galal, 2008).
 - iii. Enrollement: Jordan is relatively more successful in providing more equitable access and higher-quality education to their population than other countries. Jordan currently has average Net Enrollment Rate (NER) above 90 percent. Jordan experienced temporary setbacks in enrollment rates before recovering and continuing their paths of growth in 1995. As for secondary education, Gross Enrollment Rate (GER) today for Jordan is 85 percent or more. By 1990, Jordan had surpassed the benchmark of the average higher education for the region, which has quintupled from 5 percent in 1970 to 24 percent today. Jordan constitutions also guarantee the right of education for all, but no commitment is made that education will be provided by the state for free. These constitutional commitments were made typically in the wake of independence from colonial powers and have put pressure on governments to deliver. Over the period 1970–2003, Jordan was relatively more successful in providing access to reasonable-quality education for most of their populations than were the rest of the countries in the region. Jordan has increasingly relied on households to contribute to the cost of publicly provided education through the payment of fees, and has also encouraged private provision of education, especially at the tertiary level. Historically, the private sector played a modest role in the provision of education (Galal, 2008).
 - iv. Gender: Gender parity was reached before full primary enrollment; female students outnumber male students by a significant margin. Jordan currently has the most equal education distribution in the region. Averaging the scores for the adult literacy rates and TIMSS indices, Jordan score particularly high. Since the 1960s, despite the Six-Day War for Jordan, the civil war in Lebanon, the Iran-Iraq War for Iran, and the Gulf War for Kuwait, Jordan was able to protect its education systems. Jordan performed well in meeting education objectives though it has low per capita income (Galal, 2008).
 - v. Education and Migration: Among the 195 countries studied by Docquier and Marfouk (2004), Jordan is among the top 30 countries with the proportion of skilled emigrants in the total emigration stock, and is ranked 27 (Galal, 2008). Migration is an important channel for resolving local market imbalances with potentially large benefits to the individuals and nations involved. Labor movement is particularly important for the MENA because one of the region's main characteristics is excess labor in Jordan and excess capital in another (such as the Gulf Cooperation Council Countries). Jordan export workers to the Gulf, but also imports uneducated workers from neighboring countries like Egypt and Syria. The demand for Arab workers in the Gulf, according to Girgis (2002), is expected to fall. Nationals are given skilled jobs at higher wages. Asian workers are increasingly given unskilled jobs at lower wages and at wages below those of workers from Arab countries. For both the educated and uneducated individuals in countries like Jordan higher wages overseas are an important pull factor to convince some to migrate. The rates of return to education in countries like Jordan are low and declining (Galal, 2008).
 - vi. Social Challenges and Market Demands: Students and parents increasingly favor professional degree programs that help graduates firstly to get a job, rather than a liberal education that is capable of enriching their lives. Society is telling universities that although educational quality is important, the cost of education is even more important. At the same time, the labor market seeks low-cost quality services rather than prestige. This could be because a culture of excellence, which has driven the evolution of education and competition among universities, is no longer acceptable or sustained by the public. Although this shift from prestige-driven to cost-competitive market forces may broaden, the mission and capacity of many universities could be at the expense of the excellence of the best educational institutions (Duderstadt, 1999). Excessive attractiveness of some study programs causes not only disproportion in the market for specialists, but also partly compromise it (Valiulis & Zavadskas, 1999; Valiulis, 2003).
- c) *Marketing Higher Education*
- A number of authors have recognized the increasingly important role that marketing is playing in higher education institutions' efforts to attract new students (Carlson, 1992; Fisk & Allen, 1993; Murphy & McGarritty, 1978; Wonders & Gyure, 1991). Marketing actually is linked to needs assessment, market research, product development, pricing, or distribution (Kotler &

Fox, 1995; Murphy & McGarrity, 1978). In a higher education context, many customers have been recognized; parents, alumni, donors, the community at large, the government and prospective employers, but the primary customer remains the student (Conway, MacKay & Yorke, 1994; Robinson & Long, 1987; Scott, 1999; Wallace, 1999). When universities offer qualifications that satisfy student needs, marketing mix alluded to a set of controllable variables that an institution may use to produce the response it wants from its various publics through a 4Ps-type analysis (Product, Price, Place and Promotion) (Kotler & Fox, 1995). Price relates to aspects such as the tuition fees, bursaries and scholarships and payment terms for tuition fees. Place is the distribution method, be it face to face or by distance learning. Promotions is comprised of a package of tools such as advertising, public relations and face-to-face selling that could take place at an open day. With the intangible nature of the services, some call for a fifth element, people (Coleman, 1994; Gray, 1991; Keller, 1983; Lin, 1999) and physical facilities (Kotler & Fox, 1995), to be added.

d) Incentives and Accountability in Demand and Supply

Arab countries have tended to focus too much on engineering education and too little on incentives and public accountability. No systematic attempts have been made to link the performance of schools and teachers to student results, to put in place effective monitoring mechanisms, or to make information about school performance available to parents and students. Parents and students do not have adequate mechanisms to influence education objectives, priorities, and resource allocation (Galal, 2008).

- i. Aligning incentives on the demand side: Education is an investment and its reform has to be seen as part of a larger reform process of the entire economy (Panizza, 2001). The proposed reforms to encourage labor-intensive growth include measures to reduce the bias against exports (Galal and Fawzy, 2001) and measures to rationalize the prices of capital relative to labor (Radwan, 1998; Fawzy, 2002). It is important, however, that additional reforms to be undertaken to shift the demand for labor from the government to the private sector. This can be achieved in part by discouraging employment in government. At the same time, attention should be given to the informal sector, which is the most important source of employment (Assaad, 1994).
- ii. Aligning incentives on the supply side: On-going reforms require improving the supply quality of schools that include: (1) Aligning the incentives of teachers, bureaucrats, and private sector education providers to produce good quality education is difficult but necessary. In public

schools, it requires motivating teachers to teach effectively in the classroom through performance based financial and pecuniary rewards, in addition to improving the training of teachers. It also involves decentralization and the engagement of parents in the activities of the school, possibly including the selection of teachers. In addition, it involves: (a) greater competition among schools by allowing students to enroll in the school of their choice on the basis of systematic information prepared by the Ministry of Education; (b) fair competition and the availability of accurate information about school performance; (c) retention of its authority to verify equal access and a minimum curriculum for all students; and (d) resolution of disputes between schools and parents to fulfill the role of an arbitrator based on a set of previously known rules, procedures, and penalties. In private schools, profit maximization and competition take care of many of the motivational problems noted above. (2) Improving the physical quality of schools, and upgrading of the curriculum by increasing pressure on the treasury to spend sufficiently on building and maintaining schools and by delivering services that are not an integral part of the education process (Galal, 2002).

e) Quality of Educational Environment Impact on Students Performance

Educational environment is the setting where interaction between students and teachers takes place. There is evidence that situational (environmental) positions and dispositional (personality) characteristics and attitude towards school (Gump, 1987; Weinstein, 1985; Totusek & Staton-Spicer, 1982; Koneya, 1976) affect students' performance. Students and teachers' personality characteristics and attitude towards school (Brooks & Rebetez, 1991; Gump, 1987; Weinstein, 1985; Totusek & Staton-Spicer, 1982) affect student's performance. Interactions between environment factors and the personal characteristics of students do exhibit significant effects on the academic performance (Lewin, 1943). Basic physical requirements of the school building like minimum standards for classroom size, acoustics, lighting, heating and air conditioning, in addition to pedagogical, psychological and social variables act together as a whole in shaping the context within which learning takes place (Lackney, 1999). Therefore, educational environments include social, organizational, and physical environments:

i. Teaching Environment

A study by Tam and Cheng (1995; 1994) measured the internal social environment of the school organization and its relations to the performance of teachers and students. School environment and performance of students did have theoretical and

practical implications in school management. Leadership has been found to be an important factor in the maintenance of a cohesive social environment for the teachers to work in. A minimum period of time required for leadership effects to take root (Ming & Cheong, 1995; Cheng, 1993). Additional factors that reflect learning/teaching environment, were labeled: strength of leadership, staff frustration, positive classroom climate, caring and support to students (a combination of three environment variables: esprit, intimacy, and student-centeredness), formalization, and pupil control (pupil control ideology minus organizational ideology) (Ming, 1994; Ming & Cheong, 1995). Leadership factor was measured by the integration of the five aspects: instructional (educational), structural (hierarchy of authority, hindrance (difficulty and obstruction) as signs of bureaucratization of a school, and participative decision), human resource, political, and cultural (symbolic) (Sergiovanni, 1984; Bush, 1986; Bolman & Deal, 1991; Cheng, 1993). Personal characteristics of the students included age and gender. Personal characteristics of the teacher included average teacher teaching experience of the school (teaching age), age of the teacher, and gender of the teacher. Teacher performance was measured by efficacy and time-use at the individual level. Students' performance was measured by learning efficacy (efficiency). Students' competition was a function of affiliation and involvement, better social relationship among students increase students' engagement in studying (Ming, 1994; Ming & Cheong, 1995).

ii. *School Environment*

- i.) **Schools Size:** Small schools benefit students socially and academically, while smaller school buildings consume less energy. Additionally, small schools serve as true community centers. The use of school facilities can be shared with a variety of community organizations fostering meaningful partnerships civic participation and engagement, as well as opportunities for children to walk and bike with the added public health benefit of increasing their physical activity (Lackney, 1999). On average, the research indicates that an effective size for an elementary school is in the range of 300-400 students and that 400-800 students is appropriate for a secondary school (7-8) (Cotton, 1996). Further, school size affects the following:
- ii.) **Academic Achievement:** (Burke, 1987; Haller, Monk, & Tien, 1993; Stockard & Mayberry, 1992; Walberg, 1992; Bates, 1993; Eberts, Kehoe, & Stone, 1982; Eichenstein, 1994; Summers & Wolfe, 1977; Fowler, 1992; Eberts, Kehoe, & Stone, 1982; Stockard & Mayberry, 1992).

