



KISR 2209

TECHNICAL REPORT

EVALUATION OF THE KISR TRAINING PROGRAM THROUGH THE OPINIONS OF ITS TRAINEES

ASD-GEN

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بالاضافة الى القيام بالبحوث العلمية والتطبيقية يهدف معهد الكويت للأبحاث العلميـــــة الى تطوير القوى العاملة بالمعهد فى مجال البحث العلمى • ولتحقيق هذا الهدف أنشــــئـت ادارة التدريب لتنظيم عملية التدريب وتطوير القوى العاملة بالمعهد وخاصة الشـــــباب الكويتى • لذا تهدف هذه الدراسة الى تقييم انطباعات وشعور المتدربين بالنسبة للبرامـــج التدريبية بالمعهد ومدى تحقيق هذه البرامج التدريبية لأهدافها •

وقد أشارت النتائج الى أن معظم المتدربين يشعرون بعدم رضائهم عن البرامج التدريبية المتبعة بالمعهد وأيضا يشعرون بأن هذه البرامج لا تؤهلهم لخدمة المعهد و وكانت النتائييية المبنية على المتغيرات التالية : الجنس والجنسية ، الدرجة الوظيفية والتوصيف الوظيفيت تشير الى عدم وجود اختلافات بين هذه المتغيرات وشعور وانطباعات المتدربين اتجاه البراميية التدريبية ، ولكن يوجد هناك عدم اطمئنان بالنسبة لتأثير البرامج التدريبية على المستقبل الأمنى للمتدربين وخاصة الكويتيين منهم ،

ا هم المصطلحات

KEY WORDS

_ معهدالكويت للأبحاث العلمية ، الكويت _ تقييم البرامج _ المتدربي....ن

التدريب •

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Introduction

One of the main objectives of the Kuwait Institute for Scientific Research (KISR) is to promote scientific and applied research to meet the needs of Kuwait and to develop KISR's manpower in the field of scientific research, especially young Kuwaitis. To accomplish this objective, the Division of Training was established whose mission is to coordinate all efforts to develop KISR's staff, especially Kuwaiti nationals.

The Division of Training (DOT) continually evaluates and identifies the training needs of KISR's staff in the light of KISR's organizational needs and research work requirements. Accordingly, DOT organizes training activities and programs to meet these needs and improve the performance of KISR's staff.

The Purpose of this Study

A review of literature indicated that many studies have been conducted to evaluate the effectiveness of the training programs in many countries. There has been little work done this area, however, in Kuwait and other Arab states in general (Burke 1969; Kirk-Patrick, 1975, 1978; Forman, 1980; Alessa, 1981).

Therefore, an evaluation study could help in collecting and analyzing information regarding the KISR training programs and the attitude of trainees. This study provides a rational basis to help both the Division of Training and management to determine whether the training programs are actually meeting KISR's objectives of developing its staff while effectively pursuing its research work.

Collection of Data

In this study, two instruments have been used to collect the response of trainees. Instrument A contains the demographic characteristics of KISR's staff whereas instrument B is the training program questionnaire (Appendix A).

Instrument A consists of 30 trainee variables and Instrument B consists of 38 items related to all types of training programs offered in KISR. These types include on-job training, in-house courses, training abroad, and career development. Each participant was asked to check the appropriate response to each item on a five-point scale (5=Strongly agree to 1=Strongly disagree). At the end of Instrument B, participants had an opportunity to write comments or recommendations regarding KISR's training programs.

The two instruments were distributed to a sample of 200 trainees whose grade levels ranged from 8 to 14. The population of this study was 592 trainees and a total of 200 trainees was drawn by stratified random sample (Table 1). Of these, 178 respondents were obtained. This sample was selected from four major categories as follows:

- 1. Life and Environmental Sciences (LENV), which consists of:
 - a. Environmental and Earth Sciences Division (EES)
 - b. Food Resources Division (FRD)
- Physical and Engineering Sciences (PENG), which consists of:
 - a. Engineering Division (ENG)
 - b. Petroleum, Petrochemicals, and Materials Division (PPMD)
 - c. Techno-Economics Division (TED)
- 3. Administration, Finance, and Supporting Services (AFSS), which consists of:
 - a. Finance Division (FD)
 - b. Administration (ADMIN)
 - c. Technical Support Division (TSD)
 - d. National Scientific and Technical Information Center (NSTIC)

Table 1. Distribution of Kuwaitis and Non-Kuwaitis in Each of the Four Categories, N=200

0	Categories	Tota	Total Number	E	Sample	le Size	
)	Kuwaiti	Non-Kuwaiti	10521	Kuwaiti	Non-Kuwaiti	IOCAI
H	LENV						
	1. EES 2. FRD	23 33	35 61	58 94	∞ +	21	19 32
	Subtota1	56	96	152	19	32	51
II.	PENG						
	1. ENG	38	23	61	13	8 1	21
		19	13	32	7	4	11
	Subtotal	79	119	198	27	04	29
III.	AFSS						
		24	40	64	00 i	14	22
	2. FD 3. TSD	14 30	26 38	04 0	ა 0	<u>ν</u> π	13 23
		<u>-</u>	75	26	. 4	iη	6
	Subtotal	79	119	198	27	40	29
IV.	PD						
	1. DPP	7	9 0	ထင္		, 2	സ്
	2. DEV 3. DOT	7 4	18	25	- 2	2 %	- 8
	Subtotal	13	52	65	4	18	22
	TOTAL	241	351	592	82	118	200

- 4. Planning, Development, and Training Services (PDTS), which consists of:
 - a. Development Division (DEV)
 - b. Policy and Planning Division (DPP)
 - c. Division of Training (DOT)

Data Analysis

The data were analyzed by four statistical methods. The chi-square test was used to determine whether frequencies observed in the sample differed significantly from expected frequencies. The product moment correlation was used to determine whether a significant relationship existed among the 30 trainee variables in Instrument A. The t-test was used to test the significance of difference between two means. The analysis of variance (ANOVA) was used as a statistical test of significance among three means or more. These tests are presented by Ferguson (1981) and Howell (1982).

Instrument A

Instrument A was used to collect data on the trainees' characteristics. These data were analyzed as follows:

<u>Distribution of Respondents</u>. A summary of descriptive statistics such as percentages chi-squares (χ^2) were used to present the findings. The respondents were 54.50% Kuwaitis and 45.50% non-Kuwaitis.

In Table 2, the chi-square test showed no significant relationship between the observed return and the expected return of the responses at 0.05 level (χ^2 =4.70). This means that the four categories were independent of each other with regard to returning the questionnaire.

In Table 3, the chi-square test showed a significant relationship between category and nationality (Kuwaiti and non-Kuwaiti) at the 0.05 level (χ^2 =20.81). This means that an association existed between the categories and the number of respondents from each nationality group. To test this association, Cramer's Phi ($\phi_{\rm C}$) was used and found to be 0.34.

Table 2. Distribution of Responding Trainees in Each of the Four Categories, N = 178

C	ategory	Observed Return	Expected Return*
ī.	LENV	51	45.39
II.	PENG	62	53.40
III.	AFSS	50	59.63
IV.	PD	15	19.58

Note: χ^2 = 4.70, p>0.05, with degree of freedom = 3

Expected return (ER) =
$$\frac{\text{(Sample size in each category)(Total response)}}{\text{Total sample size}}$$

$$\text{LENV} = \frac{(51)(178)}{200} = 45.39$$

$$\text{PENG} = \frac{(60)(178)}{200} = 53.40$$

^{*} Expected return was calculated from table 1.

Similar results were found within the life and environmental sciences category, and the administration, finance, and supplementary services category (Tables 4 and 5). The chi-square tests showed a significant relationship between the division of these two categories and the nationality variables at the 0.05 level (χ^2 =4.90 and χ^2 =20.93, respectively). The Cramer's Phi (ϕ_c) for these associations was 0.32 and 0.65, respectively.

On the other hand, Tables 6 and 7 show that the chi-square tests showed no significant relationship between the divisions of the physical and engineering sciences category, and the planning development, and training services category and the nationality variable at the 0.05 level (χ^2 =4.86 and χ^2 =4.04, respectively). This means that the two variables (the responses within the divisions of each of these two categories and the nationality) were independent of each other.

Relationship Among Variables. The relationship among variables in Instrument A was investigated by a product moment correlation to determine whether a significant relationship existed (Table 8). The findings of Table 8 can be summarized as follows.

