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Lebanese Public Schools Principals' Attitudes, Level of ICT Use and Leadership Style

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Abstract: The purpose of this study was to investigate attitudes towards ICT, level of ICT use, and leadership style of the Lebanese public schools' attending a training program at the Lebanese University, Faculty of Education. The training program, in which 204 principals from all over Lebanon participated, lasted for three months. At the end of the program, they filled a survey questionnaire and only 192 filled-in the questionnaire. Data collected were analyzed using descriptive analysis and correlations were calculated to identify the relationships between ICT use and gender, age, number of computers at school, earned Diploma, geographical location. School principals agreed that they benefit greatly from the ICT course; it helped them in improving their computer skills relevant to their administrative work. Findings also suggest that there is a no significant correlation between the use of ICT and school principal gender and age, the good equipment of schools is irrelevant with the school geographical location (urban/rural city). Moreover, within this study, the researchers identify significant challenges faced by the trainees' school principals, for instance, the little number and the lack of computers in their schools, the absence of IT teachers and even many of them did not use often computers in their daily routine works before the training program. Finally, Lebanese school principals adopted an administrative style with an emphasis on the accountable management behavior. Future qualitative studies are recommended to gain in-depth knowledge about the use of ICT by school principals in their schools.

Keywords: School principals' attitudes, University training program, ICT

Introduction

Literature about leadership and ICT confirmed the importance of ICT integration in the school system that elevates the quality of education and the pedagogical use of technology in schools. This literature highlighted the vital role of the school leader in delivering and supporting ICT in schools. In addition, ICT is linked closely to the quality of living, globalization, and multiculturalism. Because we are living in an increasing demanding and dependent society on technology and this requires an emerging school system based on ICT.

Literature has shown that ICT integration in schools is linked to the readiness of school principals to adopt and to facilitate the implementation of ICT in their schools. It is evident that ICT literacy or Digital literacy or the preparation for the 21st Century skills, like utilization of ICT in their daily life can be successfully implemented when school leaders (Afshari et al, 2012; Oluyemisi, 2015; Polizzi, 2011) and teachers (Albirini, 2006; Sangrà, and González-Sanmamed, 2010; Teo 2006) adopt a positive attitude towards the utilization and integration of ICT in instruction.

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Dawson and Rakes (2003) found that the age of the principal is a critical factor affecting technology integration in schools, with older principals (ages 41 to 55 years) influencing technology integration more than younger principals. They also found that the number of years that the principal has been in his/her administrative position does not influence ICT integration. Furthermore, Anderson and Dexter (2005) believed that “technology leadership has greater leverage on desired outcomes than does technology infrastructure and expenditures” (p. 73).

Rusmini (2012; Mwalongo, 2011) advocated that school leaders need to develop ICT skills in order to be effective in their new role as a technology usage leader.

An example of Arab Countries, Bahrain, Abdul Razzak (2013) reported that the status and conditions of the implementation of ICT in Bahraini public schools is poor; she found that the schools are in need of technology plans that focus, in addition to individuals and their attitudes towards ICT integration, to also promote a school culture, which encourages exploration of new teaching, learning, and management techniques. The school leaders, however, need training on the important role they can play in leading and managing ICT integration in schools, since they are expected to positively influence everyone and everything else in the direction of more and better technology integration.

In Cyprus, Papaioannou and Charalambous (2011) explored the Cyprus primary school principals’ attitudes towards Information and Communication Technologies (ICT) as well as their perceptions about the factors that facilitate or inhibit ICT integration in primary schools in Cyprus. They found that principals hold, in general, positive attitudes towards ICT, but significant differences were observed across gender, years of service, academic qualifications, access to a computer and the internet at home, in-service training on ICT for teaching and learning purposes, existence of a computer in the principal’s office, computer experience, and the principals’ attitudes towards ICT. In addition, even though principals value the importance of ICT in the teaching and learning process as well as for the fulfilment of their managerial and administrative purposes, they still need more tailor-made in-service training and incentives in order to transfer their theoretical enthusiasm into practice. This study concluded that ICT integration in primary schools in Cyprus can be facilitated by principals regardless of their access to technology resources and the technical assistance that is provided by Ministry of Education and Culture (MOEC).