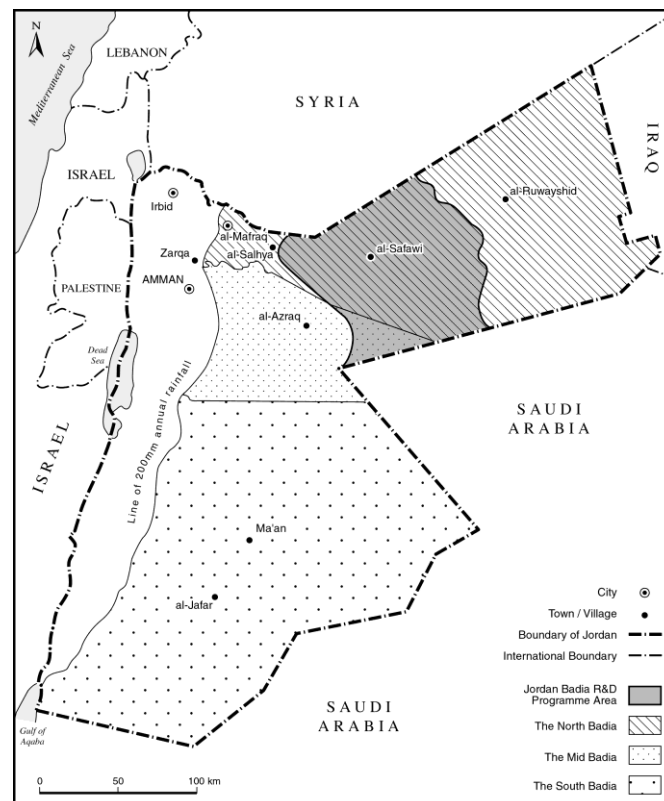
- iii.) **Quality of the Curriculum:** Howley (1994, 1996) revealed that there is no reliable relationship between school size and curriculum quality. In terms of instructional approaches and strategies, teachers in small schools are more likely to form teaching teams, integrate their subject matter content, employ grouping and cooperative learning, and use alternative assessments (Raze, 1985; Rutter, 1988; Walberg, 1992).
- iv.) **Cost-Effectiveness:** The relationship between size and costs varies depending on school circumstances (Robertson, 1995; Rogers 1987).
- v.) **Student Attitudes:** Studies by Aptekar (1983) and Bates (1993) indicated that student attitudes overwhelmingly favor small schools over large ones.
- vi.) **Social Behavior:** Studies by Duke and Perry (1978); Garbarino (1980); Gottfredson (1985); Stockard and Mayberry (1992) showed that small schools have lower incidences of negative social behavior than do large schools.
- vii.) **Extracurricular Participation:** Small schools (100-150), in comparison with large schools (over 2,000) offer students greater opportunities to participate in extracurricular activities (Barker & Gump, 1964; Burke, 1987; Cawelti, 1993; Howley, 1996; Barker & Gump, 1964; Schoggen & Schoggen, 1988; Berlin & Cienkus, 1989; Rutter, 1988; Schoggen & Schoggen, 1988; Berlin & Cienkus, 1989; Rutter, 1988; Stockard & Mayberry, 1992; Burke, 1987; Walberg, 1992).
- viii.) **Attendance:** Students in smaller schools have higher attendance rates than those in large schools, and those who change from large to small secondary schools exhibit improvements in attendance (Fowler, 1995; Gregory, 1992; Gregory & Smith, 1987; Howley, 1994; Smith & DeYoung, 1988; Walberg, 1992; Bates, 1993; McGanney, Mei, & Rosenblum, 1989; Rutter, 1988).
- ix.) **Dropouts:** the holding power of small schools is considerably greater than that of large schools (Fetler, 1989; Gregory, 1992; Jewell 1989; Pittman & Haughwout, 1987; Rogers, 1987; Smith & DeYoung, 1988; Stockard & Mayberry, 1992; Toenjes, 1989; Walberg, 1992).
- x.) **Belongingness/Alienation:** Some researchers found a greater sense of among students in small schools than in large ones (Burke, 1987; Campbell et al., 1981; Fowler & Walberg, 1991; Gregory, 1992; Howley, 1994; Pittman and Haughwout, 1987; Stolp, 1995; Walberg, 1992).
- xi.) **Self-Concept:** Grabe (1981), Rutter (1988), and Stockard and Mayberry (1992) have found that both personal and academic self-regard are more positive in smaller schools.

- xii.) Interpersonal Relations: There are positive correlations between small schools and favorable interpersonal relations among students and between students and teachers (Bates, 1993; Burke, 1987; Fowler & Walberg, 1991; Gottfredson, 1985; Gregory & Smith, 1982; 1983; Smith, Gregory, & Pugh, 1981; Kershaw & Blank, 1993; Pittman & Haughwout, 1987; Rutter, 1988; Smith & DeYoung, 1988; Stockard & Mayberry, 1992).
- xiii.) Teacher Attitudes: administrator's and teacher's attitudes toward work, administration, and one another, as well as the incidence of cooperation/collaboration with their colleagues are in favor to smaller schools (Eberts, Kehoe, & Stone, 1982; Gottfredson, 1985; Gregory, 1992; Johnson, 1990; Stockard & Mayberry, 1992).
- xiv.) College Entry: the assertions about college readiness and the relative merits of large and small schools college-related variables such as entrance examination scores, acceptance rates, attendance, grade point average, and completion found small schools equal (Fowler, 1992; Jewell, 1989) or superior (Burke, 1987; Swanson, 1988) to large ones in their capacity to prepare students for college entrance and success.

f) Research Setting Demographics

Mafrq Governorate area is about 26435 Square kilometers, which represents about 29.6% out of Jordan's total area, and the second largest governorate after Ma'an. The governorate has four regions that include (Department of Statistics, 2001): (1) Mafrq center with 104,000 with 3 districts and 72 settlements of which 25 increases over 1000 people, (2) Northwest Badia and its center is al Al-Bayt University and have three districts with 71,000 population and 42 settlements eight of which increases over 1000 people, (3) Northeast Badia, Safawi is its center, and have four districts with 51,000 population and 67 settlements with 10 settlements that have more than 1000 population, and (4) Ruwashed is its center with population of 17,000 and twelve settlements, four of which its populated with more than 1000 (Department of Statistics, 2002). The governorate has 18 municipalities that lack services and facilities for its local residents. These municipalities include: (1) Greater Mafrq, (2) New Bal'ama, (3) Zaa'tri and Mansheyya, (4) Hausha; (5) Baseleyyah; (6) AsSarhan; (7) Sabha and Dafyanah; (8) Safawi; (9) Umm Alquttayn and Makeyftah; (10) Bani Hashem; (11) New Rhab; (12) Mansheyyat Bani Hasan; (13) New Deyr Alkahf; (14) New Rweyshid; (15) AsSalhiyyah and Nayfah; (16) Alhusseyn bin Abdullah; (17) Khaldeyyah; (18) New Umm Aljmal (Department of Statistics, 2002)

Figure 1 : Jordan's Map Showing North Badia Region



Source: Al-Oun, 1997.

Mafrq Governorate population reached 239,000 and represents about 4.6% of Jordan's total population of 2001, of which 47.6% are females and 52.4% of which are males; 42% are less than 15 years old compared to Jordan's rate, which is 39%; and 33.1% urbanite and 66.9% town residents. Population density is about 9-11 per one square kilometers compared to the rest of Jordan, which is 58 per square kilometer. Life expectancy is 65.6 years old for females and 70 years old for males, compared to 68.6 years old Jordan's females and 71.1 years Jordan's males. Average infant death for each on thousand of a year old is 43% males and 31% females compared to rates of 30.7% males and 29.3% females in Jordan. Average family size is 6.4% compared to 5.8% of Jordan's (Department of Statistics, 2002). Poverty level is 28% compared to 11% for Jordan. Crime rate is 2.7% of Jordan's total. About 2890 students in 41 elementary schools benefit from the feeding program established by the Ministry of Education. Car ownership is 1/30 compared to 1/17 in the rest of Jordan (Department of Statistics, 2002).

Operating financially viable structures were 3.7% of Jordan's total in 1999. Building construction reached 3.1% of Jordan's total in 2000. Building construction license reached 6.4%. Construction beds offered by the general bed's department reached 2.6% out of Jordan's total. NGO's are 7.8% and cooperative associations are 5.7% (Department of Statistics, 2002). Manpower reached 13433 paid and unpaid, which is about 2.3% of Jordan's rate, 28% are females and 6% are foreigners. 69% of those work in public sectors and 14% for their own in 1999. Manpower for 2001 rated 4% of the total Jordan's manpower. In 2001 manpower rated 52% in defense and management of education and health, meanwhile its reached 10% in trades, transportation, and telecommunications. Economic activities in Mafrq governorate reached 36.8% compared to 38.8% in Jordan. Unemployment reached 17.3% compared to 14.7% in Jordan in 2001. Incomes of less than 100JD represented 20% and 100-199JD represented 62% and 200-299JD 14%. About 0.9% of total registered Jordan's engineers were from Mafrq Governorate in 2000. Registered lawyers represented 1.8% from Jordan's total in 2000 (Department of Statistics, 2002). Those who are registered are 264 and of which 1818 were employed, statistics of 1999-2002, the registered were 44 and the employed are 24. The department of employment issued 6837 approval for foreigners. No vocational centers ate the governorate. Those who benefited from training programs at the Work Affairs Ministry in 2000 were no females, and 18/20 who applied and employments were in two institutions. Of those who applied in this program about 3.3% were employed out of Jordan's total. About 2.7% of total applicants to the Civil Services Court were from Mafrq Governorate in 2001. Those who applied to Public

Services court were employed as shows in Table 1 (Department of Statistics, 2002).

One of the major problems the governorate suffer from is the disperse location of human settlements and of natural resources, which make the provision of infrastructure and services very costly. Road infrastructure represents 15% from the total of Jordan. 98% of the population is provided with water, electricity, and phone lines. Daily water use is rated 229 liters/person. Water loss is 73% of Jordan's total. In 2000 Mafrq governorate share was 1.8%, Gasoline is 3.5%, and diesel is 4.4% out of Jordan's total. Tourism activities are limited if not rare. The natural resources of the governorate are underground water, natural gas, and basalt zeolite. Average hospital beds are 10.8 for each 10000 compared to 16 in Jordan. Infants' hospital birth is 6.4% of Jordan's total infants born in hospitals. Disease like Zuhar Ameybi is 58.7%, malti fever is 55%, lung disease is 12.7%, and lever disease is 10.3% of Jordan's total. Most of those who use health centers have military insurance (Department of Statistics, 2002).

There are three directorates in Mafrq Governorate: Mafrq Center, Northeast Badia, and Northwest Badia. Infiltration may be for premature marriage, financial and living conditions and some students and their families, and lack of transportation. The latest statistics shows that Mafrq Governorate have about 353 schools, of which 337 built by the Ministry of Education, one by the Military, One by the Ministry of Social development, two by UNRWA, eight by private sector, in addition to three private sector kindergartens. Statistics show that there is total of 35562 male students, 32924 female students, 1989 male teachers, and 2416 female teachers, distributed over the North Badia Directorate schools. About 4206 teachers attend these schools 55% of which are females. There are 60 schools that are partially or totally rented. 30 Schools has two day shifts. About 40% of the schools have adjoined classrooms (135 schools) (Department of Statistics, 2002).