Most of the 30 variables had moderately low or very low correlation coefficients (r). The r ranged from 0.01 to 0.81, with ignoring the sign of the correlation. All correlation coefficients greater than or equal to the absolute value of 0.6 indicated high correlations. The variables with high positive correlation were birth place and nationality (r=0.81), and birth place and the length of time in Kuwait (r=0.66), and length of time in Kuwait and nationality (r=0.62). Variables with moderately positive correlations were age and previous experience (r=0.52), location of college and length of time in Kuwait (r=0.51), and marital status and the number of dependents (r=0.48).

On the other hand, some of the 30 variables had high negative correlations, such as location of colleges (Kuwait and non-Arab countries; r=-0.74), languages (Arabic and English and English and other than Arabic; r=-0.66), and length of time in Kuwait (X25 and X20; r=-0.62). Variables with moderately negative correlations included previous experience and length of time in Kuwait (r=-0.45).

Table 3. Distribution of Kuwaiti and Non-Kuwaiti in Four Categories, N = 178

Category		Kuwaiti	-		Non-Kuwai	ti	TT.	1_4-1
•	No.	(*)	%	No.	(*)	%	No	otal %
I. LENV	24	(16.91)	24.74	27	(28.48)	33.34	51	(45.39)
II. PENG	35	(28.48)	36.08	27	(24.92)	33.33	62	(53.40)
II. AFSS	32	(24.03)	33.00	18	(35.60)	22.22	50	(59.63)
IV. PDTS	6	(3.56)	6.18	9	(16.02)	11.11	15	(19.58)
Total	97	(72.98)	100.00	81	(105.02)	100.00	178	(178.00)

Note: $\chi^2 = 20.81$, P<0.05, df = 3.

Table 4. Distribution of Kuwaiti and Non-Kuwaiti in Life and Environmental Science Category (LENV), N = 51

Di	vision		Kuwaiti	-		Non-Kuwa	nit	Tot	al
		No.	(*)	7,	No.	(*)	%	No.	(*)
1.	EES	7	(8.00)	29.17	7	(11.00)	25.93	14	(19.00)
2.	FRD	17	(11.00)	70.83	20	(21.00)	74.07	39	(32.00)
	Tota	1 24		100.00	27		100.00	51	(51.00)

Note: $\chi^2 = 4.90$, P<0.05, df = 1.

Table 5. Distribution of Kuwaiti and Non-Kuwaiti in Administration, Finance, and Supplementory Services Category (AFSS), N = 50

Division		Kuwaiti			Non-Kuwai	ti	T	otal
	No.	(*)	78	No.	(*)	%	No.	(*)
. FD	11	(3.73)	34.38	3	(5.97)	16.67	14	(9.70)
ADMIN	8	(5.97)	25.00	5	(10.45)	27.78	13	(16.42)
TSD	9	(7.46)	28.12	8	(9.70)	44.44	17	(17.16)
. NSTIC	4	(2.99)	12.50	2	(3.73)	11.11	6	(6.72)
Total	32		100.00	18		100.00	50	(50.00

Note: $\chi^2 = 20.93$, P < 0.05, df = 3.

^{*} Expected number from proportional allocation method with sample size of 200.

^{*}Expected number from proportional allocation method with sample size of 51.

^{*}Expected number from proportional allocation method with sample size of 67.

Table 6. Distribution of Kuwaiti and Non-Kuwaiti in Physical and Engineering Sciences Category (PENG), N = 62

	s .		Kuwaiti]	Non-Kuwai	ti	To	otal
D1	vision	No.	(*)	%	No.	(*)	7	No.	(*)
1.	PPMD	18	(12.40)	51.43	17	(16.53)	62.96	35	(28.93)
2.	ENG	12	(13.43)	34.29	5	(8.27)	18.52	17	(21.70)
3.	TED	5	(7.23)	14.28	5	(4.13)	18.52	10	(11.36)
	Total	35		100.00	27		100.00	62	(62.00)

Note: $\chi^2 = 4.86$, P> 0.05, df = 2

Table 7. Distribution of Kuwaiti and Non-Kuwaiti in Planning, Development, and Training Category (PDTS), N = 15

		Kuwaiti		·	Non-Kuwa:	iti	To	tal
Division	No.	(*)	%	No.	(*)	Z	No.	(*)
1. DEV	2	(0.68)	33.33	4	(6.82)	44.45	6	(7.50)
2. DPP	1	(0.68)	16.67	2	(1.36)	22.22	3	(2.04)
3. DOT	3	(1.36)	50.00	3	(4.10)	33.33	6	(5.46)
Total	6		100.00	9		100.00	15	(15.00)

Note: $\chi^2 = 4.04$, P>0.05, df=2

 $^{^{\}star}$ Expected number from proportional allocation method with sample size of 60

Expected number from proportional allocation method with sample size of 22.

Correlation Matrix for 30 Variables and their Means and Standard Deviations Table 8.

Vari- able	×	x ²	x ³	×	×	y x	x,	×8	x ₉	v ₁₀	x ₁₁	x ₁₂	x ₁₃	x ₁₄	l×	S.D.
	1.00														2.27	1.02
	0.29**	1.00													0.64	0.48
	-0.51**	-0.08	1.00												09.0	0.49
	-0.53**	90.0-	0.81**	1.00											0.55	0.50
	0.38**	0.24	-0.21**	-0.23**	1.00										99.0	0.48
	0.11	0.22*	0.05	0.08	0.10	1.00									0.13	0.34
	-0.52**	-0.38**	0.30**	0.28**	-0.24**	-0.12	1.00								0.46	0.50
	0.46**	0.25**	-0.34**	-0.30**	0.17**	0.03	-0.38**	1.00							0.15	0.35
	0,21**	0.20**	-0.06	-0.07	0.12	0.10	-0.74**	-0.33**	1.00						0.39	0.49
, ×į	-0.06		0.13	0,15*	-0.12	-0.01	-0.19**	0.08	0.14	1.00					3,33	1,15
	-0.15*	0.10	0.20**	0.23**	-0.04	0.10	-0.13	-0.05	0.16*	0.21**	1.00				0.24	0.43
	0.10	0.01	-0.04	-0.05	0.22**	0.07	0.18*	0.16*	-0.29**	90.0	-0.45**	1.00			0.39	0.49
7T X	-0.14	0,03	0.01	0.02	-0.18*	-0.04	0.04	-0.10	0.04	-0.08	-0.25**	-0.36**	1.00		0.17	0,38
x x 44	-0.01	-0.12	-0.04	-0.02	-0.07	-0.01	-0.15	-0.01	0.16*	90.0	-0.12	-0.18*	-0.10	1.00	0.05	0.21
*	P<0.05	10	l		× II	age				X,	= locat	location of		college: Kuwait	wait	
*	P<0.01	_			X ₂	sex				. X	= locat	location of	college:		ab cor	Arab countries
		,	•		χ 3.	birth	birth place			X ₉	n	location of	college:	ge: No	Non-Arab	countries
SD	= stanc	standard devlation	vlatio	rd.	x 4	nation	nationality			X11	= major	major field: Engineering	: Engi	neerin	50	
		9			11 X2	marti	martial status	ns			= major	: field:	: Science	nce		
					X II	milit	military or/police	police	service	X 13	= major	field:	: Business	ness		
			X,	= majo	X, = major field		: Education;	X 15	X, s = major		field: Other	H				
			<u>+</u>	1				1	I							

Table 8 (Cont'd)