In Lebanon, Ghamrawi (2013) investigated the relationship between the leadership styles exhibited by 651 Lebanese public school principals and their attitudes and the level of use of technology for educational purposes in their schools. Moreover, one teacher from each participant public school (N = 651) completed a questionnaire pertaining to the level of use of technology in the school. The study has shown that though the principals of these schools bear positive attitudes towards computers; they did not consider them as important tools for the enhancement of teaching and learning. They valued computers as tools for the facilitation of the management of information in their schools and for administrative purposes. The study also revealed the existence of positive correlation between the autocratic leadership style of school principals and their negative attitudes towards the use of ICT for educational purposes. In addition, the results of the study accentuate another positive correlation existing between principals’ attitudes towards the use of ICT for educational purposes and the level of its use by their teachers in schools.

An OECD report, *Improving School Leadership*, summarizes the changing landscape of schools and their management over recent decades (Pont, Nusche and Moorman, 2008); it argues that to meet the educational needs of the 21st century the principals in primary and secondary schools must play a more dynamic role and become far more than an administrator of top-down rules and regulations. Schools and their governing structures must let school leaders lead in a systematic fashion and focus on the instructional and learning processes and outcomes of their schools. The same OECD report, recommends that effective school management comes from engagement in instructional leadership. At the same time, effective leadership also involves administrative accountability and a workable bureaucracy (Pont, Nusche and Moorman, 2008). OECD (2009) report classified school leader’s management into instructional leadership and administrative leadership styles (Figure 1).

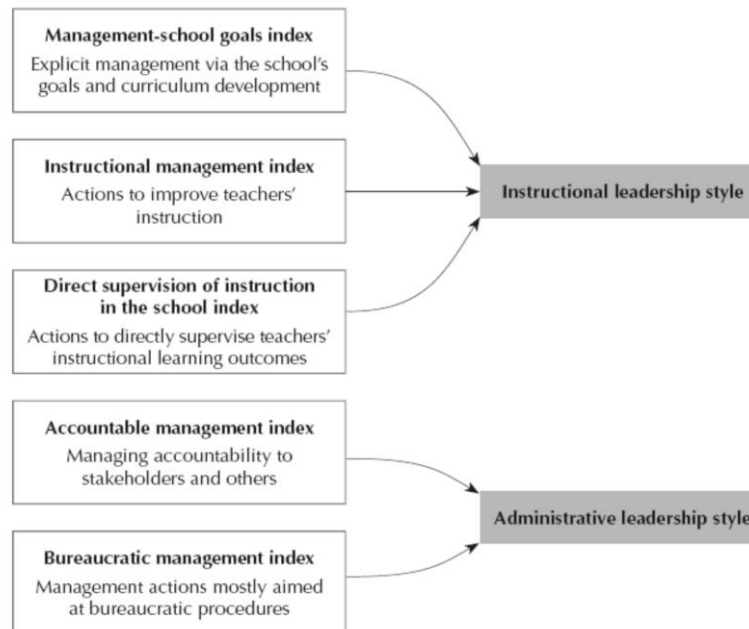


Figure 1. Composition of the indices for instructional and administrative leadership (from OECD, TALIS Database, 2009)

The purpose of the current study is to investigate the principals' attitudes, level of ICT and their leadership style. The lack of research on the use of ICT by Lebanese school principals, as well as the assessing of training programs at the Faculty of Education with respect to ICT and leadership for school principals would be a valuable addition to the literature. In Lebanon, there are few research studies concerning the integration of technology within the school setting, especially in the administrative purpose and its impact on the work of the school itself.

Research Questions

The research is experimental and tries to answer the following questions:

1. What are Lebanese school principals' attitudes toward the use of ICT in their schools, at the end of the training program at the Faculty of Education?
2. What is the level of ICT use by these school principals?
3. How did school principals benefit from the training course at the Faculty of Education, in terms of ICT?
4. What are Lebanese school principals' leadership styles at the end of the training program?

Method

The training program for the Lebanese public schools principals was 3 months in duration. The 204 principals came to the Faculty 2 days per week. The program was an intensive one that covered 6 courses: Educational Leadership (36 hrs), Educational Supervision (18 hrs), Educational Management and Planning (18 hrs), Approaches to Active Learning (18 hrs), Employees Legislations (18 hrs) and Technology and Administration (36 hrs).