In addition, there is one public university in the governorate, which its students in 2010/2011 were 12092 of which 57.186% were females. Admission rate from the governorate were 17% in 1999/2000. Majors of study include educational sciences, human sciences, jurisdiction, law, political science, social sciences, financing and business administration, IT, science, and architecture. Teaching staff reached 174, of which 20 were females that hold Ph.D. in 2010/2011. About 1160 students from the governorate were attending different universities around Jordan, 675 of which were females (Department of Statistics, 2002; Al Al-Bayt Registration Office, 2011).

Finally, there is one two-year college in the governorate located in Mafrq city and has 181 female students, and has two programs one academic and the other in business administration in 2010/2011. While

about 553 students from Mafraq governorate attended different colleges around Jordan, about 456 of which were females (Department of Statistics, 2002).

Mafraq Governorate succeeded in providing most eligible children with educational opportunities, thus narrowing gender, rural, and socioeconomic gaps in access to schooling. This has led to strains resulting from the maintenance costs of the established education apparatus; new demands for instruction at post-compulsory levels of education; and the consequent costs of ongoing inefficiencies: dropouts, low graduate employment, and ambivalent learning outcomes. How much of this outcome is the consequence of particular characteristics of the education systems and how much is due to weak linkages between education and labor markets?

g) *Conceptual Framework*

From the previous review the following framework can be concluded:

- i. Investment in education is translated into higher economic growth and investment returns, improved income equality, and lower poverty. It is reflected in measures like available supply, incentives of supply, demand, and market failures. However, investment in education is challenged by globalization and knowledge, economy, demographic pressure, finance of education, pedagogical reforms, and education and migration.
- ii. Education is a value chain that requires context understanding. Market challenges and university education includes co-operation with the market, privatization of higher education, marketing higher education, and marketing in higher education.
- iii. Demand of the educational environment in the value chain is reflected in indications like opportunities of jobs and economic activities, training, and limitations of demand.
- iv. Supply of the educational environment in the value chain includes the teaching-organizational, physical entities, and capacity of quality and quantity of supply, in addition to personality issues of the teacher and the student.

h) *Hypotheses of the Study*

Based on the above review and the assumption that Higher Education in Mafraq Governorate lacks supply of applied sciences majors (such as agriculture, engineering, architecture, nursery, medicine, arid land development, and resources management) at the local university level, it is hypothesized that there is a demand for higher education majors by the local community.

Further, students lack competitiveness because they lack preparedness at the school level. Lack of preparedness is affected by lack of capacity in quantity and quality of the supply of the Teaching Environment and as follows:

- 1) Lack of preparedness is affected by lack of capacity in quantity of supply - number of sections and students.
- 2) Lack of preparedness is affected by lack of capacity in quantity of supply – number and specialties of teachers.
- 3) Lack of preparedness is affected by the capacity of the quality of the teaching environment - teaching-organizational entity of the school environment.

III. RESEARCH METHODS

The hypotheses of the study were investigated based on field research using surveys. One leader for two teams of eight assistants conducted the field research.

a) *Field Research - Survey*

Surveys were conducted by interviewing a sample of schools administrators from the four directorates in the North Badia region (Mafraq center, Northwest Badia, and Northeast Badia) representing the eighteen municipalities that included a target population of all elementary and secondary schools. Interviews took place inside the school building in the municipal office for the whole sample.

b) *Sampling Technique*

A stratified proportional random sample was used. Stratification was for the eighteen municipalities. The 18 municipalities (covering about 100 villages) included: (1) Greater Mafraq, (2) New Bal'ama, (3) Zaa'tri and Mansheyya, (4) Hausha; (5) Baseleyyah; (6) AsSarhan; (7) Sabha and Dafyanah; (8) Safawi; (9) Umm Alquttayn and Makeyftah; (10) Bani Hashem; (11) New Rhab; (12) Mansheyyat Bani Hasan; (13) New Deyr Alkahf; (14) New Rweyshid; (15) AsSalhiyyah and Nayfah; (16) Alhusseyn bin Abdullah; (17) Khaldeyyah; (18) New Umm Aljmal.

The total number of sample frame is 337 schools of which 231 for elementary education, and 96 secondary, 8 vocational and academic, and two vocational. The proportion is suggested to be about 60%-70% of the schools distributed over the three directorates and covering all the municipalities. So from each municipality only two-thirds of the total available schools were suggested to be interviewed from both female and male elementary and secondary schools. Randomization used the list of schools in each municipality which is alphabetically ordered. Selection was assigned randomly as every other school in the list until the proportion of 60-70% of the schools is achieved from each of the female and male elementary and secondary schools list. Final sample proportion was 67.9% with a size of 229 schools' administrators. Response rate was 67.3% in Mafraq center, 42.3% in Northeast Badia, and 51.5% in Northwest Badia.

c) Questionnaire Instrument

The questionnaire included the following sections:

1) Supply for manpower (human resources) capacity – Teaching Environment:

1.a. *Capacity of supply at the schools level in terms of quantity.* (1) School capacity – distribution across levels of education, gender, and pass and fail; (2) Available levels of study - distribution across gender and pass and fail; (3) Available fields of study – distribution across gender, and pass and fail; (4) High school education distribution across gender, fields of study, and pass and fail; and (5) Available teachers – distribution across majors, gender, age, teaching experience, and teaching efficacy and hours of teaching (time-use for teaching).

1.b. *Capacity of supply at the schools level in terms of quality.* (1) Perception of available teaching pedagogy; (2) Directing students to choose the track they may need by providing qualified teacher who provides supervision and guidance to students; and (3) Obstacles of concentration at the Ministry of Education Level: financial, specializations, incentives; (4) Evaluating the impact of implemented development program provided by the Ministry of Education and Ministry of Higher Educations on the local community - limitations and vision.

2) Supply of the educational environment in the value chain includes the teaching-organizational and physical entities, reflected in quality and quantity, in addition to personality of the teacher and the student - School Environment:

2.a. *Teaching-organizational entity includes understanding available human resources capacity in terms of quantity.* (1) Strength of leadership ((a) instructional (educational) (teaching pedagogy), and (b)

structural (organizational: hierarchy of authority, bureaucracy and hindrance (difficulty of authority), and participation decisions); (2) staff frustration; (3) positive classroom environment; (4) caring and support to students (esprit, intimacy, and student-centeredness); (5) formalization; and (6) students control (student control ideology-organizational ideology).

2.b. *Physical entity include understanding classroom and school infrastructure and services:* (1) Classroom environment include: classroom size, classroom arrangements, lighting, thermal conditions, and air quality; and (2) School environment include: school size, noise location, building age.

2.c. *Other Variables that may affect the teaching-learning environment include:* (1) student attitude towards the school, student affiliation and involvement, and students' competition; (2) teacher attitude and teacher performance; and (3) Availability of Services.

3) Student performance - Learning efficacy of perceived qualitative performance or attainment test scores of average annual in all subjects such as: Science, Math, Physics, Chemistry, Biology, Geology, Computer Science, Arabic, & English.

IV. RESULTS AND ANALYSIS

a) Descriptive Statistics

i. Demographic Information of interviewed subjects

Interviewed schools municipals were distributed over Mafraq Governorate. Location of interviewed schools from the center of the main city of Mafraq ranged from the city itself to villages located 218 km away, see Table 1. The average distance from Mafraq city of the sampled schools was about 29 km.

Table 1: Descriptive Statistics – Characteristics of Interviewed Municipals of Schools

Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Village Distance from Mafraq City	228	218	0	218	29.25	33.593	1128.499
Subject's Gender	229	1	1	2	1.55	.499	.249
Educational Level	229	5	1	6	3.08	.914	.836
Training Workshops	229	6	1	7	5.90	2.107	4.438
Place of Residence	229	3	1	4	1.49	.589	.347

Interviewed subjects were about 45% males and 55% females, see Table 2. Their education level ranged from college to Ph.D. and distributed as follows: Ph.D. (3.5%), Masters (17.5%), Diploma (56.3%), Bachelor (13.5%), and College (8.7%), see Tables 1 & 2.

Table 2 : Frequencies Distribution of Major Characteristics of Interviewed Municipals of Schools

	Frequency	Percent	Cumulative Percent
Gender			
Male	104	45.4	45.4
Female	125	54.6	100.0

Educational Level			
Ph.D.	8	3.5	3.5
M.A./M.Sc.	40	17.5	21.0
Diploma	129	56.3	77.3
Bachelor	31	13.5	90.8
College	20	8.7	99.6
Other	1	.4	100.0
Training Workshops			
Management	25	10.9	10.9
Pedagogy	6	2.6	13.5
Computer Skills	13	5.7	19.2
Specialized	1	.4	19.7
Other	2	.9	20.5
None	12	5.2	25.8
More than One	170	74.2	100.0
Years of Service			
<5 Yrs	76	33.2	33.2
6-10 Yrs	57	24.9	58.1
11-15 Yrs	26	11.4	69.4
16-20 Yrs	29	12.7	82.1
21-15 Yrs	23	10.0	92.1
>25 Yrs	18	7.8	100.0
Place of Residence			
Same Village/City	127	55.5	55.5
Another Village	93	40.6	96.1
Another City	9	3.9	100.0
Total	229	100.0	100.0

Training workshops that municipals received included training in: management (10.9%), pedagogy (2.6%), computer skills (5.7%), and specialized training (0.4%), see Tables 1 & 2. In terms of years of service for the interviewed municipals: less than five years of service (33.2%), 6-10 years (24.9%), 11-15 years (11.4%), 16-20 years (12.7%), 21-15 years 10%, and more than 25 years (7.8%). About 50% of the subjects served 6-10 years, see Table 2.

More than half of the sample comes from the same town they work at (55.5%); about 40.6% come from other villages in the North Badia regions, and only about 3.9% come from outside the North Badia Region, see Tables 1 & 2.

ii. *Descriptive Statistics of the Major Study Variables*
a. *Capacity of Physical Entity of Educational Supply*

Capacity of the physical entity of the education supply includes: (1) Classroom environment: proper classroom size in terms of students numbers, classroom area, classroom size in terms of students numbers, classroom shape, classroom seats arrangement, classroom's furniture arrangement flexibility, attention to furniture and equipment so teachers can store their tools, natural and additional lighting sources, thermal

conditions, air quality and natural ventilation; and (2) School environment: availability of services such as computer labs, science labs, art studios, school library, indoor and outdoor sports facility, food facility, praying facility, school fencing, school gate, rest rooms, school size in terms of students numbers, school area, school quite location/noise location, and building maintenance.

