

## CHAPTER FOUR

### Data Analysis

#### *Introduction*

The information derived from the data analyzed is presented in this section of the research. The data that has been collected is based on the survey questionnaire, which consisted of four parts:

1. Demographics
2. Information Technology (IT), including:
  - 2.1 Information Technology in Instruction,
  - 2.2 Knowledge and Skill of Teachers and Administrators of information technology,
  - 2.3 Information Technology Plan, and
  - 2.4 Information Technology in Administrative work.
3. Staff Development
4. Method of Teaching and Learning

There is an open-ended question that follows the demographic part that asked the participants about the importance of information technology in education.

The Office of Institutional Research at Ohio University approved the study on December 6, 2001. The data collection started on December 30, 2001 for two months, after the Ministry of Education and Presidency of Girls' Education communicated its approval to the schools to encourage them to participate in the study.

The sample was composed of male and female (teachers and administrators). The surveys were given to each principal in girls' and boys' high schools and they distributed the surveys to those who had a desire to voluntarily participate in

answering the questionnaire. The participants were teachers and administrators in Boys' and Girls' schools in Riyadh City. They were given the date that the survey was to be returned. The data was collected from 31 male administrators, 47 female administrators, 43 male teachers, and 57 female teachers. Two surveys were eliminated because they were not completed. The sample was 180 participants with 178 valid responses. Crosstab was an appropriate method used to analyze the data and break it into frequencies and percentages. A multivariate analysis of variance (MANOVA) was used to test the hypotheses of the study.

### *Demographic Analysis*

#### *Participants' Age*

The first question focused on the age of the participants. Table 6 provides information that includes the overall mean age of the participants (33.38 years old), with a standard deviation of 5.347. In general, the participants were young.

Table 7

*Overall Mean and Standard Deviation of the Participants' Age (N=141)*

N	Missing	Mean	Std. Deviation
141	37	33.38	5.347

#### *Participants' Degrees*

The participants were asked what level of educational degree they hold in their field. Table 2 organized all the information into three categories – community college, bachelor's degree, and master's degree – with each category's percentage. Table 8

shows that most of the participants (89.89%) have obtained a bachelor's degree.

Likewise, Figure 6 indicates that the majority of the respondents hold a bachelor's degree. A dash

(-) indicates that the cells are empty.

Table 8

*Distribution of the Participants' Degrees (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Degree	Community college	-	2	3	-	5
		-	40.0%	60.0%	-	100.0%
Bachelor's		30	34	42	54	160
		18.8%	21.3%	26.3%	33.8%	100.0%
Master's		3	5	2	3	13
		23.1%	38.5%	15.4%	23.1%	100.0%

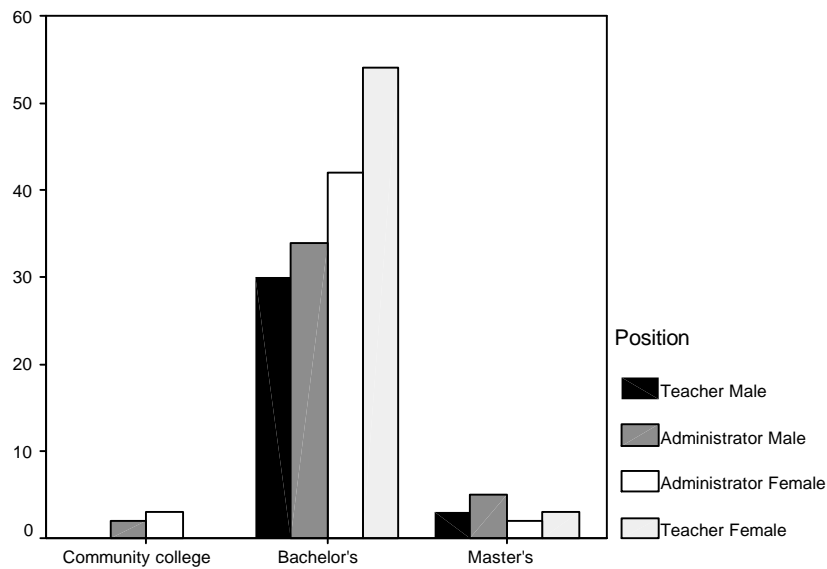


Figure 6. Distribution of the Participants' Degrees.

*Overall Mean and Standard Deviation of the Participants' Major*

The teachers and administrators were asked about the degree that they possessed. Table 9 breaks down the participants' information into various categories depending upon their majors. Thirty-two of the participants majored in Islamic Studies, which represents 18% of the subjects (13 male administrators, 9 female administrators, 7 male teachers and 3 female teachers.) Eleven respondents listed Mathematics as their major, representing 6.2% of the subjects. (1 male administrator, 4 male teachers, and 6 female teachers.) Forty-three of the participants major in Arabic Studies, which represents 24.2% of the subjects (12 male administrators, 10 female administrators, 10 male teachers, and 11 female teachers.) Eleven English as a Second Language had 11 respondents, or 6.2% of the subjects (2 female administrators 4, male teachers and 5 female teachers.) Thirty-three of the participants major in Science, which 18.5% of the subjects, which included 6 male administrators, 5 female administrators, 7 male teachers, and 15 female teachers. Fourteen of the participants majored in Geography and History, which represents 7.9% of the participants, (4 male administrators, 7 female administrators and 3 female teachers.) Nine of the participants majored in Anthropology, which represents 5.1%, which included 3 male administrators, 4 female administrators and 2 female teachers. One of the participants majored in Psychology, which represents 0.6%, which included 1 female teacher. Five of the participants majored in Administration Science, which represents 2.8% including (1 male administrator and 4 female administrators.) The number of Home Economics participants was 6, or 3.4%, which were (3 female administrators and 3 female teachers.) The number of Laboratory Specialists was 3, or 1.7%, which included (2 female administrators and one female teacher.) Three of the participants majored in Computer Science respondents 1.7%, which included (1 female administrator and two female teachers.) Two of the participants majored in

Libraries and Information Science which represents 1.1%, which included (2 female teachers.) Two of the participants majored in Nutrition Science which represents 1.1%, which included (2 female teachers). One of the participants majored in Art, which represents 0.6% which included (1 female teacher).

Table 9

*Distributions of the Participants' Majors (N=176)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Islamic Studies	32	18.0	18.2	18.2
	Math	11	6.2	6.3	24.4
	Arabic	43	24.2	24.4	48.9
	English	11	6.2	6.3	55.1
	Natural Science	33	18.5	18.8	73.9
	Geography and History	14	7.9	8.0	81.8
	Anthropology	9	5.1	5.1	86.9
	Psychology	1	.6	.6	87.5
	Administrative Science	5	2.8	2.8	90.3
	Homely Economics	6	3.4	3.4	93.8
	Libratory Specialist	3	1.7	1.7	95.5
	Computer Science	3	1.7	1.7	97.2
	Libraries and Information	2	1.1	1.1	98.3
	Nutrition Science	2	1.1	1.1	99.4
	Art	1	.6	.6	100.0
	Total	176	98.9	100.0	
Missing	99	2	1.1		
Total		178	100.0		

### *Participants' Experience*

The participants were asked to inform how many years experiences they worked in the school system. Table 10 illustrates the experience information into four categories. The number of responses was 169 with 9 non-responses. The mean is 10.02 years whereas the standard deviation was 5.619.

Table 10

*Overall Mean and Standard Deviation of the Participants' Experience (N=169)*

N	Missing	Mean	Std. Deviation
169	9	10.02	5.619

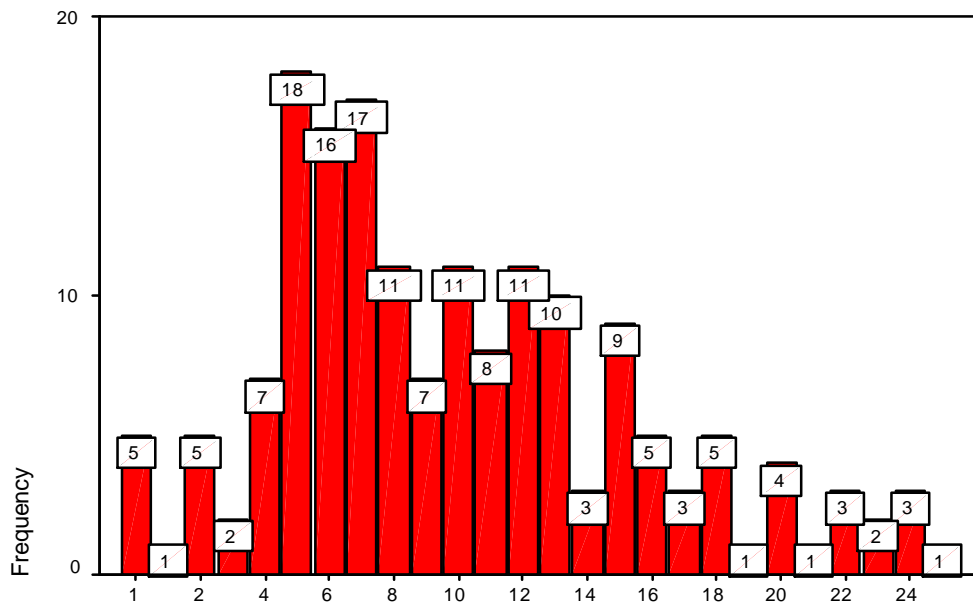


Figure 7. Frequencies of the Participants' Experience.

### *Computer Ownership*

This question addressed whether the teachers and administrators possess computers in school, home or both. Table 11 shows the number of respondents of the question was 177 with only one non-response. The mean was 2.09 and the standard deviation was 1.09. Table 11 indicates that there were 11 male administrators, or 13.8%, and 25 male teachers, or 31.3% who owned a computer at home. There were 11 female administrators, or 13.8%, and 35 female teachers, or 41.3%, who owned a computer at home. There was one male teacher, or 5.3%, and 4 female administrators, or 21%, who use a computer at school. Seven female teachers, or 36.8%, and 7 female administrators, or 36.8% who use a computer at school. Of those who use a computer both at home and school, there were 2 male teachers, or 3.3%, 22 male administrators, or 36.7%, 24 female administrators, or 40%, and 12 female teachers, or 20%. Those who did not have a computer in school or at home consisted of 5 male teachers, or 27.8%, 4 male administrators, or 22.2%, 5 female administrators, or 27.8%, and 4 female teachers, or 22.2%.

The data indicated a minority (10%) of teachers and administrators (male and female) have a computer in school. Figure 8 indicates that few teachers and administrators (female and male) have a computer at school.

Table 11

*Frequencies and percentages of the Participants Computer Ownership at Home and at School (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer Ownership	Home	25 31.3%	11 13.8%	11 13.8%	33 41.3%	80 100.0%
	School	1 5.3%	4 21.1%	7 36.8%	7 36.8%	19 100.0%
	Both	2 3.3%	22 36.7%	24 40.0%	12 20.0%	60 100.0%
	I do not have	5 27.8%	4 22.2%	5 27.8%	4 22.2%	18 100.0%

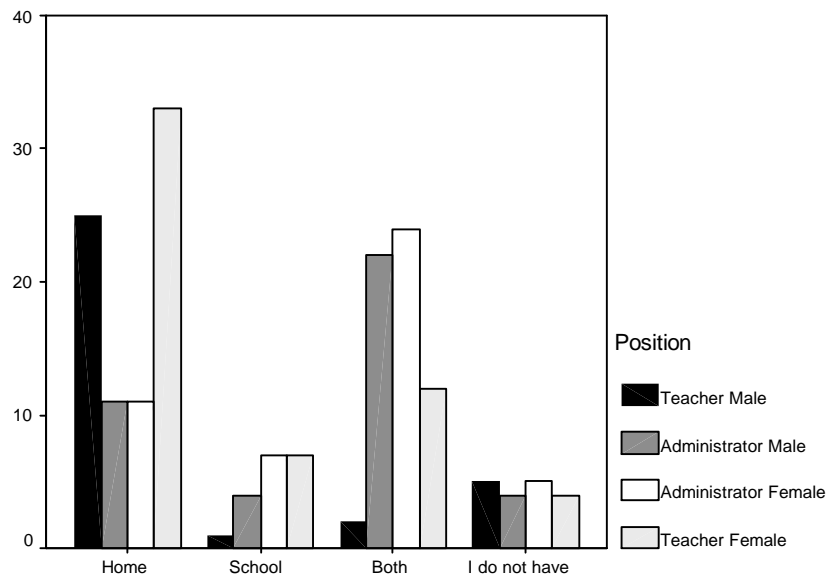


Figure 8. Computer Ownership at Home and at School.

### *Computer Usage*

The participants were asked whether or not they use a computer in school, at home, both or they do not use it. Table 12 gives the information pertaining to computer usage. Twenty-seven 27 male teachers, or 29%, 16 male administrators, or 17.2%, 15 female administrator, or 16.1%, 35 female teachers, or 37.6% reported that they used one at school. Those who used a computer at home were 1 administrator, or 4.5%, 5 male administrators, or 22.7%, 9 female administrators, or 40.9%, and 7



female teachers, or 31.8%. Those who said that they utilize it at both places included 16 male administrators, or 42.1%, 16 female administrators, or 42.1%, and 6 female teachers, or 15.8%. Those who indicated that they do not use it included 5 male teachers, or 20.8%, 4 male administrators, or 16.7%, 7 female administrators, or 29.2%, and 8 female teachers, or 33.3%. A majority of the participants (52.25%) used computers at school consisted primarily of female and male teachers, while 18.08% of male and female administrators and 3.39% of female teachers used it at both. Figure 9 indicates the use of computer technology. A dash (-) indicates that the cells are empty.

Table 12

*Frequencies and Percentage Scores Use of Computer (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer Usage	School	27	16	15	35	93
		29.0%	17.2%	16.1%	37.6%	100.0%
	Home	1	5	9	7	22
		4.5%	22.7%	40.9%	31.8%	100.0%
	Both	-	16	16	6	38
		-	42.1%	42.1%	15.8%	100.0%
I do not use it		5	4	7	8	24
		20.8%	16.7%	29.2%	33.3%	100.0%

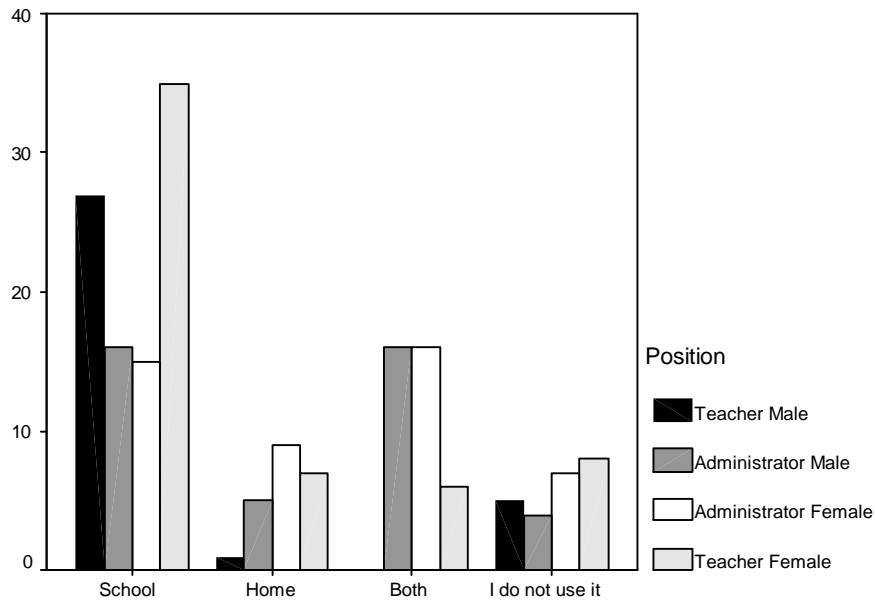


Figure 9. Use of Computer.

*Access to the Internet*

Teachers and administrators were asked whether or not they use the Internet. Table 13 indicates that those who reported a “yes” answer were 18 male teachers, or 19.8%, 21 male administrators, or 23.1%, 23 female administrators, or 25.3%, and 29 female teachers, or 31.9%. Those who replied “no” to this question were 15 male teachers, or 17.4%, 20 male administrators, or 23.3%, 24 female administrators, or 27.9%, and 27 female teachers, or 31.4%. This information indicated that female teachers and administrators were more likely than the male teachers and administrators to use the Internet. Figure 10 shows how the participants use the Internet.

Table 13

*Access to the Internet Based on the Position (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Access the Internet	Yes	18 19.8%	21 23.1%	23 25.3%	29 31.9%	91 100.0%
	No	15 17.4%	20 23.3%	24 27.9%	27 31.4%	86 100.0%

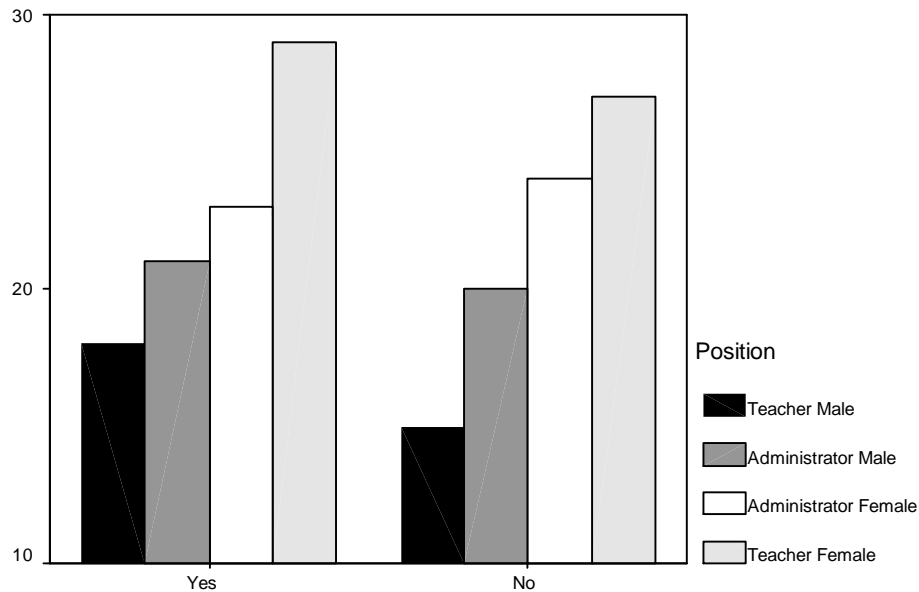


Figure 10. Distribution of Utilizing the Internet Based upon the Participant's Position.

### *Utilizing the Internet*

Utilization of the Internet was divided into four categories – at home, in school, both and not at all. Table 14 indicates that those who used the Internet at home were 17 male teachers, or 20%, 19 male administrators, or 22.4%, 23 female administrators, or 27.1%, and 26 female teachers, or 30.6%. Those who used it at school were 2 male administrators, or 100%. Those who reported that they did not use it were 16 male teachers, or 18%, 19 male administrators, or 21.3%, 24 female administrators, or 27%, and 30 female teachers, or 33.7%. As a result, the data indicates that the Internet was used at home rather than the school. Female teachers

and administrators used the Internet more often than male teachers and administrators. Only 2 administrators used it at schools. Figure 11 indicates that most of the participants use it at home and, in general, do not use it at school. A dash (-) indicates that the cells are empty.

Table 14

*Frequencies and Percentage scores of Utilization the Internet Based upon the Participant's Position (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Place of the usage of the Internet	Home	17 20.0%	19 22.4%	23 27.1%	26 30.6%	85 100.0%
	School	-	2 100.0%	-	-	2 100.0%
	Both	-	1 100.0%	-	-	1 100.0%
	I do not use it	16 18.0%	19 21.3%	24 27.0%	30 33.7%	89 100.0%

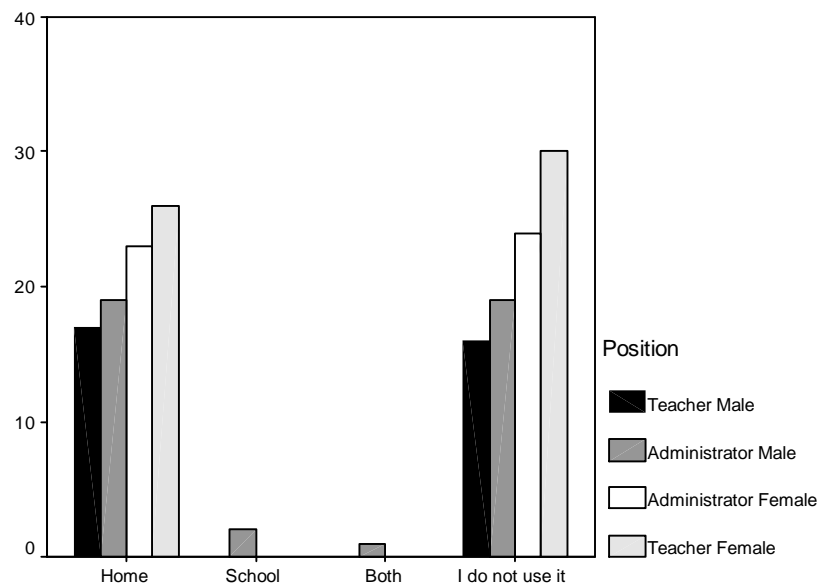


Figure 11. Frequencies and Percentage scores of Utilization of the Internet Based upon Position.

## *Information Technology in Instruction*

### *Students Should Use the Computer in All Curricula*

Teachers and administrators were asked whether or not students should use computer technology in all curricula. There were 176 who responded and only two non-responses. The mean was 2.36 with a standard deviation of 1.15 as shown in Appendix D. Table 15 breaks down the information based upon the scale that was used in the survey and provides the frequency and the percentage of responses. Table 15 shows that those participants who strongly agree with the statement, there were 8 male teachers, or 19.5%; 11 male administrators, or 26.8%; 12 female administrators, or 29.3%; and 10 female teachers, or 24.4%. Of those who agreed with the statement, there were: 16 male teachers, or 20.5%, 22 male administrators, or 28.5%; 16 female administrators, or 20.5%; and 24 female teachers, or 30.8%. Two male teachers, or 11.1%, 6 female administrator, or 33.3%, and 24 female teachers, or 55.6%, were uncertain of their agreement with the statement. The data indicated that 5 male teachers, or 16.1%, 6 male administrators, or 19.4, 10 female administrators, or 32.3%, and 10 female teachers, or 32.3% disagreed. Two male teachers, or 25%, 2 male administrators, or 25%, 2 female administrator, or 25%, and 2 female teachers, or 25% strongly disagreed with the statement that students should use computers in all curricula.

Figure 12 shows that a majority of the participants (66.85%) agree or strongly agree regarding the use of computer technology in all curricula. Male administrators and female administrators were more likely to strongly agree than female and male teachers. Some of the participants (33.15%) were uncertain, disagree and strongly

disagree toward employing information technology in school. A dash (-) indicates that the cells are empty.

Table 15

*Frequencies and Percentage Scores of the Participants toward Students Should Use the Computer in All Curricula (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Students should use the computer in all Curricula	SA	8 19.5%	11 26.8%	12 29.3%	10 24.4%	41 100.0%
	A	16 20.5%	22 28.2%	16 20.5%	24 30.8%	78 100.0%
	U	2 11.1%	-	6 33.3%	10 55.6%	18 100.0%
	D	5 16.1%	6 19.4%	10 32.3%	10 32.3%	31 100.0%
	SD	2 25.0%	2 25.0%	2 25.0%	2 25.0%	8 100.0%

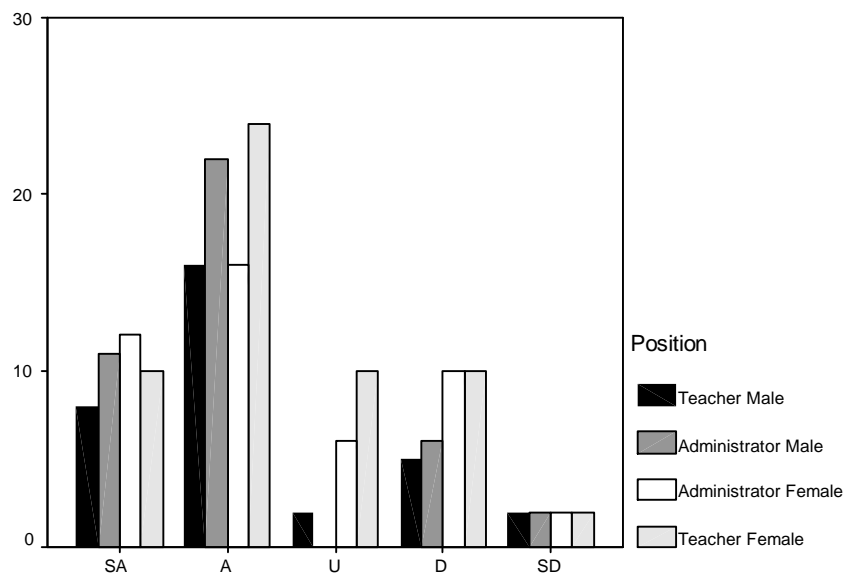


Figure 12. Distribution of the Responses to the statement, “Students Should Use the Computer in All Curricula.”

### *Computer Technologies Are Great Tools to Improve Learning*

This question examined the participants' vision of computer technologies as important tools to supplement learning. Appendix D. indicates that there were 175 who responded and only 3 non-responses. The overall mean was 1.67 with a standard deviation of 0.69 as shown in Appendix D. Table 16 breaks down the information based on the scale that the survey used and provided the frequency and percentage of responses for each part of the scale. According to Table 16, 15 male teachers, or 16%, 16 male administrators, or 21.3%, 20 female administrators, or 26.7%, and 27 female teachers, or 36%, responded that they strongly agreed with the statement, "Computer technologies are great tools to improve learning." Eighteen male teachers, or 20.7%, 22 male administrators, or 25.3%, 24 female administrators, or 27.6%, and 23 female teachers, or 26.4%, chose the answer, agree. Three male teachers, or 30%, 2 male administrators, or 20%, one female administrator, or 10%, and 4 female teachers, or 40%, were uncertain. Only two female teachers chose the response, disagree. One male administrator chose strongly disagree. In general, the most of the participants (90%) emphasized that computer technologies represent a great tool to improve learning. Female administrators and teachers most often asserted that computer technologies support learning. Those who thought that computer technologies did not support learning or were not certain was 9%. A dash (-) indicates that the cells are empty.