For the independent variables: Age, gender, principal diploma, number of computers at school and school location.

For the dependent variables: School principals' attitudes towards ICT, school principals' computer literacy and use of ICT, leadership style.

Sample

The original sample of the school principals was 204. At the training program at the Faculty of Education, they were administered a questionnaire on leadership style and their attitude toward ICT. The number of principals who filled-in the questionnaire was 192. The number of principals of age ≥ 59 was 66 and 126 principals with age ≤ 59 . They were disseminated from all over Lebanon. Their ages ranged between 33 and 64 years old (Figure 2). Finally, 92 or 47.59% Males and 100 Females (52.41%) (Figure 3).

Participants were: Forty seven (24.5%) from the North and Akkar, 18 (9.5%) from Beirut, 29 (15%) from Bekaa, 68 (35.5%) from Mount Lebanon, and 30 (15.5%) from The South and Nabatiyeh. The majority of school principals were graduates from the Lebanese University. Their diplomas cover various levels from PhD to Master, Maitirse and Licence. Their diplomas also cover a wide spectrum of specializations: from Languages, Science and Mathematics, Politics to Mechanics. Schools were also various; KG, primary, intermediate and high school as well as vocational technical institute. Their administrative experience range from one to 33 years, as for their teaching experience, it ranges from three to 40 years.