1) Classroom Environment : In terms of classroom area, it ranged from 4-48 square meters. However, most of the sample (73.7%) has classroom area of 10-29 square meters. In regards to classroom size in terms of students' numbers, the number of students ranged from 2 to 50 students, with an average size of about 21 students. About half the sampled schools (52.8%) have classroom size of less than 20 students. In regards to proper classroom size in terms of students' numbers, most of the sample agreed on its appropriateness (71.2%). Classroom shapes were square, rectangular, and irregular. However, the most occurring shape is rectangular (58.5%) and the least is irregular (2.6%). In terms of classroom seats arrangement, most of the sample (85.6%) agreed on its appropriateness. Also, about 54.2% of the

sample agreed on classroom's furniture arrangement flexibility. Further, most of the sample (72.5%) considered the attention to furniture and equipment so teachers can store their tools is appropriate. In terms of natural lighting sources, most of the sample agreed on its availability (90.8%). Number of windows in classrooms ranged from 1-8, the most frequent occurrence of number of windows is two (48.5%) indicated so. In terms of additional lighting sources, about two-thirds of the sample (79.5%) agreed on its presence. Thermal conditions: only about half the sample agreed on its heat availability (47.2%) and on about one-quarter (26.2%) agreed on its cooling control. In regards to air quality and natural ventilation, most of the sample (87.3%) agreed on its availability in classrooms.

- 2) School Environment: In regards to availability of services such as computer labs, science labs, art studios, school library, indoor and outdoor sports facility, food facility, praying facility, school fencing, school gate, rest rooms, school size in terms of students numbers, school area, school quite location/noise location, and building maintenance. In terms of services, about 77.7% of the schools have computer labs, and only 42.4% has science labs, and 13.5% has art studios. On the other side, about half the sample has libraries (50.2%) school library. Further, only 11.8% of the schools have indoor sports facilities, and 27.9% has outdoor sports facilities. In addition, about two-thirds (69%) has food facility, and only 24% has praying facility. Further, about two-thirds (65.5%) has school fencing, and about two-thirds (63.8%) has school gates. Most of the schools (91.7) have rest rooms.

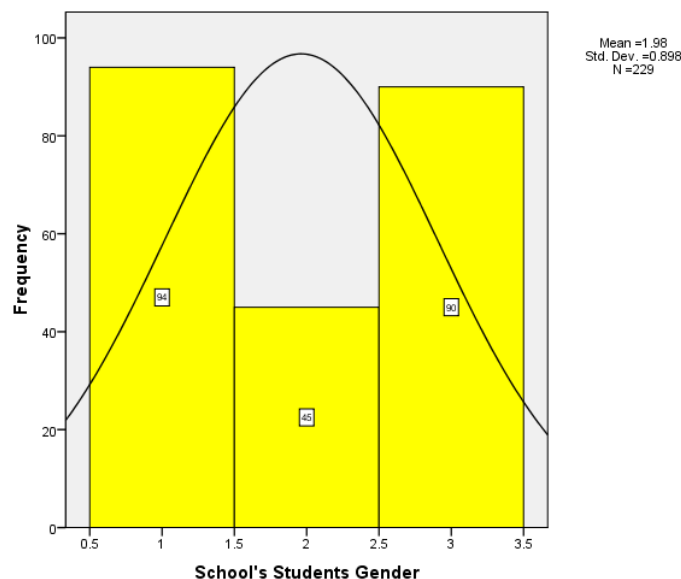
On the other hand, school size, in terms of students' numbers, ranged from schools that have less than 50 students (about 6.2%) to schools that has 500-757 students (only about 3.2% of the sample). However, about 61.1% of the sample has schools of less than 150 students, and the most occurring number of students at sampled schools is 150-200 students (about 40.7%). School area ranged from 54-10000 square meters, with the most occurring area of 200-500 square meters (39.9%). About half the sample (48%) has area of less than 500 square meters. Further, 79% of the sample agreed on the schools being located in a quite zone and away from noise. In terms of building maintenance, about half of the sample (54.6%) agreed it is well maintained.

b. Capacity of Quantity of Educational Supply

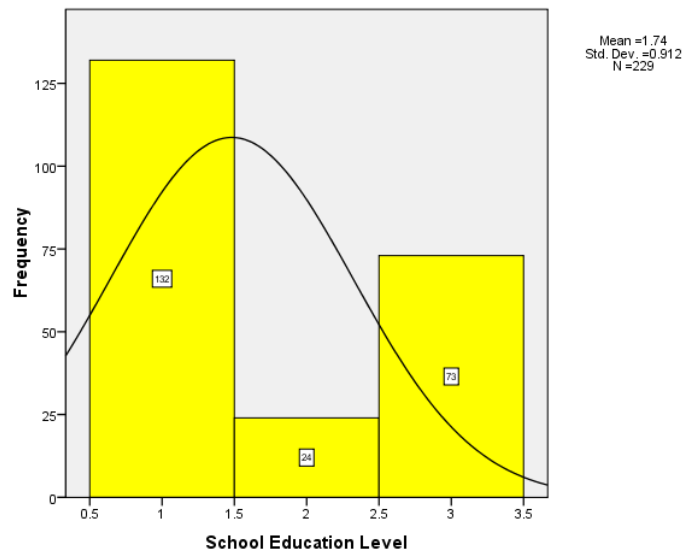
Capacity of supply at the schools level in terms of quantity: (1) School capacity – distribution across levels of education, gender, and pass and fail; (2) Available levels of study - distribution across gender and pass and fail; (3) Available fields of study – distribution across gender, and pass and fail; (4) High school education distribution across gender, fields of study, and pass and fail; and (5) Available teachers – distribution across majors, gender, age, teaching experience, and teaching efficacy and hours of teaching (time-use for teaching).

- 1) *Schools capacity* – distribution across gender, levels of education, number of sections and students, and pass and fail: The distribution of gender across the sampled schools was as follows: 41.05% males, 19.65% females, and 39.30% mixed genders, see Figure 2.

Figure 2 : Distribution of Students' Gender across Sampled Schools (1 – Males, 2- Females, 3- Mixed Gender)



The education level across the sampled schools was as follows: about 57.64% of schools were elementary, 10.48% secondary, and 31.88% have all levels, see Figure 3.

Figure 3 : Distribution of Education Level across Sampled Schools (1 – Elementary, 2- Secondary, 3- All Levels)*Elementary Stage*

In terms of distribution of students sections, students' numbers, pass, and fail across of the sample, results showed the following:

1. 1st grade - for the 115 schools who responded, sections ranged from 1-10, students numbers in these sections ranged from 5-165, and failing students ranged from 0-2.
2. 2nd grade - for the 117 schools who responded, sections ranged from 1-3, students numbers in these sections ranged from 1-91, and failing students ranged from 0-1.
3. 3^d grade - for the 140 schools who responded, sections ranged from 1-4, students numbers in these sections ranged from 1-80, and failing students ranged from 0-4
4. 5th grade - for the 153 schools who responded, sections ranged from 1-3, students numbers in these sections ranged from 1-101, and failing students ranged from 0-3.
5. 6th grade - for the 146 schools who responded, sections ranged from 1-3, students numbers in these sections ranged from 1-102, and failing students ranged from 0-2.
6. 7th grade - for the 140 schools who responded, sections ranged from 1-3, students numbers in these sections ranged from 1-121, and failing students ranged from 0-11.
7. 8th grade - for the 130 schools who responded, sections ranged from 1-4, students numbers in these sections ranged from 2-145, and failing students ranged from 0-4.
8. 9th grade - for the 122 schools who responded, sections ranged from 1-4, students numbers in these sections ranged from 2-137, and failing students ranged from 0-7.

9. 10th grade - for the 111 schools who responded, sections ranged from 1-4, students numbers in these sections ranged from 2-137, and failing students ranged from 0-5.

Eleventh Grade Stage

In terms of distribution of students sections, students' numbers, pass, and fail across of the sample, results showed the following:

1. 11th grade/scientific - for the 48 schools who responded, sections ranged from 1-3, students numbers in these sections ranged from 1-124, and failing students ranged from 0-1.
2. 11th grade/literature - for the 81 schools who responded, sections ranged from 1-2, students numbers in these sections ranged from 3-60, and failing students ranged from 0-10.
3. 11th grade/computer - for the 12 schools who responded, sections ranged from 1-2, students numbers in these sections ranged from 14-89, and failing students were none.
4. 11th grade/nursing - for the two schools who responded, sections were 1, students numbers in these sections ranged from 7-24, and failing students were none.
5. 11th grade/trade - for the one school who responded, sections were one, students numbers in the section was 18, and failing students were none.
6. 11th grade/industrial - for the one school who responded, but subject did not provide additional information about students' numbers and number of failing students.
7. 11th grade/agricultural - for the one school who responded, sections were 1, students numbers in the section was 37, and failing students were none.

8. 11th grade/management - for the one school who responded, sections were 1, students numbers in the section was 3, and failing students were none.
9. 11th grade/vocational - for the four schools who responded, sections were 1-2, students numbers in these sections ranged from 14-31, and failing students were none.
10. 11th grade/beauty - for the one school who responded, sections were 1, students numbers in the section was 12, and failing students were none.