Vari- able	, r	^x 2	x ³	x ₄	x _S	9 _x	ς _χ	x ₈	6x	x ₁₀	x ₁₁	x ₁₂	* ₁₃	X ₁₄	×	s.D.
X ₁₅	0.18*	-0.10	-0.16	-0,21**	-0.02	-0.16	-0.05	-0.04	0.08	-0.29**	-0.24**	-0.34**	-0.19*	-0.09	0.15	0.36
x ₁₆	0.02	90.0	-0.03	0.01	0.05	-0.02	0.10	0.18*	-0,23**	-0.34**	-0.15	-0.23**	0.25**	0.02	0.10	0.30
x ₁ ,7	-0.30**	-0.05	0.31**	0.30**	-0.10	0.05	0.31**	0.05	-0.35**	0.35**	0.17*	-0.36**	-0.20**	-0.14	0.67	0.47
x ₁₈	-0.03	0.03	0.17*	*61.0	-0.04	60.0	-0.13	0.00	0.13	-0.03	0.16*	-0.10	90.0	-0.04	0.04	0.20
x ₁₉	0.02	-0.14	-0.13	-0.12	-0.04	-0.04	-0.10	-0.04	0.13	-0.03	90.0-	60.0-	-0.05	0.23**	0.01	11.0
x ₂₀	0.36**	0.04	-0.41**	-0.44**	0.11	60.0-	-0.37**	+61.0-	0.51**	-0.13	-0.16*	+61.0-	0.03	0.12	0.18	0.38
x ₂₁	0.52**	0.20**	-0.39**	-0.37**	0.27**	0.10	-0.46**	0.26**	0.28**	-0.04	-0.15*	-0.07	0.10	-0.01	0.53	0.50
X ₂₂	-0.11	0.10	0.03	0.03	0.03	90.0	0.20**	90.0	-0.24**	60.0	0.33**	0.31**	-0*40**	-0.22**	0.71	0.46
X ₂₃	-0.06	0.04	0.27**	0.21**	-0.05	80.0	0.01	60.0-	0.05	-0.05	0.18*	-0.14	0.03	-0.12	0.64	0.48
X ₂₄	0.19**	0.08	0.16*	0.18*	0.11	0.17*	-0.10	0.14	0.01	0.47**	90.0	0.27**	-0.16*	-0.10	11.65	1.63
x ₂₅	-0.43**	-0.14	0.66**	0.62**	-0.14	0.09	0.51**	-0.38**	-0.24**	-0.05	0,16*	0.04	0.01	-0.10	18.95	9,40
x ₂₆	0.36**	0.07	-0.13	-0.22**	0.37**	0.02	-0.04	0.13	-0.05	-0.31**	-0.23**	0.07	-0.07	0.02	3.67	2.18
x ₂₇	0.36**	0,39**	-0.31**	-0.29**	0.48**	0.02	-0.22*	0.34	-0.02	-0.18*	-0.07	0.05	-0-03	-0.10	2.42	2.00
X ₂₈	-0.23**	90.0	0.38**	0.39**	-0.15*	-0.16*	0.13	-0.14	-0.03	0.03	0.05	60.0-	0.13	-0.04	5,48	3.31
X ₂₉	-0.10	-0.10	-0.02	-0.01	-0.10	-0.08	0.04	-0.14	90.0	0.40**	0.01	-0.01	0.01	-0.01	2.83	0.48
х ³⁰	90"0	-0.15*	0.14	80.0	0.12	-0.10	0.05	-0.07	0.01	-0.22**	-0.01	90.0	-0.12	-0.01	4.16	2.58
* P<0.05 * P<0.01		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	language: Arabi language: Arabi language: Arabi language: Engli language: Engli previous work en job description participation or KISR training		oic oic and Eng oic and oth ish ish and ot experience outside	Englis other other nce	han thar	English 'Arabíc	X X X X X X X X X X X X X X X X X X X		de 1 gth: of of de p	evel Kuwait KISR dependents persons in f oint average training pro	in family rage program	11y	2	

Table 8. (Cont'd)

Vari- able	x ₁₅	x ₁₆	x ₁₇	x ₁₈	6TX	x20	^X 21	X ₂₂	^x 23	X ₂₄	x ₂₅	x ₂₆	X ₂₇	X ₂₈	x ₂₉	x ³⁰
x ₁₅	1.00															
х ₁₆	0.22**	1.00									75					
X ₁₇	-0.41**	-0.48**	1.00													
X,18	60.0-	-0.07	-0.29	1.00												
x ₁₉	0.10	-0.04	-0.15*	-0.02	1.00											
x ₂₀	0.34**	-0.15*	-0.66**	-0.09	-0.05	1.00										
\mathbf{x}_{21}	0.18*	90.0	-0.32**	-0.04	0.10	0.35**	1.00									
X ₂₂	-0.27**	-0.15*	0.40**	90.0-	-0.05	-0.32**	-0.16*	1.00								
x ₂₃	0.02	-0.02	0.10	0.09	-0.14	-0.12	-0.10	0.03	1.00							
X ₂₄	-0.20**	-0.23**	0.36**	0.04	-0.05	-0.27**	-0.05	0.25**	0.16*	1.00						
X ₂₅	-0.21**	60.0	0.44**	0.08	-0.13	-0.62**	-0.45**	0.12	0.21**	0.19*	1.00					
X ₂₆	0.24**	0.26**	-0.17*	-0.01	-0.02	0.02	0.05	90.0-	90.0	0.04	90.0	1.00				
X ₂₇	0.09	0.17*	-0.11	0.02	-0.05	0.01	0.30**	-0.03	-0.07	0.02	-0.16*	-0.27**	1.00			
X ₂₈	-0.04	60.0	0.14	90.0-	-0.10	-0,19**	-0.21**	-0.10	0.07	0.08	0.34**	-0.05	-0.01	1.00		
X ₂₉	0.02	-0.22**	0.22**	-0.09	90.0	-0.08	-0.08	60.0	-0.07	0.30	0.03	-0.08	-0.03	0.12	1.00	
x ³⁰	0.07	0.01	0.05	0.04	0.08	-0.09	-0.14	-0.10	0.19*	0.15*	0.19*	-0.48**	0.04	0.13	0.10	1.00

11

Instrument B

Instrument B was used to collect data regarding trainees' opinions and attitudes toward the KISR training programs. Then the data collected by this instrument were analyzed according to the distribution of items in the questionnaire (Table 9) in three phases.

Phase I includes the overall opinions and attitudes of trainees about KISR's training programs. The percentages, means and standard deviations were used to present the magnitude of trainees' opinions and attitudes.

Phase II includes these opinions and attitudes about KISR's training programs with regard to the following variables.

- a. Sex (male vs female)
- b. Nationality (Kuwaiti vs non-Kuwaiti)
- c. Job description (research section vs administrative section)

The percentages and chi-squares were used to test whether or not the opinions and attitudes of both sexes were related for each item, and then t-tests were used to test whether or not the average attitude scores of the trainees were significantly different regarding the above three variables.

In Phase III, the analysis of variance was used to test whether the average attitude scores of trainees were significantly different toward KISR's training programs with regard to their grade levels.

Phase I

The overall opinions and attitudes of the trainees toward KISR's training programs are presented in Table 10. Table 10 reveals the level of agreement (agree, unsure, and disagree) regarding each item with the means and standard deviation according to a five-point scale (5=strongly agree to 1=strongly disagree). The findings are are presented by percentage, mean \bar{X}) and standard deviation (sd). The summary results show the following:

Table 9. The Distribtuion of Items in the Questionnaire (Instrument B)

	Attitude Factor	Item Number
A	The General Attitude	1,4,34,35 36,28,29 2,11
	The Skills and Knowledge Attitude	24,23 5,7 6,10 8,22
	Supervision, Leadership, and Making Decisions	20,3 12 16,9
	The Developing of Staff Relationships	15,21 27
	The Training Program Objectives The Course Content	26,25 38,30,33 37,31,32
ı r	Personal Benefit and Future Security	17,18 13,14
[Physical Condition	19

Table 10. Distribution of Trainees' Responses Indicating Opinions and Attitudes toward KISR's Training Program

Item	A U D X (%) (%) (%)	sd
KISR's Training Program		
1. Gives me an excellent opportunity to service KISR.	11 15 74 3.83	0.94
Gives me an excellent opportunity to try out some of my ideas in my work.	19 24 . 57	1.04
 Gives me an excellent opportunity to have other workers look to me for direction. 	24 · · · 29 · · 47 · · · · 3.32	1.05
4. Gives me an excellent opportunity for advancement in my work.	15 . 17 . 67 3.70	1.07
5. Gives me the technical "know-how" needed in my work-	20 : 17 : 63 :	1.11
6. Helps me to plan my work.	17 24 59 3.47	0.99
7. Helps me to see the results of my work.	21 39 40 3,20	1.02
8. Helps me to do new things in my work.	16 21 63 3.56	0.98
9. Helps me to work alone in my work.	23 29 48 3.30	1.06
10. Helps me to do different things from time to time.	19 28 53 3.39	1.02
11. Gives me an excellent opportunity to make use of my beat abilities.	22 24 54 3.40	1,08
12. Helps me to be "someone" in my division or department.	. 24 35 . 41 3.14	1.08
13. Provides me with a secure future.	24 30 46 3.23	1.11
14. Gives me an excellent opportunity to be promoted to a higher grade level.	25 41 34 3,04	1.05
15. Helps me to develop close friendships with my co-workers.	15 18 67 3.60	0.98
16. Helps me to make decisions in my work.	20 26 54 3.33	0.98
17. Gives me an excellent opportunity to increase my merit.	42 37 21 2.65	1.14
18. Gives me an excellent opportunity to increase my salary.	51 39 10 2.38	1.03
 Provides pleasant training conditions (rooms, seating, lighting, materials, etc.) 	16 31 53 3.41	0.94
20. Gives me an excellent opportunity to help other KISR staff members.	13 28 59 3.49	0.98
21. Provides a high degeree of cooperation between trainees and training staff.	15 26 59 3.48	0.90
22. Prepares me to use my own methods of doing the work.	23 27 50 3.28	1.0