Table 16

*Frequencies and Percentage Scores of Participants' Perception that Computer*

*Technologies Are Great Tools to Improve Learning (N=175)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technologies are great tools to improve learning	SA	12	16	20	27	75
		16.0%	21.3%	26.7%	36.0%	100.0%
	A	18	22	24	23	87
		20.7%	25.3%	27.6%	26.4%	100.0%
	U	3	2	1	4	10
		30.0%	20.0%	10.0%	40.0%	100.0%
	D	-	-	-	2	2
		-	-	-	100.0%	100.0%
	SD	-	1	-	-	1
		-	100.0%	-	-	100.0%

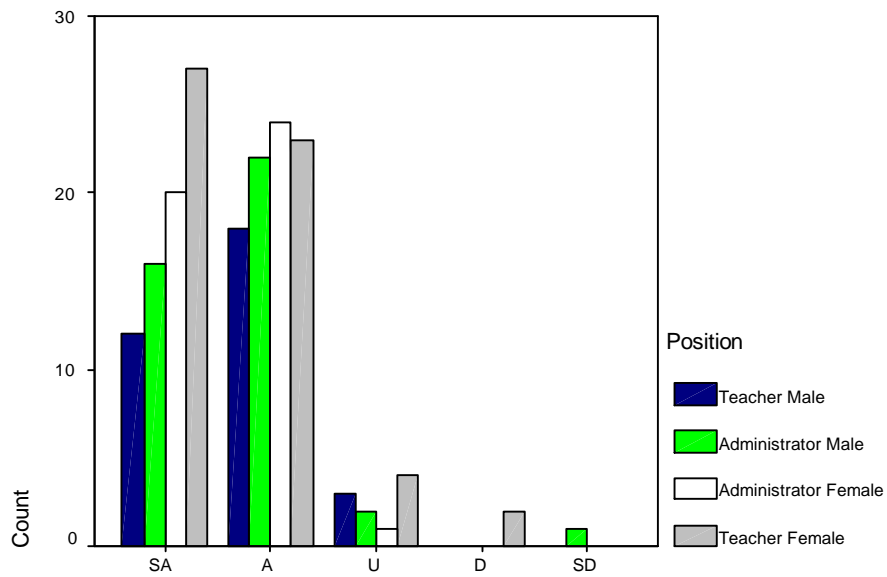


Figure 13. Distribution of the Responses to the statement, “Participants Perceptions that Computer Technologies Are Great Tool to Improve Learning.”

*Using Drill and Practice Computer Applications Will Improve Learning*



This question provided information that indicates the administrators and teachers perceptions as to whether using drill and practice computer applications improves learning. Appendix D. indicates that there were 177 responses with one response missing. The overall mean was 1.58 with a standard deviation of 0.71 as shown in Appendix D. Table 17 illustrates the information based upon the scale used in the survey and provides the frequency and percentage of the responses. It shows that 18 male teachers, or 19.4%, 20 male administrators, or 21.5%, 26 female administrators, or 28%, and 29 female teachers, or 31.2% responded strongly agreed with the statement, “Using drill and practice computer applications will improve learning.” Eleven male teachers, or 15.9%, 20 male administrators, or 29%, 16 female administrators, or 23.2%, and 22 female teachers, or 31.9%, chose the answer agree. Three male teachers, or 27.3%, one male administrator, or 9.1%, 4 female administrators, or 36.4%, and 3 female teachers, or 27.3%, chose the answer uncertain. On the other hand, there were one female administrator, or 25%, and three female teachers, or 75%, chose the response disagree. None of the respondents reported that they strongly disagreed with this statement. The majority of the participant, representing 90%, stated that utilizing drill and practice applications was appropriate to improve learning. Only 10 % of the participants were uncertain or disagree that employing computer technologies in the classroom enhanced learning. A dash (-) indicates that the cells are empty.

Table 17

*Frequencies and Percentage of Participants' Perceptions toward Using Drill and Practice Computer Applications Will Improve Learning (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using drill and practice computer applications will improve learning	SA	18 19.4%	20 21.5%	26 28.0%	29 31.2%	93 100.0%
	A	11 15.9%	20 29.0%	16 23.2%	22 31.9%	69 100.0%
	U	3 27.3%	1 9.1%	4 36.4%	3 27.3%	11 100.0%
	D	- -	- -	1 25.0%	3 75.0%	4 100.0%

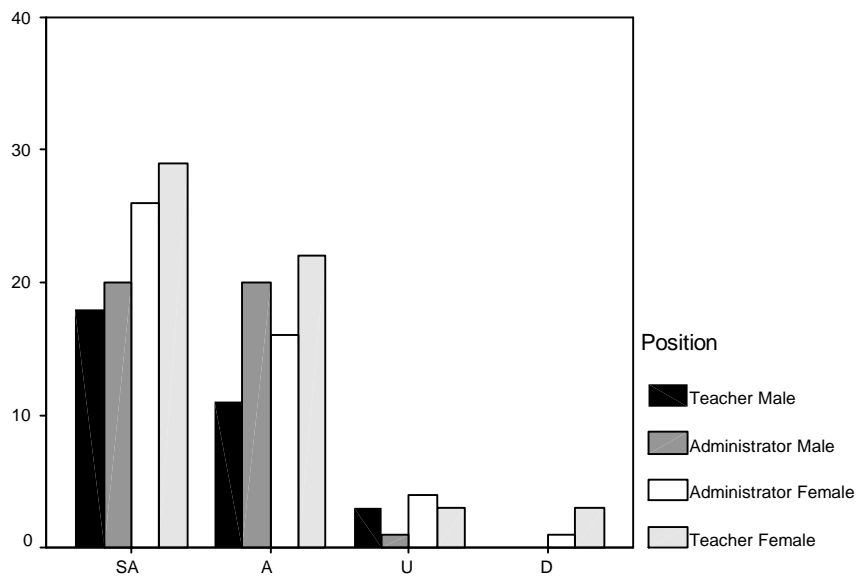


Figure 14. Distribution of the Responses to the statement, “Using Drill and Practice Computer Applications Will Improve Learning.”

*Using Computer Technology in the Classroom Makes Subject Matter Interesting*

This question asked if computer technology makes the subject matter interesting. Table 18 illustrates the information based upon the scale used in the survey and provides the frequency and percentage of responses. There were 178

responses. The overall mean was 1.61 with a standard deviation of 0.76 as shown in Appendix D. Table 18 shows the responses of the participants. Fifteen male teachers, or 15.8%, 22 male administrators, or 23.2%, 26 female administrators, or 27.4%, and 32 female teachers, or 33.7%, responded that they strongly agreed with the statement that “Using computer technology in the classroom makes subject matter more interesting.” Twelve male teachers, or 19.7%, 13 male administrators, or 21.3%, 17 female administrators, or 27.9%, and 19 female teachers, or 31.1%, chose the answer agree. Four male teachers, or 22.2%, 6 male administrators, or 33.3%, 3 female administrators, or 16.7%, and 5 female teachers, or 27.8%, chose the answer uncertain. There were two male teachers, one female administrator, and one female teacher who chose the response disagree, and no one chose the response strongly disagree. The majority of the participants, or 87.64%, asserted that computer technologies in classroom make subject matter interesting. Those who were uncertain or who disagree represented 12.36% of the respondents. Figure 15 shows that more female administrators and teachers strongly agreed and agreed than male administrators and male teachers. Only a few participants (22) were uncertain or disagreed. A dash (-) indicates that the cells are empty.

Table 18

*Frequencies and Percentage Scores of the Participants’ Perception toward Using Computer Technology in the Classroom Makes Subject Matter Interesting (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using computer technology in the classroom makes subject matter interesting	SA	15	22	26	32	95
		15.8%	23.2%	27.4%	33.7%	100.0%
	A	12	13	17	19	61
		19.7%	21.3%	27.9%	31.1%	100.0%
	U	4	6	3	5	18
		22.2%	33.3%	16.7%	27.8%	100.0%
	D	2	-	1	1	4
		50.0%	-	25.0%	25.0%	100.0%

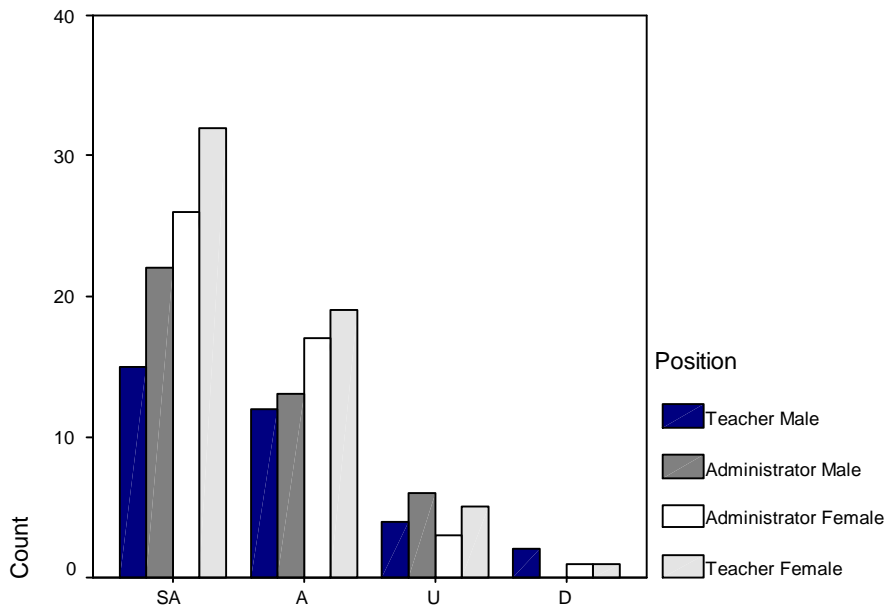


Figure 15. Distribution of the Responses to the statement “Using Computer Technology in the Classroom Makes Subject Matter Interesting.”

### *Information Technology Assists Students in Problem Solving*

This question was asked in order to provide information as to whether administrators and teachers perceive that information technology assists students in problem solving. Table 19 illustrates the information based on the scale used in the survey and provides the frequency and percentage of the responses. There were 178

who responded. The overall mean was 1.84 with a standard deviation of 0.78 as shown in Appendix D Table 19 shows the responses of the participants. Ten male teachers, or 15.4%, 16 male administrators, or 24%, 16 female administrators, or 24.6%, and 23 female teachers, or 35.4%, responded that they strongly agree with the statement that information technology assists students in problem solving. Sixteen male teachers, or 19.8%, 18 male administrators, or 22.2%, 24 female administrators, or 29.6%, and 23 female teachers, or 28.4%, chose the answer agree. Five male teachers, or 17.9%, 7 male administrators, or 25%, 6 female administrators, or 21.4%, and 10 female teachers, or 35.7%, chose the answer uncertain. Two male teachers and one female administrator chose the response disagree, while only one female administrator responded that she strongly disagreed with the statement. A majority of the participants, or 82%, affirmed that information technologies play important roles in problem solving. Figure 16 shows that more female teachers supported the information technologies impact in problem solving than male teachers whereas more of the female teachers reported that they were uncertain than any of the other groups. A dash (-) dash indicates that the cells are empty.

Table 19

*Frequencies and Percentage Scores of Participants' Perception toward that Information Technology Assists Students in Problem Solving (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Information technology assists students in problem solving	SA	10 15.4%	16 24.6%	16 24.6%	23 35.4%	65 100.0%
	A	16 19.8%	18 22.2%	24 29.6%	23 28.4%	81 100.0%
	U	5 17.9%	7 25.0%	6 21.4%	10 35.7%	28 100.0%
	D	2 66.7%	-	-	1 33.3%	3 100.0%
	SD	-	-	1 100.0%	-	1 100.0%

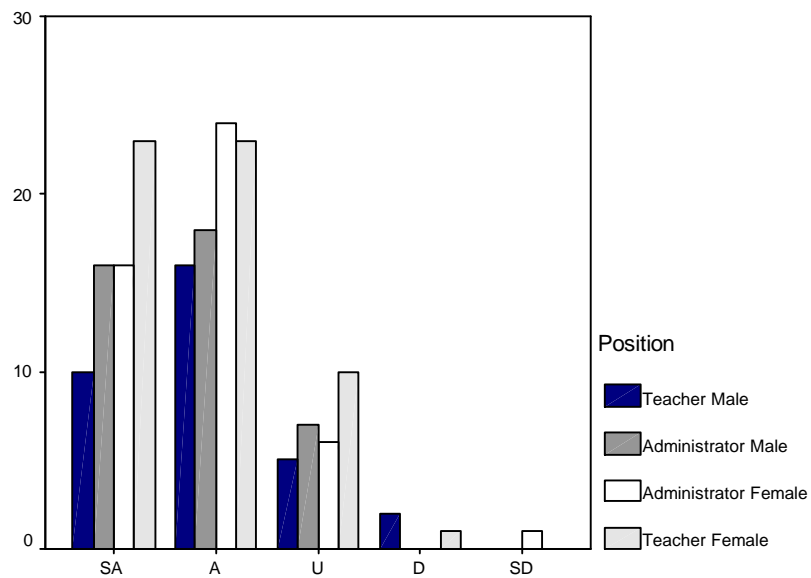


Figure 16. Distribution of the Responses to the statement, “Information Technology Assists Students in Problem Solving.”

*Using the World Wide Web (WWW) in Instruction Helps to Access Many Different Types of Information.*

This question discussed the importance of the World Wide Web for instruction that can supply various types of information to enhance instruction. Table 20 breaks down the information based on the scale used in the survey and provides the frequency and percentage of responses. Appendix D. indicated that there were 177 responses with only one non-response. The overall mean was 2.36 with a standard deviation of 1.15 as shown in Appendix D. Table 19 that 15 male teachers, or 18.5%, 20 male administrators, or 24.7%, 18 female administrators, or 22.2%, and 28 female teachers, or 34.6%, who responded that they strongly agree with the statement, “Information technology assists students in problem solving.” Thirteen male teachers, or 20.6%, 11 male administrators, or 17.5%, 21 female administrators, or 33.3%, and 18 female teachers, or 28.6%, chose the answer agree whereas 2 male teachers, or 10%, 7 male administrators, or 35%, 4 female administrators, or 20%, and 7 female teachers, or 35%, chose the answer uncertain. There was one male teacher, or 10%, one male administrator, or 10%, 4 female administrators, or 40%, and 4 female teachers, or 40%, who chose the response disagree. Only one male teacher and one male administrator responded, strongly disagree. The majority of the participants (80.9%) maintained that use of the WWW enhanced instruction. Of the participants 11.24% were uncertain and 6.86% disagree or strongly disagree. Figure 17 shows that female administrators and teachers constituted the majority of those who support the use of the WWW in instruction. A dash (-) indicates that the cells are empty.

Table 20

*Frequencies and Percentage Scores of Participants' Perception toward Using the World Wide Web (WWW) in Instruction Helps to Access Many Different Types of Information (N=177)*

		position				
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	Total
Using the WWW in instruction helps to access many different types of information sources	SA	15	20	18	28	81
		18.5%	24.7%	22.2%	34.6%	100.0%
	A	13	11	21	18	63
		20.6%	17.5%	33.3%	28.6%	100.0%
	U	2	7	4	7	20
		10.0%	35.0%	20.0%	35.0%	100.0%
	D	1	1	4	4	10
		10.0%	10.0%	40.0%	40.0%	100.0%
	SD	1	2	-	-	3
		33.3%	66.7%	-	-	100.0%

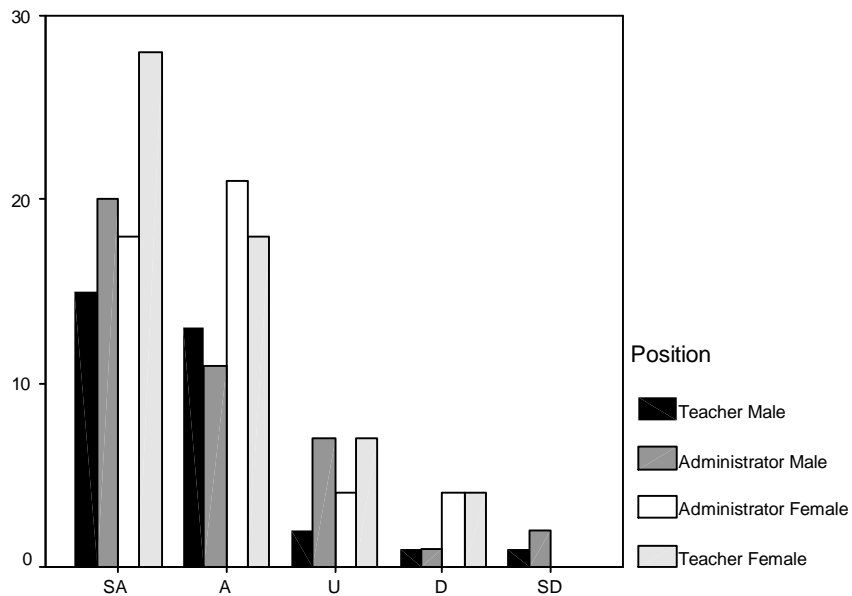


Figure 17. Distribution of the Responses to the statement, “Using the World Wide Web in Instruction Helps to Access Many Different Types of Information.”

*Using Multimedia Is Important in Enhancing Learning and Teaching*

The use of multimedia in the classroom allows students to use various senses in teaching and learning. Table 21 breaks down information based on the scale that it



was used in the survey and provides frequency and percentage of responses. There were 178 responses. The overall mean was 1.85 with a standard deviation of 0.77 as shown in Appendix D. The responses of the participants were provided in Table 21. There were 7 male teachers, or 11.3%, 15 male administrators, or 24.2%, 19 female administrators, or 30.6%, and 21 female teachers, or 33.9%, who responded that they strongly agreed with the statement that “using multimedia is important in enhancing learning and teaching.” Twenty male teachers, or 23.3%, 21 male administrators, or 24.4%, 18 female administrators, or 20.9%, and 27 female teachers, or 31.4%, chose the answer agree. Six male teachers, or 25%, 5 male administrators, or 20.8%, 6 female administrators, or 25.8%, and 7 female teachers, or 29.2%, chose the answer uncertain. Four female administrators and two female teachers chose the response disagree. No one strongly disagree. The majority of the participant, or 83.15%, asserted that multimedia influences learning. Whereas 13.48% reported that they were uncertain and 3.37% of the participants said they disagreed. Figure 17 showed that significantly more female teachers claimed that the employing multimedia enhances teaching and learning than male teachers did. A dash (-) indicates that the cells are empty.

Table 21

Frequencies and Percentage Scores of the Participants toward Using Multimedia is Important in Enhancing Learning and Teaching (N=178)

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using multimedia is important in enhancing learning and teaching	SA	7 11.3%	15 24.2%	19 30.6%	21 33.9%	62 100.0%
	A	20 23.3%	21 24.4%	18 20.9%	27 31.4%	86 100.0%
	U	6 25.0%	5 20.8%	6 25.0%	7 29.2%	24 100.0%
	D	- -	- -	4 66.7%	2 33.3%	6 100.0%

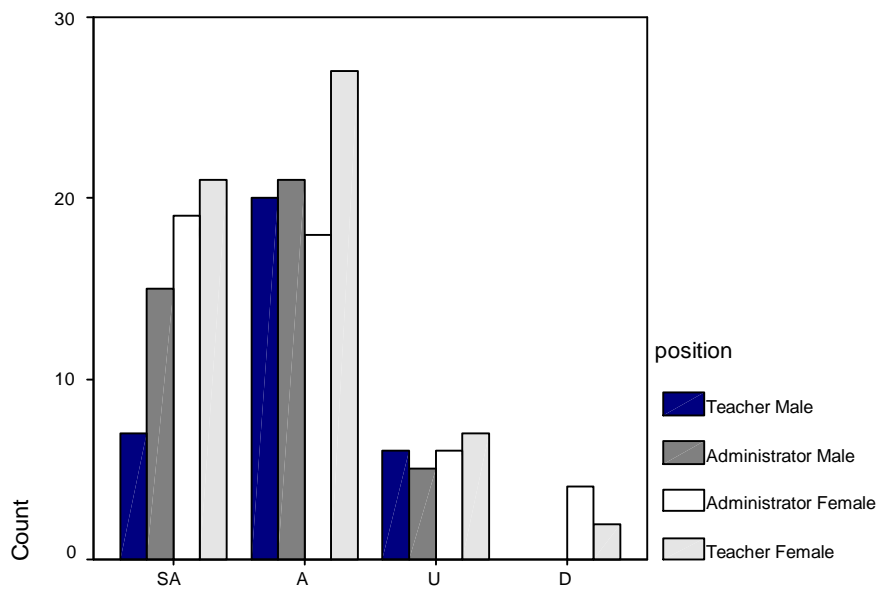


Figure 18. Distribution of the Responses to the statement, “Using Multimedia is Important in Enhancing Learning and Teaching.”

*Using the Internet in the Classroom Enhances Teaching and Learning*

This question examined the participants' perceptions toward using the Internet in the classroom during teaching and learning and its impact. Table 22 illustrated the information based upon the scale used in the survey and provides the frequencies and percentages of the responses. There were 176 responses and two non-responses, the overall mean was 2.48 with a standard deviation of 1.09 as shown in Appendix D. Table 22 shows that the responses of the participants included 3 male teachers, or 8.8%, 11 male administrators, or 32.4%, 7 female administrators, or 20.6%, and 13 female teachers, or 38.2%, who responded that they strongly agree with the statement that using the Internet in the classroom enhances learning and teaching. Fifteen male teachers, or 23.4%, 9 male administrators, or 14.1%, 14 female administrators, or 21.9%, and 26 female teachers, or 40.6%, chose the answer agree. Whereas 8 male teachers, or 17.8%, 12 male administrators, or 26.7%, 16 female administrators, or 35.6%, and 9 female, or 20%, who chose the answer uncertain. There were 4 male teachers, or 16%, 5 male administrator, or 20%, 8 female administrator, or 32%, and 8 female teachers, or 32%, who chose the response disagree. 3 male teachers, or 37.5%, 3 male administrators, or 37.5%, one female administrator, or 12.5%, and one female teacher, or 12.5% responded that they strongly disagree with the statement. Overall, 55.68% of the participants stated that use of the Internet enhances learning and teaching. Of the remainder, 25.57% of the participants stated that they were uncertain, 14.20% of the participants stated that they disagree, and 4.56% strongly disagreed. Figure 19 shows that female teachers' assertion that the Internet has positive influences was significantly larger than that of the male teachers. A large number of female and male administrators reported that they were uncertain whether the Internet enhances teaching and learning.

Table 22

*Frequencies and Percentage Scores of the Participants toward Using the Internet in the Classroom Enhances Teaching and Learning (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using the Internet in the classroom enhances teaching and learning	SA	3	11	7	13	34
		8.8%	32.4%	20.6%	38.2%	100.0%
	A	15	9	14	26	64
		23.4%	14.1%	21.9%	40.6%	100.0%
	U	8	12	16	9	45
		17.8%	26.7%	35.6%	20.0%	100.0%
	D	4	5	8	8	25
		16.0%	20.0%	32.0%	32.0%	100.0%
	SD	3	3	1	1	8
		37.5%	37.5%	12.5%	12.5%	100.0%

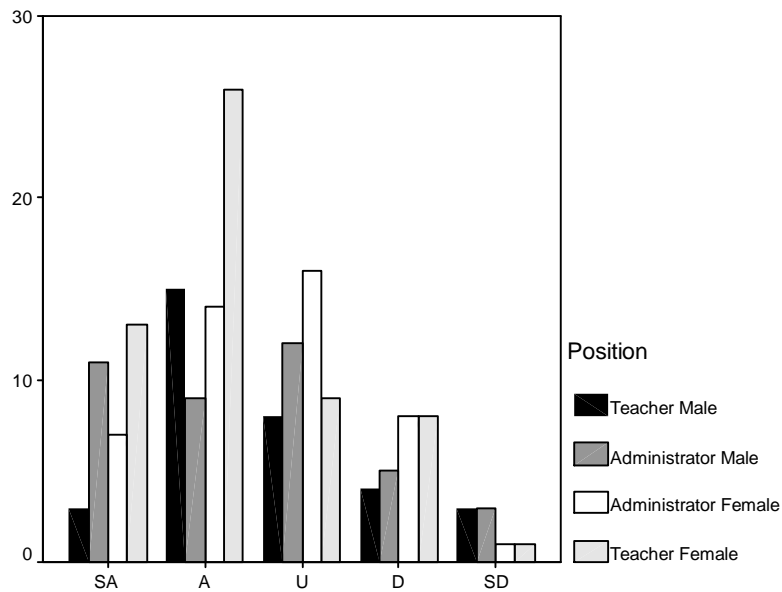


Figure 19. Distribution of the Responses to the statement, “Using the Internet in the Classroom Enhances Teaching and Learning.”

*Using Email and a Listserv Increases the Exchange of Information Between Teacher and Students.*

This question focused on how communication tools influence the distribution of information among teachers and students. There were 176 responses and two non-responses. The overall mean was 2.13 with a standard deviation of 0.93 as shown in Appendix D. Table 23 breaks down the information based upon the scale used in the survey and provides the frequencies and percentages of the responses. Of the participants, there were 8 male teachers, or 18.2%, 13 male administrators, or 29.5%, 10 female administrators, or 22.7%, and 13 female teachers, or 29.5%, who responded that they strongly agree with the statement that using email and a listserv increases the exchange of information between teacher and students. Fifteen male teachers, or 17.2%, 23 male administrators, or 26.4%, 26 female administrators, or 29.9%, and 23 female teachers, or 26.4%, chose the answer agree whereas 5 male teachers, or 19.2%, 4 male administrators, or 15.4%, 6 female administrators, or 23.1%, and 11 female teachers, or 42.3%, chose the answer uncertain. Three male teachers, one male administrator, 5 female administrator, and 8 female teachers chose the response disagree, and only one male teacher chose strongly disagree. A total of 74.43% of the participants emphasized that communication tools increase the exchange of information between teachers and students. Only 14.77% of the participants reported that they were uncertain, 9.66% of the participants reported that they disagree, and 1.14% strongly disagree. Figure 20 shows that female administrators, male administrators, and female teachers asserted that communication tools are significant in teaching and learning more than the male teachers did. More female teachers reported that they were uncertain or disagree than the other participants. A dash (-) indicates that the cells are empty.

Table 23

*Frequencies and Percentage Scores of Participants toward Using Email and a Listserv Increases the Exchange of Information between Teacher and Students*

(N=176)

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using email and a listserv increases the exchange of information between teachers and students	SA	8 18.2%	13 29.5%	10 22.7%	13 29.5%	44 100.0%
	A	15 17.2%	23 26.4%	26 29.9%	23 26.4%	87 100.0%
	U	5 19.2%	4 15.4%	6 23.1%	11 42.3%	26 100.0%
	D	3 17.6%	1 5.9%	5 29.4%	8 47.1%	17 100.0%
	SD	1 50.0%	- -	- -	1 50.0%	2 100.0%

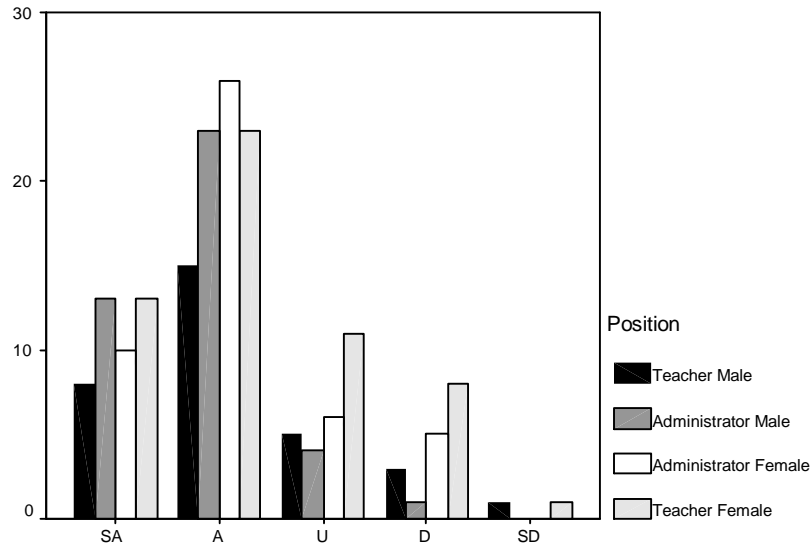


Figure 20. Distribution of the Responses to the statement, “Using Email and a Listserv Increases the Exchange of Information between Teacher and Students.”