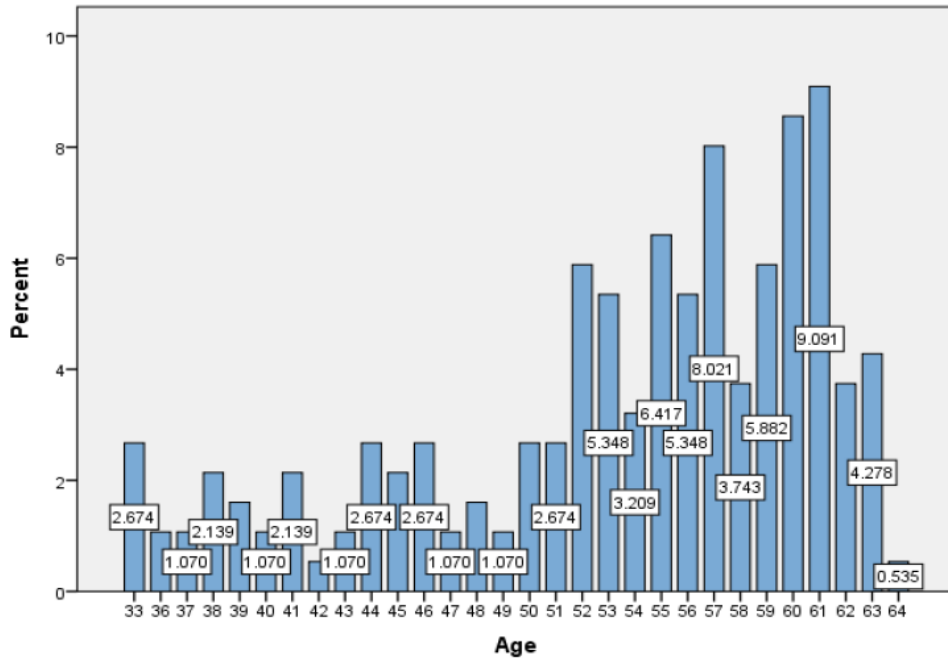


Figure 2. The age sample distribution

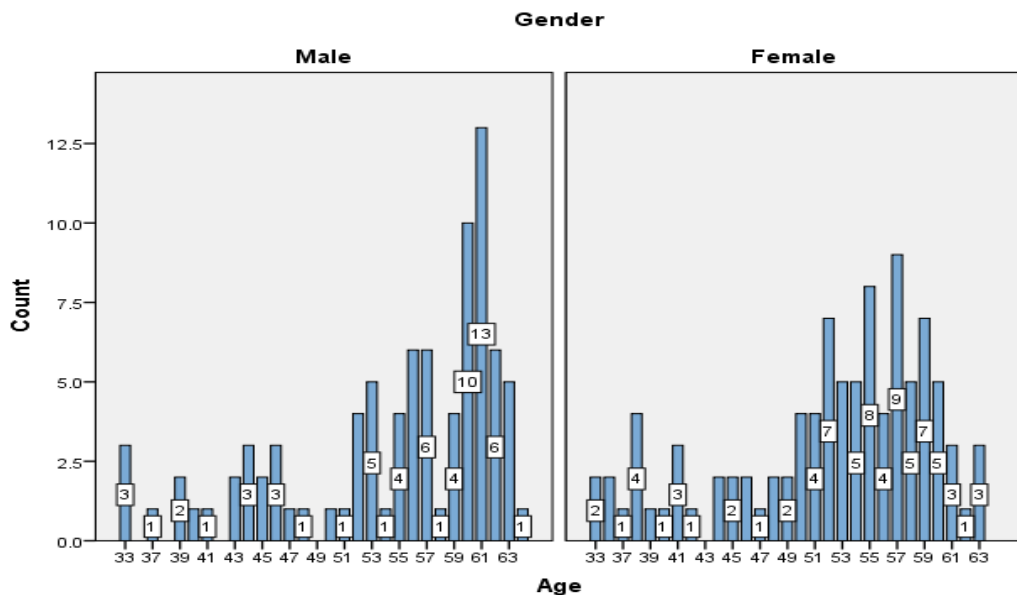


Figure 3. The age sample distribution by age and gender

Instrument

A questionnaire was used to collect both quantitative and qualitative data. It consisted of 120 items, 30 of them were open-ended questions. The questionnaire aimed at collecting school principals’ opinion on ICT as well as their attitude towards ICT and the training course. The questionnaire consisted of 6 sections: 1. Personal and professional profiles, 2. Computer Skills, 3. Problems of infrastructure, 4. Computer Literacy before and after the ICT Course, 5. Leadership style, 6. Principals’ attitudes towards ICT use.

The questionnaire was inspired mainly from Albirini (2006) questionnaire on attitudes towards ICT, the TALIS questionnaire, the Teaching and Learning International Survey (2009), is a project of the Organization for Economic Cooperation and Development (OECD) and the PITLICTQ questionnaire (Leng, 2008), designed to investigate teachers' perceptions of Positive Influence of Transformational Leadership Practices on the Integration of ICT into teaching.

Data Analysis

At the end of the training program, school principals received a survey questionnaire, and the data collected were processed by using Statistical Package for Social Science (SPSS, 21) program. It was used to analyze data as follows:

1. Descriptive analysis (Frequency and Percentages).
2. Pearson's correlation coefficients were used to identify the relationships between ICT use and gender, age, number of computers at school, earned Diploma, geographical location or province.

Results and Discussion

Research Question 1: What are Lebanese school principals’ attitudes toward the use of ICT in their schools? Principals’ responses to the 15 questions from section VI (Leadership and attitude towards computers) of the questionnaire, related to attitudes, revealed that overall, school principals have a positive attitude towards the use of computers for educational purposes; 94.3% believed that computers save time and effort and they can help them in organizing their work, while 84.9% disagree that it is better to do things by hand rather than with a computer. Public school principals believed that computers are important in teaching and learning; 77.1% believed that teaching with computers offer real advantages, 73.8% thought that computers will improve education and that computers are a fast means to get information (93.8%) (Table 1).

Table 1. School principals’ attitudes towards ICT at the end of the program

Items	Agree %	Disagree %	No opinion %
Computers would help me organize my work	94.3	3.1	2.6
Using computers would make subject matter more interesting	80.7	9.4	9.9
Computers save time and effort	94.3	1.6	4.1
Using computers is enjoyable	88.5	2.6	8.9
Computers make me much productive	83.9	8.9	7.2
Computers have proved to be effective learning tools	86.5	4.2	9.3
Computers can enhance students’ learning	88.5	3.6	7.9
Teaching with computers do not offer real advantages	8.9	77.1	14
I believe that using computers in teaching is useful	91.7	1.0	7.3
Computers are a fast means of getting information	93.8	0.5	6.15
I would like to learn more about computers	91.7	1	7.3
Computers will not necessarily improve education	12.5	73.8	13.7
Computers do not scare me at all	79.2	10.9	9.9
I would rather do things by hand than with a computer	8.3	84.9	6.8
I do not like talking with others about computers	9.9	66.7	23.4

Research Question 2: What is the level of ICT use by these school principals? Section IV of the questionnaire highlights principals’ responses to their computer skills literacy and development during the training program at the faculty of Education.
Before the ICT Course

Table 2 displays data related to principals' computer literacy; 39.1% of the public school principals admitted that they performed poorly with the Internet, 45.3% used poorly the Excel and Word, while only 3.1% have an advanced performance of ActivInspire.