A = agree

U = unsure D = disagree

Table 10 (Cont'd)

Item	A (Z)	Ü (%)	D (%)	$\bar{\mathbf{x}}$	sd
KISR's Training Program					
3. Directly relates to my career development plan.	24	31	45	3.22	1.04
4. Immediately applies in my work.	21	27	52	3.36	1.02
5. Has clearly stated objectives	19	30	51	3.38	0.94
6. Has accomplished each stated objective	19	48	33	3.16	0.90
 Helps me to see how KISR:s management develops its staff. 	23	32	45	3.20	0.99
8. Helps me to accomplish my work	21	18	61	3.40	1.05
9. Does not need improvement	7	22	71	2.13 .	0.89
O. Offers courses with content that is interesting.	28	30	42	3.11	0.96
1. Offers courses with content that is challenging	32	39	29	2.94	0.99
2. Offers courses with content that is practical	23	26	51	3.27	1.03
3. Offers courses with content that is geared to a professional level	24	27	49	3,22	1.05
LEASE INDICATE YOUR FEELINGS ABOUT THE FOLLOWING STA	TEMENTS				
4. I have a highly positive attitude toward KISR's training programs.	15	16	69	3.67	1.08
5. I have gained a lot of new knowledge from KISR's training programs.	23	17	60	3.43	1.11
I will attend the next training program offerred by KISR.	10	28	63	3.72	0.99
7. I need additional courses in the same subject	35	22	43	3.14	1.26
8. I need additional courses in a similar subject	21	23	56	3.45	. 1.16

A = agree U = unsure D = disagree

A. The General Attitude

- 1. The majority of the trainees (74%) felt that KISR training programs do not give them an opportunity to serve KISR (item 1), and 67% felt that they do not advance their work (item 4). Also, it was found that 69% have a negative attitude about the training programs (item 34). This is supported by 60% who disagreed with the statement that they had gained knowledge from the training programs (item 35).
- 2. Similar results were received on item 36, "I will attend the next training program section"; 63% of the trainees disagreed with it, and 9% agreed. This was supported by 61% who felt that the training programs do not help them to accomplish their work (item 28), and 71% who felt that training programs need some improvement, especially on "in-house courses" (item 29).
- 3. On item 2, "gives an opportunity to try out some of your ideas", 57% of the trainees disagreed, and 19% agreed. This disagreement was also apparent on item 11 where 54% disagreed that training programs gave them an opportunity to make use of their best abilities. On the other hand, 22% agreed and 24% were not sure.
- 4. On item 24, 52% of the trainees disagreed that the training programs could be applied to their work; 21% agreed, and 27% were not sure.

B. The Skills and Knowledge Attitude

- 1. On item 5, 63% of the trainees felt that the training programs did not give them the technical "know-how" needed to do their work. This was supported by 40% who felt that training programs did not help them to see and understand the results of their work, whereas 21% felt it did, and 39% were not sure (item 7).
- 2. On item 6, "helps me to plan my work", 59% of trainees disagreed, and 17% agreed. This was also supported by item 10, "helps me to do different things from time to time", where 54% disagreed, and 18% agreed.

3. On item 8, 63% of the trainees disagreed with the statement "helps me to do new things", and this was supported by 49% who disagreed that the training programs prepare them to use their own methods (item 22). The percentage of agreement did not exceed 23% for either of the two items.

C. Supervision, Leadership, and Making Decisions

- 1. On item 20, 59% of the trainees disagreed that the training programs provide them with the skills that make them needed in KTSR, whereas 14% agreed. This was supported by item 3 where 47% felt that the training programs did not give them an opportunity to have other KTSR staff look to them for direction or support, whereas 24% felt it did.
- 2. On item 12, "helps me to be someone in my division or department", 41% of the trainees felt it did not, 23% felt it did, and 35% were not sure. This large amount of uncertainty among the trainees pointed out the lack of advisory and supervisory roles in the training programs at KISR.
- 3. On item 16, "helps me to make decision in my work", 54% of the trainees felt it did not, and 20% felt it did. This was supported by item 9 where 48% felt that the training programs did not provide them with the skills to work alone, and 23% felt it did.

D. Developing Staff Relationships

- 1. On item 15, 66% of the trainees felt that the training programs did not help them to develop friendships with other staff to improve work (item 15). This is also supported by item 21 where 59% felt that the training programs do not provide a high degree of cooperation and friendship between trainees and training staff; 12% felt there was some degree of cooperation between the two.
- 2. On item 27, 45% of the trainees did not feel that the training programs help them to see how KISR's management develops its staff, 23% felt they do, and 32% were not sure. This is also an indication of the uncertainity among the trainees regarding the role and objectives of training programs.

E. Training Program Objectives

The majority of the trainees (48%) felt uncertain about the training programs' objectives. There were, however, some indications of disagreement regarding their accomplishments. This was indicated by the fact that 33% felt that the training programs have not accomplished their objectives (item 26). This was supported by item 25 where 51% felt that the training programs did not have clear objectives, and 30% were not sure.

F. Course Content

- 1. In item 38, 56% of the trainees felt they do not need additional courses on a similar subject, and 21% felt they do. The reason for this feeling was explained by items 30 and 33 where 42% and 49%, respectively, felt that KISR offers courses that are not interesting and not geared to their professional level.
- 2. Furthermore, 43% of trainees felt that they do not need more courses (item 37) because these courses are not practical (51%) and are not challenging (29%), items 32 and 31, respectively.

G. Personal Benefit and Future Security

- 1. On item 18, 51% of the trainees felt that KISR training program give them an opportunity to increase their salary, and in item 17, 42% felt it gives them an opportunity to increase their annual merit and bonuses. The percentage of disagreement did not exceed 21% for either item, which explains that most trainees attend programs to get bonuses and increase salary.
- 2. On the other hand, 46% of the trainees felt that KISR training programs did not provide them with a secure future, 30% were unsure, and 24% felt that the training programs would provide them with a more secure future (item 13). This was supported by 34% who felt that the training programs do not give them an opportunity to be promoted to a higher grade level, and 41% who were unsure (item 14).

H. Physical Conditions

The majority of the trainees (53%) felt that the training division did not provide pleasant conditions, and 16% felt it did. This may result from comparing the conditions at KISR with what they had seen in outside training programs (item 19).

Phase II

In this phase, the trainees' opinions and attitudes were analyzed according to sex (male or female), nationality (Kuwaiti or non-Kuwaiti) and job description (the staffs of research divisions and administration divisions). The three variables were analyzed by the percentages, t-test and chi-squre (χ^2) test.

I. Sex

The chi-square (χ^2) test of independence was used to determine whether there is a significant relationship between male and female attitudes with regard to each item. The results of the percentages and chi-square tests are presented in Table 11.

A t-test result was used to compare the average attitude scores of males and females, and to determine whether the average score of the two groups are the same. This showed that no significant difference existed between their average scores at 0.05 level, t=1.28. This indicates that the attitude of both males and females toward KISR training programs is the same. The results of Table 11 can be summarized as follows:

A. The Overall Attitude Toward the Training Programs.

1. The majority of both sexes (75% of the males and 72% of the females) felt that the training programs did not give them an opportunity to benefit KISR and/or advance their work (item 1). The chi-square test showed no significant relationship between sex and level of agreement (categories of response) at the 0.05 level, χ^2 =0.44. This means that sex and level of agreement were independent. This was supported by 58% of the males and 65% of the females on item 35 who disagreed regarding gaining new knowledge.

