

**A STATISTICAL ANALYTICAL STUDY WITH THE PURPOSE OF
KNOWING THE TENDENCIES OF SCIENTIFIC COLLEGES
"STUDENTS OF THE ISLAMIC UNIVERSITY IN AL- MADINAH
TOWARDS USING THE MODERN SCIENTIFIC METHODS IN
LEARNING"**

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ABSTRACT

This study deals with the tendencies of students towards using the modern scientific methods in learning by using statistical methods. The study aims at using these methods and to what extent do they affect the academic attainment of scientific colleges' students of the Islamic university of Al-Madinah. Also to know whether there are differences of statistical significance regarding the students' tendencies? A number of variables are used such as: (age, place of residence, name of college, specialization, educational level). Tests are made by using: means, deviations, T- test and man analysis discrepancy '. A questionnaire was designed and distributed to students to know their tendencies for using such methods. Data were analyzed by using the statistical packages for social sciences (SPSS) through the analytical methodology.

The most important findings reached by the researches in this study are:

- The tendencies of scientific colleges' students in the Islamic university of Al-Madinah towards using the modern scientific methods in education are considered positive.
- There are differences of statistical significance concerning the degree of students' satisfaction from using modern scientific methods in education.
- There are differences of statistical significance towards using the modern scientific methods attributed to all the variables (age, name of college, specialization and education level) with the exception of the residence variable.

The most important recommendations referred by the researcher are:

- The use of the modern scientific methods in learning for all scientific colleges in the university.

- Generalizing the idea on all university's colleges.
- Benefiting from students in the future upon using these methods.

Keywords: students" tendencies, scientific methods, academic attainment, the Islamic university in Al-Madinah.

1. INTRODUCTION

Things have changed during the recent fifty years in the field of modern scientific technologies in astonishing way, like the occurrence of computer and scientific laboratories these years witnessed developments in the scientific fields which were linked to each other to serve as a base for the development of any state.

Generally, the use of modern scientific methods by students is considered most essential specially university students.

Therefore, the researcher gave this study more importance because the modern learning methods were also important and effective in performance and improving the level of academic attainment for the students. The development taking place in our age in fields of modern technologies necessitates the scientific development in various fields.

The student of today has a different role from the one he/she played in the traditional system of learning. This new role is characterized by the use of modern technologies in learning.

Thus, the researcher deems that there are uses required by working in the field of education which are needed by the student in his academic life currently, and to benefit from in his/her future life.

From here comes the idea of this study, to search in tendencies of students towards using the modern scientific methods in various fields of sciences.

The modern scientific technological methods which can be used by the student in his work life are considered important for encouraging students to increase their academic attainment specially in scientific researches.

The study's problem lies in the fact that there are Arab and foreign universities having interest in such field and benefited from it academically and practically.

The study basic problem lies in weakness of students' tendencies towards the use of modern scientific technological methods in learning to assist them in the learning process and developing them in the future, moreover students lack self-controls arguing that traditional learning methods are simple and comfortable compared to the modern ones, although universities have taken wide steps in the fields of modern technologies.

The study questions can be formulated in the following points:

- What is the reality of the use of modern scientific technologies for university students and their role in increasing academic attainment of the students?
- How students evaluate their tendencies towards using modern scientific technologies and the difference between them and the old ones?
- What are the benefits gained by the students from using modern technological methods and explaining obstacles facing the utilization of these technologies?
- What is the role of the teacher and student inside and outside the university in encouraging the use of such technologies and generalizing their benefits on the society?
- What is the extent of difference of students using these technologies according to these variables (age, place of residence, name of college, specialization, study level)?

The fact that it is an attempt for knowing students' opinion general about using the modern scientific technologies in the various scientific fields, and to what extent do they contribute to raising awareness, and benefit from them in increasing academic attainment.

The study also aims at revealing evaluations of the students upon using such technologies and explaining the extent of differences attributed to variables of (age, place of residence, name of college, specialization, study level).

The main objective of this study is to know the tendencies and opinions of scientific college students of the Islamic university of Al-Madinah about the uses of modern scientific technologies in their scientific fields – other sub- objectives derive from this objective:

- The role of these used in increasing academic attainment of university student.
- Explaining to what extent do students benefit from these technologies?
- Explaining the role of the university teacher and the ways providing modern technologies for university student.
- Explaining the differences between students' opinions in using these technologies according to these variables (age, place of residence, name of the college, specialization and study level).