Table 2. School principals' computer literacy at the beginning of the program

Category	Performance			
	Advanced	Beginning	Poor	No answer
Word	61 (31.8%)	67 (34.9%)	63 (32.8%)	1 (0.5%)
Excel	37 (19.3%)	66 (34.4%)	87 (45.3%)	2 (1%)
PowerPoint	28 (14.6%)	57 (29.7%)	104 (54.2%)	3 (1.6%)
ActivInspire	6 (3.1%)	47 (24.5%)	130 (67.7%)	9 (4.7%)
Internet (E-mail, ...)	48 (25%)	64 (33.3%)	75 (39.1%)	5 (2.6%)

After the ICT Course

At the end of the training course, 65.6% believed that they have an advanced performance in Word, Excel (52.1%) and ActivInspire (13%). The use of the Internet increased by 43.8% while only 25% used Internet before the training course (Table 3).

Table 3. School principals' computer literacy at the end of the program

Category	Performance			
	Advanced	Beginning	Poor	No answer
Word	126 (65.6%)	57 (29.7%)	8 (4.2%)	1 (0.5%)
Excel	100 (52.1%)	79 (41.1%)	11 (5.7%)	2 (1%)
PowerPoint	98 (51%)	81 (42.2%)	10 (5.2%)	3 (1.6%)
ActivInspire	25 (13%)	109 (56.8%)	40 (20.8%)	18 (9.4%)
Internet (E-mail, ...)	84 (43.8%)	70 (36.5%)	24 (12.5%)	14 (7.3%)

In sum, school principals' computer literacy improved after the training course: only 25 % of principals believed that they have an advanced level of use the internet and mails.., this number increases to 43.8% after three months of the training program. In addition, 3.8% of the sample has an excellent command of the word processing, it increased to 65.6%. Moreover, 42.2% believed that they performed poorly the use of Power Point Software; it turns up to 51% after the training at the Faculty. Finally, 67.7 % have a poor level in Activinspire use, at the end of the training program, it increases to 13%.

Pearson's correlation coefficients were used to find whether there are relationships between: ICT use and Age, ICT use and Gender, ICT Use and PC Number at school ICT Use and Earned Diploma and ICT Use and school geographical Location.

No significant relationship (Pearson's R =.094; Spearman Correlation=.083) was found between the the use of ICT and age, no relation (Pearson's R = -.089; Spearman Correlation= - .089) was found between ICT use and Gender, ICT Use and PC Number at school ICT use (Pearson's R =-.047; Spearman Correlation=.052) and Earned Diploma and ICT use (Pearson's R =-.173; Spearman Correlation=-.188) and school geographical Location (Pearson's R = .032; Spearman Correlation=.032) (Table 4).

Table 4. The correlations between the different independent variables
Correlation of Gender and ICT Use

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval	Pearson's R	-.089	.086	-1.036	.302 ^c
Ordinal by Ordinal	Spearman Correlation	-.089	.086	-1.036	.302 ^c
N of Valid Cases		135			

Correlation of Age and ICT Use

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval Pearson's R	.094	.084	1.093	.276 ^c
Ordinal by Ordinal Spearman Correlation	.083	.085	.968	.335 ^c
N of Valid Cases	137			

Correlation of ICT Use and Number of Computers at School

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval Pearson's R	-.047	.073	-.549	.584 ^c
Ordinal by Ordinal Spearman Correlation	.052	.086	.604	.547 ^c
N of Valid Cases	139			

Correlation between ICT Use and Earned Diploma

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval Pearson's R	-.173	.082	-1.866	.065 ^c
Ordinal by Ordinal Spearman Correlation	-.188	.089	-2.030	.045 ^c
N of Valid Cases	115			

Correlation between ICT Use and Geographical Location

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval Pearson's R	.032	.088	.369	.713 ^c
Ordinal by Ordinal Spearman Correlation	.023	.088	.268	.789 ^c
N of Valid Cases	133			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Related to ICT use with Age and Gender

Table 5 revealed that, compared to 10.3% of the sample aged 60 years old and above, 63% of the sample aged 59 and below tend to use ICT in their work. Younger female school principals use more ICT (20.3%) compared to male principals (12.5%) of the same age group. Finally, 8.8% older male principals do not use ICT in their daily work.