*Computer Technology in Education Motivates Students to Learn*

This question focused on whether computer technology motivates students to learn. Table 24 indicates that there were 177 responses and one non-response. The overall mean was 1.72 with a standard deviation of 0.69 as shown in Appendix D. Table 24 illustrates the information based upon the scale used in the survey and provides the frequencies and percentages of responses. Of the participants, 8 male teachers, or 11.3%, 20 male, or 28.2%, 21 female administrators, or 29.6%, and 22 female teachers, or 31%, responded that they strongly agree with the statement that computer technology in education motivates students to learn. Twenty male teachers, or 23%, 17 male administrators, or 19.5%, 23 female administrators, or 26.4%, and 27 female teachers, or 31%, agreed with the statement. Whereas 4 male teachers, or 25%, 2 male administrators, or 12.5%, 2 female administrators, or 12.5%, and 8 female teachers, or 50%, were uncertain. Two male administrators and one female administrator disagree, though no one strongly disagree. None of the participants

reported strongly disagree. Overall, 89.27% of the participants believed that computer technology motivates students to learn, while 9.04% reported that they were uncertain and 1.69% disagree. In Figure 21, the majority of the participants agreed that the use of computer technologies has positive effects on students' motivation. The majority of the participants who said they were uncertain were female teachers. A dash (-) indicates that the cells are empty.

Table 24

*Frequencies and Percentage Scores of the Participants toward Computer Technology in Education to Motivates Students to Learn (N=177).*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology in education motivates students to learn	SA	8 11.3%	20 28.2%	21 29.6%	22 31.0%	71 100.0%
	A	20 23.0%	17 19.5%	23 26.4%	27 31.0%	87 100.0%
	U	4 25.0%	2 12.5%	2 12.5%	8 50.0%	16 100.0%
	D	-	2 66.7%	1 33.3%	-	3 100.0%



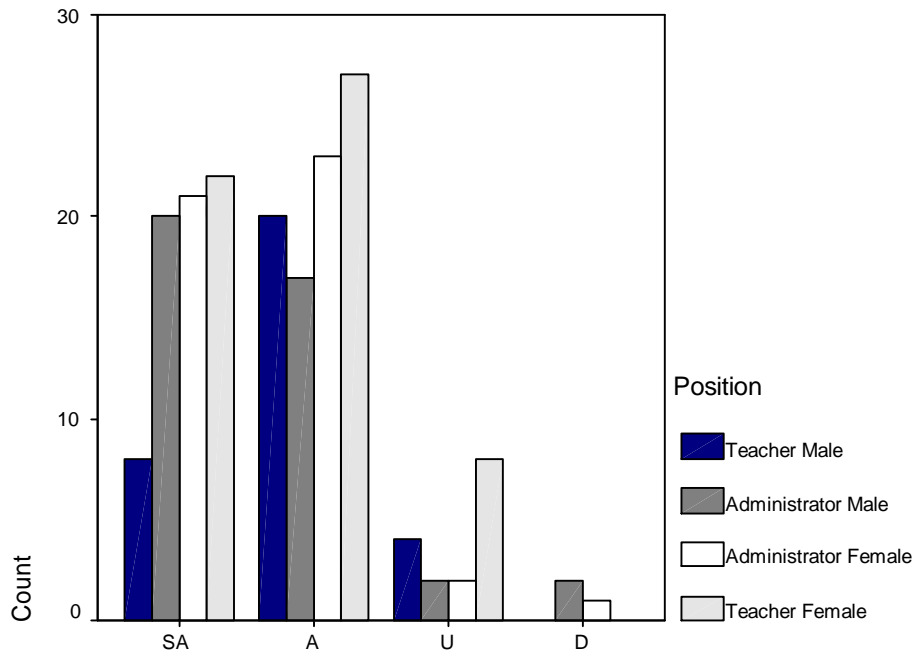


Figure 21. Distribution of the Responses to the statement that “Computer Technology in Education Motivates Students to Learn.”

### *The Web Enhances Content*

This question examined the perceptions of the administrators and teachers toward the statement that the web enhances content. There were 176 responses and two non-responses. The overall mean was 2.10 with a standard deviation of 1.00 as shown in Appendix D. Table 25 breaks down the information based upon the scale used in the survey and provides frequencies and percentages of responses. There were 7 male teachers, or 12.3%, 18 male administrators, or 31.6%, 11 female administrators, or 19.3%, and 21 female teachers, or 36.8%, who responded that they strongly agree with the statement that the Web enhances content. Twelve male teachers, or 18.5%, 13 male administrators, or 20%, 20 female administrators, or 30.8%, and 20 female teachers, or 30.8%, chose the answer agree, while 11 male teachers, or 28.9%, 5 male administrators, or 13.2%, 11 female administrators, or

28.9%, and 11 female teachers, or 28.9%, were uncertain. One male teacher, or 8.3%, 2 male administrators, or 16.7%, 5 female administrators, or 41.7%, and 4 female, or 33.3%, chose the response disagree, and only 2 male teachers and 2 male administrators chose strongly disagree. Overall, 69.32% of the participants reported that the Web enhances content, while 21.59% were uncertain, 6.82% disagree, and 2.27% strongly disagree. The distribution of the female and male respondents who reported that they disagree and strongly disagree was almost equal. Figure 22 provides information that most of the participants asserted that the Web enhances content. A dash (-) indicates that the cells are empty.

Table 25

*Frequencies and Percentage Scores of the Participants toward the Web Enhances Content (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
The Web enhances the content	SA	7	18	11	21	57
		12.3%	31.6%	19.3%	36.8%	100.0%
	A	12	13	20	20	65
		18.5%	20.0%	30.8%	30.8%	100.0%
	U	11	5	11	11	38
		28.9%	13.2%	28.9%	28.9%	100.0%
	D	1	2	5	4	12
		8.3%	16.7%	41.7%	33.3%	100.0%
	SD	2	2	-	-	4
		50.0%	50.0%	-	-	100.0%

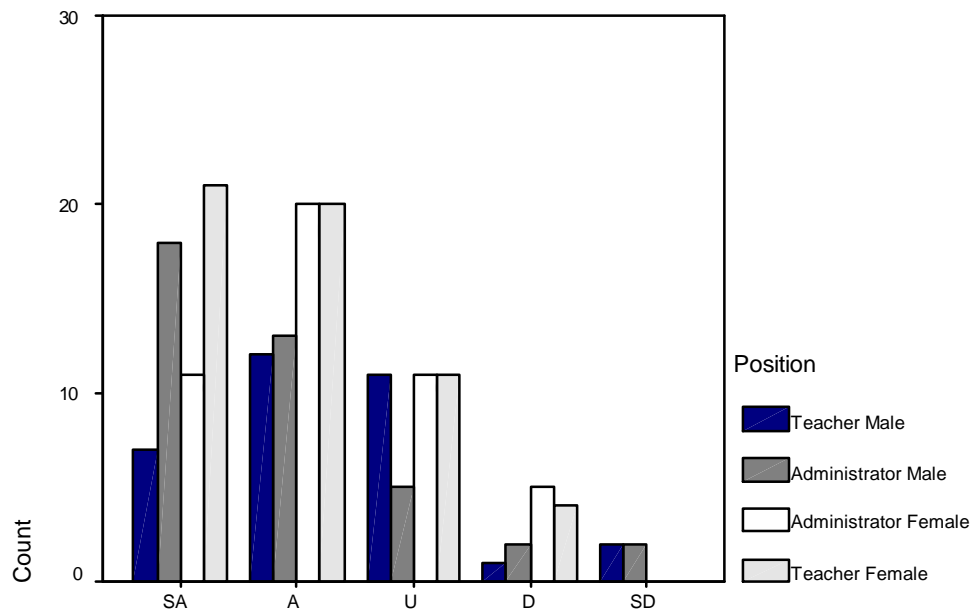


Figure 22. Distribution of the Responses to the statement, “The Web Enhances Content.”

#### *Information Technology Supports Cooperative Learning*

This question examined the perceptions of the administrators and teachers as to whether information technology encourages students to work in cooperative learning situations. There were 178 responses. The overall mean was 1.90 with a standard deviation of 0.83 as shown in Appendix D. Table 26 illustrates the information based upon the scale used in the survey and provides the frequencies and percentages of the responses. Of the 178 respondents, 9 male teachers, or 15%, 18 male administrators, or 30%, 16 female administrators, or 26.7%, and 17 female teachers, or 28.3%, responded that they strongly agreed with the statement that information technology supports cooperative learning. Eighteen male teachers, or 21.4%, 19 male administrators, or 22.6%, 21 female administrators, or 25%, and 26 female teachers, or 31%, chose the answer agree. Whereas 4 male teachers, or 14.8%, 3 male administrators, or 11.1%, 7 female administrators, or 25.9%, and 13 female teachers, or 48.1%, chose the answer uncertain. One male teacher, or 20%, 3 female

administrators, or 60%, and one female teacher, or 20%, chose the response disagree. Only one male teacher and one male administrator chose strongly disagree. Overall, 80.9% of the participants reported that information technology supplements cooperative learning, 15.17% of the participants reported that they were uncertain, and 3.92% disagree or strongly disagree. Figure 23 shows that the majority of the respondents asserted the importance of information technology in cooperative learning. It also shows that female teachers were substantially more uncertain than the other participants. A dash (-) indicates that the cells are empty.

Table 26

*Frequencies and Percentage Scores of Participants toward that Information*

*Technology Supports Cooperative Learning (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Information technology supports cooperative learning	SA	9	18	16	17	60
		15.0%	30.0%	26.7%	28.3%	100.0%
	A	18	19	21	26	84
		21.4%	22.6%	25.0%	31.0%	100.0%
	U	4	3	7	13	27
		14.8%	11.1%	25.9%	48.1%	100.0%
	D	1	-	3	1	5
		20.0%	-	60.0%	20.0%	100.0%
	SD	1	1	-	-	2
		50.0%	50.0%	-	-	100.0%

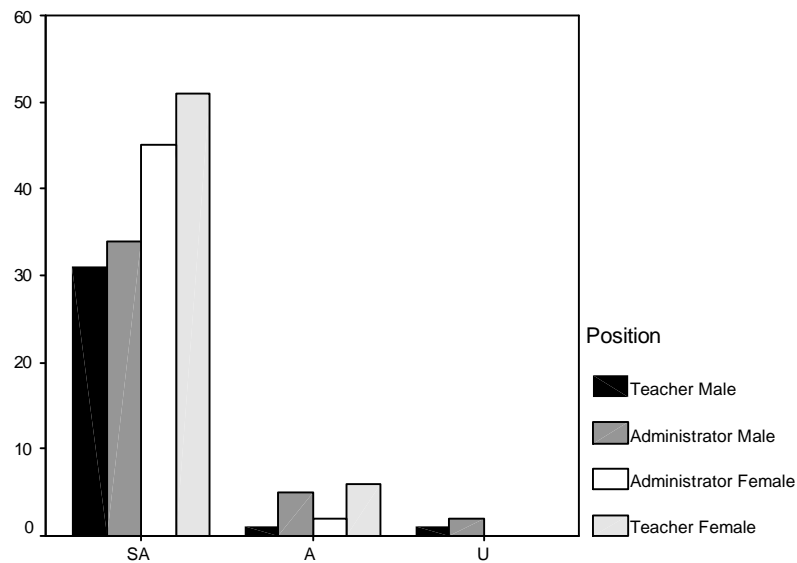


Figure 23. Distribution of the Responses to the statement, “Information Technology Supports Cooperative Learning.”

*Using Computers in the Classroom in Instruction Helps to Construct the Knowledge of the Students*

This question discussed the use of computer technologies in instruction to help students to construct new knowledge. There were 175 responses and 3 non-responses. The overall mean was 1.80 with a standard deviation of 0.71 as shown in Appendix D. Table 27 breaks down the information based upon the scale used in the survey and provides frequencies and percentages of the responses. Of the respondents, 9 male teachers, or 14.3%, 18 male administrators, or 28.6%, 19 female administrators, or 30.2%, and 17 female teachers, or 27%, who responded that they strongly agreed with the statement that using computers in the classroom in instruction helps to construct the knowledge of the students. Twenty male teachers, or 23.3%, 15 male administrators, or 17.4%, 19 female administrator, or 22.1%, and 32 female teachers, or 37.2%, chose agree. Whereas 3 male teachers, or 12.5%, 6 male administrators, or 25%, 7 female administrator, or 29.2%, and 8 female teachers, or 33.3%, chose uncertain. One male administrator and one female administrator disagreed with the statement. Overall, 85.14% of the participants indicated that using computer technology in instruction helps to construct the knowledge of the students. Whereas 13.71% of the participants were uncertain and 1.14% disagreed. Figure 24 shows female teachers overwhelmingly asserted that utilizing computer technology in the classroom helps construct the knowledge of the students. A dash (-) indicates that the cells are empty.

Table 27

*Frequencies and Percentage Scores of Participants' Perception toward Using Computers in the Classroom in Instruction Helps to Construct Knowledge of Students (N=175)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using computers in the classroom in instruction helps to construct knowledge of students	SA	9 14.3%	18 28.6%	19 30.2%	17 27.0%	63 100.0%
	A	20 23.3%	15 17.4%	19 22.1%	32 37.2%	86 100.0%
	U	3 12.5%	6 25.0%	7 29.2%	8 33.3%	24 100.0%
	D	-	1 50.0%	1 50.0%	-	2 100.0%
		-			-	

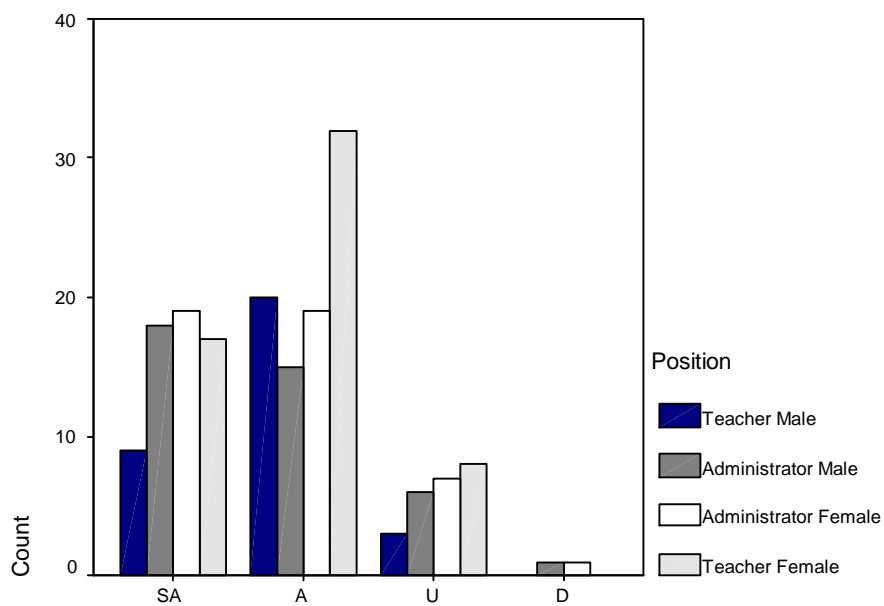


Figure 24. Distribution of the Responses to the statement, “Using Computers in the Classroom in Instruction Helps to Construct Knowledge of Students.”

### *All Teachers Should Use Information Technology in Instruction*

This question examined the perceptions of the administrators and teachers toward employing information technology in teaching activities in order to provide information that the students needed. There were 178 responses. The overall mean was 2.12 with a standard deviation of 0.94 as shown in Appendix D. Table 28 breaks down the information based upon the scale used in the survey and the frequencies and percentages of the responses. Of the participants, 7 male teachers, or 14.9%, 12 male administrators, or 25.5%, 12 female administrators, or 25.5%, and 16 female teachers, or 34% responded that they strongly agreed with the statement that all teachers should use information technology in instruction. Eighteen male teachers, or 21.4%, 23 male administrators, or 27.4%, 20 female administrators, or 23.8%, and 23 female teachers, or 27.4%, agree. Whereas 7 male teachers, or 25%, 3 male administrators, or 10.7%, 6 female administrators, or 21.4%, and 12 female teachers, or 42.9%, were uncertain. One male teacher, or 5.9%, 3 male administrators, or 17.6%, 8 female administrators, or 47.1%, and 5 female teachers, or 29.4%, disagree, while only one female administrator and one female teacher chose to strongly disagree. Overall, 73.6% of the participants asserted that all teachers should use information technology in instruction, 15.73% reported they were uncertain whether or not information technology could be used by all teachers in instruction, 9.55% reported they disagree with the statement and 1.12% strongly disagree that information technology should be used by all teachers in instruction. Figure 25 shows that more female teachers and male administrators supported using information technology in instruction than the other participants. A large number of female teachers reported that they were uncertain whether all teachers should employ the use of information technology in instruction. A dash (-) indicates that the cells are empty.



Table 28

*Frequencies and Percentage Score of the Participants' Perception toward that All Teachers should Use Information Technology in Instruction (N=175)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
All teachers should use information technology in instruction	SA	7	12	12	16	47
		14.9%	25.5%	25.5%	34.0%	100.0%
	A	18	23	20	23	84
		21.4%	27.4%	23.8%	27.4%	100.0%
	U	7	3	6	12	28
		25.0%	10.7%	21.4%	42.9%	100.0%
	D	1	3	8	5	17
		5.9%	17.6%	47.1%	29.4%	100.0%
	SD	-	-	1	1	2
		-	-	50.0%	50.0%	100.0%

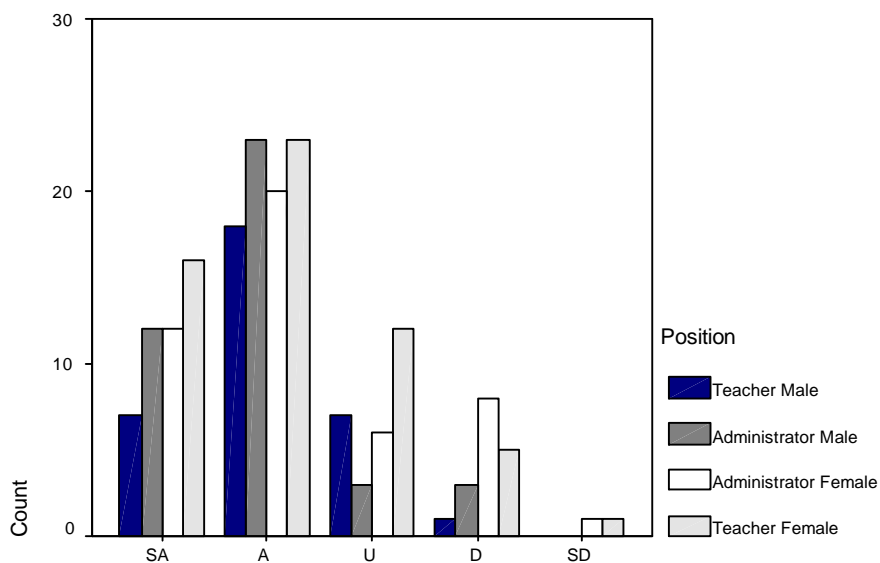


Figure 25. Distribution of the Responses to the statement, “All Teachers should Use Information Technology in Instruction.”

*Information Technology Plan*

*Information Technology Plan Should Be Written for Schools.*

The participants were asked if they preferred a written Information Technology Plan for their schools as a guide for what they should do during its implementation.

There were 176 responses and two non-responses. The mean was 1.69 with a standard deviation of 0.73 as shown in Appendix E. Table 29 illustrates the information based upon the scale used in the survey, and provides the frequencies and its percentages of the responses. Table 29, shows that of those who strongly agree there were 8 male teachers, or 10.7%, 15 male administrators, or 20%, 25 female administrators, or 33.3%, and 27 female teachers, or 36%. Those who responded, agree, constituted 23 male teachers, or 26.7%, 22 male administrators, or 25.6%, 18 female administrators, or 20.9%, and of 23 female teachers, or 26.7%. Three male administrators, or 30%, 4 female administrators, or 40%, and 3 female teachers, or 30%, responded that they were uncertain. Three male administrators, 1 male teacher, and 1 female teacher disagree with this statement.

A total of 91.48% of the participants asserted that an information technology plan should be written for the schools. Only 5.68% of the participants were uncertain and 2.84% did not need the information technology plan to be written for school. Figure 26 shows that more female teachers and female administrators strongly agree than the male teachers and administrators. A dash (-) indicates that the cells are empty.

Table 29

*Frequencies and Percentage Scores of the Participants' Perception to the statement, Information Technology Plans should be Written for Schools (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Information technology plans should be written for schools	SA	8 10.7%	15 20.0%	25 33.3%	27 36.0%	75 100.0%
	A	23 26.7%	22 25.6%	18 20.9%	23 26.7%	86 100.0%
	U	- -	3 30.0%	4 40.0%	3 30.0%	10 100.0%
	D	2 50.0%	1 25.0%	- -	1 25.0%	4 100.0%
	SD	- -	- -	- -	1 100.0%	1 100.0%

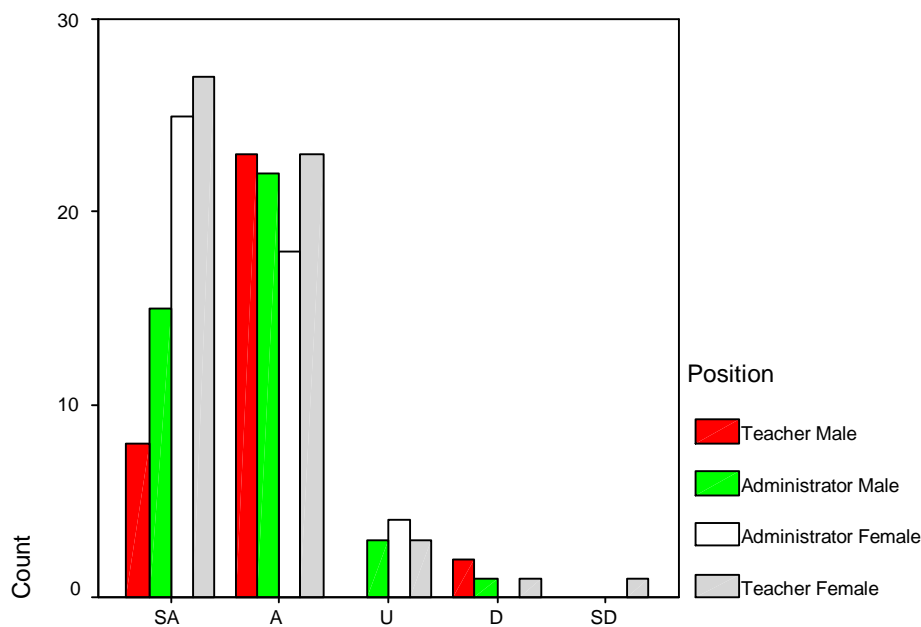


Figure 26. Distribution of the Responses to the statement, "Information Technology Plans should be Written for Schools."

*Teachers should have Knowledge of Information Technology*

The participants were asked whether or not teachers should have knowledge of information technology in order to infuse it in planning and instruction. There were 176 responses and two non-responses. The overall mean was 2.98, with a standard deviation of 0.95 as shown in Appendix E. Table 30 breaks down the information based upon the scale that used in the survey and provides frequencies and percentages

of the responses. A strongly agree responses one male teacher, or 8.3%, 3 male administrators, or 25%, 4 female administrators, or 33.3%, and 4 male teachers, or 33.3%. Agree responses included 6 male teachers, or 16.7%, 10 male administrators, or 27.8%, 8 female administrators, or 22.2%, and 12 male teachers, or 33.3%. Uncertain responses constituted 15 male teachers, or 18.5%, 16 male administrators, or 19.8%, 26 female administrators, or 32.1%, and 24 male teachers, or 29.6%. Disagree responses broke down into 7 male teachers, or 18.4%, 11 male administrators, or 28.9%, 7 female administrators, or 18.4%, and 13 male teachers, or 34.2%. Strongly disagree responses represented 2 male teachers, or 22.2%, one male administrator, or 11.1%, 2 female administrators, or 22.2%, and 4 male teachers, or 44.4%.

Consequently, 46.02% of the participants were uncertain and 21.6% of the participants were disagree. The number of participants who agree and disagree was almost equal. Figure 26 indicates that female administrators and teachers represented most of the participants who said they were uncertain whether teachers should have knowledge of information technology. Female teachers (17) mostly disagree.

Table 30

*Frequencies and Percentage Scores of the Participants toward Teachers should have Knowledge of Information Technology (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Teachers should have knowledge of information technology	SA	1	3	4	4	12
		8.3%	25.0%	33.3%	33.3%	100.0%
	A	6	10	8	12	36
		16.7%	27.8%	22.2%	33.3%	100.0%
	U	15	16	26	24	81
	18.5%	19.8%	32.1%	29.6%	100.0%	
	D	7	11	7	13	38
		18.4%	28.9%	18.4%	34.2%	100.0%
	SD	2	1	2	4	9
		22.2%	11.1%	22.2%	44.4%	100.0%

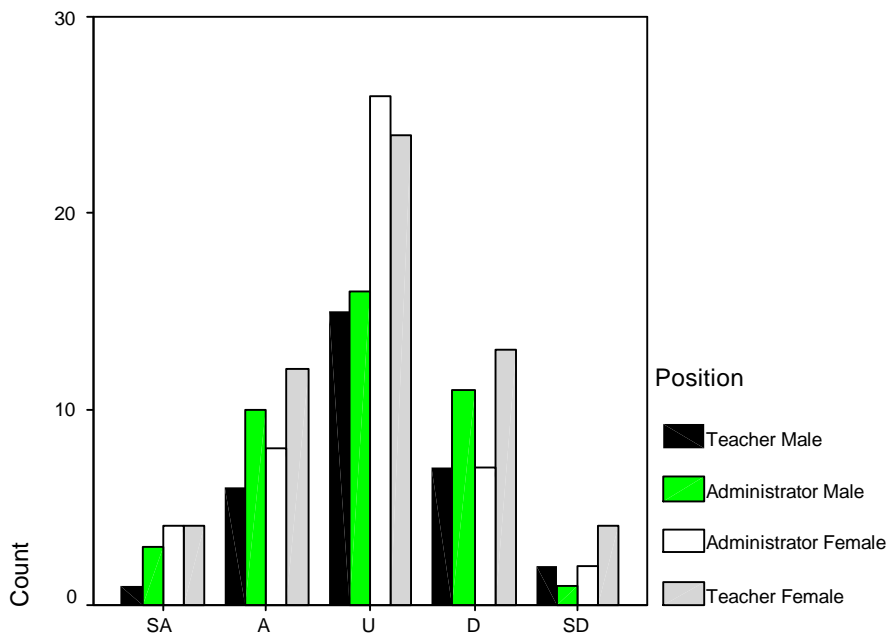


Figure 27. Distribution of the Responses to the statement, "Teachers should have Knowledge of Information Technology."