Hypothesis of the study can be formulated as follows:

- Tendencies of scientific college students of the Islamic university on the use of modern learning methods tend to be positive.
- There are differences of statistical significance about the degree of students' satisfaction of using modern learning methods according to the following variables (age, place of residence, name of college, specialization and study level).

The study population includes scientific colleges' students of the Islamic university in Al-Madinah.

Data were collected by questionnaire which was evaluated according to the standards of statistical scientific theories. There was another method for collecting data known as total restriction but the interview was chosen due to the large size of the population Likert pentagon measure was used in giving questions and variables of the study.

The researcher made the probable mean for each phrase and specifies the directions of opinions of each phrase. The following table shows this:

Table 1.1 shows how to get the probable mean on Likert pentagon measure

Opinion	Weight	Probable mean	Theatrical mean
Don't agree very much	1	5-4.20	3
Don't agree neutral	2	4.19-3.40	
Agree	3	3.39-2.60	
Agree very much	4	2.59-1.80	
	5	1.79-1	

From the above table it is clear that the theoretical mean equals $(5/1+2+3+4+5)=3$, therefore we can consider that the theoretical mean for their measure is 3.

The researcher depended on Likert pentagon measure because it was more representative for measuring data and accurately interpreting them statistically.

The tool is scientifically applied sparticular in the field of statistics and scientific research. The questionnaire was accurately designed according to the sound methods.

The researcher made use of different methods therefore he obtained findings that were totally different from other studies. The researcher used the method of (Cronbache. Alpha)to know the extent of the real stability of the tool. The value of stability co-efficient was 0.8302 for the

measure of students' tendency toward using the modern scientific methods in scientific colleges of the Islamic university in Al-Madinah. This measure was considered accurate.

The study's population includes all the students of scientific colleges in the Islamic university who use the modern scientific methods or don't use them. The researcher enumerates all students existing in the scientific colleges of university totaling 1186 students depending on the competent bodies from among each college shown according to the table below.

Table 2.1 showing the enumeration of scientific colleges' students in the Islamic university according to specialization

College	Specialization			
		Male	Female	Total
Sciences	• Mathematics	79	0	79
	• Chemistry	124	0	124
	• Physics	44	0	44
	• Total			247
Computer	• Information technology	53	0	53
	• Information systems	40	0	40
	• Computer sciences	46	0	46
	• General specialization	56	0	56
	• Total			195
Engineering	•	55	0	55
	• Civil	52	0	52
	• Electrical	58	0	58
	• Mechanic	42	0	42
	• General specialization			207
Preparatory year	• General for all college	537	0	537
	• Total			537
total		1186	0	1186

1. 1 The method of calculating the sample size:

The researcher, in choosing the sample size, depended on "Richard Ginger Method because it was commonly used and more accurate than the other ones. This method was used in choosing the size of large samples. The total size of the population was 1186 students. The researcher applied the size of the population on Richard Ginger method so that the sample size became 290 students, then dividing the sample to classes so that each college became a class.

The method of calculating the sample size by applying Richard Ginger equation:

Enter the size of population N in the corresponding cell	1186
Therefore _____ the sample = size	290.3551964
39.2	1.96
	0.05

Richard Ginger equation

$$n = \frac{\left(\frac{z}{d}\right)^2 \times (0.50)^2}{1 + \frac{1}{N} \left[\left(\frac{z}{d}\right)^2 \times (0.50)^2 - 1\right]}$$

Size of population	N
The standard degree corresponding to the level of 0.95 equals 1.96	Z
Ratio of error	D

Division of colleges into systematic classes as follows :

$$N_h = \frac{n \cdot N_h}{N}$$

where

N : Population size

N_h: class size

n: sample size

n_h: sample size in each class

Number of students of college of sciences = 247

$$N_h = \frac{n \cdot N_h}{N}$$
$$N_{h1} = \frac{290 * 247}{1186} = 61$$

Number of students of college of computer = 195

$$N_h = \frac{n \cdot N_h}{N}$$
$$N_{h2} = \frac{290 * 195}{1186} = 48$$

Number of students of college of engineering = 207

$$N_h = \frac{n \cdot N_h}{N}$$
$$N_{h3} = \frac{290 * 207}{1186} = 51$$

Number of students of preparatory year = 537

$$N_h = \frac{n \cdot N_h}{N}$$
$$N_{h4} = \frac{290 * 537}{1186} = 130$$

2 . The Islamic university:

It was established by the royal order No 11 Dated 25/3/1381. The study started in the same year on 18/5/1386 a royal decree was issued with the acceptance of system of the university. The university embraces scientific cadres from different nationalities. It is composed of a number of faculties, but we restrict our study only on the scientific colleges.