Table 5. Use of ICT by school principals distributed by age and gender

Age	Use of ICT	Male	Female	Total
≤ 59	Yes	24 (12.5%)	39 (20.3%)	63 (32.8%)
	No	14 (7.3%)	21 (10.9%)	35 (18.2%)
	unanswered	12 (6.2%)	16 (8.3%)	28 (14.5%)
≥ 60	Yes	13 (4.6%)	11 (5.7%)	24 (10.3%)
	No	17 (8.8%)	6 (3.1%)	23 (11.9%)
	unanswered	12 (6.2%)	7 (3.6%)	19 (9.8%)

Overall, there was no correlation between the use of ICT and the school location, age, gender, number of computers at school and school principal diploma.

Research Question 3: How did school principals benefit from the training course at the Faculty of Education, in terms of ICT? To the open question: how ICT can help you in your work? Principals emphasized on the use of ICT in their daily routine, such as communication (18.7%) and administrative work (37.9%). For instance,

21.8% admitted that it helps with their work, communicating with the ministry (5.7%) and it makes their work easier (21.8%). Finally, 2% of the sample mentioned student evaluation (Table 6).

Table 6. School principals' answers to 'How ICT can help you in your work'

School principals' responses	Number of answers
It helps as a reference	43 (22.4%)
It makes work easier	42 (21.8%)
It makes communication easier	24 (12.5%)
It helps document typing	20 (10.4%)
It saves time	17 (8.8%)
It helps sending reports to ministry etc..	11 (5.7%)
It helps improving administration work	11 (5.7%)
I gained more self-esteem	6 (3.1%)
It helps learn new things	5 (2.6%)
It helps students evaluation	4 (2%)
It helps with Activinspire	3 (1.5%)
I can work with no need to IT instructor	3 (1.5%)
It helps with distance learning	1 (0.5%)

To the open question, do you use ICT by yourself? Only 182 principals answered. Table 7 highlights their answers, where 38% agree; among them 23.4% female principals appreciate more than male principals (14.5%) the use of ICT in their daily work (Table 7).

Table 7. School principals' use of ICT at work

	Male	Female	Total
Yes	28 (14.5%)	45 (23.4%)	73 (38%)
No	33 (17.1%)	27 (14%)	60 (31%)
No answer	23 (12%)	26 (13.5%)	49 (25.5%)

Overall, school principals agreed that they benefit greatly from the ICT course; it helped them in improving their computer skills relevant to their administrative work. This showed that these principals had a lack in these skills and the training course was a good opportunity for them to enrich their ICT skills: they wrote that they can use ICT for various tasks, such as, communication with the ministry, student evaluation and distance learning. Finally, they gained self-esteem.

Research Question 4: What is Lebanese school principals' leadership style at the end of the training program?

To answer this question, section V of the questionnaire consisted of 26 closed items. Originally, the items were first categorized and analyzed according to: Leadership and School Environment (8 items), Leadership and Students (4 items) and Leadership and school teachers (14 items). The principals could also add to each part their comments (Table 8).

In Table 8, principals' answers were first categorized into: Leadership and School Environment (6 items), Leadership and Students (3 items) and Leadership and school teachers (11 items). The principals could also add to each part their comments.

To analyze data related to the two types of leadership and management styles (instructional and administrative), the 20 items from OECD (2009) study were also used and tabulated (Table 9).

As appeared in Table 8, 89.1% considered as an important part of the school principal is to present new ideas to the parents in a convincing way, 71.4% that it is their task to pay attention to disruptive students, 80.1% believed that the main part of their job is to ensure that the teaching skills of the staff are always improving. Only, 12% take the initiative to discuss matters, when a teacher has problems in his/her classroom. School principals main role is to deal with parents (89.1%). For students, only when there is student misbehaviour (71.4%). Principals are not involved in the policy of the curriculum development; only 3.1% use student performance results to develop the school’s educational goals.