#### *Teachers should be Involved in an Information Technology Plan*

This question focused on whether teachers should be involved in developing an information technology plan. There were 176 responses and two non-responses.

The overall mean was 1.78 with a standard deviation of 0.86 as shown in Appendix E.

Table 31 illustrates the information based upon the scale used the survey and provides the frequencies and percentages of the responses. Strongly agree responses split into 14 male teachers, or 18.2%, 17 male administrators, or 22.1%, 24 female administrators, or 31.2%, and 22 female teachers, or 28.6%. Of those who said, agree, there were 17 male teachers, or 23%, 18 male administrators, or 24.3%, 17 female administrators, or 23%, and 22 female teachers, or 29.7%. Two male teachers, or 13.3%, 5 male administrators, or 33.3%, one female administrator, or 6.7%, and 7 male teachers, or 46.7% were uncertain. Of the participants who disagree, there was 1 male administrator, or 10%, three female administrators, or 30%, and 6 male teachers, or 60%. Whereas only one female administrator was strongly disagree.

A total of 85.8% of the participants asserted that teachers should be involved in an information technology plan, 8.52% of the participants were uncertain, and 5.68% of the participants disagree. Figure 28 indicates that more female teachers and administrators strongly agree that teachers should be involved in technology planning than other participants. More female teachers agreed with this statement than the other participants. A dash (-) indicates that the cells are empty.

Table 31

*Frequencies and Percentage Scores of the Participants toward, Teachers should be Involved in an Information Technology Plan (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Teachers should be involved in an information technology plan	SA	14 18.2%	17 22.1%	24 31.2%	22 28.6%	77 100.0%
	A	17 23.0%	18 24.3%	17 23.0%	22 29.7%	74 100.0%
	U	2 13.3%	5 33.3%	1 6.7%	7 46.7%	15 100.0%
	D	- -	1 10.0%	3 30.0%	6 60.0%	10 100.0%
	SD	- -	- -	1 100.0%	- -	1 100.0%

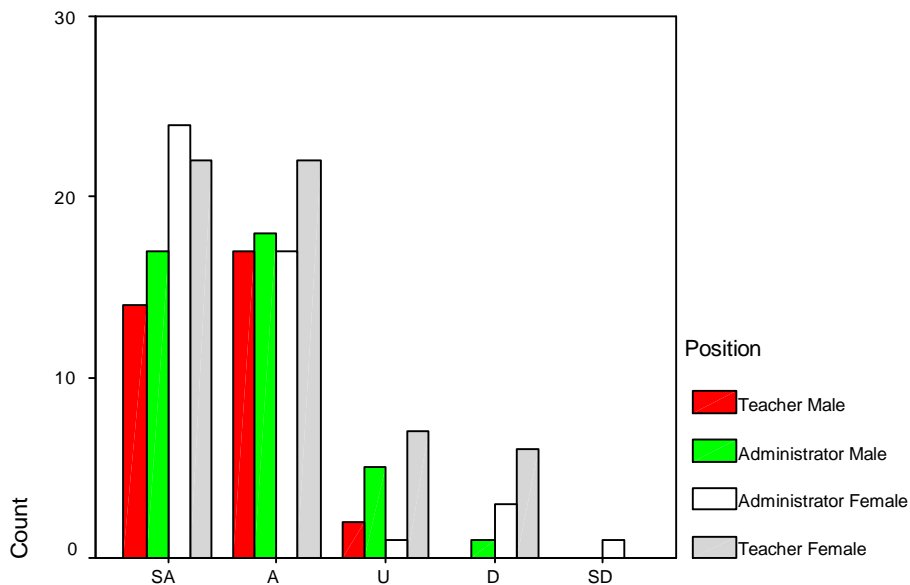


Figure 28. Distribution of the Responses' Perception to the statement, "Teachers Should Be Involved in an Information Technology Plan."

*Developing an Information Technology Mission Statement, Goals, and Objectives Are Necessary for Students Learning.*

The participants were asked about the importance of developing an information technology mission, goals, and objectives for students' learning. There were 176 responses and two non-responses. The overall mean was 1.68 with a

standard deviation of 0.66 as shown in Appendix E. Table 32 illustrates the information based upon the scale used the survey and provides the frequencies and percentages of the responses. Strongly agree responses included 13 male teachers, or 17.8%, 18 male administrators, or 24.7%, 20 female administrators, or 30.1%, and 22 male teachers, or 30.1%. Of the participants who said, agree, 18 were male teachers, or 20.5%, 18 were male administrators, or 20.5%, 25 were female administrators, or 28.4%, and 27 were male teachers, or 30.7%. Those who were uncertain were divided into one male teacher, or 7.7%, 3 male administrators, or 23.1%, 2 female administrators, or 15.4%, and 7 male teachers, or 53.8%. There were only one male administrator and one female teacher who disagreed. There was only one female administrator who chose strongly disagree.

A total of 91.48% of the participants emphasized that an information technology plan should include mission, goals and objectives. Figure 29 indicates that most of the participants strongly agree or agree with this statement. A dash (-) dash indicates that the cells are empty.

Table 32

*Frequencies and Percentage Scores of the Participants toward Developing an Information Technology Mission, Goals and Objectives is Necessary for Student Learning (N=176).*



		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Developing an information technology mission, goals, and objectives is necessary for student learning	SA	13	18	20	22	73
		17.8%	24.7%	27.4%	30.1%	100.0%
	A	18	18	25	27	88
		20.5%	20.5%	28.4%	30.7%	100.0%
	U	1	3	2	7	13
		7.7%	23.1%	15.4%	53.8%	100.0%
	D	1	-	-	1	2
		50.0%	-	-	50.0%	100.0%

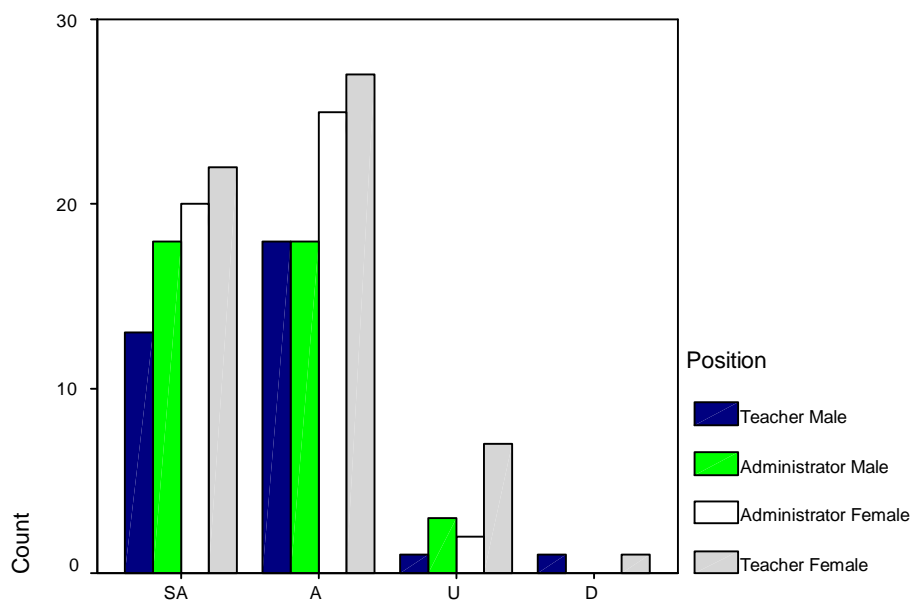


Figure 29. Distribution of the Responses to the statement, “Developing an Information Technology Mission, Goals and Objectives is Necessary for Student Learning.”

*An Information Technology Plan Should Include Integrating the Local Area Network and Wide Area Network*

The question was examined the perceptions of the participants as to whether or not an information technology plan should include integrating the local and wide area network. Table 33 indicates that the overall mean was 1.43 with a standard deviation

of 0.57 as shown in Appendix E. Table 33 illustrates the information based upon the scale used the survey and provides the frequencies and percentages of the responses. Strongly agree responses break down into 17 male teachers, or 15.7%, 25 male administrators, or 23.1%, 32 female administrators, or 29.6%, and 34 female teachers, or 31.5%. Agree responses break down into 14 male teachers, or 23%, 12 male administrators, or 19.7%, 14 female administrators, or 23%, and 21 male teachers, or 34.4%. Uncertain responses included one male teacher, or 14.3%, 3 male administrators, or 42.9%, one female administrator, or 14.3%, and 2 female teachers, or 28.6%. None of the respondents answered strongly disagree.

A total of 96.02% of the participants emphasized that local and wide area network should be part of information technology plan. Figure 30 shows that the majority of the participants replied, strongly agree and agree. A dash (-) indicates that the cells are empty.

Table 33

*Frequencies and Percentage Scores of the Participants toward an Information Technology Plan should Include Integrating the Local and Wide Area Network (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
An information technology plan should include integrating the local area network and wide area network	SA	17 15.7%	25 23.1%	32 29.6%	34 31.5%	108 100.0%
	A	14 23.0%	12 19.7%	14 23.0%	21 34.4%	61 100.0%
	U	1 14.3%	3 42.9%	1 14.3%	2 28.6%	7 100.0%

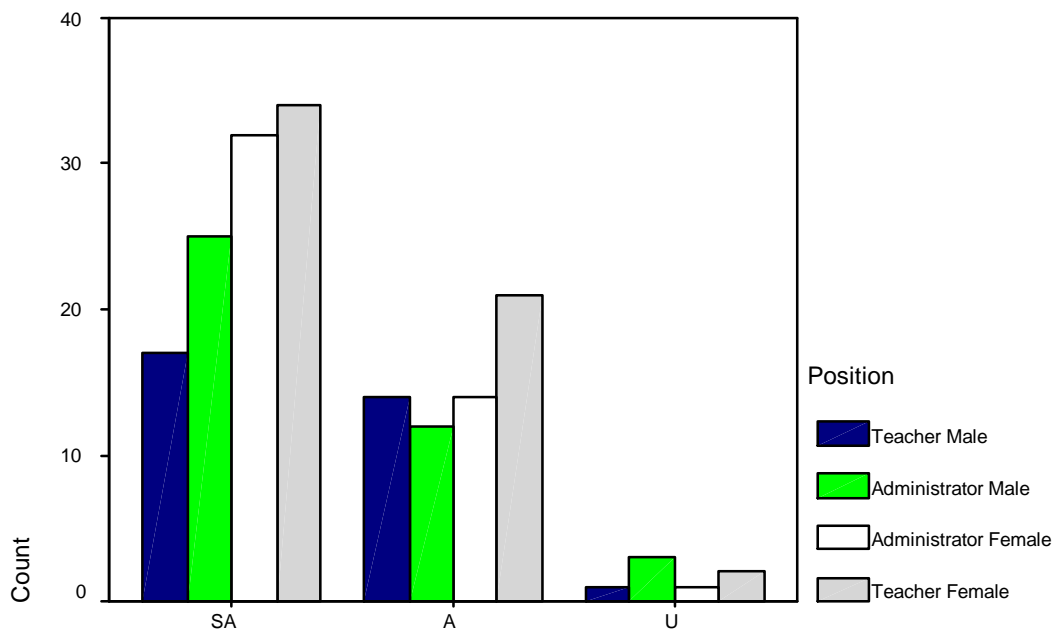


Figure 30. Distribution of the Responses to the statement, “an Information Technology Plan should Include Integrating the Local and Wide Area Network.”

*An information Technology Plan should Include Improvements in Teaching and Learning by using Information Technology.*

This question examined the perceptions of the administrators and teachers toward an information technology plan should include improvements in teaching and learning by using information technology. There were 178 responses. The overall mean was 2.92 with a standard deviation of 1.04 as shown in Appendix E. Table 34

illustrates the information based upon the scale used the survey and provides the frequencies and percentages of the responses. Strongly agree responses were divided into 2 male teachers, or 11.8%, 3 male administrators, or 17.6%, 6 female administrators, or 35.3%, and 6 female teachers, or 35.3%. Agree responses broke down into 7 male teachers, or 15.6%, 9 male administrators, or 20%, 14 female administrators, or 31.1%, and 15 male teachers, or 33.3%. The participants who reported, uncertain, include 13 male teachers, or 22%, 14 male administrators, or 23.7%, 19 female administrators, or 32.2%, and 13 male teachers, or 22%. Disagree divided into 9 male administrators, or 18.4%, 14 male teachers, or 28.6%, 7 female administrators, or 14.3%, and 19 female teachers, or 38.8%. Two male teachers, or 25%, one male administrator, or 12.5%, one female administrator, or 12.5%, and 4 female teachers, or 50%, strongly disagreed.

Overall, 33.15% of the participants were uncertain, 27.53% of the participants disagreed, 4.49% of the participants strongly disagree, while 34.83% of the participants agreed that information technology plan includes improvement in teaching and learning by using information technology. Figure 31 indicates most of the participants were uncertain and disagreed with this statement.

Table 34

*Frequencies and Percentage Scores of the Participants toward an Information Technology Plan Should Include Improvements in Teaching and Learning by Using*

*Information Technology (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
An information technology plan should include improvements in teaching and learning by using Information technology	SA	2 11.8%	3 17.6%	6 35.3%	6 35.3%	17 100.0%
	A	7 15.6%	9 20.0%	14 31.1%	15 33.3%	45 100.0%
	U	13 22.0%	14 23.7%	19 32.2%	13 22.0%	59 100.0%
	D	9 18.4%	14 28.6%	7 14.3%	19 38.8%	49 100.0%
	SD	2 25.0%	1 12.5%	1 12.5%	4 50.0%	8 100.0%

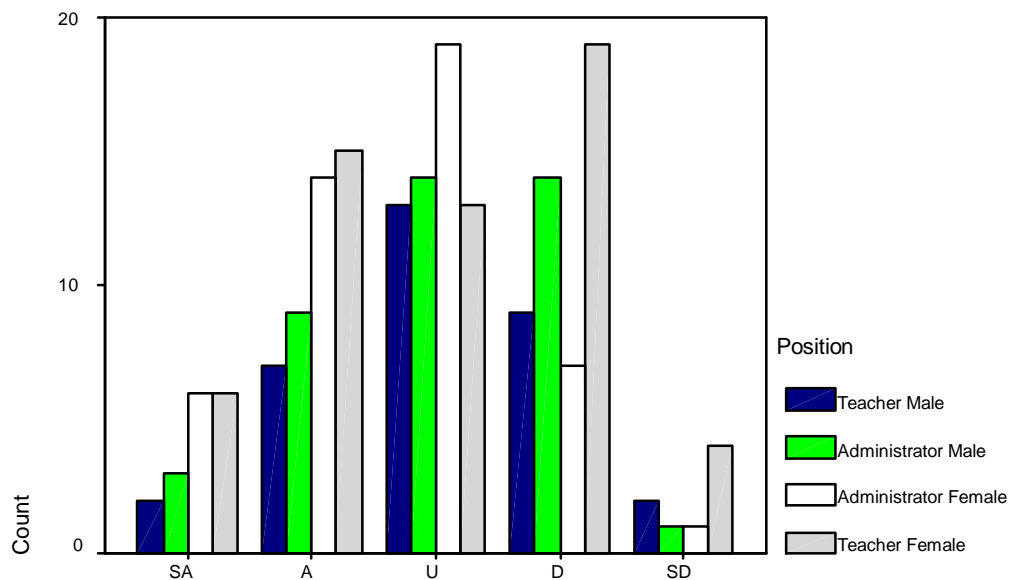


Figure 31. Distribution of the Responses to the statement, "an Information Technology Plan Should Include Improvements in Teaching and Learning by Using Information Technology."

*Developing an Information Technology Plan Is Based on the Stakeholders' Vision.*

The question focused on the importance of visions in developing and creating an information technology plan for school. There were 178 responses. The overall mean was 1.8 with a standard deviation of 0.813 as shown in Appendix E. Table 35 illustrates the information based upon the scale used the survey and provides the

frequencies and percentages of the responses. Strongly agree responses included 9 male teachers, or 14.8%, 13 male administrators, or 21.3%, 20 female administrators, or 32.8%, and 19 female teachers, or 31.1%. Agree responses included 17 male teachers, or 17.9%, 23 male administrators, or 24.2%, 23 female administrators, or 24.2%, and 32 male teachers, or 33.7%. Uncertain responses were divided into 5 male teachers, or 45.5%, 3 male administrators, or 27.3%, 2 female administrators, or 18.2%, and one female teacher, or 9.1%. Disagree broke down into one male administrator, or 10%, 2 male teachers, or 20%, 2 female administrators, or 20%, and 5 female teachers, or 50%. Only one male teacher strongly disagree.

Female administrators represented the highest percentage of those who strongly agree, or 32.8%, and female teachers represented the highest percentage of those who agree, or 33.7%. A total of 87.64% of the participants asserted that the stakeholders' vision is important in developing an information technology plan. Figure 32 shows the majority of the participants both strongly agree and agree with the statement. The female teachers more often supported the importance of the stakeholders' vision in an information technology plan than the male teachers. A dash (-) indicates that the cells are empty.

Table 35

*Frequencies and Percentage Scores toward Developing an Information Technology Plan Is Based on the Stakeholders' Vision (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Developing an information technology plan is based on the stakeholders' vision	SA	9 14.8%	13 21.3%	20 32.8%	19 31.1%	61 100.0%
	A	17 17.9%	23 24.2%	23 24.2%	32 33.7%	95 100.0%
	U	5 45.5%	3 27.3%	2 18.2%	1 9.1%	11 100.0%
	D	1 10.0%	2 20.0%	2 20.0%	5 50.0%	10 100.0%
	SD	1 100.0%	-	-	-	1 100.0%

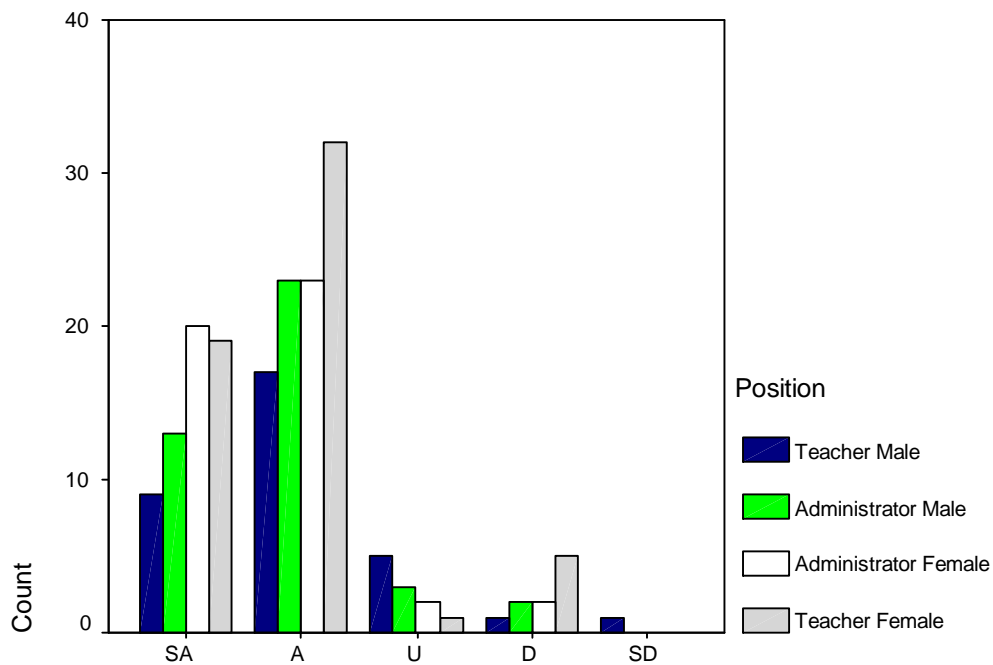


Figure 32. Distribution of the Responses to the statement, “Developing an Information Technology Plan is Based on the Stakeholders’ Vision.”

*Information Technology in Administrative Work*

*Using Computer Technology for Grade Keeping Is Efficient.*

Teachers and administrators were asked whether or not employing computer technology for grade keeping is efficient. There were 178 responses. The mean was 1.11 with a standard deviation of 0.36 as shown in Appendix F., Table 36 illustrates

the information based upon the scale used the survey and provides the frequencies and percentages of the responses. Table 36 shows that those of the participants who strongly agree with the statement were 31 male teachers, or 19.3%, 34 male administrators, or 21.1%, 45 female administrators, or 28%, and 51 female teachers, or 31.7%. In addition, of those agreed with the statement, there were 1 male teacher, or 7.1%, 5 male administrators, or 35.7%, 2 female administrators, or 14.3%, and 6 female teachers, or 42.9%. In addition, 1 male teacher, or 33.3%, 2 male administrators, or 66.7%, were uncertain of their agreement with the statement. None of the participants disagree or strongly disagree.

Overall, the majority of respondents (98.3%) asserted the importance of computer technology in an efficient grading system. Female administrators and teachers were more likely to strongly agree than male teachers and administrators, representing 59.63%. Female were also the minority of them who were uncertain (1.7%). Figure 33 shows distribution of the participants to the statement. A dash (-) indicates that the cells are empty.

Table 36

*Frequencies and Percentage Scores toward Using Computer Technology for Grade Keeping is Efficient (N=178)*



		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Using computer technology for grade keeping is efficient	SA	31 19.3%	34 21.1%	45 28.0%	51 31.7%	161 100.0%
	A	1 7.1%	5 35.7%	2 14.3%	6 42.9%	14 100.0%
	U	1 33.3%	2 66.7%	- -	- -	3 100.0%

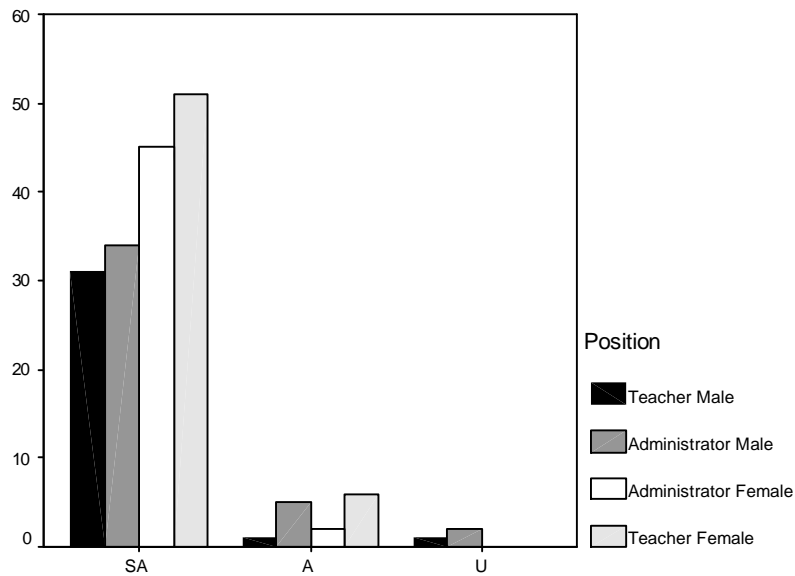


Figure 33. Distribution of the Responses to the statement that, “Using Computer Technology for Grade Keeping is Efficient.”

*Using Computer Technology for Equipment Inventory Is Important.*

This question addressed whether or not the use of computer technology is important for equipment inventory control. There were 178 responses. The overall mean was 1.37 with a standard deviation of 0.61 as shown in Appendix F. Table 37 illustrates the information based upon the scale used the survey and provides the frequencies and percentages of the responses. According to Table 37, 25 male

teachers, or 20.3%, 30 male administrators, or 24.4%, 32 female administrators, or 26.7%, and 36 female teachers, or 29.3%, responded that they strongly agreed with the statement that computer technology supports equipment inventory systems. Five male teachers, or 10.9%, 10 male administrators, or 21.7%, 12 female administrators, or 26.1%, and 19 female teachers, or 41.3%, chose the answer, agree. Three male teachers, or 42.9%, one male administrator, or 14.3%, one female administrator, or 14.3%, and 2 female teachers, or 28.6%, were uncertain. Only two female administrators chose the response, disagree.

Most of the participants (94.9%) emphasized that computer technologies represent a great tool in equipment inventory. A majority of the, female administrators and female teachers (55.3%) most strongly agree of the participants who reported strongly agree. 67.4% female administrators and female teachers reported agree that represented the most of the participants who replied agree. Female administrators and teachers that often asserted that computer technology appropriate system to support inventory system. Only a small portion of the participants (3.93%) were not certain that computer technologies support the inventory system. None of the participants reported disagree or strongly disagree. Figure 34 shows that the majority of the respondents asserted that computer technology is an appropriate system to establish a mechanism to make the inventory system more efficient. A dash (-) indicates that the cells are empty.

Table 37

*Frequencies and Percentage Scores of the Responses to the Statement that Using Computer Technology for Equipment Inventory Is Important (N=178)*

		Position				
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	Total
Administrators and teachers should utilize information technology in administrative work	SA	16	23	24	29	92
		17.4%	25.0%	26.1%	31.5%	100.0%
	A	14	14	21	27	76
		18.4%	18.4%	27.6%	35.5%	100.0%
	U	2	3	1	1	7
		28.6%	42.9%	14.3%	14.3%	100.0%
	D	1	1	1	-	3
		33.3%	33.3%	33.3%	-	100.0%

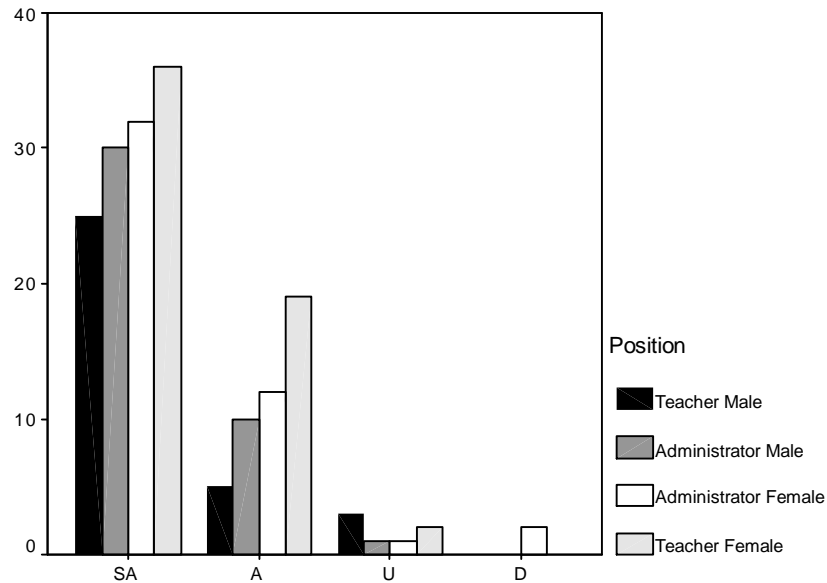


Figure 34. Distribution of the Responses to the statement, “Using Computer Technology for Equipment Inventory is Important.”