Twelfth Grade Stage (Tawjeehi)

In terms of distribution of students sections, students' numbers, pass, and fail across of the sample, results showed the following:

1. 12th grade/scientific - for the 38 schools who responded, sections ranged from 1-4, students numbers in these sections ranged from 3-124, and failing students ranged from 0-15.
 2. 12th grade/literature - for the 73 schools who responded, sections ranged from 1-2, students numbers in these sections ranged from 3-55, and failing students ranged from 0-26.
 3. 12th grade/computer - for the 12 schools who responded, sections ranged from 1-2, students numbers in these sections ranged from 15-92, and failing students were 0-2.
 4. 12th grade/nursing - for the three schools who responded, sections were 1, students numbers in these sections ranged from 9-25, and failing students were 0-3.
 5. 12th grade/trade - for the one school who responded, sections were one, students numbers in the section was 20, and failing students were 14.
 6. 12th grade/industrial - no school from the sample has industrial at this level.
 7. 12th grade/agricultural - for the one school who responded, sections were 1, students numbers in the section was 26, and failing students were none.
 8. 12th grade/management - for the one school who responded, sections were 1, students numbers in the section was 6, and failing students were none.
 9. 12th grade/vocational - for the three schools who responded, sections were 1-2, students numbers in these sections ranged from 15-25, and failing students were none.
 10. 12th grade/beauty - for the one school who responded, sections were 1, students numbers in the section was 12, and failing students were none.
- 2) *Available Teachers* – Distribution across Majors, Age, Specialty, Teaching Experience (years of Service), and Teaching Efficacy and Hours of Teaching (Teaching Load Measured in Hours), Training Workshops, and Place of Residence:
1. Religion Teachers : ranged from 0-6 with a total number of 210 and an age of 20 and above, served 0-24 years with an average of 7.7 years, taught 0-61 hours with an average of 21.2 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 2. Arabic Teachers : ranged from 0-7 with a total number of 209 and an age of 20 and above, served 0-30 years with an average of 9.4 years, taught 0-123 hours with an average of 24.2 hours a week, trained with an average of 3-4 workshops, and resided mostly in the North Badia region.
 3. English Teachers : ranged from 1-6 with a total number of 214 and an age of 20 and above, who has education of College to Bachelor degree, and served 0-25 years with an average of 7.1 years, taught 0-87 hours with an average of 22.8 hours a week, trained with an average of 3 workshops, and resided mostly in the North Badia region.
 4. Culture Teachers : ranged from 0-3 with a total number of 204 schools and an age of 20-50, who has education of College to Ph.D. degree, and served 0-19 years with an average of 6.3 years, taught 0-25 hours with an average of 17.0 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 5. Math Teachers : ranged from 0-6 with a total number of 203 schools and an age of 20 and above, who has education of College to Ph.D. degree, and served 0-30 years with an average of 7.1 years, taught 0-79 hours with an average of 22.1 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 6. Science Teachers : ranged from 0-6 with a total number of 191 schools and an age of 20 and above, who has education of College to Masters degree, and served 0-22 years with an average of 7.4 years, taught 0-42 hours with an average of 20.2 hours a week, trained with an average of 3-4 workshops, and resided mostly in the North Badia region.
 7. Physics Teachers : ranged from 0-3 with a total number of 159 schools and an age of 20-50, who has education of Bachelor to Masters degree, and served 0-16 years with an average of 5.2 years, taught 0-32 hours with an average of 18.8 hours a week, trained with an average of 1-2 workshops, and resided mostly in the North Badia region.
 8. Chemistry Teachers : ranged from 0-2 with a total number of 142 schools and an age of 20 and above, who has education of Bachelor to Ph.D. degree, and served 0-16 years with an average of 4.6 years, taught 0-24 hours with an average of 17.8 hours a week, trained with an average of 1-2 workshops, and resided mostly in the North Badia region.
 9. Biology Teachers : ranged from 0-2 with a total number of 138 schools and an age of 20 and above, who has education of Bachelor to Ph.D.

- degree, and served 0-26 years with an average of 6.5 years, taught 0-24 hours with an average of 16.7 hours a week, trained with an average of 1-2 workshops, and reside dmostly in the North Badia region.
10. Geology Teachers : ranged from 0-2 with a total number of133 schools and an age of 20-40, who has education of Bachelor to Masters degree, and served 1-15 years with an average of 5.0 years, taught 7-21 hours with an average of 16.1 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 11. Computer Teachers : ranged from 0-8 with a total number of 161 schools and an age of 20 and above, who has education of College to Masters degree, and served 0-17 years with an average of 4.0 years, taught 0-38 hours with an average of 15.6 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 12. Geography Teachers : ranged from 0-6 with a total number of 164 schools and an age of 20 and above, who has education of College to Masters degree, and served 0-17 years with an average of 5.7 years, taught 0-28 hours with an average of 19.1 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 13. History Teachers: ranged from 0-3 with a total number of 151 schools and an age of 20-50, who has education of College to Masters degree, and served 0-20 years with an average of 7.1 years, taught 0-27 hours with an average of 17.7 hours a week, trained with an average of 3-4 workshops, and resided mostly in the North Badia region.
 14. Arts Teachers: ranged from 0-6 with a total number of 131 schools and an age of 20-50, who has education of College to Masters degree, and served 2-16 years with an average of 8.3 years, taught 7-103 hours with an average of 19.4 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 15. Athletics Teachers : ranged from 0-6 with a total number of 129 schools and an age of 20-50, who has education of College to Masters degree, and served 0-20 years with an average of 7.0 years, taught 0-28 hours with an average of 18.4 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region..
 16. Music Teachers : ranged from 0-1 with a total number of 61 schools and an age of 20-40, who has education of Bachelor to Ph.D. degree, and served 0-15 years with an average of 5.5 years, taught 0-21 hours with an average of 14.8 hours a week, trained with an average of 2-3 workshops, and resided mostly in the North Badia region.
 17. Languages Teachers s: ranged from 0-8 with a total number of 69 schools and an age of 20-50, who has education of Bachelor to Masters degree, and served 0-21 years with an average of 6.8 years, taught 1-28 hours with an average of 21.4 hours a week, trained with an average of 5-6 workshops, and resided mostly in the North Badia region.
- c. *Capacity of Teaching-Organizational Entity of the Supply & Capacity of Quality of Education Supply at the School Level & Other Variables*
- Capacity of Teaching-Organizational Entity of the Supply :* Instructional capacity was assessed with an average of 4 and a tendency of strong agreement; structural agreement was also with an average of 4.1 and a tendency of strong agreement; staff frustration has a tendency of disapproval with an average of 2.6; positive classroom environment has a slight tendency of approval with an average of 3.7; caring and support for students has a slight tendency of approval with an average of 4; formalization has a tendency of strong agreement with an average of 4.2; and students control has a strong agreement with an average of 4.2, see Table 3.
- Capacity of Quality of Education Supply at the School Level:* Perception of existing pedagogy has a slight tendency of approval with an average of 3.8; directing students to choose the right stream also received slight approval with an average of 3.5; and obstacles of Ministry of Education concentration has a tendency of agreement with an average of 4.0, see Table 3.
- Other Variables:* Included students attitude with a tendency of slight agreement (M=3.8); teachers attitude with tendency of agreement (M=3.98); available school services has a slight agreement with M=3.4; and perceived students' performance has a tendency of slight agreement (M=3.1), see Table 3.

Table 3 : Descriptive Statistics about Independent Variables – Organizational Entity & Capacity of Quality of Supply & Other Variables

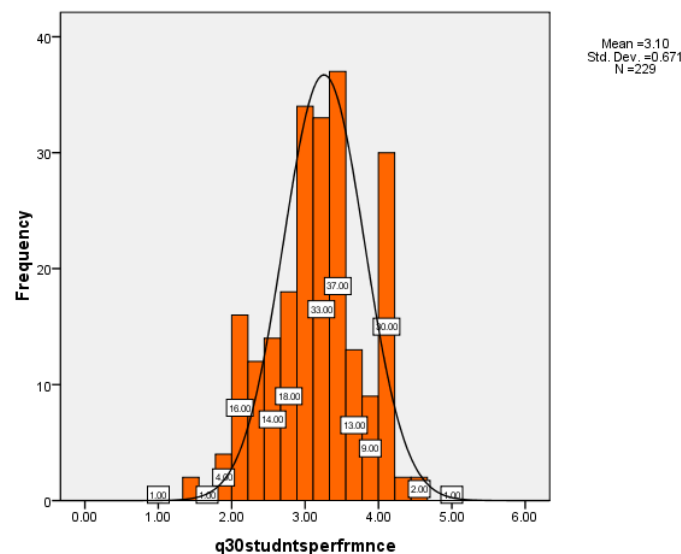
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Teaching-Organizational Entity							
Instructional	229	2.40	2.60	5.00	4.0170	.38732	.150
Structural	229	3.67	1.33	5.00	4.1317	.50557	.256

Staff Frustration	229	4.00	1.00	5.00	2.6288	.92454	.855
Positive Classroom Environment	229	4.00	1.00	5.00	3.7810	.77435	.600
Caring & Support for Students	229	4.00	1.00	5.00	3.9597	.65705	.432
Formalization	229	3.50	1.50	5.00	4.2329	.51498	.265
Students Control	229	2.50	2.50	5.00	4.2205	.44125	.195
Quality of Education							
Perception of Existing Pedagogy	229	3.50	1.50	5.00	3.8443	.61237	.375
Directing Students Track	229	4.00	1.00	5.00	3.4716	.98356	.967
Obstacles of Ministry Concentration	229	4.00	1.00	5.00	3.9502	.76167	.580
Other Variables							
Students Attitude	229	2.88	2.13	5.00	3.7718	.53898	.291
Teachers Attitude	229	3.33	1.67	5.00	3.9816	.54591	.298
Available School Services	229	3.89	1.00	4.89	3.3557	.66320	.440
Perceived Students Performance - Learning Efficacy	229	4.00	1.00	5.00	3.1009	.67052	.450

d. *Education Outputs - Student performance - Learning efficacy of perceived qualitative performance or attainment test scores of average annual in all subjects such as: Science, Math, Physics, Chemistry, Biology, Geology, Computer Science, Arabic, & English.*

Over all perceived students' performance averaged 3.1, with a slight agreement, see Figure 4.

Figure 4 : Distribution of Perceived Students Performance – Overall Qualitative Learning Efficacy



Meanwhile perceived students' performance in all subjects were as follows, see Table 4:

1. Science ranged from 1-5 with M= 3.2.
2. Math ranged from 1-5 with M= 2.9.
3. Physics ranged from 1-5 with M= 2.7.
4. Chemistry ranged from 1-5 with M= 2.9.
5. Biology ranged from 1-5 with M= 3.1.
6. Geology ranged from 1-5 with M= 3.2.
7. Computer Science ranged from 1-5 with M= 3.4.
8. Arabic ranged from 1-5 with M= 3.7.
9. English ranged from 1-5 with M= 2.9.