Table 11. Distribution of Trainees' Responses Indicating Opinions and Attitudes Toward KISR's Training Program, by Sex

Item	Male (Z) Female (Z) X
KISR's Training Program	
. Gives me an excellent opportunity to service KISR.	12 13 75 11 17 72 0.44
. Gives me an excellent opportunity to try out some of my ideas in my work.	15 26 59 26 18 56 3.80
. Gives me an excellent opportunity to have other workers look to me for direction.	20 25 55 29 37 34 7.33
. Gives me an excellent opportunity for advancement in my work.	14 17 69 18 18 64 0.39
. Gives me the technical "know-how" needed in my work .	20 14 66 20 23 57 2.48
. Helps me to plan my work.	17 25 58 17 21 62 0.40
. Helps me to see the results of my work.	20 37 43 23 42 35 0.87
3. Helps me to do new things in my work.	12 23 65 23 19 58 3.54
. Helps me to work alone in my work.	21 30 49 28 26 46 1.24
O. Helps me to do different things from time to time	15 - 31 - 54 25 23 52 - 2.98
 Gives me an excellent opportunity to make use of my best abilities. 	19 21 60 26 31 43 4.39
12. Helps me to be "someone" in my division or department.	22 · 33 · · 45 · 26 · 40 · 34 · 2.18
13. Provides me with a secure future.	23 31 46 26 29 45 0.23
14. Gives me an excellent opportunity to be promoted to a higher grade level.	26 38 36 25 46 29 1.29
15. Helps me to develop close friendships with my co-workers.	15 20 65 15 17 68 0.18
16. Helps me to make decisions in my work.	20 24 56 20 31 49 1.07
17. Gives me an excellent opportunity to increase my merit.	38 40 22 48 34 18 1.58
18. Gives me an excellent opportunity to increase my salary.	44 48 12 62 30 8 4.94
19. Provides pleasant training conditions (rooms, seating, lighting, materials, etc.)	17 30 53 14 34 52 0.42
20. Gives me an excellent opportunity to help other KISR staff members.	11 25 74 18 32 50 4.01
21. Provides a high degeree of cooperation between trainees and training staff.	15 25 60 15 29 56 0.48
22. Prepares me to use my own methods of doing the work.	19 . 28 . 53 . 31 26 43 3.57

P<0.05

A = agree U = unsure D = disagree t=1.28

Table 11 (Cont'd)

Item	Mal	e (%)	D	F	emale	(Z)	χ²
KISR's Training Program							
23. Directly relates to my career development plan.	20	34	46	31	24	45	3.56
4. Immediately applies in my work.	22	27	51	20	26	54	0.20
5. Has clearly stated objectives	18	31	51	22	29	49	0.40
6. Has accomplished each stated objective	19	47	34	20	49	31	0.27
7. Helps me to see how KISR:s management develops its staff.	21	34	45	26	29	45	0.68
8. Helps me to accomplish my work	19	17	64	25	20	55	1.31
9. Does not need improvement	8	23	69	6	20	74.	0.49
O. Offers courses with content that is interesting.	27	32	41	31.	26	43	0.91
1. Offers courses with content that is challenging	29	37	34	37	43	20	3.81
2. Offers courses with content that is practical	21	29	50	26	. 20	. 54	1.93
3. Offers courses with content that is geared to a professional level	24	28	48	25	26	. 49 .	0.10
LEASE INDICATE YOUR FEELINGS ABOUT THE FOLLOWING STA	TEMENTS						
4. I have a highly positive attitude toward KISR's training programs.	17	10	78	12	.25	63	6.23
5. I have gained a lot of new knowledge from KISR's training programs.	22	20	58	25	10	45	2.71
6. I will attend the next training program offerred by KISR.	10	-25	65	. 8	.34	. 58	1.71
7. I need additional courses in the same subject	31	21	48	42	24	34	3.41
8. I need additional courses in a similar subject	17	22	61	29	25	46.	4.47

P<0.05 t=1.28

A = agree U = unsure D = disagree

- 2. Similar results were found on items 28 and 29. The χ^2 test showed no significant relationship between sex and level of agreements at the 0.05 level, $\chi^2=1.31$ and 0.49, respectively. On item 29, "does not need improvement", 69% of the males and 74% of the females disagreed and felt that the training programs do need improvement.
- 3. There was no relation between sex and level of agreement on items 2,4,35, and 36. The χ^2 tests were not significant at the 0.05 level, and χ^2 values were 3.80, 0.39, 2.71, and 1.71, respectively. The percentages of agreement regarding these items ranged from 10% to 26%, and the disagreements ranged from 56% to 69%.
- 4. On the other hand, on item 34, regarding the overall attitude, 73% of the males have a negative attitude toward the KISR training programs compared with 63% of females. The chi-square test did show a significant relationship between sex and level of agreement at 0.05 level, χ^2 =6.23. This means that the two variables (sex and level of agreement) are not independent of each other.
- 5. Also on item 11, "gives me an opportunity to make use of my best abilities", male and female attitudes were different toward the training programs—60% of the males disagreed compared with 43% of the females. The chi-square test of this item showed there was a significant relationship at 0.05 level, $\chi^2=4.39$. This means that males, females and the level of agreement were not independent regarding this item.

B. The Skills and Knowledge Attitude.

- 1. On item 5, 66% of the males and 57% of the females felt that the training programs did not give them the technical "know-how" needed in their work. The chi-square test showed that no significant relationship existed at 0.05 level, $\chi^2=2.48$. This means that sex and level of agreement were independent of each other regarding this item.
- 2. Similar results were found on items 6,7, and 10. The agreement between trainees regarding these items were 17%, 20%, and 15% and

- the disagreement were 62%, 35%, and 52%, respectively. The Chi-square tests did not show a significant relationship between the sex level of agreement at 0.05 level, χ^2 =0.40, 0.87, and 2.98, respectively.
- 3. On item 22, 53% of the males and 43% of the females disagreed that the training programs prepare them to use their own methods in doing their work, and 19% of the males and 3% of the females agreed. The chi-square test showed no significant relationship between sex and level of agreement at 0.05 level, $\chi^2=3.57$.
- 4. On item 8, no significant relationship between sex and level of agreement was found at the 0.05 level, $\chi^2=3.54$. This means that the sex and level of agreement were independent of each other. This item also indicated that 65% of males and 58% of females have negative attitudes toward the training programs with regard to helping them do new things.

C. Supervision, Leadership, and Making Decisions.

- 1. There was some difference in the level of agreement between the sexes with regard to the training programs on items 3, 9, 12, 16, and 20. The percentage of agreement among males regarding these items ranged from 11 to 22%, and among females from 18 to 29%. The percentage of disagreement among males ranged from 49 to 74% and among females from 34 to 50%.
- 2. The chi-square test did show that there is a significant relationship between sex and level of agreement at 0.05, χ^2 =7.33 and 4.01 (items 3 and 20). This means that both sex and level of agreement have some association regarding these two items. There was, however, some gap between percentage of disagreement between males and females, 55 and 34% on item 3, and 74 and 50% on item 20, respectively.

D. Developing Staff Relationships.

 On item 15, 65% of the males and 68% of the females felt that the training programs did not help them to develop closer relationships with other KISR staff. The chi-square test on this

- item showed no significant relationship between sex and level of agreement at 0.05 χ^2 =0.18.
- 2. On item 21, 60% of the males and 56% of the females disagreed with the statement that the training programs provide cooperation between the trainees and the training staff. This indicated that most trainees had negative attitudes toward the efforts of the training staff. The chi-square test for this item showed that no significant relationship existed between the sex variable and level of agreement at 0.05, $\chi^2=0.48$.
- On item 27, 45% of both sexes disagreed regarding how KISR's management develop its staff, whereas 34% of the males and 29% of the females were unsure, and 21% of the males and 26% of females agreed. The chi-square test showed no significant relationship existed between the sex variables and levels of agreement at 0.05, χ^2 =0.68.

E. Training Program Objectives.

- 1. On item 25, 51% of males and 49% of females felt that training program objectives were not clear and need to be restated, whereas 18% of the males and 22% of the females felt the objectives were clear, and approximately 30% of both sexes were not sure. In this item, the chi-square test showed no significant relationship between sex and level of agreement at 0.05, $\chi^2=0.40$.
- 2. On item 26, "has accomplished each stated objective", approximately 20% of both sexes agreed, and 34% of both sexes disagreed, whereas the majority of the trainees were not sure regarding this item (47% and 49%, respectively). The chi-square test showed that no significant relationship existed between sex and level of agreement at 0.05, χ^2 =0.27.

F. Course Content.

1. On item 38, 61% of the males and 46% of the females felt that they do not need additional similar courses, whereas 17% of the males and 29% of the females felt they do. The reason for this attitude was supported by 48% of the males and 49% of the females who felt

- that courses were not geared to their professional level, and approximately 43% of both sexes felt that the courses were not interesting (items 33 and 30).
- 2. Furthermore, on item 37, 48% of the males and 34% of the females felt that they do not need more courses on the same subject because these courses were not challenging or practical (items 31 and 32). The percentage of disagreement for these items was 50% for the males and 54% of the females.
- 3. For item 38, the chi-square test showed that a significant relationship existed between the sex variable and level of agreement at 0.05, χ^2 =4.74. This means that the two variables were not independent of each other.