*Computer Technology Can Help in Textbook Inventory.*

This question focused on whether or not the use of computer technology is able to help in textbook inventory management. There were 178 responses and two non-responses. The overall mean was 1.54 with a standard deviation of 0.69 as shown in Appendix F, Table 38 indicates 15 male teachers, or 15.5%, 25 male administrators, or 25.8%, 24 female administrators, or 24.7%, and 33 female teachers, or 34%, strongly agree with the use of computer technology to supplement textbook inventory systems. Also, 17 male teachers, or 25%, 10 male administrators, or 22.1%, 16 female administrators, or 23.5%, and 20 female teachers, or 29.4%, chose the answer, agree. One male teacher, or 12.5%, 5 female administrators, or 62.5%, and 2 female teachers, or 25%, were uncertain. Only 1 male administrator, or 25%, 2 female administrators, or 50%, and 1 female teacher, or 25%, who chose the response, disagree. Most of the participants (93.2%) believed that computer technologies

represent a good tool in textbook inventory control. The female teachers were the participants who most strongly agree with the statement. They represented 34% of responses that strongly agree. Of the participants who agree (29%) were female teachers who asserted that computer technology is appropriate to support the textbook inventory systems. A small number of those who were not certain that computer technology support the textbook inventory system was 4.5% male and female, while 2.3% male and female said they disagree with the statement. A majority of the female administrators (62.5%) said they were uncertain. Figure 35 shows the majority of the respondents asserted that computer technology is an appropriate method to make the inventory system more efficient of which most of the respondents were female teachers. In addition, the majority of those who were uncertain and disagreed with the statement were female administrators. A dash (-) indicates that the cells are empty.

Table 38

*Frequencies and Percentage Scores of the participants toward Computer Technology Can Help in Textbook Inventory (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology can help in textbook inventory	SA	15	25	24	33	97
		15.5%	25.8%	24.7%	34.0%	100.0%
	A	17	15	16	20	68
		25.0%	22.1%	23.5%	29.4%	100.0%
	U	1	-	5	2	8
		12.5%	-	62.5%	25.0%	100.0%
	D	-	1	2	1	4
		-	25.0%	50.0%	25.0%	100.0%

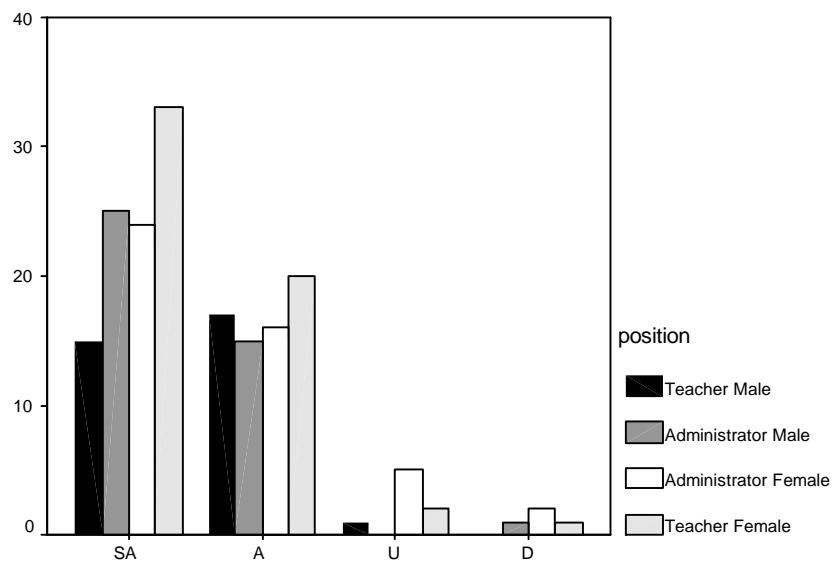


Figure 35. Distribution of the Responses to the “Computer Technology Can Help in Textbook Inventory.”

### *Computer Technology Assists in Organizing Library Catalogs*

The participants were asked whether or not they realized the importance of the use of computer technology to organize library indexes. There were 176 responses and two non-responses. The overall mean was 1.39 with a standard deviation of 0.60 as shown in Appendix F. Table 39 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of

the responses. Table 39 indicates 20 male teachers, or 17.1%, 25 male administrators, or 26.5%, 29 female administrators, or 24.8%, and 37 female teachers, or 31.6%, responded that they strongly agreed with the statement that computer technology supplement textbook inventory system. Only 10 male teachers, or 19.2%, 8 male administrators, or 15.4%, 15 female administrators, or 28.8%, and 19 female teachers, or 36.5%, chose the answer, agree. One male teacher, or 20%, one female administrator, or 20%, 3 female administrator, or 60%, were uncertain. One male administrator, or 50%, and one female teacher, or 50%, chose the response, disagree. The majority of the participants (96%) affirmed that computer technology represent a great tool to organize library catalogs. Of the participants that strongly agree 31.4% were female teachers. Of the participants who said agree 36% were female teachers. Only a small portion (3.92%) were uncertain and disagree that computer technologies support library catalogs was 3.9%. Figure 36 shows that the majority of the respondents asserted that computer technology is appropriate system to assists in organizing library catalogs. A (-) dash indicates that the cells are empty.

Table 39

*Frequencies and Percentage Scores of the Participants toward Computer Technology Assists in Organizing Library Catalogs (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology assists in organizing library catalogs	SA	20 17.1%	31 26.5%	29 24.8%	37 31.6%	117 100.0%
	A	10 19.2%	8 15.4%	15 28.8%	19 36.5%	52 100.0%
	U	1 20.0%	1 20.0%	3 60.0%	-	5 100.0%
	D	-	1 50.0%	-	1 50.0%	2 100.0%

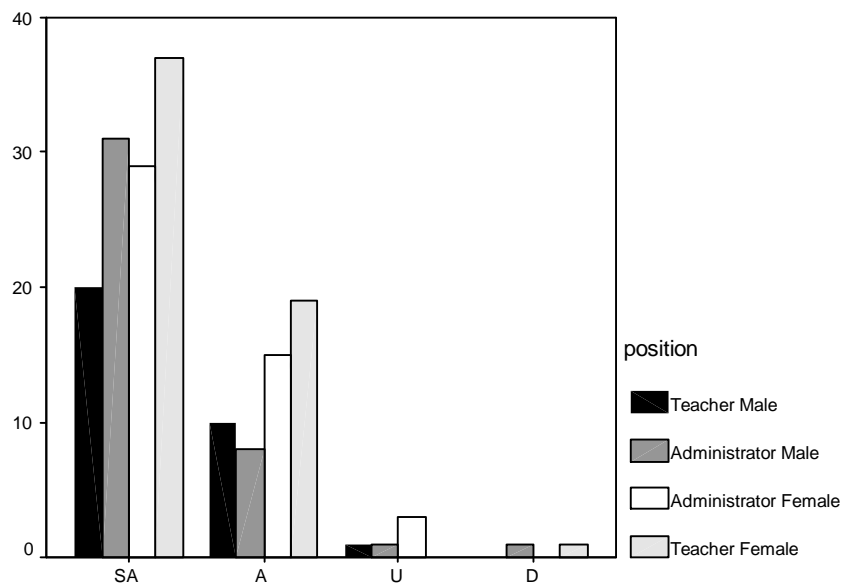


Figure 36. Distribution of the Responses to the statement, “Computer Technology Assists in Organizing Library Catalogs.”

### *Computer Technology Is Useful in Managing the School Budget*

This question focused on whether or not computer technology is an appropriate technique to manage school budgets. There were 177 responses and one non-response. The overall mean was 1.75 with a standard deviation of 0.97 as shown in Appendix F. Table 40 breaks down the information of the question based upon the



scale that the survey used and provides the frequencies and percentages of the responses. Table 40 indicates that 16 male teachers, or 19.5%, 19 male administrators, or 23.2%, 17 female administrators, or 20.7%, and 30 female teachers, or 36.6%, responded that they strongly agreed that computer technology assists to manage school budgets. Fourteen male teachers, or 21.5%, 10 male administrators, or 15.4%, 22 female administrators, or 33.8%, and 19 female teachers, or 29.2%, chose the answer, agree. Three male teacher, or 12.5%, 11 male administrators, or 45.8%, 3 female administrator, or 12.5%, 7 female administrator, or 29.2% were uncertain. Four female administrators, or 80%, and one female teacher, or 20%, chose the response, disagree. There was only one female administrator who strongly disagreed. The majority of the participants (83.1%) affirmed that computer technologies provide a tool to manage school budgets. The female teachers were the participants who most strongly agreed and represented 36.6% of the respondents who strongly agree. Whereas 19.5% of male teachers and 33.8% of the female administrators reported agree. The majority of the participants who responded uncertain were male administrators 45.8%. The female administrators represented 80% of the participants who said disagree. Figure 37 shows that the majority of the respondents asserted that computer technology is a useful system to manage school budgets. A dash (-) dash indicates that the cells are empty.

Table 40

*Frequencies and Percentage Scores of the Participants toward Computer Technology is Useful in Managing School Budgets (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology is useful in managing school budgets	SA	16	19	17	30	82
		19.5%	23.2%	20.7%	36.6%	100.0%
	A	14	10	22	19	65
		21.5%	15.4%	33.8%	29.2%	100.0%
	U	3	11	3	7	24
		12.5%	45.8%	12.5%	29.2%	100.0%
	D	-	-	4	1	5
		-	-	80.0%	20.0%	100.0%
	SD	-	-	1	-	1
		-	-	100.0%	-	100.0%

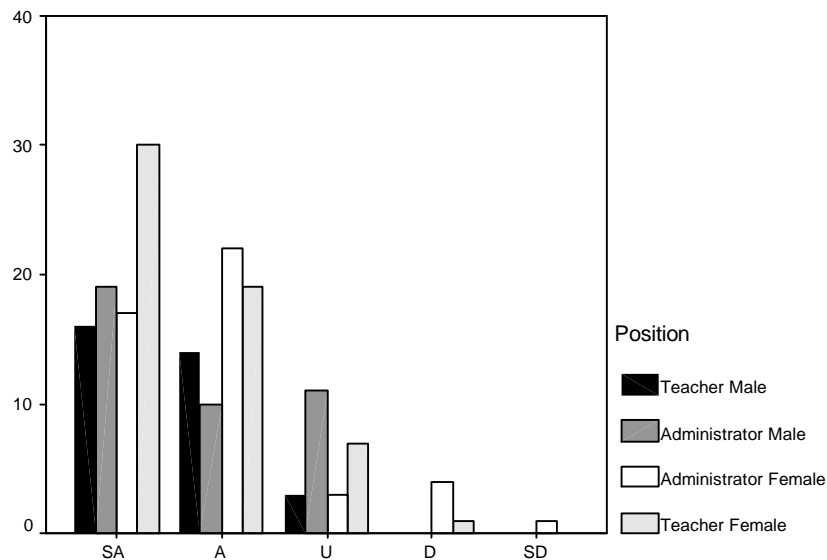


Figure 37. Distribution of the Responses to the statement, “Computer Technology is Useful in Managing School Budgets.”

### *Computer Technology Can Help to Create Accurate Class Schedules*

Teachers and administrators were asked whether or not computer technology could help to create accurate class schedules. There were 177 responses and one non-response. The mean was 1.79 with a standard deviation of 0.97 as shown in Appendix F. Table 41 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 41

shows that of the participants who strongly agree with the statement there were 19 male teachers, or 21.1%, 24 male administrators, or 26.7%, 18 female administrators, or 20%, and 29 female teachers, or 32.2%. Of the participants who said they agree with the statement, there were 9 male teachers, or 17.6%, 12 male administrators, or 23.5%, 14 female administrators, or 27.5%, and 16 female teachers, or 31.4%. Whereas 4 male teachers, or 19%, 2 male administrator, or 9.5%, 8 female administrators, or 34%, 7 male teachers, or 33.3%, were uncertain about the statement. One male teacher, or 7.1% disagree. Thirty male administrators, or 21.4%, 5 female administrators, or 35.7%, 5 female teachers, or 35.7%, and only one female administrator said strongly disagree.

Figure 38 shows that most of the participants (50.8%) strongly agree with the use of computer technology in creating accurate class schedules and 28.8% of the participants agreed with the statement. The majority of respondents (79.7%) asserted the importance of computer technology in developing class schedules. The female teachers more strongly emphasized the importance of computer technology in developing class schedules than male teachers and administrators. In addition, female administrators and teachers were the most uncertain participants. A dash (-) indicates that the cells are empty.

Table 41

*Frequencies and Percentages Scores Responses to the Statement that Computer Technology Can Help to Create Accurate Class Schedules (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology can help to create accurate class schedules	SA	19 21.1%	24 26.7%	18 20.0%	29 32.2%	90 100.0%
	A	9 17.6%	12 23.5%	14 27.5%	16 31.4%	51 100.0%
	U	4 19.0%	2 9.5%	8 38.1%	7 33.3%	21 100.0%
	D	1 7.1%	3 21.4%	5 35.7%	5 35.7%	14 100.0%
	SD	- -	- -	1 100.0%	- -	1 100.0%

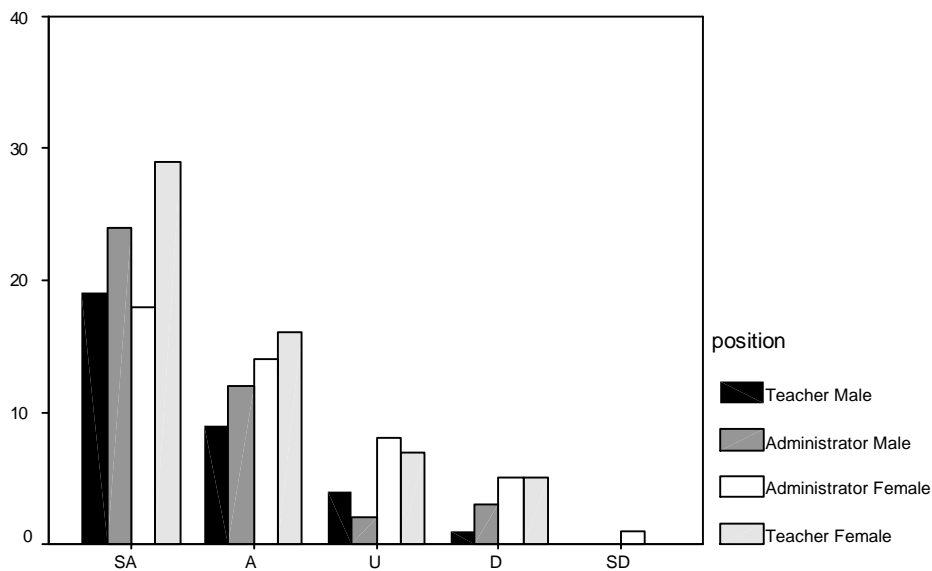


Figure 38. Distribution of the Responses to the Statement, “Computer Technology can Help to Create Accurate Class Schedules.”

*A Computer Technology Application Is an Appropriate Way to Organize Daily Appointments.*

Teachers and administrators were asked whether or not the application of computer technology is an appropriate method to organize daily appointments. There were 172 responses and six non-responses. The mean was 2.11 with a standard

deviation of 0.89 as shown in Appendix F. Table 42 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 42 shows that of the participants who strongly agree with the statement, there were 5 male teachers, or 11.6%, 10 male administrators, or 23.3%, 13 female administrators, or 30.2%, and 15 female teachers, or 34.9%. Of the participants who reported a response of agree there were 16 male teachers, or 19.5%, 23 male administrators, or 28%, 24 female administrators, or 29.3%, and 19 female teachers, or 23.2%. Seven male teachers, or 20.6%, 4 male administrator, or 11.8%, 7 female administrator or 20.6%, 16 male teachers, or 47.1%, were uncertain. Two male teachers, or 18.2%, one male administrator, or 9.1%, 3 female administrators, or 27.3%, 5 female teachers, or 45.5%, and one male teacher, or 50%, were responded disagree. One male administrator or 50% who said strongly disagree.

Of the participants (47.7%) strongly agree and 25% agree to the use of computer technology in organizing daily appointments. The majority of the participants asserted that computer technology has significant value in organizing daily appointments. Female teachers represented the majority who said uncertain and disagree that computer technology was appropriate in organizing daily appointments. Figure 39 shows that female teachers and administrators and male teachers were the ones most in agreement with the importance of computer technology in organizing daily appointment. Female teachers were more likely to answer that they were uncertain. A dash (-) indicates that the cells are empty.

Table 42

*Frequencies and Percentage Scores of the Participants toward Computer Is an Appropriate Way to Organize Daily Appointments (N=172)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
A computer is an appropriate way to organize daily appointments	SA	5	10	13	15	43
		11.6%	23.3%	30.2%	34.9%	100.0%
	A	16	23	24	19	82
		19.5%	28.0%	29.3%	23.2%	100.0%
	U	7	4	7	16	34
		20.6%	11.8%	20.6%	47.1%	100.0%
	D	2	1	3	5	11
		18.2%	9.1%	27.3%	45.5%	100.0%
	SD	1	1	-	-	2
		50.0%	50.0%	-	-	100.0%

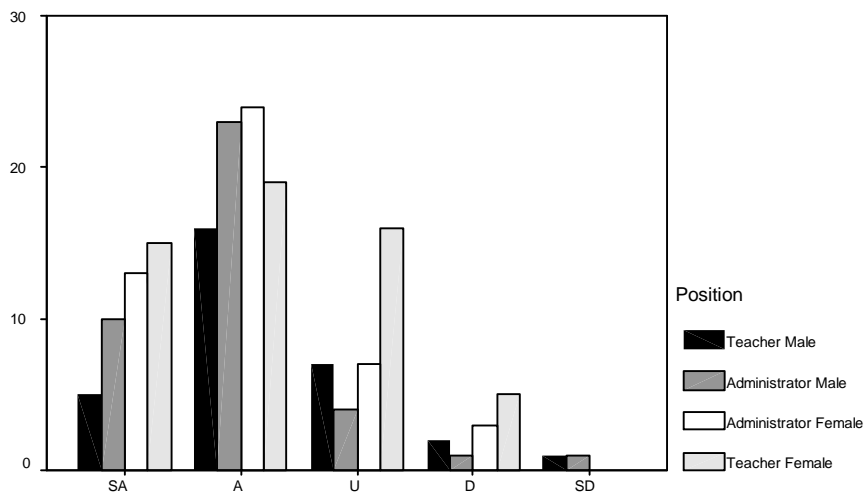


Figure 39. Distribution of the Responses to the Statement that "Computer is an Appropriate Way to Organize Daily Appointments."

*Computer Technology Makes Communication Easy and Fast for Exchanging Information.*

Teachers and administrators were asked to explore whether or not the use of computer technologies made communication easy and fast for exchanging

information in administrative work. There were 178 responses. The overall mean was 1.62 with a standard deviation of 0.71 as shown in Appendix F. Table 43 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. According to the Table 43, 18 male teachers, or 21.2%, 19 male administrators, or 22.4%, 21 female administrators, or 24.7%, and 27 female teachers, or 31.8%, responded that they strongly agreed that computer technology supports communication and makes in administrative work easier. Thirteen male teachers, or 16.3%, 18 male administrators, or 22.5%, 26 female administrators, or 32.5%, and 23 female teachers, or 28.8%, chose the answer, agree. One male teacher, or 11.1%, 3 male administrators, or 33.3%, and 5 female teachers, or 55.6%, were uncertain. There were only one male teacher, or 33.3%, one male administrator, or 33.3%, and one female administrator, or 33.3%, who chose the response, disagree. Only one female teacher responded, strongly disagree. Most of the participants (92.7%) emphasized that computer technology makes communication easier to enhance administrative work. 56.5% of the Female administrators and female teachers were the ones who most strongly agree, as well as 61.3% of who responded, agree.

A small number (5.1%) of the participants were uncertain. Most of these respondents were female teachers and male administrators. Figure 40 shows that the majority of the respondents asserted that the use of computer technology enhances communication in administrative work. A dash (-) indicates that the cells are empty.

Table 43

*Frequencies and Percentage Scores of the Respondents toward Computer Technology Makes Communication Easy and Fast for Exchanging Information (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology makes communication easy and fast for exchanging information	SA	18	19	21	27	85
		21.2%	22.4%	24.7%	31.8%	100.0%
	A	13	18	26	23	80
		16.3%	22.5%	32.5%	28.8%	100.0%
	U	1	3	-	5	9
		11.1%	33.3%	-	55.6%	100.0%
	D	1	1	-	1	3
		33.3%	33.3%	-	33.3%	100.0%
	SD	-	-	-	1	1
		-	-	-	100.0%	100.0%

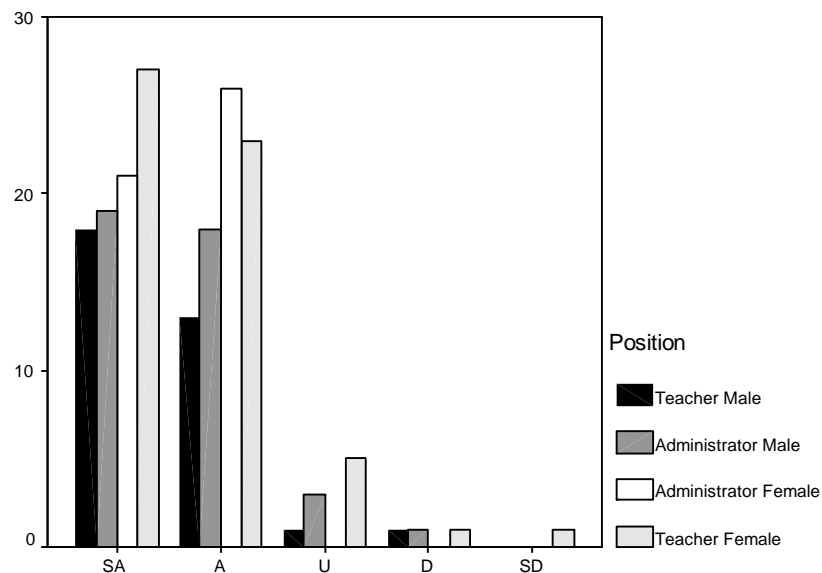


Figure 40. Distribution of Responses to the Statement, "Computer Technology Makes Communication Easy and Fast for Exchanging Information."

*It is Easy to Use Computer Technology for Students' Attendance.*

This question considered whether or not computer technology is easy to use for students' attendance. There were 176 responses and two non-responses. The overall mean was 2.06 with a standard deviation of 0.91 as shown in Appendix F.



Table 44 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Eight male teachers, or 15.1%, 20 male administrators, or 37.7%, 13 female administrators, or 24.5%, and 12 female teachers, or 22.6%, responded that they strongly agreed with the statement that computer technology enhances students' attendance. Thirteen male teachers, or 17.6%, 15 male administrators, or 20.3%, 15 female administrators, or 20.3%, and 31 female teachers, or 41.9%, chose the answer, agree. Eight male teachers, or 21.6%, 4 male administrator, or 10.8%, and 15 female administrators, or 40.5%, and 10 female teachers, or 27%, were uncertain. There were 2 male teachers, or 20%, one male administrator, or 10%, 4 female administrators, or 40%, and 3 female teachers, or 30%, who chose the response, disagree. Only one male administrator, or 50%, and one male teacher, or 50%, reported that they strongly disagree. A majority of the participants (72.2%) emphasized that computer technologies provide a great tool for students' attendances. Male administrators (37%) most strongly agree and more female teachers (41.9%) reported, agree, than male teachers. 21% of the participants were not certain that computer technologies support students' attendances. Figure 41 shows that the majority of the respondents asserted that computer technologies support students' attendance, and some of the participants were uncertain. A dash (-) indicates that the cells are empty.

Table 44

*Frequencies and Percentage Scores of the Participants toward Easy to Use Computer Technology for Students' Attendance (N=176).*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
It is easy to use computer technology for students' attendance	SA	8	20	13	12	53
		15.1%	37.7%	24.5%	22.6%	100.0%
	A	13	15	15	31	74
		17.6%	20.3%	20.3%	41.9%	100.0%
	U	8	4	15	10	37
		21.6%	10.8%	40.5%	27.0%	100.0%
	D	2	1	4	3	10
		20.0%	10.0%	40.0%	30.0%	100.0%
	SD	1	1	-	-	2
		50.0%	50.0%	-	-	100.0%

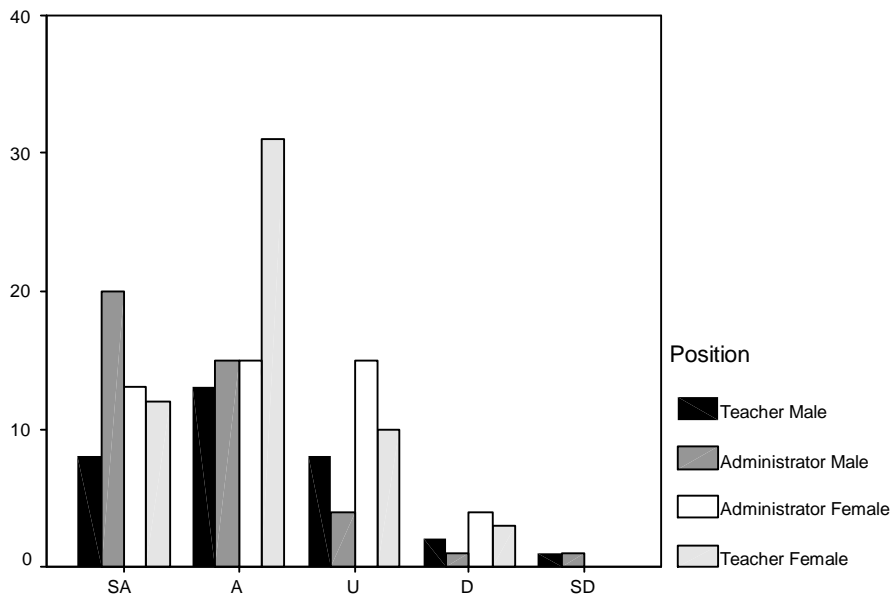


Figure 41. Distribution of the Responses to the Statement, "It Is Easy to Use Computer Technology for Students' Attendance."

*Computer Technology Is Useful for Keeping the Track of Students' Information.*

This question considered whether or not computer technologies support electronically tracking students' information. There were 176 responses and two non-responses. The overall mean was 1.68 with a standard deviation of 0.765 as shown in Appendix F. Table 45 breaks down the information of the question based upon the

scale that the survey used and provides the frequencies and percentages of the responses. There were 14 male teachers, or 16.9%, 25 male administrators, or 30.1%, 21 female administrators, or 25.3%, and 23 female teachers, or 27.7%, who responded that they strongly agreed with the statement that computer technologies support tracking students' information. Also, there were 15 male teachers, or 20.8%, 12 male administrators, or 16.7%, 21 female administrators, or 29%, and 24 female teachers, or 33.3%, who chose the answer, agree. Four male teachers, or 23.5%, one male administrator, or 5.9%, 5 female administrators, or 29.4%, and 7 female teachers, or 41.2%, were uncertain. There were 2 male administrators, or 66.7%, and one teacher female, or 33.3%, who chose the response, disagree. Only one male administrator responded, strongly disagree.