Table 4 : Descriptive Statistics about Dependent Variable – Perceived Students Performance / Qualitative Learning Efficacy – Education Outputs

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Overall Performance	229				3.10	0.670	
High Performance in Science	229	4	1	5	3.23	1.023	1.047
High Performance in Math	229	4	1	5	2.85	1.066	1.136
High Performance in Physics	229	4	1	5	2.71	0.896	0.803
High Performance in Chemistry	229	4	1	5	2.87	0.918	0.842
High Performance in Biology	229	4	1	5	3.13	0.923	0.851
High Performance in Geology	229	4	1	5	3.18	0.907	0.823
High Performance in Computer Science	229	4	1	5	3.39	0.854	0.730
High Performance in Arabic	229	4	1	5	3.67	0.835	0.696
High Performance in English	229	4	1	5	2.88	1.077	1.160

Frequency distribution of perceived students' performance in all subjects was as follows:

1. Science, about one-third of the sample does not agree that students have high performance in science, accumulative percent = 34.5%.
2. Math, about half of the sample does not agree that students have high performance in Math, accumulative percent = 51.1%.
3. Physics, about half of the sample does not agree that students have high performance in Physics, accumulative percent = 44.1%.
4. Chemistry, about one-third of the sample does not agree that students have high performance in Chemistry, accumulative percent = 37.6%.
5. Biology, about one-quarter of the sample does not agree that students have high performance in Biology, accumulative percent = 24.9%.
6. Geology, about one-fifth of the sample does not agree that students have high performance in Geology, accumulative percent = 22.7%.
7. Computer Science, about one-fifth of the sample does not agree that students have high performance in Computer Science, accumulative percent = 17.0%.
8. Arabic, most of the sample agree that students have high performance in Arabic, accumulative percent = 76.9%.
9. English, about half of the sample do not agree that

students have high performance in English, accumulative percent = 50.7%.

b) Relationship between Overall Students Performance and Capacity of Students & Teachers Quantity (Inputs)

In order to test the hypothesis that lack of preparedness is affected by lack of capacity in quantity of the supply of the Teaching Environment (Students and Teachers), the following statistical Multi-level Analysis were carried out.

i. ANOVA Test – Effect of Overall Perceived Performance by Quantitative Inputs of Supply

Further analysis was carried out to investigate the effect of capacity of quantity of Education Supply of students on Overall Perceived Performance using anova test.

a. Overall Performance Affect by Quantitative Inputs of Elementary Stage Supply (numbers of sections and students)

The test of effect of directorates of Village Distance over capacity of quantity of Education Supply at the Elementary stage using anova test (Table 5), indicated that numbers of sections at the elementary level affect Overall Performance at Second, Third, Fifth, Sixth, Seventh, Eighth, Ninth, and Tenth Grades.

Table 5 : ANOVA – Perceived Students Performance - Overall Learning Efficacy over Elementary Stage Students Input/Capacity of Quantity of Supply

	Sum of Squares	df	Mean Square	F	Sig.
1 st Grade No. of Sections	48.427	29	1.670	1.273	.171
1 st Grade No. of Students	9740.228	22	442.738	.631	.891
2 nd Grade No. of Sections	31.387	29	1.082	1.716	.017
2 nd Grade No. of Students	6261.028	23	272.219	.608	.913
3 rd Grade No. of Sections	27.528	29	.949	1.607	.032

3 rd Grade No. of Students	5794.779	23	251.947	.811	.712
4 th Grade No. of Sections	14.576	29	.503	.883	.642
4 th Grade No. of Students	6752.424	24	281.351	.805	.726
5 th Grade No. of Sections	23.999	29	.828	1.726	.016
5 th Grade No. of Students	10892.274	25	435.691	1.135	.315
6 th Grade No. of Sections	28.998	29	1.000	2.029	.003
6 th Grade No. of Students	12279.305	25	491.172	1.145	.306
7 th Grade No. of Sections	48.114	29	1.659	2.863	.000
7 th Grade No. of Students	17502.806	27	648.252	1.093	.361
8 th Grade No. of Sections	44.404	29	1.531	2.280	.000
8 th Grade No. of Students	20773.267	27	769.380	1.070	.390
9 th Grade No. of Sections	46.288	29	1.596	2.521	.000
9 th Grade No. of Students	19487.354	27	721.754	1.009	.465
10 th Grade No. of Sections	43.058	29	1.485	2.510	.000
10 th Grade No. of Students	11934.826	26	459.032	.544	.960

b. Overall Performance Effect by Quantitative Inputs of Eleventh Grade Stage Supply

The test of effect of overall performance by capacity of quantity of Education Supply at the Eleventh Grade stage using Anova Test of Variance (Table 6)

indicated significant effect of sections at Eleventh Grade Scientific, Computer and Nursing streams. As well, as significant effect of Number of students at Eleventh Grade Scientific and Computer streams.

Table 6 : ANOVA – Perceived Students Performance - Overall Learning Efficacy over Eleventh Grade Stage Students Input/Capacity of Quantity of Supply

	Sum of Squares	df	Mean Square	F	Sig.
Scientific/11 th Grade No. of Sections	9.636	29	.332	1.550	.044
Scientific/11 th Grade No. of Students	14206.063	17	835.651	9.937	.000
Literature/11 th Grade No. of Sections	9.818	29	.339	1.315	.141
Literature/11 th Grade No. of Students	1666.720	26	64.105	.602	.920
Computer/11 th Grade No. of Sections	3.807	29	.131	1.640	.027
Computer/11 th Grade No. of Students	4278.000	8	534.750	46.276	.005
Nursing/11 th Grade No. of Sections	1.253	29	.043	2.363	.000
Nursing/11 th Grade No. of Students	144.500	1	144.500	.	.
Trade/11 th Grade No. of Sections	.130	29	.004	.482	.989
Industrial/11 th Grade No. of Sections	.096	29	.003	.729	.843
Agricultural/11 th Grade No. of Sections	.067	29	.002	.496	.987
Management/11 th Grade No. of Sections	.180	29	.006	.444	.994
Vocational/11 th Grade No. of Sections	1.276	29	.044	1.334	.130
Vocational/11 th Grade No. of Students	182.000	3	60.667	.	.
Beauty/11 th Grade No. of Sections	.120	29	.004	.440	.995

c. Overall Performance Effect by Quantitative Inputs of Twelfth Grade Stage Supply

The test of effect of overall performance by capacity of quantity of Education Supply at the Twelfth Grade stage using Anova Test of Variance (Table 7)

indicated significant effect of sections at Twelfth Grade Nursing streams. As well, as significant effect of Number of students at Twelfth Grade Scientific and Computer streams.

Table 7 : ANOVA Test – Perceived Students Performance - Overall Learning Efficacy over Twelfth Grade Stage Students Input/Capacity of Quantity of Supply

	Sum of Squares	df	Mean Square	F	Sig.
Scientific/12 th Grade No. of Sections	10.016	29	.345	1.510	.054

Scientific/12 th Grade No. of Students	12823.178	16	801.449	12.252	.000
Literature/12 th Grade No. of Sections	9.959	29	.343	1.404	.093
Literature/12 th Grade No. of Students	2210.565	23	96.112	1.126	.354
Computer/12 th Grade No. of Sections	2.109	29	.073	.821	.730
Computer/12 th Grade No. of Students	4710.167	7	672.881	17.421	.008
Nursing/12 th Grade No. of Sections	1.367	29	.047	2.662	.000
Nursing/12 th Grade No. of Students	160.667	2	80.333	.	.
Trade/12 th Grade No. of Sections	.043	29	.001	.312	1.000
Industrial/12 th Grade No. of Sections	.000	29	.000	.	.
Agricultural/12 th Grade No. of Sections	.067	29	.002	.496	.987
Management/12 th Grade No. of Sections	.102	29	.004	.371	.999
Vocational/12 th Grade No. of Sections	1.253	29	.043	1.525	.050
Vocational/12 th Grade No. of Students	66.667	2	33.333	.	.
Beauty/12 th Grade No. of Sections	.033	29	.001	.233	1.000

i. *ANOVA Test - Effect of Overall Perceived Performance Effect by Quantitative Inputs of Supply/Teachers*

Further analysis was carried out to investigate the effect of over capacity of quantity of Education Supply of teachers on Overall Performance using Anova

Test. The test of effect of over capacity of quantity of Education Supply of Teachers on Overall Performance using Anova Test (Table 8) indicated that numbers of Religion, Arabic, English, Math, Physics, Biology, Geology, Computer, History, and Languages Teachers is affect Overall Performance.

Table 8 : ANOVA – Perceived Students Performance - Overall Learning Efficacy over Teachers Input/Capacity of Quantity of Supply

	Sum of Squares	df	Mean Square	F	Sig.
Religion Number of Teachers	47.422	29	1.635	2.125	.001
Arabic Number of Teachers	102.591	29	3.538	1.923	.005
English Number of Teachers	57.413	29	1.980	1.572	.039
Culture Number of Teachers	6.302	29	.217	.772	.793
Math Number of Teachers	68.258	29	2.354	1.926	.005
Science Number of Teachers	33.406	29	1.152	1.147	.286
Physics Number of Teachers	15.723	29	.542	1.607	.032
Chemistry Number of Teachers	11.893	29	.410	1.524	.050
Biology Number of Teachers	14.496	29	.500	2.079	.002
Geology Number of Teachers	7.618	29	.263	1.864	.007
Computer Number of Teachers	33.820	29	1.166	1.542	.046
Geography Number of Teachers	18.537	29	.639	1.477	.064
History Number of Teachers	16.820	29	.580	1.910	.005
Arts Number of Teachers	9.538	29	.329	.986	.492
Athleticss Number of Teachers	10.169	29	.351	.821	.730
Music Number of Teachers	.416	29	.014	.526	.979
Languages Number of Teachers	130.636	29	4.505	2.251	.001

ii. *Regression Model for the Significant Students Inputs Effect of Overall Students Performance*

The hypothesis that Overall Student Performance is affected by a set of Students Inputs was reported none significant in Table 9.

Table 9 : Multivariate Tests Model- Perceived Students Performance - Overall Learning Efficacy over Significant Numbers of Students & Sections

Effect Wilks' Lambda	Value	F	Hypothesis df	Error df	Sig.
Intercept	.088	3.444	3.000	1.000	.373
Perceived Students Performance – Overall Learning Efficacy	.041	.386	18.000	3.314	.920

However, factors that could contribute to the regression model in the order of their strong effect are: stream, Twelfth Grade Scientific stream, and Twelfth Grade Computer stream, see Table 10.

Table 10 : Tests of Between-Subjects Effects - Perceived Students Performance - Overall Learning Efficacy over Significant Variables

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2 nd Grade No. of Sections	.233	6	.039	.175	.966
	3 rd Grade No. of Sections	.233	6	.039	.175	.966
	5 th Grade No. of Sections	9.733	6	1.622	7.300	.066
	6 th Grade No. of Sections	9.733	6	1.622	7.300	.066
	7 th Grade No. of Sections	5.733	6	.956	.400	.844
	8 th Grade No. of Sections	15.333	6	2.556	2.421	.250
	9 th Grade No. of Sections	9.733	6	1.622	1.043	.530
	10 th Grade No. of Sections	10.933	6	1.822	2.050	.297
	Scientific/11 th Grade No. of Sections	3.733	6	.622	2.800	.214
	Scientific/11 th Grade No. of Students	11334.000	6	1889.000	20.682	.015
	Computer/11 th Grade No. of Sections	.900	6	.150	.	.
	Computer/11 th Grade No. of Students	4126.233	6	687.706	59.513	.003
	Scientific/12 th Grade No. of Sections	7.833	6	1.306	5.875	.087
	Scientific/12 th Grade No. of Students	10837.733	6	1806.289	27.484	.010
	Literature/12 th Grade No. of Sections	2.233	6	.372	1.675	.360
	Computer/12 th Grade No. of Students	4441.233	6	740.206	14.887	.025
	Nursing/12 th Grade No. of Sections	.233	6	.039	.175	.966
	Vocational/12 th Grade No. of Sections	.933	6	.156	.175	.966
Intercept	2 nd Grade No. of Sections	.019	1	.019	.086	.789
	3 rd Grade No. of Sections	.019	1	.019	.086	.789
	5 th Grade No. of Sections	4.876	1	4.876	21.943	.018
	6 th Grade No. of Sections	4.876	1	4.876	21.943	.018
	7 th Grade No. of Sections	6.519	1	6.519	2.729	.197
	8 th Grade No. of Sections	13.376	1	13.376	12.672	.038

iii. Regression Model for the Significant Teachers Inputs Effect of Overall Students Performance

The hypothesis that Overall Student Performance is affected by a set of Teachers Inputs was reported significant, see Table 11.