G. Personal Benefit and Future Security.

- 1. On item 18, 44% of the males and 62% of the females agreed that attending training programs at KISR would give them an opportunity to increase their salary, and few trainees of either sex disagreed.
- 2. Similar findings were found on item 17 where 38% of the males and 48% of the females felt that attending training programs would also increase their annual merit and bonuses.
- 3. On the other hand, 46% of the males and 45% of the females felt that the KISR training programs did not provide them with a secure future (item 13), and approximately 31% of both sexes were unsure. Close to 23% of trainees did feel that the training programs would provide them with a more secure future. This was supported by 36% of the males and 29% of the females who felt that the training programs did not give them an opportunity to be promoted to higher grades (item 14), and close to 46% of both sexes were unsure if training programs would give them this opportunity.
- 4. The chi-square tests showed a significant relationship between sex and level of agreement at the 0.05 level, $\chi^2=4.94$. This means that both sexes have some association regarding the salary item (18).

H. Physical Conditions.

- 1. On item 19, "provides pleasant training conditions", 53% of the males, and 52% of the females felt that the physical conditions should be improved, whereas 30% of the males, and 34% of the females were not sure, and less than 17% felt they are pleasant.
- 2. The chi-square test showed that no significant relationship existed between the sex variable and the level of agreement at 0.05 level, χ^2 =0.42.

II. Nationality

The data were analyzed by chi-square tests (χ^2) and t-tests to determine whether the nationality of trainees affects their opinions or attitudes toward the training programs or not. Table 12 reveals the findings on the nationality variable (Kuwaitis vs non-Kuwitis) and the level of agreement on each item. It also includes the percentage of agreement and disagreement regarding the trainees' attitudes toward the KISR training programs. The findings can be summarized as follows:

- 1. The overall attitude of Kuwaitis and non-Kuwaitis toward the training programs were similar. Both groups expressed disagreement on most items. This disagreement ranged from 11% (item 18) to 74% (item 34) among Kuwaitis. Among non-Kuwaitis, the range was from 9% (item 18) to 76% (item 1).
- 2. The range of agreement on each item among Kuwaitis was 5% (item 36) to 46% (item 18), and among non-Kuwaitis was 12% (item 36) to 55% (item 18).
- 3. The chi-square tests did show that some significant relationships existed between the nationality variable and the level of agreement on each item at the 0.05 level. The χ^2 values were 4.67, 9.76, 3.97, 5.25, 6.72, 6.88, and 5.63 of items 1,2,8,17, 23, 33, and 36, respectively.
- 4. The t-test was used to compare the average attitude scores of both groups and to determine whether the average attitude scores of the two groups are the same or not. The result of the t-test showed that no significant difference existed between their

Table 12. Distribution of Trainees' Responses Indicating Opinions and Attitudes
Toward KIR's Training Program, by Nationality.

Thomas	Kuwaiti (%)	Non-Ku	waiti	(%)	2
Item	d U A	A	Ū	D	χ²
KISR's Training Program					
1. Gives me an excellent opportunity to service KISR.	7 [20] 73	14	10	. 76	4.67*
2. Gives me an excellent opportunity to try out some of my ideas in my work.	12 33 55	.25	15	60	9.76
 Gives me an excellent opportunity to have other workers look to me for direction 	. 2031 49	27 .	. 28	45	1.20
4. Gives me an excellent opportunity for advancement in my work.	11 . 12 . 67	19	13	68	3.00
5. Gives me the technical "know-how" needed in my work	19 15 66	21	19	60	1.01
6. Helps me to plan my work.	16 26 58	17	23	60 .	0.27
7. Helps me to see the results of my work	20 39 .41	23	38	39	0.23
8. Helps me to do new things in my work.	11 26 63	21	. 17	62	3.97*
9. Helps me to work alone in my work.	21 32 47	.25	26	49	0.9
10. Helps me to do different things from time to time	22 29 48			.58	1.97
	22 .49 .49	15 .			
11. Gives me an excellent opportunity to make use of my best abilities.	. 20 , .25 . 56	24	24	52	0.45
12. Helps me to be "someone" in my division or department.	22 . 36 .42	25	35	40	0.16
13. Provides me with a secure future.	27 34 39	22	26	52	3.14
14. Gives me an excellent opportunity to be promoted to a higher grade level.	. 264430	25	38	37	1.18
15. Helps me to develop close friendships with my co-workers.	11 21 68	19	16	65	2.15
16. Helps me to make decisions in my work.	17 31 29	45	49	14	1.82
17. Gives me an excellent opportunity to increase my merit.	37 34 29	46	40	14	5.25*
18. Gives me an excellent opportunity to increase my salary.	46 43 1.1	55	36	9	1.42
19. Provides pleasant training conditions (rooms, seating, lighting, materials, etc.).	12 36 52	19	27	54	2.0
20. Gives me an excellent opportunity to help other KISR staff members.	9 30 61	18	25	57	3.10
21. Provides a high degeree of cooperation between trainees and training staff	12 28 60	. 18	24	58	1.02
22. Prepares me to use my own methods of doing the work.	20 33 47	26	22	52	2.71

N.B: t=0.33 p<0.05

A = agree U = unsure

D = disagree

Table 12 (Cont'd)

Item .	K	uwait	i (Z)	Non	-Kuwa	iti (7)	2
		1	ם ד	A	บ	ח	χ²,
KISR's Training Program							
23. Directly relates to my career development plan.	25	39	36	23	23	54	6.72
24. Immediately applies in my work.	19	28	53	24	25	51	0.73
5. Has clearly stated objectives	17	36	47	21	25	54	2.11
6. Has accomplished each stated objective	15	49	36	23	46		1.83
 Helps me to see how KISR:s management develops its staff. 	26	29	. 45	21	34		0.81
8. Helps me to accomplish my work	25	21	54	18	16	66	2.56
9. Does not need improvement	40	22	68	6	21	73 .	1.53
O. Offers courses with content that is interesting.	24	33	43	32 .	28		1.67
1. Offers courses with content that is challenging	27	43	30	36	36	28	1.72
2. Offers courses with content that is practical	22	27	51	24	24	52	0.15
3. Offers courses with content that is geared to a professional level	22	37	41	26	19.	55	6.88
EASE INDICATE YOUR FEELINGS ABOUT THE FOLLOWING STA	TEMENTS						
. I have a highly positive attitude toward KISR's training programs.	14	12	74	17	18	65	1.86
. I have gained a lot of new knowledge from KISR's training programs.	25	17	58 .	22	. 16	62	0.30
. I will attend the next training program offerred by KISR.	5	23	. 72	12	32	56	5.63*
. I need additional courses in the same subject	33	17	50	36	27	37:	3.43
. I need additional courses in a similar subject	20	21	59	23	24	53	0.80

N.B : t=0.33 P<0.05

A = agree
U = unsure
D = disagree

average attitude scores at the 0.05 level, t=0.33. This indicates that the two groups (Kuwaiti and non-Kuwaiti) are not different in regard to their attitudes toward the KISR training programs (Table 12).

III. Job Description

The data were analyzed by the same statistical methods that were used with the sex and nationality variables to determine how the jobs of the trainees effect their opinions and attitudes toward the training programs. Table 13 presents the findings on the job description variable (research or administrative). The findings can be summarized as follows:

- 1. In general, trainees in both the research and administrative sections have similar attitudes toward the KISR training programs. Both groups expressed their disagreement with most items. The findings were also similar to those in Tables 10 and 11 (sex and nationality).
- 2. The range of agreement in the trainees' attitudes in the research section was from 11% (item 1) to 47% (item 18). For the trainees in the administrative section, the range was from 12% (item 1) to 60% (item 18). This is an indication that most trainees who are in the administrative section have a more positive attitude than trainees in the research section regarding training programs activities.
- 3. The range of disagreement in trainees' attitudes in the research section was from 11% (item 18) to 71% on item 1. For the administrative section, the range was 8% (item 18) to 83% (item 1). This indicates that the disagreement among trainees regarding training activities existed in both sections.
- 4. The chi-square tests did show that a significant relationship existed between the job description variable and the level of agreement at the 0.0 level. The χ^2 values were 4.66, 4.94, 7.21, 5.79, 3.88, 4.30, and 4.91 (items 1,7,13, 17, 23, 30, and 38, respectively; Table 13).

5. The t-test was used to compare the attitude scores of both groups (researcher and administrative) and to determine whether the average attitude scores of the two groups are the same. The t-test showed that no significant difference existed between the average attitude scores at the 0.05 level, t=0.47. This indicates that the attitudes of the two groups are not different regarding their attitude toward KISR training programs (Table 13).

Phase III

In this phase, the average attitude scores among the trainees' grade levels were tested to determine whether there were differences among their attitudes toward the training programs.

Tables 14 and 15 present the results of this investigation. Table 14 presents the number of Kuwaitis and non-Kuwaitis of the total respondents, the average scores, and the minimum and maximum scores.