The majority of the participants (72.20%) emphasized that computer technologies support tracking students' information. More male administrators (30.1%) responded strongly agree with the statement than the other participants. More female administrators and teachers (62.5%) reported that they agree than male administrators and teachers. 9.7% of the participants were not certain that computer technologies support tracking students' information. Figure 42 shows that the majority of the respondents asserted that computer technologies support tracking students' information. A dash (-) indicates that the cells are empty.

Table 45

*Frequencies and Percentage Scores of the Participants toward Computer Technology*

*Is Useful for Keeping Track of Students' Information (N=176)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Computer technology is useful for keeping the track of students' information	SA	14 16.9%	25 30.1%	21 25.3%	23 27.7%	83 100.0%
	A	15 20.8%	12 16.7%	21 29.2%	24 33.3%	72 100.0%
	U	4 23.5%	1 5.9%	5 29.4%	7 41.2%	17 100.0%
	D	-	2 66.7%	-	1 33.3%	3 100.0%
	SD	-	1 100.0%	-	-	1 100.0%
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-

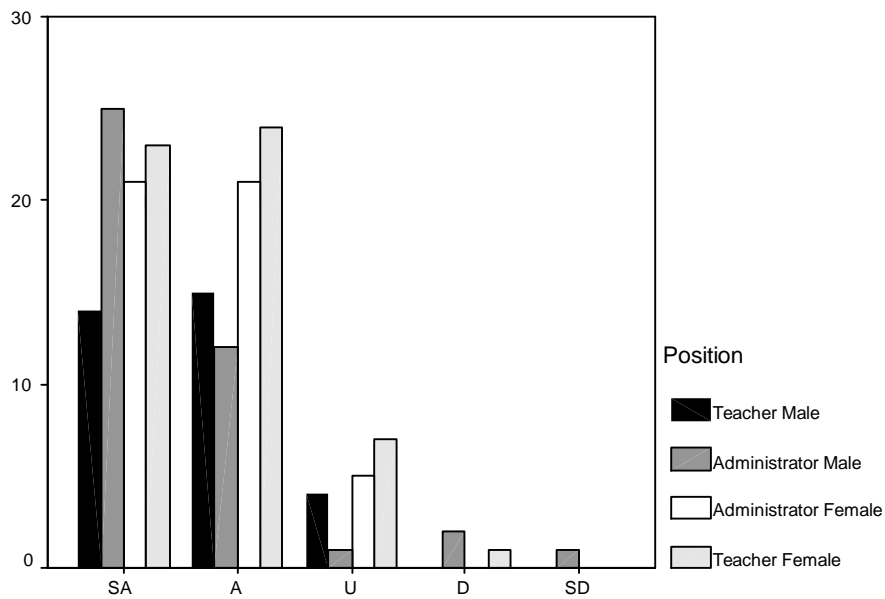


Figure 42. Distribution of the Responses to the statement, “Computer Technology is Useful for Keeping Track of Students’ Information.”

*Administrators and Teachers should Utilize Information Technology in Administrative Work.*

Teachers and administrators were asked whether or not they should employ information technology in administrative work. There were 178 who responded. The mean was 1.56 with a standard deviation of 0.65 as shown in Appendix F. Table 46 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 46 shows that of the participants who strongly agreed with the statement, there were 16 male teachers, or 17.4%, 23 male administrators, or 25%, 24 female administrators, or 26.1%, and 29 female teachers, or 31.5%. Of those who agree with the statement, there were 14 male teachers, or 18.4%, 14 male administrators, or 18.4%, 21 female administrators, or 27.60%, and 27 female teachers, or 35.5%. Two male teachers, or 28.6%, 3 male administrator, or 42.9%, one female administrator, or 14.3%, and one female teacher, or 14.3% were uncertain. One male teacher, or 33.3%, one male administrator, or 33.3%, and one female administrator, or 33.3% reported they strongly disagree.

The majority of participants (94.4%) asserted that administrators and teachers should utilize information technology in administrative work. Female administrators and teachers strongly agreed (57.6%) and agree (63.1%). Figure 43 shows the distribution of the participants. It shows that most of the participants strongly agreed and agree that information technology must be used in administrative work. A dash (-) indicates that the cells are empty.

Table 46

*Frequencies and Percentage Scores of the Participants toward Administrators and Teachers should Utilize Information Technology in Administrative Work (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the knowledge to use computers in administrative work	SA	2 6.7%	13 43.3%	10 33.3%	5 16.7%	30 100.0%
	A	7 11.9%	17 28.8%	22 37.3%	13 22.0%	59 100.0%
	U	19 38.8%	5 10.2%	9 18.4%	16 32.7%	49 100.0%
	D	4 11.4%	6 17.1%	4 11.4%	21 60.0%	35 100.0%
	SD	1 20.0%	-	2 40.0%	2 40.0%	5 100.0%

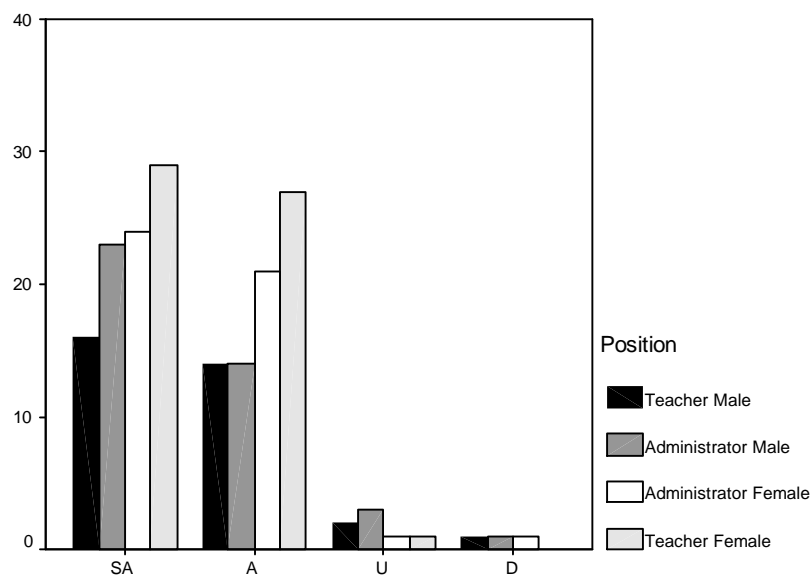


Figure 43. Distribution of the Responses to the statement, “Administrators and Teachers should Utilize Information Technology in Administrative Work.”

### *Knowledge and Skills of Information Technology*

#### *I Use The Internet for Communication, Such as Email.*

Teachers and administrators were asked whether or not they used the Internet for communication, such as email. There were 175 responses and 3 non-responses. The mean was 1.74 with a standard deviation of 0.86 as shown in Appendix G. Table

47 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 47 shows that of the participants who strongly agree with the statement they were 19 male teachers, or 22.9%, 20 male administrators, or 24.1%, 21 female administrators, or 25.3%, and 23 female teachers, or 27.7%. Those who agreed with the statement were 8 male teachers, or 12.5%, 17 male administrators, or 26.6%, 19 female administrators, or 29.7%, and 20 female teachers, or 31.3%. Whereas, 4 male teachers, or 21.1%, 3 male administrators, or 15.8%, 5 female administrators, or 26.3%, and 7 female teachers, or 36.8%, were uncertain.

Most of the participants (84%) asserted they strongly agree or agree that it is essential to use e-mail in communications. 10.9% of the participants reported that they were not certain, most of whom were represented by the male teachers, female administrators and female teachers. Of those who said, disagree the majority were female teachers. Figure 44 shows the distribution of the participants. A dash (-) indicates that the cells are empty.

Table 47

*Frequencies and Percentage Scores Responses to the Statement, I Use the Internet for Communication, such as Email (N=175)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I use the Internet for communication, such as email	SA	19 22.9%	20 24.1%	21 25.3%	23 27.7%	83 100.0%
	A	8 12.5%	17 26.6%	19 29.7%	20 31.3%	64 100.0%
	U	4 21.1%	3 15.8%	5 26.3%	7 36.8%	19 100.0%
	D	- -	1 12.5%	2 25.0%	5 62.5%	8 100.0%
	SD	1 100.0%	- -	- -	- -	1 100.0%

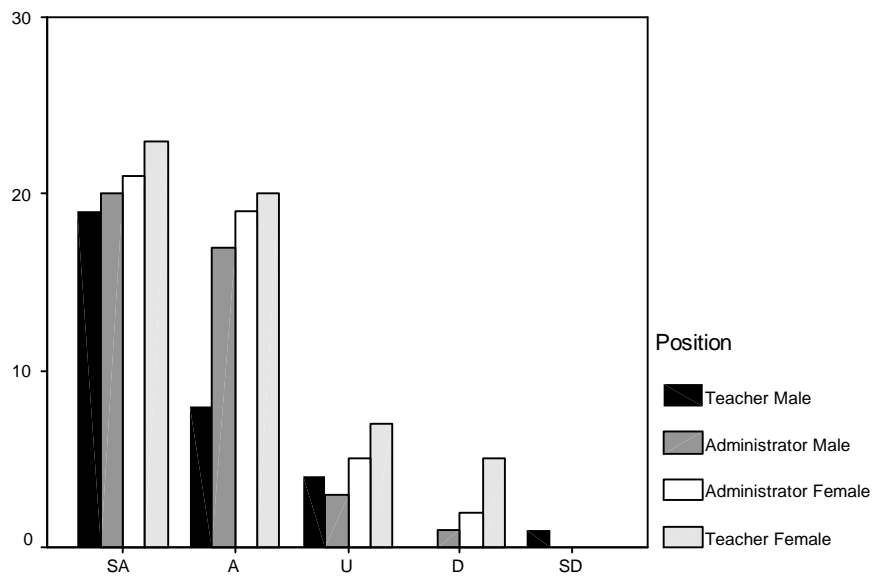


Figure 44. Distribution of the Responses to the statement, "I Use the Internet for Communication, such as Email."

#### *I Have the Ability to Use Basic Computer Functions*

The question explored whether administrators and teachers have the ability to conduct basic computer functions. There were 177 responses and one non-response. The overall mean was 2.68 with a standard deviation of 1.05 as shown in Appendix G. Table 48 breaks down the information of the question based upon the scale that the



survey used and provides the frequencies and percentages of the responses.

According to Table 48, one male teacher, or 4.0%, 11 male administrators, or 44.0%, 6 female administrators, or 24.0%, and 7 female teachers, or 28.0%, responded that they strongly agree that they had the ability to use the basic of the computer functions. Thirteen male teachers, or 24.5%, 9 male administrators, or 17.0%, 17 female administrators, or 32.1%, and 14 female teachers, or 26.4%, chose the answer, agree. Fourteen male teachers, or 23.0%, 11 male administrators, or 18.0%, 16 female administrators, or 26.2%, and 20 female teachers, or 32.8%, were uncertain. There were 4 male teachers, or 13.3%, 8 male administrators, or 26.7%, 5 female administrators, or 16.7%, and 13 male teachers, or 43.3%, who chose the response, disagree. Only one male teacher, or 12.5%, one male administrator, or 12.5%, 3 female administrators, or 37.5%, and 3 male teachers, or 37.5%, who chose the response, strongly disagree. 34.5% of the participants reported that they were uncertain whether they had enough skills use computer functions. Male and female (teachers and administrators) who did not possess the skills constituted 21.4% of the participants. Male and female (teachers and administrators) that were able to use computer functions represent 44.1%. The majority of the participants who reported that they did not know the basic of computer functions were female administrators, female teachers and male teachers. Figure 45 shows that the many of the participants were uncertain or disagreed with the statement.

Table 48

*Frequencies and Percentage Score of the Responses to the Statement, I Have the Ability to Use Basic Computer Functions*

(N=177)

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the ability to use basic computer functions.	SA	1	11	6	7	25
		4.0%	44.0%	24.0%	28.0%	100.0%
	A	13	9	17	14	53
		24.5%	17.0%	32.1%	26.4%	100.0%
	U	14	11	16	20	61
		23.0%	18.0%	26.2%	32.8%	100.0%
	D	4	8	5	13	30
		13.3%	26.7%	16.7%	43.3%	100.0%
	SD	1	1	3	3	8
		12.5%	12.5%	37.5%	37.5%	100.0%

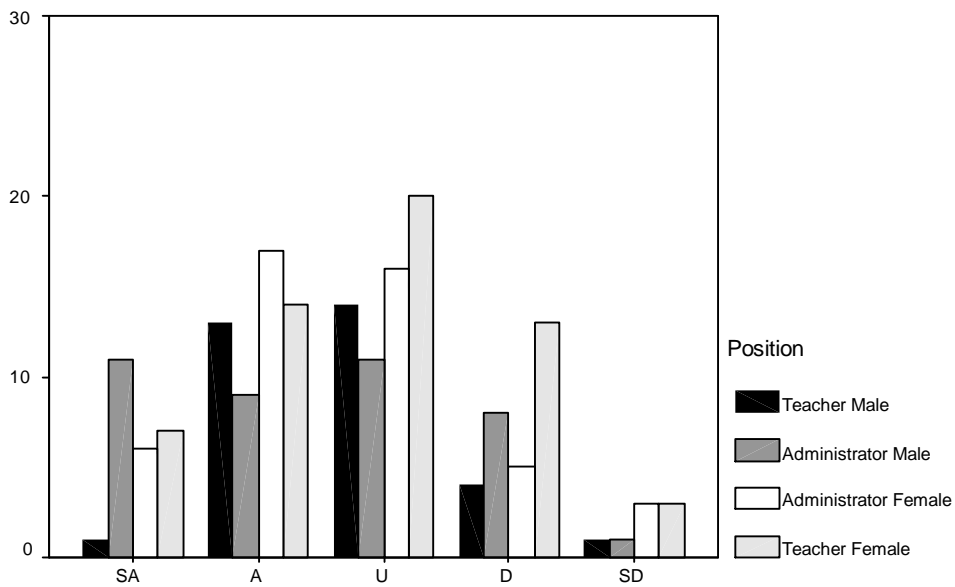


Figure 45. Distribution of the Responses to the statement, “I Have the Ability to Use Basic Computer Functions.”

*I Can Use an Operating System Such as Windows.*

This question investigated whether or not the participants have the ability to use operating systems such as *Windows*. There were 177 responses and one non-response. The overall mean was 2.06 with a standard deviation of 1.10 as shown in Appendix G. Table 49 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 48 data indicated that 11 male teachers, or 15.9%, 19 male administrators, or 27.5%, 18 female administrators, or 26.1%, and 21 female teachers, or 30.4%, responded that they strongly agreed that they were able to use the *Windows* operating system. Also, 12 male teachers, or 21.1%, 16 male administrators, or 28.1%, 12 female administrators, or 21.1%, and 17 female teachers, or 29.8%, chose the answer, agree. Nine male teachers, or 32.1%, 14 female administrators, or 50%, and 5 female teachers, or 17.9%, were uncertain. There were only one male administrator, or 5.6%, 6 male administrators, or 33.3%, 1 female administrator, or 5.6%, and 10 female teachers, or 55.6%, who chose the response disagree. Two female administrators, or 40%, and 3 female teachers, or 60%, who strongly disagree. Most of the participants (71.2%) maintained that they are able to use operating systems such as *Windows*. Those who were uncertain or did not have the skills to use the *Windows* operating system represented 28.2% of all the participants. Of the participants who did not have these skills, were female teachers, and female and male administrators. The majority of those who said strongly agree, were female teachers and who those who agree the least were the male teachers. Figure 46 shows that the

majority of the respondents asserted that they knew how to use operating systems such as *Windows*. A dash (-) indicates that the cells are empty.

Table 49

*Frequencies and Percentage Scores Responses to the Statement, I Have the Ability to Use Operating Systems, such as Windows (N=177).*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I can use an operating system such as Windows	SA	11 15.9%	19 27.5%	18 26.1%	21 30.4%	69 100.0%
	A	12 21.1%	16 28.1%	12 21.1%	17 29.8%	57 100.0%
	U	9 32.1%	-	14 50.0%	5 17.9%	28 100.0%
	D	1 5.6%	6 33.3%	1 5.6%	10 55.6%	18 100.0%
	SD	-	-	2 40.0%	3 60.0%	5 100.0%
		-	-	2 26.6%	3 31.6%	5 100.0%
		18.6%	23.2%	26.6%	31.6%	100.0%

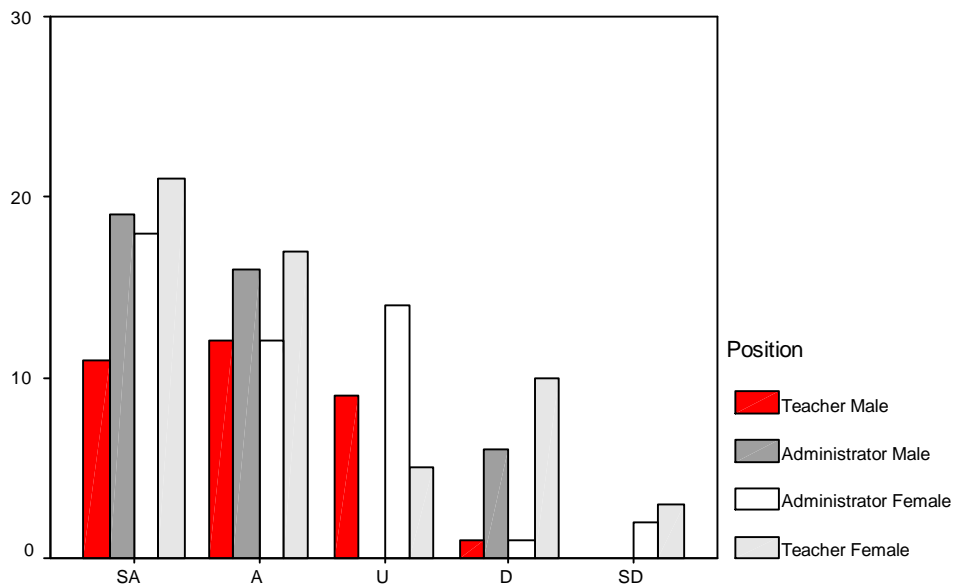


Figure 46. Distribution of the Responses to the statement, “I Have the Ability to Use Operating Systems, such as Windows.”

*I have the Ability to Use PowerPoint.*

This question discussed whether or not the participants have the skills and knowledge to use PowerPoint. There were 175 responses and 3 non-responses. The overall mean was 2.14 with a standard deviation of 0.89 as shown in Appendix G. Table 50 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 50 indicates 2 male teachers, or 10%, 7 male administrators, or 35%, 3 female administrators, or 15%, and 8 female teachers, or 40%, responded that they strongly agree. This response meant they are able to use PowerPoint. Also, 9 male teachers, or 29%, 9 male administrators, or 29%, 6 female administrators, or 19.4%, and 7 female teachers, or 22.6%, chose the answer, agree. Twelve male teachers, or 19%, 8 female administrators, or 12.7%, 27 female administrators, or 42.9%, and 16 female teachers, or 25.4% were uncertain. There were 8 male teachers, or 14.8%, 17 male administrator, or 31.5%, 7 female administrators, or 13%, and 22 female, or 40.7%, who chose the response, disagree. Of those who reported, strongly disagree, were 2 male administrators, or 22.2%, 3 female administrators, or 33.3%, and 4 female teachers, or 44.4%. The majority of the participants (72%) affirmed that they were uncertain or did not have the skills to use PowerPoint.

The majority of those who indicated uncertain were female administrators and female teachers. The majority most of those who disagreed were male administrators and female teachers. Figure 47 shows that most of the respondents (72%) asserted that they did not or were uncertain of their skills and knowledge of the PowerPoint application. A dash (-) indicates that the cells are empty.

Table 50

*Frequencies and Percentage Scores Responses to the Statement, I have the Ability to Use PowerPoint (N=175).*

		Position				
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	Total
I have the ability to use PowerPoint	SA	2	7	3	8	20
		10.0%	35.0%	15.0%	40.0%	100.0%
	A	9	9	6	7	31
		29.0%	29.0%	19.4%	22.6%	100.0%
	U	12	8	27	16	63
		19.0%	12.7%	42.9%	25.4%	100.0%
	D	8	17	7	22	54
		14.8%	31.5%	13.0%	40.7%	100.0%
	SD	2	-	3	4	9
		22.2%	-	33.3%	44.4%	100.0%

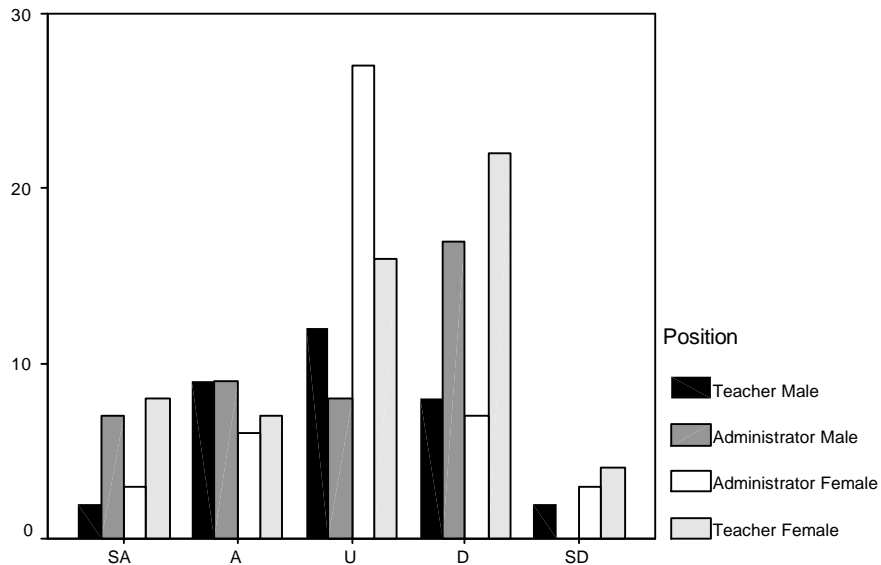


Figure 47. Distribution of the Responses to the statement, "I have the Ability to Use PowerPoint."

*I Can Use a Spreadsheet, Such as Excel, to Analyze Data in order to Represent My Work.*

This question addressed the knowledge and skills of administrators and teachers in employing spreadsheets, such as *Excel*, in their work. There were 177 responses and one non-response. The overall mean was 2.14 with a standard deviation of 0.89 as shown in Appendix G. Table 51 breaks down the information of

the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 51 indicates 13 male teachers, or 25.5%, 9 male administrators, or 17.6%, 12 female administrators, or 23.5%, and 17 female teachers, or 33.3%, responded that they strongly agree with the statement. Fourteen male teachers, or 25%, 14 male administrators, or 25%, 14 female administrators, or 25%, and 14 female teachers, or 25%, chose the answer, agree, while 5 male teachers, or 8.1%, 15 male administrators, or 24.2%, 19 female administrators, or 30.6%, 23 female teachers, or 37.1%, were uncertain. There were 2 male administrators, or 40%, one female administrator, or 20%, and 2 female teachers, or 40%, who chose the response, disagree. There was only one female teacher who strongly disagreed.

Of the participants (38.9%) indicated that they did not have the skills and knowledge of spreadsheets such as *Excel* in the work place. The majority were uncertain with a majority of this number being female teachers, female administrators and male administrators, respectively. Figure 48 shows that many of the participants did not possess the skills and knowledge of spreadsheets in order to analyze data to represent their work.

Table 51

*Frequencies and Percentage Score Responses to the Statement I Can Use a Spreadsheet, Such as Excel, to Analyze Data in order to Represent My Work (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I can use a spreadsheet, such as Excel, to analyze data and draw chart in order to represent my work	SA	13 25.5%	9 17.6%	12 23.5%	17 33.3%	51 100.0%
	A	14 25.0%	14 25.0%	14 25.0%	14 25.0%	56 100.0%
	U	5 8.1%	15 24.2%	19 30.6%	23 37.1%	62 100.0%
	D	- -	2 40.0%	1 20.0%	2 40.0%	5 100.0%
	SD	- -	- -	- -	1 100.0%	1 100.0%

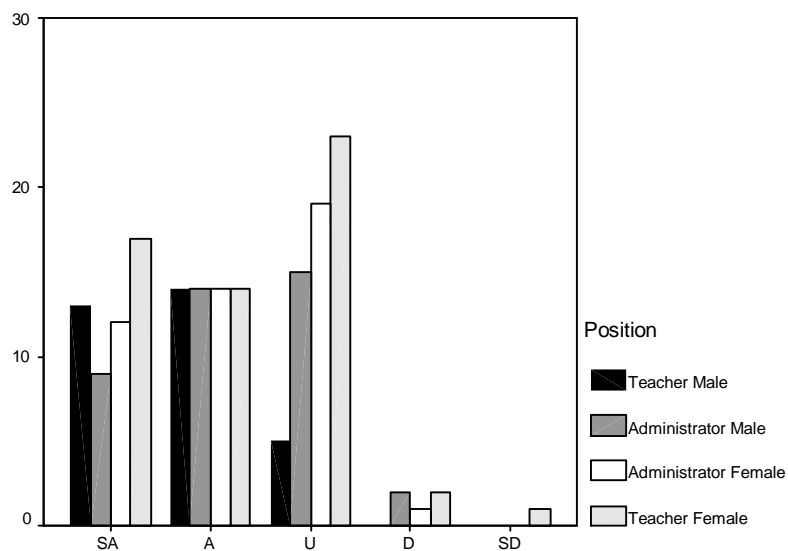


Figure 48. Distribution of the Responses to the statement, “I Can Use a Spreadsheet, Such as Excel, to Analyze Data in order to Represent My Work.”

*I have the Ability to Organize My Files on a Hard Drive, Zip Disc, or Floppy Disc.*

Teachers and administrators were asked whether or not they are able to organize their information on a hard drive, zip disc, or floppy disc. There were 177 responses and one non-response. The mean was 2.42 with a standard deviation of 1.11 as shown in Appendix G. Table 52 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and



percentages of the responses. Of the participants who strongly agree with the statement, there were 5 male teachers, or 11.6%, 13 male administrators, or 30.2%, 9 female administrators, or 20.9%, and 16 female teachers, or 37.2%. Of those who agreed with the statement, there were 14 male teachers, or 24.6%, 17 male administrators, or 29.8%, 16 female administrators, or 28.1%, and 10 female teachers, or 17.5%. Meanwhile, 10 male teachers, or 25%, 5 male administrators, or 12.5%, 13 female administrator or 32.5%, 12 male teachers, or 30%, were uncertain. Of those who responded, disagree were 3 male teachers, or 9.1%, 6 male administrators or 18.2%, 9 female administrators, or 27.3%, and 15 female teachers, or 45.5%. Only 4 female teachers who participated said they strongly disagree. Sixteen female teachers reported they strongly agree. Fifteen female teachers stated they did not have ability or disagree.