Table 8. School principals’ answers to leadership-school environment-student-teacher

Item No		Often %	Sometimes %	Never %	No answer %
Leadership and School Environment					
1	I stimulate a task-oriented atmosphere in my school	17.7	6.8	1	74.5
2	I communicate school vision to staff and students	76.6	19.3	1	3.1
3	I give high priority to developing within the school a shared set of values, beliefs and attitudes related to education	54.2	42.7	1	2.1
4	An important part of my job is to create an orderly atmosphere in the school	2.6	70.8	26.6	0
5	An important part of my job is to present new ideas to the parents in a convincing way	89.1	8.9	0.5	0.7
6	An important part of my job is to ensure ministry approved instructional approaches are explained to new teachers, and the more experienced teachers are using these approaches	50	43.8	2.1	4.1
Leadership and Students					
7	I use student performance results to develop the school’s educational goals	3.1	31.8	60.4	4.7
8	I monitor students’ work	2.6	2.1	0.5	94.8
9	I pay attention to disruptive behaviour in classrooms	71.4	24.5	1	3.1
Leadership and school teachers					
10	I facilitate opportunities for staff to learn from each other	56.8	33.9	4.7	4.6
11	When a teacher brings up a classroom problem, we solve the problem together	86.5	9.9	1	2.6
12	I take rarely teachers’ opinions into account when making decisions	63	32.3	0.5	4.2
13	I have high expectations of teachers as professionals	55.2	39.1	2.6	3.1
14	I provide resources to support teachers’ professional growth	70.3	24	1.6	4.1
15	When a teacher has problems in his/her classroom, I take the initiative to discuss matters	12	29.7	53.1	5.2
16	It is important for the school that I see everyone sticks to the rules	39.6	53.6	3.1	3.7
17	I inform teachers about possibilities for updating their knowledge and skills	63.4	31.9	2.1	2.6
18	I give teachers suggestions as to how they can improve their teaching	78.5	16.2	1.6	3.7
19	A main part of my job is to ensure that the teaching skills of the staff are always improving	80.1	14.7	1	4.2
20	I observe instructions in classrooms	55.5	41.4	0.5	2.6

In Table 9, the 20 items encompassing the two leadership styles (administrative and instructional) were also classified into the 5 five indices of management behavior: the management-school goals index (2 items), the instructional management index (7 items), the direct supervision of instruction in the school index (3 items), the accountable management index (3 items) and the bureaucratic management index (5 items).

According to (OECD, 2009), principals scoring high for the management style appeared to be of instructional leadership style. This index was derived by averaging the indices for the first three management behaviors, management for school goals, instructional management and direct supervision of instruction in the school (Table 9).

Table 9. School principals' answers to the leadership and management styles

Indices	Item no	Description of the item	Often %	Sometimes %	Never %	No answer %
Instructional Leadership	2	I communicate school vision to staff and students	76.6	19.3	1	3.1
	7	I use student performance results to develop the school's educational goals	3.1	31.8	60.4	4.7
	9	I pay attention to disruptive behaviour in classrooms	71.4	24.5	1	3.1
	10	I facilitate opportunities for staff to learn from each other	56.8	33.9	4.7	4.6
	11	When a teacher brings up a classroom problem, we solve the problem together	86.5	9.9	1	2.6
	13	I have high expectations of teachers as professionals	55.2	39.1	2.6	3.1
	14	I provide resources to support teachers' professional growth	70.3	24	1.6	4.1
	15	When a teacher has problems in his/her classroom, I take the initiative to discuss matters	12	29.7	53.1	5.2
	17	I inform teachers about possibilities for updating their knowledge and skills	63.4	31.9	2.1	2.6
	Administrative Leadership	8	I monitor students' work	2.6	2.1	0.5
18		I give teachers suggestions as to how they can improve their teaching	78.5	16.2	1.6	3.7
20		I observe instructions in classrooms	55.5	41.4	0.5	2.6
3		I give high priority to developing within the school a shared set of values, beliefs and attitudes related to education	54.2	42.7	1	2.1
5		An important part of my job is to present new ideas to the parents in a convincing way	89.1	8.9	0.5	0.7
6		An important part of my job is to ensure ministry approved instructional approaches are explained to new teachers, and the more experienced teachers are using these approaches	50	43.8	2.1	4.1
Bureaucratic management index	19	A main part of my job is to ensure that the teaching skills of the staff are always improving	80.1	14.7	1	4.2
	1	I stimulate a task-oriented atmosphere in my school	17.7	6.8	1	74.5
	4	An important part of my job is to	2.6	70.8	26.6	0