It can be seen from Table 14 that 28% of the respondents (trainees) were in grade level 11, whereas grades 8 and 14 have fewer respondents. Also, the majority of Kuwaitis are in the middle grade levels (grades 11 and 12).

To describe the attitude of trainees in these grade levels, the mean and standard deviation are presented. They indicate that the trainees in grade 9 have the highest positive average attitude score $(\bar{X}=130.2,\ sd=22.7)$. Grade 14 trainees have the lowest positive average attitude score $(\bar{X}=115.5,\ sd=27.6)$. Grade 10 trainees have more variation in attitude score than the other grade levels (sd=32.2, se=7.6). This means that there were more extreme attitude scores in grade 10 than there were in the other grade levels. In contrast, grade 11 has less variation among the scores than the other grades (sd=19.97; se=2.8). This means that there were less extreme attitude scores in this grade than the others.

Table 15 summarizes average scores of attitude toward the KISR training program, by grade level of trainees. The results showed no significant differences at the 0.05 level, F=0.67.

Table 13. Distribution of Trainees' Responses Indicating Opinions and Attitudes Toward KISR's Training Program, by Job Description

	Administrative (%) Research (%)2
Item	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	8 11 11 11 11 11 11 11 11 11 11 11 11 11
KISR's Training Program	
. Gives me an excellent opportunity to service KISR.	12 5 83 11 18 71 4.66*
. Gives me an excellent opportunity to try out some of my ideas in my work.	23 23 54 18 23 59 0.77
. Gives me an excellent opportunity to have other workers look to me for direction	29. 23 48 . 21 32 47 1.82
. Gives me an excellent opportunity for advancement in my work.	17 17 66 14 17 69 0.27
. Gives me the technical "know-how" needed in my work	15 17 68 22 17 61 0.91
. Helps me to plan my work.	17 23 60 17 24 59 0.05
. Helps me to see the results of my work	29 27 44 18 44 38 4.94 [*]
. Helps me to do new things in my work.	17 21 62 16 21 63 0.06
. Helps me to work alone in my work.	28 23 49 21 31 48 1.28
O. Helps me to do different things from time to time	19 31 50 18 27 55 0.36
 Gives me an excellent opportunity to make use of my best abilities. 	27 31 42 20 22 58 3.62
2. Helps me to be "someone" in my division or department.	27 29 44 22 38 40 1.42
3. Provides me with a secure future.	27 42 31 23 25 52 7.21
4. Cives me an excellent opportunity to be promoted to a higher grade level.	23 42 35 26 40 34 0.19
15. Helps me to develop close friendships with my co-workers.	13 .25 62 16 16 68 2.04
6. Helps me to make decisions in my work.	27 29 44 18 25 57 2.95
17. Gives me an excellent opportunity to increase my merit.	46 25 29 40 43 17 5.79*
18. Gives me an excellent opportunity to increase my salary.	60 32 8 47 42 11 2.44
19. Provides pleasant training conditions (rooms, seating, lighting, materials, etc.)	21 33 46 13 31 56 2.03
20. Gives me an excellent opportunity to help other KISR staff members.	15 29 56 13 27 60 0.30
21. Provides a high degeree of cooperation between trainees and training staff	15 23 62 15 28 57 0.43
22. Prepares me to use my own methods of doing the work.	27 23 50 22 29 49 1.02

	Admini	cive ((Z) R	esear			
Item	A	U	D	A	· U	Ð	χ²
KISR's Training Program							
23. Directly relates to my career development plan.	33	30	37	20	31	49	3.88*
24. Immediately applies in my work.	. 27	19	54	19	30	51 .	2.77
25. Has clearly stated objectives	21	37	42	18	28	54	2.08
26. Has accomplished each stated objective	25	52	23	17	46	37	0.63
27. Helps me to see how KISR:s management develops its staff.	19	33	48	15	31	44	0.63
28. Helps me to accomplish my work	-25	-17	58	19	19	62	0.79
9. Does not need improvement	-10	19	7	6	23	7 .	0.78
0. Offers courses with content that is interesting.	33	19	48	26	35	39	4.30*
31. Offers courses with content that is challenging	33	38	29	32	39	29	0.02
32. Offers courses with content that is practical	.25 -	17	58	22	29	49:	2.81
33. Offers courses with content that is geared to a professional level	25	19	56	24	31	45	2.70
PLEASE INDICATE YOUR FEELINGS ABOUT THE FOLLOWING STA	TEMENTS						
34. I have a highly positive attitude toward KISR's training programs.	14	11	75	16	17	67	1.33
5. I have gained a lot of new knowledge from KISR's training programs.	27	9	64	21	20	59	2.90
36. I will attend the next training program offerred by KISR.	12	26	62	8	28	.64	0.59
7. I need additional courses in the same subject	40	21	39	33	23	44	1.01
8. I need additional courses in a similar subject	29	13	58	18	27	55 .	4.91*

N.B. t=0.47

^{*}P<0.05

A = average U = unsure D = disagree

Table 14. The Distribution of Trainees in the Seven Grade Levels

Grade Level	Frequency N(n)a	%		Att	itude Sc	ore	
			$\overline{\overline{x}}$	SD	SE	Min	Max
8	13(4)	7	127.2	29.7	8.2	51	167
9	17(2)	10	130.2	22.7	5.5	85	171
10	18(6)	10	122.3	32.2	7.6	58	186
11	49(38)	28	128.2	19.9	2.8	71	169
12	41(27)	23	122.6	29.8	4.7	65	182
13	25(17)	14	125.4	26.8	5.4	61	173
14	15(4)	8	115.5	27.6	7.1	60	164
Total	178(98)	100	125.10	26.2	1.9	51	186

a = number of Kuwaitis

se = standard error of the mean

 $\bar{X} = mean$

sd = standard deviation

Min = minimum score

Max = maximum score

Table 15. Analysis of Variance of the Trainees' Grade Level

Source of Variation	dF	SS	MS	F
Between Grade Level	6	2789.25	464.87	0.67
Between Grade Level	171	118822.93	694.87	

dF = degrees of freedom

SS = sum of squares

MS = mean sum of squares

F = F-ratio, at P > 0.05

Summary and Conclusions

In the review of literature, it was found that many studies have been conducted to evaluate the effectiveness of training programs in the United States, Europe, and other countries. It was also found that less information was available regarding the evaluation of the effectiveness of training programs in Kuwait, in general, and KISR, in particular.

The expanded growth of the KISR employee population and the increased emphasis being placed on the training division have raised the need to evaluate the training programs. Are they serving the development and work needs at KISR, and will they serve in future? This study is designed to meet this need. It analyzes the trainee's attitudes toward KISR training program in general and examines the relationship among variables. It is hoped that this study will provide a more rational basis for decision making both for DOT and KISR's upper management.

The data were collected by two instruments: Instrument A (trainees' characteristics), and instrument B (the KISR training program questionnaire). The population of this study consisted of 592 KISR full-time trainees who were at grade levels 8 through 14. A total of 200 trainees were drawn by stratified random sample. Out of the 200 trainees, 178 respondents were obtained.

The respondents include 97 (54.50%) Kuwaitis and 81 (45.50%) non-Kuwaitis. The chi-square test was used to test whether the respondents of the two groups were independent among the four categories (LENV, PENG, AFSS, and PDTS), and within each category. The findings were significant among the four categories and within two categories. The 30 trainee variables were analyzed by product moment correlations to examine the correlations between each pair of variables. It was found that most of the 30 variables had moderately low correlations.

For instrument B, the data were analyzed in three phases. Phase I includes the overall attitude of trainees toward the training programs. Phase II includes the overall attitude of trainees toward the training

programs with regard to (a) sex, (b) nationality, and (c) job description. Phase III includes an analysis of the seven grade levels.

The findings of Phase I showed that the majority of trainees (74%) felt that KISR training programs did not give them an opportunity to serve KISR or advance their work and 69% had a negative attitude toward the training programs at KISR. In Phase II, the sex variable was used to test the difference between attitude scores. The results were similar to those found in Phase I. The t-test showed that the attitude of males and females were the same regarding the KISR training programs. Also the t-test results for both nationality and job description variables were not significant and indicated results similar to the sex variable. The chi-square test showed that there were some associations between each variable and the level of agreement on the questionnaire.

We could conclude that this study found that the attitudes of the majority of the trainees indicate a negative feeling toward the KISR training programs. This remains when the data are analyzed by sex, nationality, job description, and grade level. There was, however, some indication of uncertainty regarding a number of items. This was evident on items that dealt with the impact of training programs on future security and the expectation of career development, especially among Kuwaitis in the research divisions.