Consequently, 43.5% of the respondents reported that they did not have the ability to organize their information on the various storage apparatus, such as a hard drive, zip disc, or floppy disc. The majority of the respondents who were not certain were, sequentially (in regards to their inability), 13 female administrators, 12 female teachers, 5 male administrators and 10 male teachers. Those who did not have the skills and knowledge to organize their information on electronic media were, sequentially (in regards to their inability), female teachers, female administrators, and male administrators. Figure 49 shows the distribution of the participants. A dash (-) indicates that the cells are empty.

Table 52

*Frequencies and Percentage Scores Responses to the Statement, I Have the Ability to Organize My Files on a Hard Drive, Zip Disc, or Floppy Disc (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the abilities to organize my files on a hard drive, zip disc, or floppy disc	SA	5 11.6%	13 30.2%	9 20.9%	16 37.2%	43 100%
	A	14 24.6%	17 29.8%	16 28.1%	10 17.5%	57 100%
	U	10 25.0%	5 12.5%	13 32.5%	12 30.0%	40 100%
	D	3 9.1%	6 18.2%	9 27.3%	15 45.5%	33 100%
	SD	-	-	-	4 100.0%	4 100%
		-	-	-		

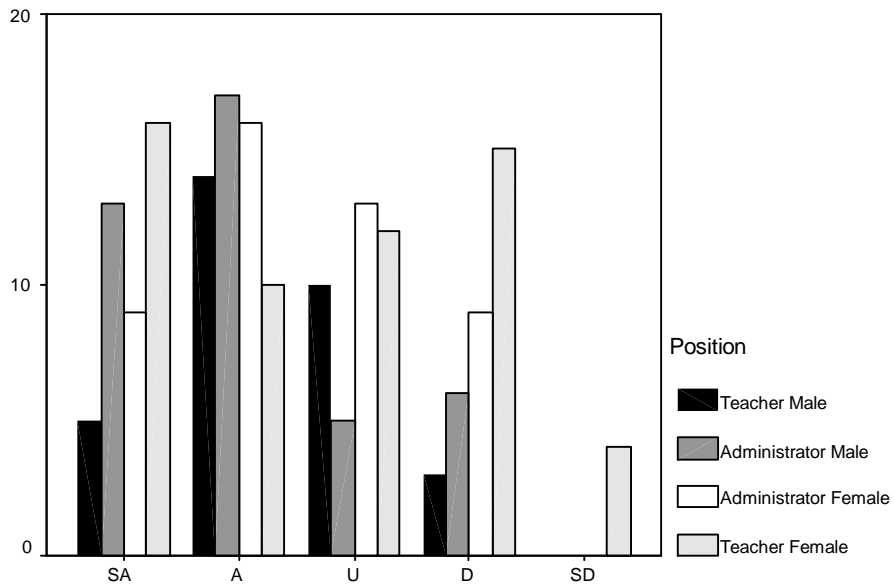


Figure 49. Distribution of the Responses to the statement, “I have the Ability to Organize my Files on a Hard Drive, Zip Disc, or Floppy Disc.”

*I Know How to Use the Internet Search Engines in order to Seek Information.*

Teachers and administrators were asked whether or not they knew how to use the Internet search engines to seek information that they need. There were 178 responses. The mean was 2.65 with a standard deviation of 1.02 as shown in Appendix G. Table 53 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 53 shows that of the participants who strongly agreed with the statement, there were 5 male teachers, or 19.2%, 8 male administrators, or 30.8%, 6 female administrators, or 23.1%, and 7 female teachers, or 26.9%. Of those who agreed with the statement, there were 13 male teachers, or 24.5%, 16 male administrators, or 30.2%, 9 female administrators, or 17%, and 15 female teachers, or 28.2%. Whereas, 13 male teachers, or 21.3%, 8 male administrator, or 13.1%, 25 female administrators, or 41%, and 15 male teachers, or 24.6%, were uncertain. Of those who disagreed were 2 male teachers, or 5.9%, 9 male administrators, or 26.5%, 7 female administrators, or 20.6%, and 16 female teachers, or 47.1%, while 4 female administrators, or 50%, strongly disagreed.

A majority of the participants (54.6%) asserted that they did not have the knowledge and skills to use search engines on the Internet to get information that they need. Most of those who were not certain were, sequentially (in regards to their inability), female administrators, female teachers, and male teachers. The majority of those who disagreed were female teachers and those who disagreed the least were male teachers. Figure 50 indicates there were many participants who were not able to use the web search engines to acquire information. A dash (-) indicates that the cells are empty.

Table 53

*Frequencies and Percentage Scores Responses to the Statement, I Know How to Use the Internet Search Engines in Order to Seek Information (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I know how to use the Internet search engines in order to seek information	SA	5 19.2%	8 30.8%	6 23.1%	7 26.9%	26 100.0%
	A	13 24.5%	16 30.2%	9 17.0%	15 28.3%	53 100.0%
	U	13 21.3%	8 13.1%	25 41.0%	15 24.6%	61 100.0%
	D	2 5.9%	9 26.5%	7 20.6%	16 47.1%	34 100.0%
	SD	- -	- -	- -	4 100.0%	4 100.0%

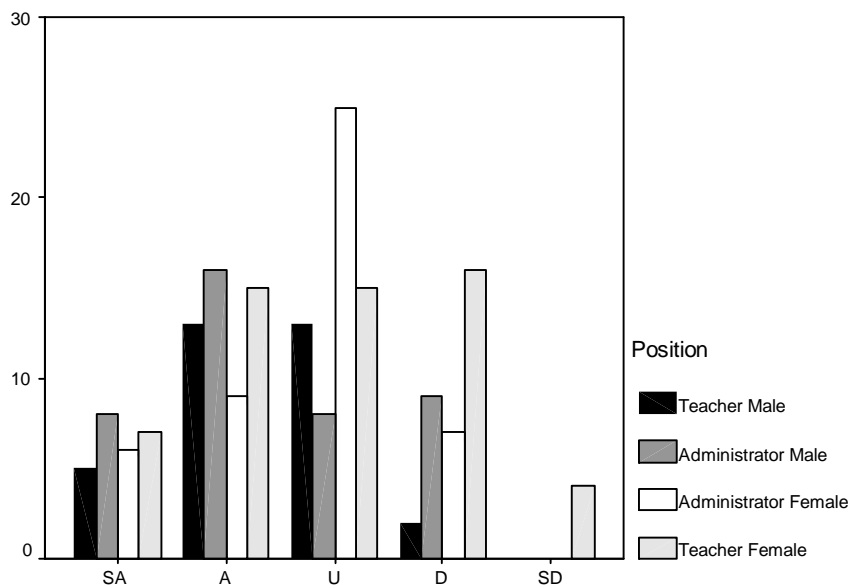


Figure 49. Distribution of the Responses to the statement, “I Know How to Use the Internet Search Engines in order to Seek Information.”

*I have the Skills to Develop My Own Web Page.*

Teachers and administrators were asked whether or not they have skills and knowledge to develop a web page. There were 177 responses and one non-response.

The overall mean was 2.65 with a standard deviation of 1.02 as shown in Appendix G.

Table 54 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses.

According to Table 54, three female administrators, or 75%, and one female teacher, or 25%, responded that they strongly agree that they were able to develop their own web pages. Four male teachers, or 18.2%, 5 male administrators, or 22.7%, 4 female administrators, or 18.2%, and 9 female teachers, or 40.9%, chose the answer, agree. Eight male teachers, or 14%, 9 male administrators, or 15.8%, 23 female teachers, or 40.4%, and 17 male teachers, or 29.8% were uncertain. There were 17 male teachers, or 22.4%, 21 male administrators, or 27.6%, 13 female administrators, or 17.1%, and 25 female teachers, or 32.9%, who chose the response, disagree. Four male teachers, or 22.2%, 5 male administrators, or 27.8%, 4 female administrators, or 22.2%, and 5 female teachers, or 27.8%, who strongly disagree with the statement.

Most of the participants (85.15%) did not have the skills and knowledge to develop their own web pages. A dash (-) indicates that the cells are empty.

Table 54

*Frequencies and Percentage Scores Responses to the Statement, I Have the Skills to Develop My Own Web Page (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the skills to develop my own web page	SA	-	-	3	1	4
		-	-	75.0%	25.0%	100.0%
	A	4	5	4	9	22
		18.2%	22.7%	18.2%	40.9%	100.0%
	U	8	9	23	17	57
	14.0%	15.8%	40.4%	29.8%	100.0%	
	D	17	21	13	25	76
		22.4%	27.6%	17.1%	32.9%	100.0%
	SD	4	5	4	5	18
		22.2%	27.8%	22.2%	27.8%	100.0%

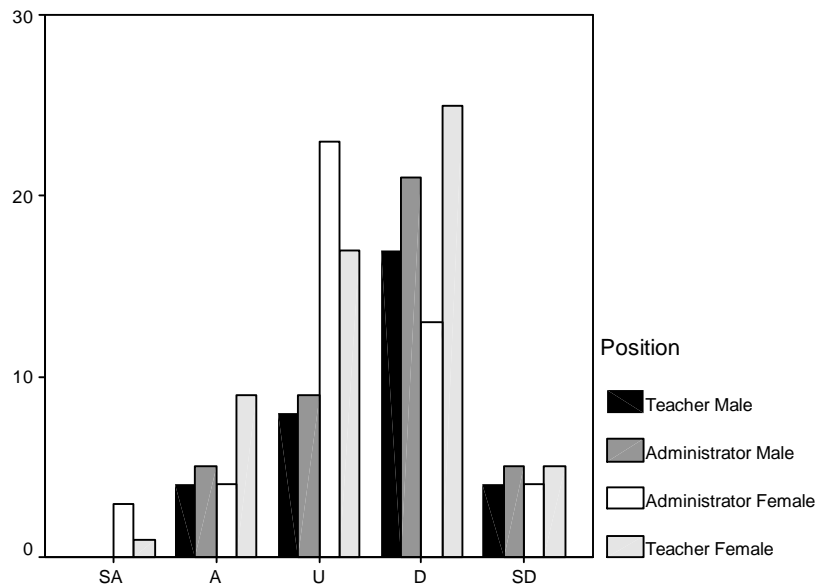


Figure 51. Distribution of the Responses to the statement, "I have the Skills to Develop My Own Web Page."

*I Can Use Word Processing Functions to Write and Edit My Text.*

This question considered whether or not teachers and administrators are able to use word processing functions to write and edit text. There were 178 responses. The overall mean was 2.36 with a standard deviation of 1.10 as shown in Appendix G. Table 55 breaks down the information of the question based upon the scale that the

survey used and provides the frequencies and percentages of the responses. According to the data in Table 55, 9 male teachers, or 17.4%, 11 male administrators, or 23.9%, 10 female administrators, or 21.7%, and 17 female teachers, or 37%, strongly agree that they have the skills that allow them to use word processing functions. Ten male teachers, or 16.9%, 20 male administrators, or 33.9%, 15 female administrators, or 25.4%, and 14 female teachers, or 23.7%, chose the answer, agree. Twelve male teachers, or 29.3%, 3 male administrators, or 7.3%, and 16 female administrators, or 39%, 10 female teachers, or 24.4% were uncertain. There were 2 male teachers, or 7.4%, 6 male administrators, or 22.2%, 6 female administrators, or 22.2% and 13 female teachers, or 48.1%, who chose the response, disagree and one male teacher, or 20%, one male administrator, or 20%, and 3 male teachers, or 60%, who strongly disagree.

Consequently, 41% of the participants indicated that they did not have word processing skills. They were unable to utilize word processing in their work. The majority of those who were uncertain were female administrators and male teachers. The majority of those who said, disagree were female teachers. Figure 52 shows that some of the participants did not possess the skills and knowledge to employ word processing in their work. A dash (-) indicates that the cells are empty.

Table 55

*Frequencies and Percentage Scores Responses to the Statement, I Can Use Word Processing Functions to Write and Edit My Text (N=178).*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I can use word processing functions to write and edit my text	SA	8 17.4%	11 23.9%	10 21.7%	17 37.0%	46 100.0%
	A	10 16.9%	20 33.9%	15 25.4%	14 23.7%	59 100.0%
	U	12 29.3%	3 7.3%	16 39.0%	10 24.4%	41 100.0%
	D	2 7.4%	6 22.2%	6 22.2%	13 48.1%	27 100.0%
	SD	1 20.0%	1 20.0%	- -	3 60.0%	5 100.0%

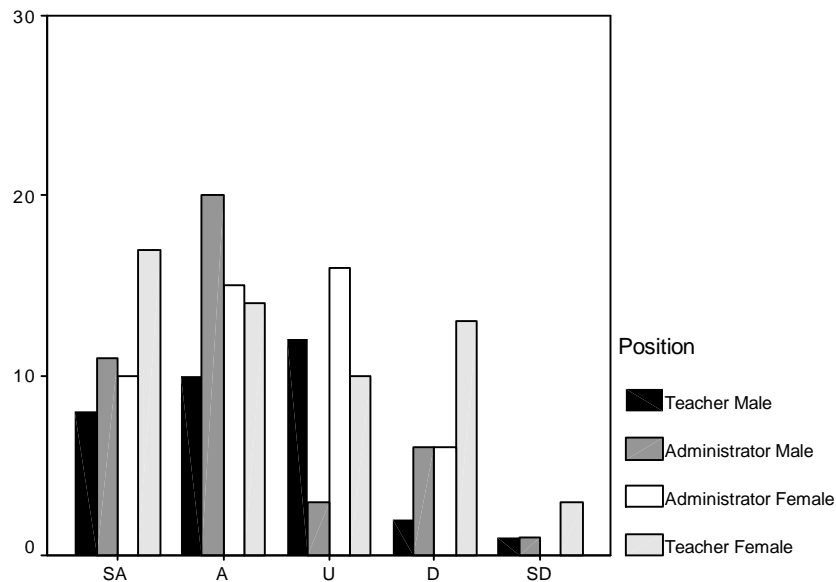


Figure 52. Distribution of the Responses to the statement, "I Can Use Word Processing Functions to Write and Edit My Text."

*I Have the Knowledge to Use Information Technology in Administrative Work.*

This question considered whether or not teachers and administrators were able to use computer technologies to support administrative work. There were 178 responses. The overall mean was 2.58 with a standard deviation of 1.07 as shown in



Appendix G. Table 56 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. According to Table 56, 2 male teachers, or 6.7%, 13 male administrators, or 43.3%, 10 female administrators, or 33.3%, and 5 female teachers, or 16.7%, responded that they strongly agreed with the statement that computer technologies support tracking students' information. Seven male teachers, or 11.9%, 17 male administrators, or 28.8%, 22 female administrators, or 37.3%, and 13 female teachers, or 22%, chose the answer, agree. However, 19 male teachers, or 38.8%, 5 male administrators, or 10.2%, 9 female administrators, or 18.4%, and 16 female teachers, or 32.7%, were uncertain. There were 4 male administrators, or 11.4% and 6 male teacher, or 17.1%, 4 female administrators, or 11.4%, 21 female teachers, or 60%, chose the response, disagree. One male administrator, or 20%, 2 female administrators, or 40%, and 2 female teachers, or 40% reported that they strongly disagree.

Consequently, 50% of the participants reported that they don't have the skills to use computer technology in administrative work. A dash (-) dash indicates that the cells are empty. Figure 53 shows that half of the respondents did not have computer technology skills to use for their administrative work.

Table 56

*Frequencies and Percentage Scores of the Responses to the Statement, I Have the Knowledge to Use Computers in Administrative Work (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the knowledge to use computers in administrative work	SA	2 6.7%	13 43.3%	10 33.3%	5 16.7%	30 100.0%
	A	7 11.9%	17 28.8%	22 37.3%	13 22.0%	59 100.0%
	U	19 38.8%	5 10.2%	9 18.4%	16 32.7%	49 100.0%
	D	4 11.4%	6 17.1%	4 11.4%	21 60.0%	35 100.0%
	SD	1 20.0%	-	2 40.0%	2 40.0%	5 100.0%

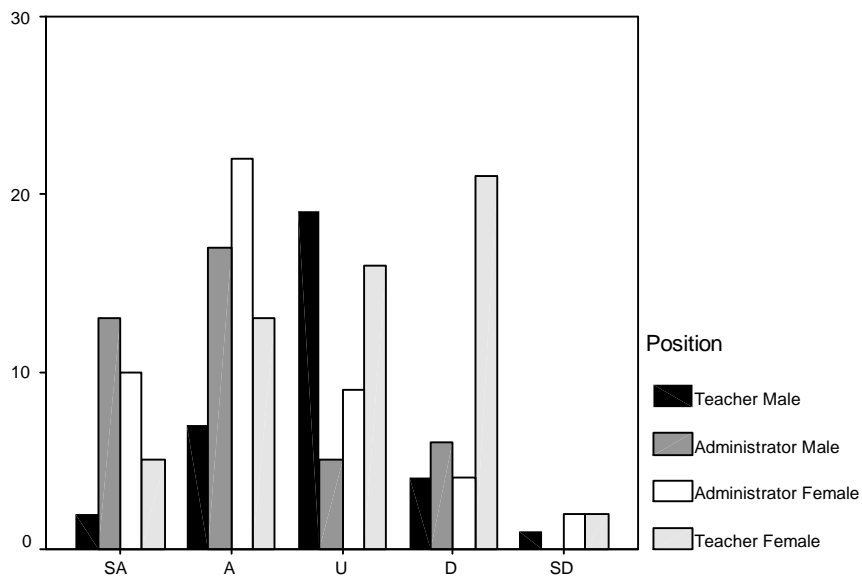


Figure 53. Distribution of the Responses to the statement, "I Have the Knowledge to Use Computers in Administrative Work."

*I Have the Ability to Select and Evaluate Software for School.*

This question investigated whether teachers and administrators had obtained the skills and knowledge to permit them to evaluate software and courseware for their schools. There were 178 responses. The mean was 2.8 with a standard deviation of 1.035 as shown in Appendix G. Table 57 breaks down the information of the

question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 57 shows that of those participants who strongly agree with the statement, there were 2 male teachers, or 10%, 6 male administrators, or 30%, 9 female administrators, or 45%, and 3 female teachers, or 15%. Of those who agree with the statement, there were 8 male teachers, or 19%, 16 male administrators, or 38.1%, 10 female administrators, or 23.8%, and 8 female teachers, or 19%. Whereas, 12 male teachers, or 18.2%, 9 male administrators, or 13.6%, 19 female administrators, or 28.8%, and 26 female teachers, or 39.4%, were uncertain. Nine male teachers, or 20.9%, 9 male administrators, or 20.9%, 6 female administrators, or 14%, and 19 female teachers, or 44.2%, disagree. Two male teachers, or 28.6%, 1 male administrator, or 14.3%, 3 female administrators, or 42.9%, and 1 female teacher, or 14.3% strongly disagree.

Consequently, most of the participants (65.2%) indicated that they do not have the skills and knowledge to allow them to evaluate and choose appropriate software for school. Of those who were uncertain were 26 female teachers, 19 female administrators, 12 male teachers and 9 male administrators. Those who disagree and strongly disagree were, 20 female teachers, 11 male teacher, 10 male administrators and 9 female administrators. Figure 54 shows that the majority of the participants do not have the skills and knowledge to give them the ability to consider what type of software to use in school.

Table 57

*Frequencies and Percentage Scores of the Responses to the Statement, I Have the Ability to Select and Evaluate Software for School (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the ability to select and evaluate software for school	SA	2	6	9	3	20
		10.0%	30.0%	45.0%	15.0%	100.0%
	A	8	16	10	8	42
		19.0%	38.1%	23.8%	19.0%	100.0%
	U	12	9	19	26	66
		18.2%	13.6%	28.8%	39.4%	100.0%
	D	9	9	6	19	43
		20.9%	20.9%	14.0%	44.2%	100.0%
	SD	2	1	3	1	7
		28.6%	14.3%	42.9%	14.3%	100.0%

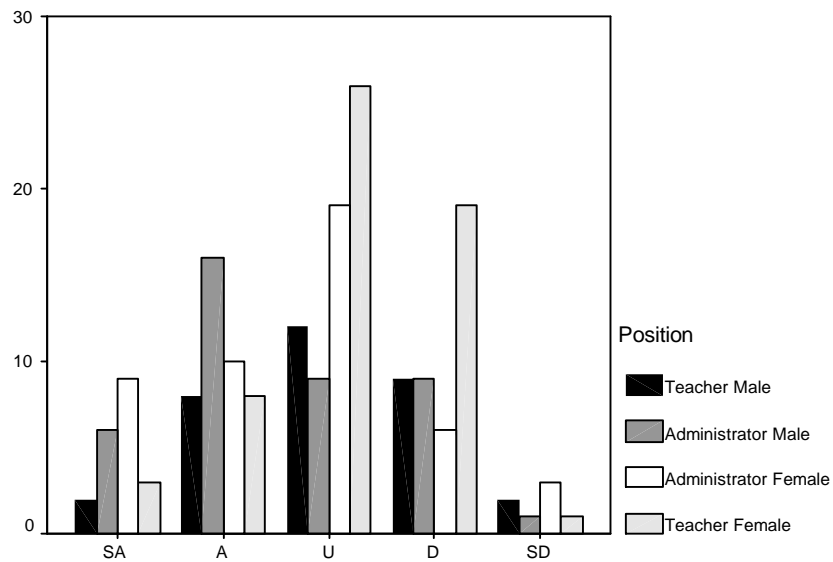


Figure 54. Distribution of the Responses to the Statement, “I Have the Ability to Select and Evaluate Software for School.”

*I have the Ability to Select and Evaluate Hardware for School.*

The teachers and administrators were asked whether or not they have the skills and knowledge of evaluating hardware for school. There were 178 responses. The mean was 2.88 with a standard deviation of 0.99 as shown in Appendix G. Table 58 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Table 58 shows that of those participants who strongly agree with the statement were 2 male teachers, or 11.8%, 4 male administrators, or 23.5%, 7 female administrators, or 41.2%, and 4 female teachers, or 23.5%. Of those who agreed with the statement, there were 8 male teachers, or 20%, 15 male administrators, or 37.5%, 10 female administrators, or 25%, and 7 female teachers, or 17.5%. Thirteen male teachers, or 17.1%, 14 male administrators, or 18.4%, 20 female administrators, or 26%, and 29 female teachers, or 38.2%, were uncertain.

Seven male teachers, or 18.9%, 7 male administrators, or 18.9%, 7 female administrators, or 18.9%, and 16 female teachers, or 43.2%, responded that they disagreed. Whereas, three male teachers, or 37.5%, 1 male administrator, or 12.5%, 3 female administrators, or 37.5%, and 1 female teacher, or 12.5%, strongly disagree.

Most of participants (68%) pointed out that they had not acquired the skills and knowledge of information technology that allow them to evaluate the computer technology hardware for school. Of the participants who were uncertain were 29 female teachers, 20 female administrators, 14 male administrators, and 13 male teachers. Those who disagree and strongly disagree were 17 female teachers, 10 female administrators, 10 male teachers, 8 male administrators. Figure 55 shows that

most participants had not acquired knowledge and skills about information technology.

Table 58

*Frequencies and Percentage Scores of the Responses to the Statement, I Have the Ability to Select and Evaluate Hardware for School (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
I have the ability to select and evaluate hardware for school	SA	2 11.8%	4 23.5%	7 41.2%	4 23.5%	17 100.0%
	A	8 20.0%	15 37.5%	10 25.0%	7 17.5%	40 100.0%
	U	13 17.1%	14 18.4%	20 26.3%	29 38.2%	76 100.0%
	D	7 18.9%	7 18.9%	7 18.9%	16 43.2%	37 100.0%
	SD	3 37.5%	1 12.5%	3 37.5%	1 12.5%	8 100.0%

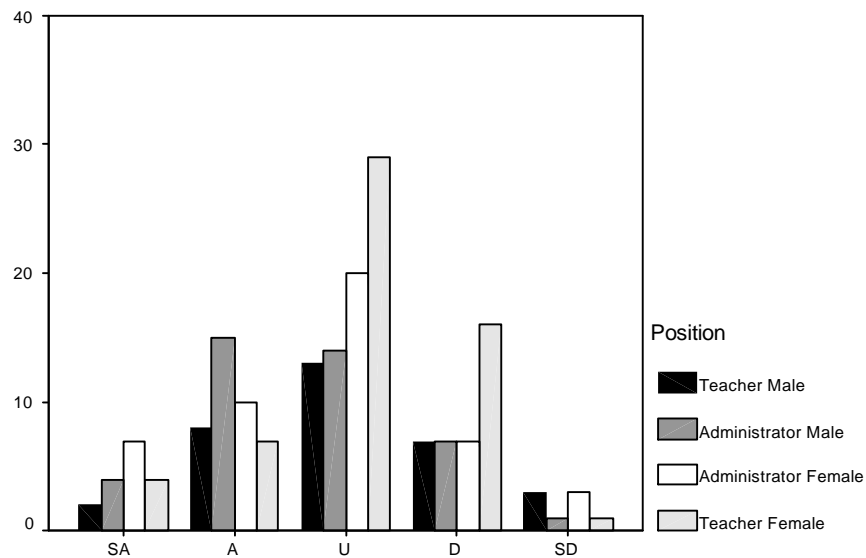


Figure 55. Distribution of the Responses to the statement, “I Have the Ability to Select and Evaluate Hardware for School.”

*Information Technology Staff Development*

The administrators and teachers were asked whether they have taken information technology courses related to computers and the Internet. Table 59 illustrates the participants' information in two categories, yes or no. Of the respondents who had taken courses there were 15 male teachers, or 22.4%, 15 male administrators, 22.4%, 15 female administrators, or 22.4%, and 22 female teachers, or 32.8%. Of the participants who reported that they had not take courses in this field, 18 were male teachers, or 16.2%, 26 were male administrators, or 23.4%, 32 were female administrators, or 28.8%, and 35 were female teachers, or 31.5%.

The majority of the participants (62.4%) had not taken computer. The majority of those who said they had taken courses were female teachers. Those who reported they had not taken courses were: 31.5% female teachers, 28.8% female administrators, 23.4% male administrators, and 16.2% male teachers. Figure 55 shows how the majority of participants have not taken information courses.

Table 59

*Frequencies and Percentage Scores Responses to the Question, Have you Taken a Computer or the Internet Course? (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Have you taken a computer or Internet course(s)?	Yes	15 22.4%	15 22.4%	15 22.4%	22 32.8%	67 100%
	No	18 16.2%	26 23.4%	32 28.8%	35 31.5%	111 100%

Table 60

*Frequencies and Percentage Scores of the Participants who Have Taken Computer or the Internet Courses or Not (N=178).*

	Frequency	Percent
Yes	67	37.6
No	111	62.4
Total	178	100.0

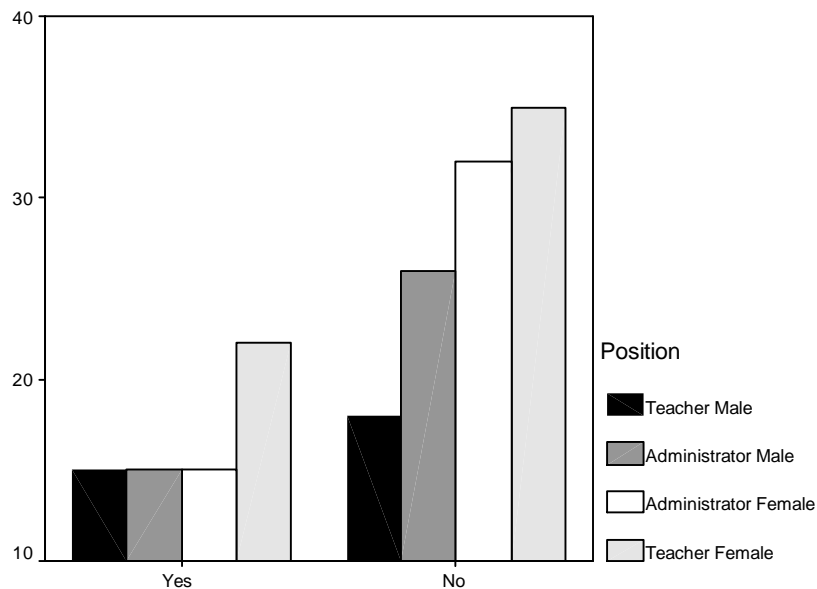


Figure 55. Distribution of the Responses to the Question, “have you Taken a Computer or the Internet Course?”