	create an orderly atmosphere in the school				
12	I take rarely teachers' opinions into account when making decisions	63	32.3	0.5	4.2
16	It is important for the school that I see everyone sticks to the rules	39.6	53.6	3.1	3.7

To simplify the reading of Table 9, Table 10 displays the average numbers of the five leadership management behaviors according to the instructional and administrative leadership styles. Equal 65.3% of the school principals have a management school goals and a direct supervision of instruction in the school, compared to 86.9% who present an instructional management. On the other hand, Lebanese principals display a strong administrative style: 95.8% for the accountable management index and 71.5% for the bureaucratic management index.

Table 10. School principals' answers to the leadership style

Indices		Often %	Sometimes %	Never %	No answer %
Instructional Leadership	Management-school goals index	39.8	25.5	30.7	3.9
	Instructional management index	59.3	27.6	9.4	3.6
	Direct supervision of instruction in the school index	45.5	19.9	0.8	33.7
Administrative Leadership	Accountable management index	68.3	27.5	1.1	2.7
	Bureaucratic management index	30.7	40.8	7.8	20.6

The administrative leadership style is derived by averaging the indices for the accountable management behavior and bureaucratic management behavior. This style of management focuses on administrative tasks, enforcing rules and procedures, and accountability (Table 11). For instance, the administrative index 83.6% was calculated by adding the averages of the 2 indices (accountable and bureaucratic) for the scales often and sometimes.

Table 11. School principals' average answers to the leadership style

Indices	Present %	Not present %	No answer %
Instructional Leadership	72.5	13.6	13.7
Administrative Leadership	83.6	4.6	11.6

In sum, Lebanese principals adopt an administrative Leadership (83.6%) with emphasis on the accountable management style (68.3%) (Table 11).

Conclusion

This study tackled the school principals' ICT level, their leadership styles, their use and attitudes towards ICT at the end of the training program at the Faculty of Education, Lebanese University. It has shown that:

1. There was no significant correlation between the use of ICT and the school principal earned degree, the school location, age, gender, number of computers at school. This is good because it might be, because that school needs in ICT equipment, is related to the school leader himself/herself and how much he/she can have strong ties with the local community and the ministry.
2. School principals have a positive attitude towards the use of computers in teaching and learning similar to Ottestad (2013).
3. School principals assured that they benefit greatly from the ICT course; their administrative work improved (e.g., communication with the ministry, student evaluation and distance learning...) because their ICT skills improved. Above all, they gained self-esteem.
4. Lebanese school principals adopted an administrative style with an emphasis on the accountable management and less the instructional management. This means that their role is to ensure that ministry-approved instructional approaches are explained to new teachers and that all teachers are held accountable for improving their teaching skills. These principals also focus on convincing students' parents of the need for new ideas and procedures at the school (OECD, 2009).

From all the above, this study is conform to previous research literature about leadership management and ICT that emphasized on the school principal role in facilitating the implementation and adoption of technology in their schools (e.g., Laaria, 2013; Mingaine, 2013).

Recommendations

The authors could collect data only at the end of the training program. We could not know about their ICT profile, as well as the actual situation at their schools nor their leadership behaviors at the beginning of the training program, because of administrative difficulties.

Future field studies to gather qualitative data are encouraged to map Lebanese public schools regarding ICT equipment, in order to know the real situation and the school needs. It is known that most schools have photocopy machines and scanners for daily administrative work and less multimedia (LCD projector, video camera, overhead projector and laptop). But this multimedia is not enough for all classes. Moreover, it is a challenge for principals to make ICT infrastructure (labs with the computer desks, networks and e-learning materials) due to the high costs.

Finally, it is important for school principals to be part of ICT policy plans developed by the National Ministry of Education and Higher Education (MEHE).

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