Finally, it can be concluded that Kuwaitis and non-Kuwaitis, both in the research and administration sections, have expressed their disagreement with the training programs at KISR. This disagreement was the highest among trainees in grade 14, and the lowest among trainees in grade 9. In grade 11, which included the majority of Kuwaitis in the research staff, the disagreement variation among Kuwaitis was the lowest, which means that there were less extreme attitudes in both directions among the Kuwaiti staff.

Suggestions and Recommendations

The main purpose of this study was to evaluate the trainees' attitudes and opinions about the KISR training programs. It was concluded that the general attitude of trainees was negative with some indications of uncertainty.

Therefore, the following suggestions and recommendations are made.

Regarding Trainees.

- 1. All trainees at KTSR should know what the training opportunities and career development plans are and how they are designed and processed. It is also important that trainees know how training programs will affect their promotion and performance plan to decrease unrealistic expectations and increase participation.
- 2. Open communication regarding training programs within division staff and between divisions and departments is important, especially at the professional level, and, in particular, among Kuwaitis to exchange ideas and share scientific experiences and needs.
- 3. Information about future training is needed to give trainees more motivation and job security and to enhance their feeling of commitment to identify their objectives. This can be done by encouraging young researchers and professionals to be involved in the development of career and training plans and to see what the KISR Divisions have planned for them.
- 4. Supervision is important in the research area, especially in training. Therefore, supervisors should continue their supervision and be aware of the trainees' activities and training programs even if the trainees are not working with them. This point is difficult, but important to stabilize changes in career development plans due to changes in supervisors and project assignments.
- 5. Trust and confidence in trainees' abilities should be discussed between KTSR management and especially Kuwaitis. It should be noted that developing trust and confidence in the trainee depends on the training programs, training experience, and his view of KTSR management's role.

Regarding Variables of the Study.

- 1. Personality variables should be selected carefully to evaluate opinions and attitude of trainees specially with regard to research training programs.
- 2. Nationality and sex variables are good to evaluate attitudes and opinions of KISR staff and should be given greater emphasis in future studies.

Other Suggestions and Recommendations. These are based on Section B of the questionnaire and conversations from the summer of 1984 (see instrument B). The comments are summarized in Table 16.

Table 16. Summary of the Trainees' Ideas of What Division of Training (DOT) Should Be

Where DOT Should be Where DOT is I. Staff roles and responsibilities o In-house courses and career o In-house courses and career development. development. - Viewed as individual DOT, - Viewed as individual responsiand KISR management responbility. sibility. o DOT and KISR managers functioning o DOT AND KISR managers functioning as program facilitators. as controllers and managers. o Work decisions should be o Work decisions are usually collective and cooperative. centralized. o Working as partners on a o Working on a short-term and on a continuous basis. voluntary basis. II. DOT Training Operational Plan Courses offered by assessing o Courses offered independently the needs and cooperatively with no planning. using the information in planning. o In-house programs need new o In-house programs largely ideas. repetitive and sterotyped. o Some in-house programs funded o In-house programs funded by DOT. by KISR's Divisions and DOT: o In-house programs as part of o In-house programs meet past career development plan. requirements. Training programs view the o Training programs view the individual and KISR as clients. individual as the client.

Appendix A Training Program Questionnaire

INSTRUMENT A

PART I

DEMOGRAPHIC CHARACTERISTICS

OF KISR TRAINEES

Α.	Plea	ase place a check mark ase for each of the fol	be .lc	ta: two	de the appropriate re-
	1.	Age	(((()	20-25 years 26-30 years 31-35 years 36-40 years Over 40 years
	2	Sex	(Male Female
	3.	Birthplace	(In Kuwait Outside Kuwait
	4.	Nationality	()	Kuwaiti Non-Kuwaiti
	5•	Marital Status	(Married Single
	6.	Service in Military or Police Force	(Yes. No
	7.	Location of College or Institute from which You Graduated	()	Kuwait Another Arab country A non-Arab country
	8.	Educational Level	()	Hold a secondary school
			()	diploma Hold a two-year diploma beyond secondary school
			()	Hold a four-year college
			(degree (Bachelor's) Hold a five-year college
			()	degree (Bachelor's) Hold a Master's degree Have completed 30 hours or more beyond Master's degree

9.	Major Field:	
	- Engineering	() Yes () No
	- Science (Mathematics, Physics, Physics, and Biological Sciences)	() Yes () No
	- Business and Economics	() Yes (·) No
	- Education and Humanities	() Yes () No
	- Other (Please specify)	
10.	Language(s) You Speak and Write:	
	- Arabic only	() Yes () No
	- Arabic and another language other than English	() Yes () No
	- English only	() Yes () No
	- English and another language other than Arabic	() Yes () No
11.	Previous Work Experience	() Yes () No
12.	Job Description	() Administration section() Research section
13.	Participation in Training Programs Outside KISR (in or out of Kuwait)	() Yes () No
14.	Grade Level (circle one)	8 9 10 11 12 13 14

В.		se write the correct answer	beside each of the
	15.	How long have you lived in Kuwait	(Record in years)
	16.	How long have you worked at KISR?	(Record in years)
	17.	How many persons depend on you for support?	(Record in persons)
	18.	How many persons are in your family (live in the same house but are not necessarily dependent on you for support)?	(Record in persons)
	19.	What was your grade point average for your last diploma or degree program?	(Record in 9-pt. scale)
	20.	How many training programs have you attended since joing KISR (both inside and outside of KISR)?	(Record in numbers)

INSTRUMENT B

PART II

QUESTIONNAIRE ON KISR'S TRAINING PROGRAMS

The purpose of this questionnaire on KISR's training programs is to give you an opportunity to express how you feel about various aspects of your training program. On the basis of your responses and those of other trainees, the investigator hopes to gain a better understanding of the aspects of KISR's training programs with which the trainees agree and disagree, and the ability to predict the success of the training programs. Therefore, your careful consideration of each item of this instrument will be greatly appreciated.

Directions: The items of this questionnaire are designed to record your responses to various aspects of the training programs offered by the Kuwait Institute for Scientific Research (KISR). Please read each item carefully, and then honestly indicate exactly what you feel about each one. These items have been identified as possible reasons for the success of KISR's training programs.

Please indicate your responses by ranking each item on a scale ranging from Strongly Agree to Strongly Disagree.

Check the space which best expresses your response to the item, according to the following:

- SA = I strongly agree with this statement.

 (Mark this if you feel your training program gives you more than what you expected.)
 - A = I agree with this statement.

 (Mark this if you feel your training program gives you what you expected.)
- UN = I am uncertain about this statement.

 (Mark this if you cannot make up your mind about whether the training program gives you what you expected.)
 - D = I disagree with this statement.

 (Mark this if you feel your training program
 gives you less than what you expected.)
- SD = I strongly disagree with this statement.

 (Mark this if you feel your training program gives you much less than what you expected.)

Section A

Item	SA	A	UN	D	SD
ISR's training program					
1. Gives me an excellent opportunity to service KISR.					
 Gives me an excellent opportunity to try out some of my ideas in my work. 					
3. Gives me an excellent opportunity to have other workers look to me for direction.					
4. Gives me an excellent opportunity for advancement in my work.					
5. Gives me the technical "know-how" needed in my work.			_		
6. Helps me to plan my work.					
7. Helps me to see the results of my work.					
8. Helps me to do new things in my work.					
9. Helps me to work alone in my work.					
10. Helps me to do different things from time to time.					
11. Gives me an excellent opportunity to make use of my best abilities.					
12. Helps me to be "someone" in my division or department.					
13. Provides me with a secure future.					
14. Gives me an excellent opportunity to be promoted to a higher grade level.					
15. Helps me to develop close friend- ships with my co-workers.					

Item	SA	A	UN	D	SD
6. Helps me to make decisions in my work.					
17. Gives me an excellent opportunity to increase my merit.					
18. Gives me an excellent opportunity to increase my salary.					
19. Provides pleasant training conditions (rooms, seating, lighting, materials, etc.).					
20. Gives me an excellent opportunity to help other KISR staff members.					
21. Provides a high degree of cooper- ation between trainees and train- ing staff.					
22. Prepares me to use my own methods of doing the work.					
23. Directly relates to my career development plan.					
24. Immediately applies in my work.					
25. Has clearly stated objectives.				-	
26. Has accomplished each stated objective.					
27. Helps me to see how KISR's man- agement develops its staff.					
28. Helps me to accomplish my work.					
29. Does not need improvement.					
30. Offers courses with content that is interesting.	-				
31. Offers courses with content that is challenging.					
32. Offers courses with content that is practical.					

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