Table 11 : Multivariate Tests Perceived Students Performance - Overall Learning Efficacy over Number of Teachers

Effect Wilks' Lambda	Value	F	Hypothesis df	Error df	Sig.
Intercept	.376	26.042	12.000	188.000	.000
Perceived Students Performance - Learning Efficacy	.139	1.190	348.000	2128.068	.014

However, factors that contributed to the regression model in the order of their strong effect are: Number of Teachers in Languages, Religion, Biology,

Arabic, Math, History, Geology, Physics, English, and Chemistry, see Table 12.

Table 12 : Tests of Between-Subjects Effects - Overall Learning Efficacy over Number of Teachers

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Religion Number of Teachers	47.422	29	1.635	2.125	.001
	Arabic Number of Teachers	102.591	29	3.538	1.923	.005
	English Number of Teachers	57.413	29	1.980	1.572	.039
	Math Number of Teachers	68.258	29	2.354	1.926	.005
	Physics Number of Teachers	15.723	29	.542	1.607	.032
	Chemistry Number of Teachers	11.893	29	.410	1.524	.050
	Biology Number of Teachers	14.496	29	.500	2.079	.002
	Geology Number of Teachers	7.618	29	.263	1.864	.007
	Computer Number of Teachers	33.820	29	1.166	1.542	.046
	Geography Number of Teachers	18.537	29	.639	1.477	.064
	History Number of Teachers	16.820	29	.580	1.910	.005
	Languages Number of Teachers	130.636	29	4.505	2.251	.001
Intercept	Religion Number of Teachers	162.769	1	162.769	211.504	.000
	Arabic Number of Teachers	428.307	1	428.307	232.776	.000
	English Number of Teachers	324.028	1	324.028	257.304	.000
	Math Number of Teachers	223.122	1	223.122	182.577	.000
	Physics Number of Teachers	15.799	1	15.799	46.832	.000
	Chemistry Number of Teachers	14.174	1	14.174	52.665	.000
	Biology Number of Teachers	18.808	1	18.808	78.212	.000
	Geology Number of Teachers	3.794	1	3.794	26.926	.000
	Computer Number of Teachers	56.346	1	56.346	74.516	.000
	Geography Number of Teachers	29.096	1	29.096	67.248	.000
	History Number of Teachers	16.984	1	16.984	55.938	.000
	Languages Number of Teachers	12.241	1	12.241	6.117	.014
Total	Religion Number of Teachers	679.000	229			
	Arabic Number of Teachers	1645.000	229			
	English Number of Teachers	1285.000	229			
	Math Number of Teachers	919.000	229			
	Physics Number of Teachers	131.000	229			
	Chemistry Number of Teachers	97.000	229			
	Biology Number of Teachers	91.000	229			
	Geology Number of Teachers	43.000	229			
	Computer Number of Teachers	337.000	229			
	Geography Number of Teachers	199.000	229			
	History Number of Teachers	133.000	229			
	Languages Number of Teachers	612.000	229			

c) *Relationship between Overall Students Performance Capacity of Teaching-organizational, Capacity of Quality of Education & Other Entities and*

In order to test the hypothesis that lack of preparedness is affected by lack of Teaching-organizational, Capacity & capacity in Quality of the supply of the Teaching Environment, the following statistical Multi-level Analysis were carried out.

i. *ANOVA Test – Overall Performance over Teaching-organizational Capacity and Qualitative Inputs of Supply*

Further analysis was carried out to investigate the effect of capacity of Teaching-organizational, Capacity & capacity in Quality of the supply on Overall Perceived Performance using anova test. The test of

effect of Teaching-organizational, Capacity & capacity in Quality of the supply on Overall Performance using Anova Test (Table 13) indicated significant relationship

with Students' Gender, caring and support for students, perception of existing pedagogy, students attitude, teachers attitude, available school services.

Table 13 : ANOVA Test - Capacity of Teaching-organizational Entity, Capacity of Quality of Education & and Other Entities Student Performance over Overall Learning Efficacy

Variable	Sum of Squares	Df	Mean Square	F	Sig.
<u>Students' Gender</u>	37.657	29	1.299	1.767	.013
School Education Level	31.945	29	1.102	1.358	.115
Instructional	4.683	29	.161	1.089	.354
Structural	7.945	29	.274	1.083	.361
Staff Frustration	31.143	29	1.074	1.305	.148
Positive Classroom Environment	23.126	29	.797	1.397	.096
<u>Caring & Support for Students</u>	19.313	29	.666	1.675	.022
Formalization	7.232	29	.249	.932	.570
Students Control	6.264	29	.216	1.127	.308
<u>Perception of Existing Pedagogy</u>	22.828	29	.787	2.499	.000
Directing Students Track	33.989	29	1.172	1.250	.188
Obstacles of Ministry Concentration	11.213	29	.387	.636	.926
<u>Students Attitude</u>	17.750	29	.612	2.512	.000
<u>Teachers Attitude</u>	19.962	29	.688	2.855	.000
<u>Available School Services</u>	26.140	29	.901	2.419	.000

- ii. *Regression Model for the Significant Teaching-organizational Capacity and Qualitative Inputs of Supply with Overall Students Performance*

organizational, Capacity& capacity in Quality of the supply of the Teaching Environment significant in Table 14.

The hypothesis that Overall Student Performance is affected by a set of Teaching-

Table 14 : Multivariate Tests Models - Capacity of Teaching-organizational Entity, Capacity of Quality of Education & and Other Entities Student Performance over Overall Learning Efficacy

Effect Wilks' Lambda	Value	F	Hypothesis df	Error df	Sig.
Intercept	.023	1146.377	7.000	193.000	.000
Perceived Students Performance – Overall Learning Efficacy	.211	1.674	203.000	1329.011	.000

However, factors that contributed to the regression model in the order of their strong effect are: teachers attitude, student's attitude, perception of

existing pedagogy, available school services, and caring and support for students, see Table 15.

Table 15 : Tests of Between-Subjects Effects - Capacity of Teaching-organizational Entity, Capacity of Quality of Education & and Other Entities Student Performance over Overall Learning Efficacy

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Positive Classroom Environment	23.126	29	.797	1.397	.096
	Caring & Support for Students	19.313	29	.666	1.675	.022
	Students' Gender	37.657	29	1.299	1.767	.013
	Perception of Existing Pedagogy	22.828	29	.787	2.499	.000
	Students Attitude	17.750	29	.612	2.512	.000
	Teachers Attitude	19.962	29	.688	2.855	.000
	Available School Services	26.140	29	.901	2.419	.000

Intercept	Positive Classroom Environment	1138.672	1	1138.672	1994.882	.000
	Caring & Support for Students	1215.590	1	1215.590	3057.484	.000
	Students' Gender	289.466	1	289.466	393.809	.000
	Perception of Existing Pedagogy	1074.138	1	1074.138	3410.621	.000
	Students Attitude	1075.688	1	1075.688	4415.046	.000
	Teachers Attitude	1205.110	1	1205.110	4997.797	.000
	Available School Services	828.147	1	828.147	2222.817	.000
Total	Positive Classroom Environment	3410.551	229			
	Caring & Support for Students	3689.025	229			
	Students' Gender	1084.000	229			
	Perception of Existing Pedagogy	3469.722	229			
	Students Attitude	3324.156	229			
	Teachers Attitude	3698.247	229			
	Available School Services	2678.914	229			

a) *Capacity of Quality of Education Evaluation - impact of implemented development program provided by the Ministry of Education and Ministry of Higher Educations by the subjects*

In order to realize how the relationship of overall student performance is associated with capacity of quality of education; the following analysis was extracted from the interviews with the sampled municipals:

a. *Evaluations of Inputs – SWOT Analysis:*

1. Inputs Strength: availability of all streams; teachers specialties, capacity, skills, and cooperation; small students numbers; and available electronic pedagogy.
2. Input Weaknesses: Lack of computers; lack of parents awareness and support to intensify students' performance; hard courses in comparison to students capacity and ability; weak physical infrastructure like crowding in some classrooms, rented buildings, and bad quality buildings; dense teaching schedules; dispersed school from residential settings; lack of instruments, tools, and computers in remote schools; insufficient financial and technical capacities of school; lack of experience of teachers; lack of community feedback; limited authority of teachers over students; lack of scientific majors; two teaching shifts (morning and evening) and mixed schools; travel distance for teachers and students; unqualified teachers for the first three grade levels.
3. Opportunities: Improvement of physical environment, infrastructures, facilities, labs, equipment, buildings, and classrooms; direct and intensive training for managers and teachers; electronic teaching; intensification of elementary stage by provide quality inputs; provision of technical team working under municipals; interaction with local community; separation of gender, and educational levels.

4. Threats: Students attitude; centralization; weak classroom management; escape of teachers to other professions to generate better income; decrease of students numbers in schools in favor of increasing household manpower and, therefore, income; infiltration from schools; lack of financial support for the poor; parents attitude; social structure of kinships and clans; lack of thermal control in extreme weather conditions; and lack of safe playground, school fencing, and other infrastructures.
5. Assessment of Education Economically, Socially, and culturally: should be based on reality and community understanding, as it does not fit with household needs, as well, it is not responsive to community demands and lifestyle.
6. Quality Assurance for Students & Teachers: there are gaps in teacher's performance and student's performance; exchange with students is weak; and there is lack of training in electronic education.
7. Distinctness to students and Teachers: is being lower but there are potentials to keep enhancing it, but infrastructure does not help and there are no incentives for both teachers and students.
8. Human Resources: Are available in full capacity and qualification but are unable to orient students energy; also it does not match with community and Badia region needs, distribution is not efficient; and limited resources and incentives for the available human resources.
9. Flexibility of Subject Choice & Job Opportunities: All streams are available, but awareness is weak, choice is inflexible, and match with needs is disturbed by geographical locations; also choices do not fit market and North Badia Region needs.
10. Upgrading in Teaching and Learning Environment: Should be based on information technology; but some schools suffer from lack of infrastructure and

feel upgrading is not made possible, especially for schools who have rented buildings.