### *Information Technology Staff Development Plan*

This question investigated whether teachers and administrators have a staff development plan that manages and develops their knowledge and skills of information technology. Table 61 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. Respondents to this question were who reported a ‘yes’ response were 1 male teacher, or 7.7%, 3 male administrators, or 23.1%, 7 female administrators, or 53.8%, and 2 female teachers, or 15.4%. Conversely, those who replied ‘no’ were 7 male teachers, or 10%, 20 male administrators, or 28.6%, 23 female administrators, or 32.9%, 20 female teachers, or 28.6%. Twenty-five male teachers, or 27.2%, 17 male



administrators, or 18.5%, 16 female administrators, or 17.4%, and 34 female teachers, or 37%, responded that they did not know.

The majority of the respondents (92.6%) were divided into two factions: the participants who said no (40%) and those who did not know whether or not there is a staff development plan (52.6%). The majority of the respondents who said ‘no’ were 23 female administrators, 20 female teachers, and 20 male teachers. The majority who reported I don’t know were 34 female teachers, 25 male teachers, 17 male administrators and 16 female administrators. Figure 57 shows that the majority of the participants (92.6%) did not know anything about a staff development plan.

Table 61

*Frequencies and Percentage Scores Responses to the Question, Do you have a Staff Development Plan at your School? (N=175)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Do you have a staff development plan at your school?	Yes	1 7.7%	3 23.1%	7 53.8%	2 15.4%	13 100%
	No	7 10.0%	20 28.6%	23 32.9%	20 28.6%	70 100%
	I do not know	25 27.2%	17 18.5%	16 17.4%	34 37.0%	92 100%

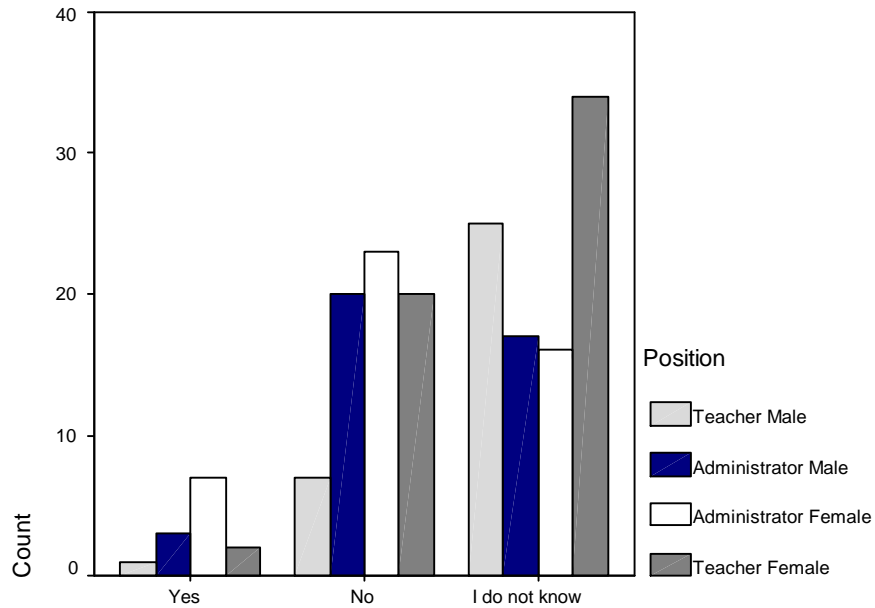


Figure 57. Distribution of the Responses to the Question, “Do you Have a Staff Development Plan at you School?”

*Indicate Your Current Need for Computer Training the Programs in Following Scale?*

The teachers and administrators were asked whether they need to acquire skills and knowledge of information technology so that they can implement it in an educational setting. Table 62 breaks down the information of the question based upon the scale that the survey used and provides the frequencies and percentages of the responses. The respondents who reported that they need these skills were 14 male teachers, or 18.7%, 18 male administrators, or 24%, 16 female administrators, or 27%, and female teachers, or 36%. Those who indicated that they strongly need these skills were 19 male teachers, or 19.2%, 21 male administrators, or 21.2%, 29 female administrators, or 29.3% and 30 female teachers, or 30.3%.

The majority of the participants (98.3%) asserted that staff development of information technology is strongly needed. Figure 58 shows how the participants stressed that staff development should be part of their educational institutions. A dash (-) indicates that the cells are empty.

Table 62

*Frequencies and Percentage Scores of the Responses to the Statement, Indicate your Current Need for Computer Training Programs (N=177)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Indicate your current need for computer training the programs in following scale	No	-	2	1	-	3
	Need	-	66.7%	33.3%	-	100%
	Need	14 18.7%	18 24.0%	16 21.3%	27 36.0%	75 100%
	Strong Need	19 19.2%	21 21.2%	29 29.3%	30 30.3%	99 100%

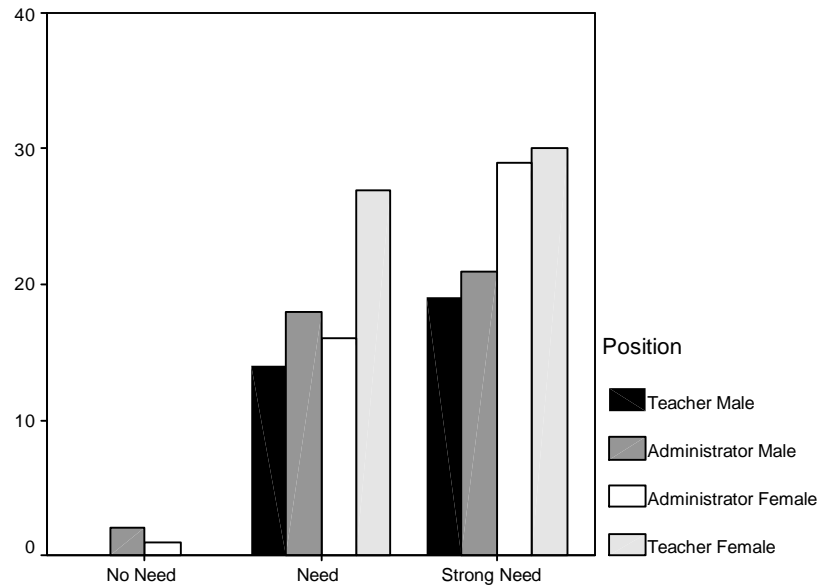


Figure 58. Distribution of the Responses to the statement, “Indicate Your Current Need for Computer Training Programs.”

### *Constructivism and Behaviorism Approaches*

The questions that were asked of the participants were composed of eight constructivism statements and eight behaviorism statements, in order to identify which approach the participants followed in instruction. Table 63 provides information on which method the participants followed in their instruction. An analysis of the data indicated that there were three groups. The first group includes all those who answered a number of constructivism questions equal to the number of behaviorism questions, and ranked them neither constructivist nor behaviorist. There were 19 participants in this category. This represented 10.7% of the participants. Of these, 2.2% were male teachers, 4.5% were male administrators, 1.7% were female administrators, and 2.2% were female teachers. The second constructivism group

included 14 participants, which represented 7.9% of the participants. Of these, 4.5% were male administrators, 2.2% were female administrators, and 1.1% were female teachers. A majority of the participants (145) identified themselves as behaviorists, which represented 81.5%. Of these, 16.3% were male teachers, 14% were male administrators, 22.5% were female administrators, and 28.7% were female teachers. Figure 58 shows that most of the participants were influenced by the behaviorist approach.

*Methods of Instruction Used*

Tables 64 and 65 show the number of the participants who responded to each question. Table 64 contains all of the questions that represent the constructivism method. There were 26 participants who answered 5 or and more questions. Table 65 provides information that represents the behaviorist method. 125 participants responded to five or more questions. This represented 70.22% of the subjects. A dash (-) indicates that the cells are empty.

Table 63

*Frequencies and Percentage Scores of the Participants Toward Method and Philosophy of Teaching (N=178)*

		Position				Total
		Teacher Male	Administrator Male	Administrator Female	Teacher Female	
Method of teaching that is used	Equal	4 21.1%	8 42.1%	3 15.8%	4 21.1%	19 100.0%
	Cognitive	-	8 57.1%	4 28.6%	2 14.3%	14 100.0%
	Behavioris	29 20.0%	25 17.2%	40 27.6%	51 35.2%	145 100.0%

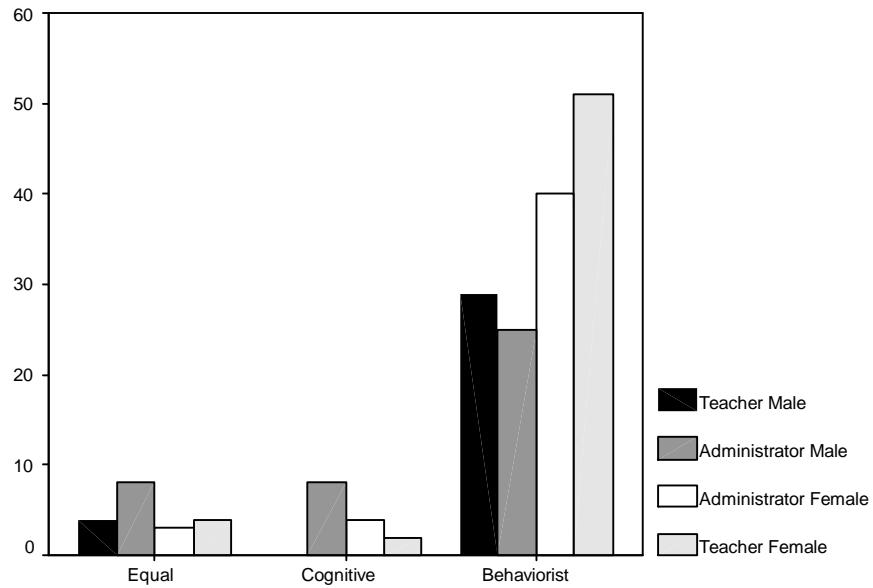


Figure 59. Distribution of the Participants toward Method and Philosophy of Teaching.

Table 64.

*Constructivist Items and How Many Participants Answered Each Question (N=178)*

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	23	12.9	12.9	12.9
1	35	19.7	19.7	32.6
2	31	17.4	17.4	50.0
3	40	22.5	22.5	72.5
4	23	12.9	12.9	85.4
5	13	7.3	7.3	92.7
6	5	2.8	2.8	95.5
7	5	2.8	2.8	98.3
8	3	1.7	1.7	100.0
Total	178	100.0	100.0	

Table 65

*Behaviorist Items and How Many Participants Answered Each Question (N=178)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	1.1	1.1	1.1
	1	10	5.6	5.6	6.7
	2	8	4.5	4.5	11.2
	3	16	9.0	9.0	20.2
	4	17	9.6	9.6	29.8
	5	26	14.6	14.6	44.4
	6	27	15.2	15.2	59.6
	7	34	19.1	19.1	78.7
	8	38	21.3	21.3	100.0
Total	178	100.0	100.0		

### *The Results of Hypotheses Investigation*

#### *Multivariate Analysis of Variance (MANOVA)*

A two-way multivariate analysis of variance (MANOVA) was conducted as an appropriate test to compare the group means of information technology in instruction and the development of an information technology plan for the position of the teachers and administrators and gender (male and female). In the study, the significant level used was 0.05. Appendix H indicated that  $F(2, 150) = 3.014$ ,  $P = .052$ . The result of MANOVA showed there is no significant interaction between gender and position based on the combination of information technology plan and information technology in instruction as shown in the Figure 60 & 61.

Appendix H indicated that the result of MANOVA testing shows that there is no significant difference according to position, where  $F(2, 150) = .888$ ,  $P = .413$ , and there is no difference according to gender, where  $F(2, 150) = 1.208$ ,  $P = .302$ .

The result of the MANOVA test indicates there were no significant differences between gender and position on combination of information technology plan and information in instruction.

The overall mean for the dependent variable, the information technology plan, was 1.91. This indicated that the participants asserted the importance of information technology plan. The overall mean for the dependent variable, information technology in instruction, was 2.03, which indicated that the participants affirmed the vital nature of information technology in instruction.

Figure 60 shows that there was no interaction between the position and gender on information technology plan. The two lines that represented the participants' perceptions were parallel. This indicates that the perception of male and female (teachers and administrators) concerning development of an information technology plan are similar.

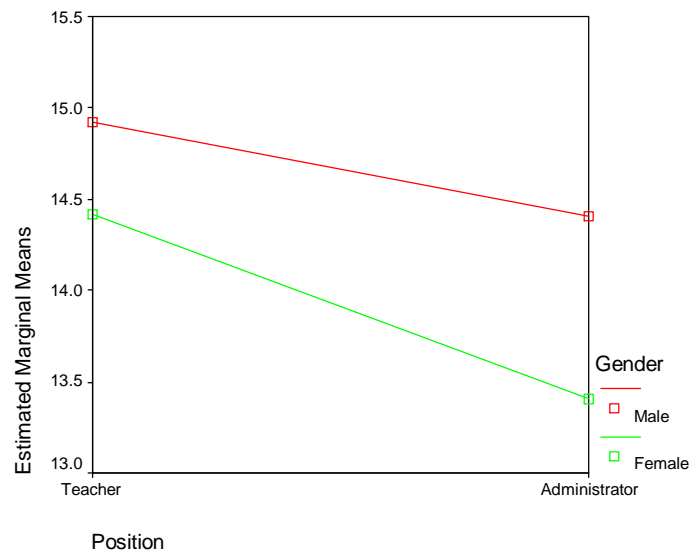


Figure 60. Estimated Marginal Means of Information Technology Plan.



Figure 61 shows that there was no interaction between the position and gender on information technology in instruction. The interaction between gender and position as shown in Figure 61 is false. The result is very clear in the next test, which is univariate analysis.

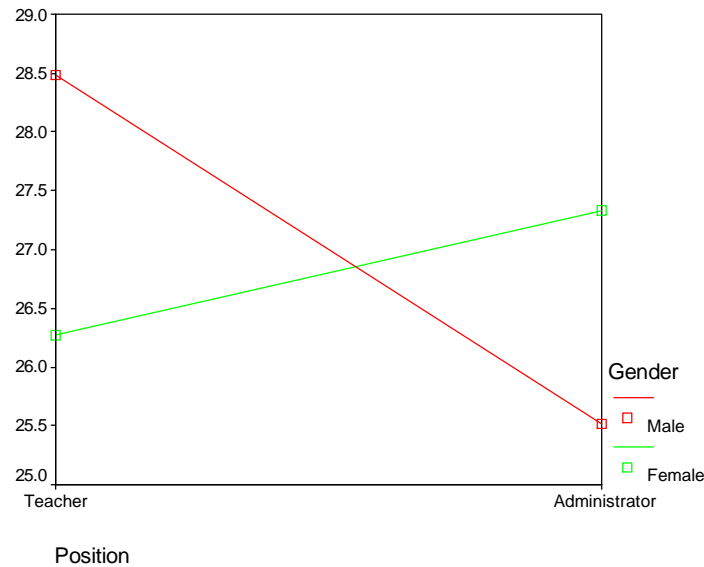


Figure 61. Estimated Marginal Means of Information Technology in Instruction.

#### *Univariate Analysis (Analysis of Variance, ANOVA)*

In the univariate analysis (ANOVA), each dependent variable tests with two independents. The first dependent variable was information technology plan. Appendix I indicated that the result from ANOVA test shows that there is no significant difference in the information technology plan, where  $F(1,169) = 1.81$ ,  $P = 0.18$ . There is no difference according to gender where  $F(1, 16) = 1.006$ ,  $P = 0.31$ . The ANOVA test indicated there is no significant interaction between position and gender on information technology plan, where  $F(1, 16) = 0.43$ ,  $P = 0.51$ . The lines are paralleled as shown in Figure 60.

The second dependent variable was information technology in instruction. Appendix I indicated that the result from ANOVA test shows that there is no significant difference in information technology in instruction, where  $F(1, 16) = 1.48$ ,  $P = .22$ . There is no difference according to gender, where  $F(1, 16) = 1.06$ ,  $P = .98$ . The univariate analysis test indicated there is no significant interaction between position and gender on information technology in instruction, where  $F(1, 16) = 2.37$ ,  $P = .12$ . The lines show there is interaction as shown in Figure 61 but the true result is that there is no interaction, where  $P = 0.12$ .

*Assumptions of Multivariate Analysis of Variance (MANOVA)*

1. Independence of observation

Each of the respondents answered independently the items of the questionnaire.

2. Homogeneity of covariance

There were no significant differences between the variance and covariance matrixes, so the multivariate homogeneity assumption was met,  $P = 0.13$ , as shown in Table 66.

Table 66

*Box's Test of Equality of Covariance Matrices*

Box's M	F	df1	df2	Sig.
14.157	1.532	9	107384.254	.130

3. Normality

For the first dependent variable (information technology in instruction), the normality assumption was not met for the teacher group,  $P = 0.01$ . The administrator group met the normality assumption,  $P = 0.20$ , as shown in Table 67. For the second

dependent variable (information technology plan), both groups met the normality assumption, where the teacher group was  $P = 0.20$  and the administrative group was  $P = 0.20$ , as shown in Table 67.

The normality assumption was met for three groups except one. That means they did not violate the assumption for three groups but that for the other group the normality assumption was violated.

Table 67

*Test of the Normality*

		Kolmogorov-Smirnov		
	Position	Statistic	df	Sig.
Information Technology in Instruction	Teacher	.117	76	.011
	Administrator	.075	79	.200
Information Technology Plan	Teacher	.079	76	.200
	Administrator	.081	79	.200

*Item Analysis*

Item analysis has been done for two dependent variables, information technology plan and information technology in instruction. A discrimination index was used to evaluate the quality of the items. Based on this index, all the items have good quality to discriminate among the participants as shown in Appendix J because the discrimination index was greater than 0.19, as based on Ebel and Frisbie (1986). Appendix J indicated that the result from the discrimination index for the highest item was 0.63 and for the lowest item was 0.30.

All items for the second dependent variable, based on this index, have good discrimination among the participants as shown in Appendix J, where the discrimination index was greater than 0.19, as based on Ebel and Frisbie (1986). Appendix J indicated that the result from the discrimination index for the highest item

was 0.54 and for the lowest item was 0.201. That means all the items worked well to measure the independent variable, based on Ebel and Frisbie (1986).

The consequence of item analysis for the two dependent variables specified that all the items that composed each of them had good quality to discriminate among the participants.

#### *Reliability*

The reliability for the two dependent variables was determined from the actual data. The first dependent variable, information technology plan, includes 7 questions and the Cronbach Alpha was 0.71 as shown in Appendix J. The second dependent variable, information technology in instruction, includes 14 questions and the Cronbach Alpha was 0.86 as shown in Appendix J.

#### *Correlation*

The result of the Pearson Correlation Coefficient was 0.56, which is a positive correlation between two independent variables, information technology plan and information technology in instruction, as shown in Table 68.

Table 68

#### *Correlation*

		Information Technology Plan	Information Technology in Instruction
Information Technology Plan	Pearson Correlation	1	.596**
	Sig. (2-tailed)	.	.000
	N	170	155
Information Technology in Instruction	Pearson Correlation	.596**	1
	Sig. (2-tailed)	.000	.
	N	155	162

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### *Qualitative Data Analysis*

Question eleven and the comments of the participants were analyzed by use of a qualitative method that depends on combining all the data that is similar in one category to make analysis easy. The themes that derived from the qualitative data are as follows.

#### *Mechanism Administration vs. Manual Work.*

Both male and female teachers and administrators, recognize the advantages of employing information technology in school. A female administrator reported, “Computer technology assists us to save all information and easily to retrieve it when it will be needed.” Another said information technology makes it “easy to get the final reports and statistical summary.” A female administrator reported that unless schools implement new technology, such as computers and the Internet in all of their activities, those schools would lose the many benefits of information technology that would improve the quality of administrative work and make it faster and more efficient than the traditional methods. A male administrator pointed out that “computer technology is helpful for statistical analysis.” A male teacher reported, “Computer technology helps us to follow up students’ daily information.”

### *Information Technology Enhances Learning.*

The respondents believe that information technology has significant value in teaching, learning, and support of content. A female teacher reported, “The Internet is important for teaching and learning to support subject matter.” Another teacher said, “We can enhance each content by the Internet.” Furthermore, a male teacher indicated that “computer technology as resources for information.” There was a male administrator who said, “information technology provides us all the information that we need in administration and education.” A female administrator realized how information technology provides useful information that they need to explore the web, enhancing their knowledge, and pointed out it was important “to know the current information in the field of education.”

### *Electronic Information Maintains Research*

The respondents indicated that information technology provides an enormous and varied type of information for those developing their research. They believed the Internet has significant value in that it can provide what the researchers need thus saving them time and effort. They can access information provided by various organizations, such as private, government or non-profit organizations. A male administrator indicated, “The Internet provides information and makes it available to us.” So, there was a male administrator stated, “It makes information available for researchers.” Another administrator reported, “The Internet enables us to access new educational research.”

### *Conformation of Occupation Information Technology*

This study included participants who had obtained diverse degrees such as geography, anthropology, English language, Math, Islamic studies, and Arabic

language. Most of the respondents proposed that information technology is imperative for school administration and instruction. A female teacher said, "It provides new information in anthropology and psychology sciences." Another teacher said, "...it is important for reading and writing in order for students to grow in information technology." A female teacher asserted that, "The Internet provides information that enhances fine arts education." A male administrator indicated that, "Information technology supports all the subject matter without exception." A female administrator indicated that the Internet allows us to "learn new information in education and administration."

#### *Evil of the Internet*

Utilizing information technology in teaching and learning at school was acceptable to the most of the participants but there were some who disagreed with employing the Internet at school. They believed that it is evil in that it can negatively affect the cultural status quo and students' behaviors. A male teacher stated, "I strongly disagree with using the Internet in school because of its wickedness."

A female administrator asserted that, "It is critical to use computers and the Internet in classroom but teachers should observe the students and prevent them to use inappropriate sites."

#### *Information Technology Provides Integrity of Information*

Traditional methods in recording students' scores are inefficient because many mistakes may happen. Displaying all of the statistical information that provides a summary of the data. The respondents indicated that information technology is an appropriate tool that allows us to save, adjust and retrieve information with reasonable speed. It is more efficient than the traditional method. A female teacher reported, "Computer technology is an appropriate means to record students' scores and the rate

of the students in the final reports. This saves our time and effort.” A female administrator supported the use of computer technology. “I support its use in administrative work because....reduces mistakes that happen when we use the traditional method.”

### *Information Technology Planning*

Technology planning is the backbone of the implementation of information technology in schools. This includes the mission statement, goals and objects of the plan. The respondents indicated that there is no planning for temporary technology in the schools. They reported that computers and the Internet cannot be efficiently used in schools without the development of an appropriate technology plan to ensure its implementation in administrative work and instruction. A female administrator reported, “It is important to develop an information technology plan to guide the successful implementation of technology in schools successfully. If there is no plan, it is difficult to utilize information technology in schools.”

### *Constructivism Versus Behaviorism*

The behaviorism theory is widespread in the Saudi educational institutions. It is based on the teacher-centered method of learning. The respondents indicated that they used this method in teaching and learning. Female teachers and administrators prefer the constructivism though and they critique the behaviorism approach. A female teacher said, “Often teacher-centered classroom.” Female teachers and administrators have visions of using the constructivism approach. They need students to work as a group and to use various resources, not just the textbook, so that they can build a coherent knowledge base. A female teacher reported, “Unfortunately, students use only the textbooks as the main resources for developing their knowledge.” A



female administrator stated that “Students never use other resources. They always use the textbook.”

#### *Imperative Staff Development Programs*

The creation and development of teachers’ and administrators’ knowledge and skills of information technology cannot be obtained unless staff development takes place in school. The participants indicated that there are no staff development programs that enhance their knowledge and skills. All of the male and female participants agreed that they need training programs. Some schools developed their own programs for only administrators in order to execute administrative work. A female teacher said “we need training programs.” A male administrator stated “There is a schedule in the Ministry of Education for training.” Most of teacher and administrators did know this schedule.

Many teachers and administrators specified that it is important to develop staff training for schools. They believed that it is obligatory for each of the schools to offer the training programs either during the day work or after works. A female teacher said, “it is necessary to develop staff development during the work hours.” A male teacher indicated “it is important to create staff development programs for all teachers and administrators. They must enroll to improve their knowledge and skills.”

A male teacher reported “I suggest schools in conjunction with an out side company to create staff development programs for the teachers. The training should transpire after school day.”

#### *Exchange Experiences Globally*

The participants realized how critical the Internet is for the exchange of information, experiences and ideas with the other nations and Saudi Arabia people who are based in other cultures. Participants realized that the Internet is a universal

link and that it is one of the resources that provide enlightenment for students, teachers and administrators.

#### *Aspiration of Information Technology Acquisition*

Teachers and administrators desire to learn about information technology, including the Internet and computer technology, in order to employ it in their schools. They are eager to enroll in information technology staff development programs to develop new knowledge that allows them to acquire abilities that they do not presently have but which are implemented in the real world. A female teacher reported, "I hope that I am able to enroll in a staff development program in order to obtain the knowledge and skills of information technology."

#### *Electronic Mail*

Electronic mail is the means to increase communication among people and organizations, and among people in one organization. Email has made communication more efficient in that it saves time and effort between people. Email is important to educational institutions because it has the ability to increase the interaction between teachers and students. The participants asserted that email is critical for instruction and administrative work. They also stated that email saves time. A female teacher indicated that, "Using electronic mail supports shared information among the schools and the Presidency of Girls' Education." A male teacher stressed that, "Electronic mail makes communication easy among schools, school districts, students, and teachers."

#### *Independent Learning*

Some participants indicated that information technology is an appropriate approach for those who want to learn by themselves, to explore new information, and to assist individuals to develop new meanings of learning. A female teacher

recognized that the Internet plays a good role in increasing individual learning. She indicated that “the Internet is an interesting approach that motivated and encouraged to obtain new information.” Another teacher said, “Any information that I do not possess can be found and provided by the Internet.” A male administrator described the Internet and computer technology as “self independent education.”