11. Electronic Infrastructure: Most schools have it available but some lack its availability. Some municipals indicated their need for simple computer infrastructure; and others suffer from lack of computer systems at their schools.

b. Quality Assessment:

1. Existing Pedagogy: it is a foreign system on Arab students; it is applied without consideration for its appropriateness for the region; some contents are above students capacity; continuous change in content which causes frustration among students and teachers; it is rigid; it has gaps between students' abilities and capacities; it is informative and not responsive to context; it lacks vocational emphasis; requires self-improvisation that depends on students who does not get parental support; and it is traditional.
2. Suggested Pedagogy: suggested pedagogy development by providing clearer content, progressive, and fixed pedagogy; change in some courses content; comprehensive and compatibility; decrease course size; intensify electronic teaching/learning; enhance fitness of pedagogy to remote area needs; enhance hierarchy throughout the different levels of education; decrease overload of information; focus on practical and applied pedagogy; tailor for regional needs; and intensify quality of Math and English at first three grade levels.
3. Existing Students Interaction: students are attitudinal; interaction lacks communication and discussion, and is traditional; some students are disrespectful and lack motivation and belonging; some students have negative behavior and not cooperative; others are carless; and students lack support from their families and communities.
4. Suggested Students Interaction: teachers to be kind to students, aware, responsible, and to communicate with students, to deal with students positively and easily, and to encourage respect; to increase student's motivation and encourage discussion; ad to enhance effective control and not just implementation and execution of regulations; to facilitate teacher's authority over students; to make students aware of education importance.

V. CONCLUSIONS

Capacity of quality of education Supply at the school level: perception of existing pedagogy has a slight tendency of approval; directing students to choose the right stream also received slight approval; and obstacles of Ministry of Education concentration has a tendency of agreement. In terms of capacity of teaching-organizational entity of the supply, instructional

capacity was assessed with a tendency of strong agreement; structural agreement was also with a tendency of strong agreement; staff frustration has a tendency of disapproval; positive classroom environment has a slight tendency of approval; caring and support for students has a slight tendency of approval; formalization has a tendency of strong agreement; and students control has a strong agreement. Additionally, students' attitude has a tendency of slight agreement; teachers' attitude has tendency of agreement; available school services has a slight agreement; and perceived students' performance has a tendency of slight agreement.

a) Overall Students Performance and Capacity of Students & Teachers Quantity (Inputs)

Over all perceived performance was associated with Elementary grade inputs 1st Grade and 2nd Grade number of sections; negative association with Eleventh Grade the number of students Nursing Stream; and none of the Twelfth Grade inputs. It also showed positive association with Number of Geology Teachers. In terms of capacity of quantity of Education Supply at the Elementary level effect on Perceived overall performance, results indicated that attributes of effect at the elementary stage level include: numbers of sections at Second, Third, Fifth, Sixth, Seventh, Eighth, Ninth, and Tenth Grades.

In terms of capacity of quantity of Education Supply at the Eleventh Grade level effect on Perceived overall performance, results indicated that attributes of effect at the Eleventh Grade level include: sections of Scientific, Computer and Nursing streams; as well as, number of students at Scientific and Computer streams. In terms of capacity of quantity of Education Supply at the Twelfth Grade level effect on Perceived overall performance, results indicated that attributes of effect at the Twelfth Grade level include: sections of Nursing streams; as well as, number of students of Scientific and Computer streams.

In terms of capacity of number of teachers on Perceived overall performance, results indicated that attributes of effect number of teachers include the following majors: Religion, Arabic, English, Math, Physics, Biology, Geology, Computer, History, and Languages teachers.

Overall Student Performance is affected by a set of attributes of Capacity of Students Quantity inputs was not significant. However, factors that could contribute to the regression model in the order of their strong effect are: number of students at Eleventh grade Computer stream, and Twelfth Grade Scientific and Computer streams.

Overall Student Performance is affected by a set of attributes of Capacity of Teachers Quantity inputs was significant. However, factors that contributed to the regression model in the order of their strong effect are:

number of teachers in Languages, Religion, Biology, Arabic, Math, History, Geology, Physics, English, and Chemistry.

b) Overall Students Performance and Teaching-organizational Capacity, Qualitative Inputs of Supply, and Other

In terms of Teaching-Organization & Capacity of Quality of Education Supply & Other Variables association with Perceived overall performance, results indicated that attributes of Teaching-Organization & Capacity of Quality of Education Supply & Other Variables associated with the following: (1) Teaching-Organizational Entity such as Structural, Staff Frustration, Positive Classroom Environment, and caring and support for students; (2) with quality of education such as perception of existing pedagogy and directing student to choose a track; (3) other variables such as students attitude, teachers attitude, available school services, and students gender, which supports Sergioanni (1984), Bush (1986), Bolman & Deal (1991), Cheng (1993b), Ming (1994), and Ming & Cheong (1995). However, the following attributed affected the Perceived overall performance differently: Students' Gender, caring and support for students, perception of existing pedagogy, students' attitude, teacher's attitude, and available school services, which supports Aptekar (1983), Bates (1993), Eberts, Kehoe, & Stone (1982), Gottfredson (1985), Gregory (1992) Johnson (1990), and Stockard & Mayberry (1992). Overall Student Performance is affected by a set of attributes of Teaching-organizational, Capacity & capacity in Quality of the supply is significant. However, factors that contributed to the regression model in the order of their strong effect are: teachers' attitude, students' attitude, perception of existing pedagogy, available school services, and caring and support for students.

c) Recommendations - Vision and Solutions

Concentration of Certain High School Fields of Study at the Governorate Level – Impact of Implementation

The following is a set of suggestions to follow:

1. For limiting **Cultural** obstacles that hinder the local community by Ministry of Education's Policies: activation of parents councils role in order to share cultural issues and taboos about education and work; activation of students council in order to aware them of vocational studies, increasing community cultural awareness via workshop, public lectures, awareness brochures, newsletters; adjusting regulation to control students build community libraries; support first grade at elementary stage; and launching summer school and courses for students in order to keep them disciplined and interested.
2. For limiting **Social** obstacles that hinder the local community by Ministry of Education's Policies:

activating parents and local community councils to increase bridging and communication and responsibility towards education, increase community awareness, bond, cooperate, and communicate with local community; emphasizing teachers mission; providing trained counselors to solve students social problems; establishing open-door policy with the community; enhancing teachers' income; intensifying teachers' roles and social status; and enhancing team spirit.

3. For limiting **Financial** obstacles that hinder the local community by Ministry of Education's Policies: launching activities that generate money so as to enhance facilities and services at local schools; encourage donations and financial support by the local community and civic institutions; decrease school fees; honoring donors by offering their names to facilities; decreasing centralization and offering local management some freedom to enhance school budget; and increasing incentives for teachers and school budget by the Ministry of Education.
4. For limiting **Managerial** obstacles that hinder the local community by Ministry of Education's Policies: allowing new managements approach; activating managers role and authority; decentralizing decisions; activating punishment law; providing management incentives; bridging communication with managers and exchanging experience with other schools; and increasing capacity of municipals by intensifying training workshops.
5. For limiting **Training** obstacles that hinder the local community by Ministry of Education's Policies: Providing teachers with training before teaching; providing continuous and intensive training and awareness about teaching skills, responsibilities, and classroom environment; encourage effective training and participation; providing and increasing chances of training; evaluating training content; training students with speaking disabilities at local schools; launching summer training and workshops to save time; and training senior teachers about new methods and pedagogies and just fresh graduates.
6. For limiting **Technical** obstacles that hinder the local community by Ministry of Education's Policies: Supporting managers with technical team to get their job done; providing serious supervisors in the region, one supervisor for each subject; establishing extensive technical training and supervision by the Ministry of Education.
7. For limiting **Logistic** obstacles that hinder the local community by Ministry of Education's Policies: increasing and enhancing infrastructure and services for students, teachers, and management; distributing services equally among schools; implementing safety measures at the main street in front of the schools.

d) Implication

Major issues that should be considered by education policy makers include:

1. To restructure inputs of education in the Northeast Badia Region.
2. Emphasis of joining schools together, as it seems number of students as well as section are vital for output and more so than number of teachers. Many schools are suffering, especially in the Northeast Badia Region, from small number of students in geographically dispersed villages. It is healthier to increase numbers of students to a range of 20-30 per section for completion among students.
3. Number of teachers and their major seem to be sufficient and more importantly are their attitude. This suggests working more on enhancing the teachers' attitude, as their qualifications seem sufficient but they lack inspiration and incentives and it seems to be a worthwhile issue of investment by policy maker of higher education.
4. Physical infrastructure that supports students' activity seems vital and affects student's performance positively. Therefore, it is worth to invest in sports and arts facilities, and the like.

However, the following partners should play different roles:

1. Policy makers: should not be mainly concerned about the inputs of schooling (finance, curriculum, and student allocation), but should also pay attentions about the internal process of the school, such as instructional approaches, school structure, etc.
2. School administrators: the school environment may be related to the contextual factors of the schools, such as age, size, experience of the teachers, etc., which is not under the control of the school administrators, but they have the authority to plan and implement suitable policies which can reduce the negative effects of the school contextual factors. Another implication is for the school administrators to keep in mind that although the school environment is complicated, the different aspects of school environment are inter-related, and they need to take a holistic view about school environment, and that school management should not be conducted in a piecemeal fashion.
3. Education Department: since the principal is in a key role in the creation of a good school environment, which would be beneficial to the learning of the students and the success of the teachers, it implies that selection and training of principal should be given prominent attention by the policy makers and Education Department. The stability of leadership effect implies that in order for the leadership effects of principals to take root, the incumbents should not change too often.

4. Training programs: because a principal has multiple roles, he/she is an educational leader, a structural leader, a human relationship leader, a political leader, and a symbolic leader; it suggests that training programs for the principal should include the following five components.

e) Limitations of the Research Study

The research aperwork was long and even when released was not enough to convince the local municipals to collaborate with the extensive data related to teachers and students inputs (especially scores of students in all subjects and at all level). Further, teachers at the interviewed schools offered no time to work with or help the research team in extracting this data. In addition at the central exam office of the Ministry this data, which was supposed to be upload to EduWave, were not accessible or available. In terms of questionnaire, it was long, for future studies components of the research will be separated in different parcels and phases. Finally, the timing of the research was towards the end of the academic year; many schools where dropped out from the study because they were on vacation.

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