2.1 Computer college:

It is considered a Saudi academic body having international message caring for education, scientific research and service of society in computer sciences with international standards and technologies. Its objectives can be summed up in:

- Developing scientific and leadership skills for the students.
- Contributing to the service of society.

It comprises three sections (computer sciences – Information technology – computer engineering "not activated")

2.2 College of sciences:

It is considered one of the main projects for supplying society with high level specialists in different fields of sciences. Its message is represented in qualifying specialists and preparing researchers that are able to develop the scientific research. Its objectives are:

- Raising the institutional capacity of the college.
- Developing strategies of education, learning and educational methods used for this.
- Deepening national loyalty, maintaining the principles of society and the Noble Islamic values. Its departments are: (the sciences of physics, chemistry and mathematics).

2.3 College of engineering:

It operates in the fields of education, scientific research and serving the local and international society in the different fields of engineering. Its message is represented in qualifying the

graduate for engineering jobs and meeting the current and future needs of the local and international society. Its educational objectives are:

- Possessing the skills necessary for work's environment.
- Benefiting from modern technology in solving engineering problems.
- Providing engineering knowledge through innovative researches.
- It embraces four departments: (electrical engineering – Mechanic – Civil- general engineering).

3. The statistical methods used:

The researcher depends on a number of statistical methods to reach the study's findings by using the statistical packages for social sciences (SPSS) programme. The most important methods used are:

3.1 Arithmetic mean:

It is considered one of the most important method for measuring the central. It is defined as the value reached when dividing the total of values by their numbers. If we represent the values of society by variable X, given N as a value a category forming the arithmetic mean for the population. It can be defined with the following equation:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \dots\dots\dots(2)$$

$$= \frac{x_1 + x_2 + \dots + x_n}{n}$$

But if data are given by distribution table with K as a category, the arithmetic mean can be given with the following equation:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^k x_i f_i \dots\dots\dots(3)$$

f_i, x_i , represent the repetition of the category i and its center respectively, also The sample mean is considered one which is likely unknown because values of population are not known in some cases. The word mean is used in many cases to signify arithmetic mean.

3.2 Standard Deviation:

It is the most accurate measure for dispersion and most used. It is defined as the square of the average of values deviations from their arithmetic mean. It is represented by the symbol S^2 . It is characterized by:

- The mean squares of values deviations from their arithmetic mean are called variance. That means the standard deviation is the variance square and the value of variations should be zero.
- Whenever the value of variance approaches zero, that means wherever the value of standard deviation approaches zero, data will become close to homogeneity.
- The standard deviation is affected by the odd values and can be calculated with the following equation:

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2} \dots\dots\dots(4)$$

Whereas in the case of values classified in the distribution table with K as a category, the standard deviation S is given like this:

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^k f_i (x_i - \bar{x})^2} \dots\dots\dots(5)$$

3.3 The Natural Distribution:

The natural distribution (the usual) is considered one of the important examples for the probable distribution for the continuous variable. This distribution is much used in the field of samples. It is characterized by:

- The random continuous variable X takes values between $-\infty$ to $+\infty$.
- The shape of natural distribution curve looks like the bell.
- The distribution center depends on μ and its shape depends on the standard deviation σ . We can show the equation of the density of probable natural distribution like this:

$$f(x | \mu, \sigma^2) = \frac{1}{\sqrt{2\sigma^2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \dots\dots\dots(6)$$

When the value of the curve is located at the population a mean μ And population variance σ^2 , therefore such distribution is referred to by: $N((\mu, \sigma^2))$ where N refers to nature (normal)

3.4 Alpha Cronbacks:

The internal harmony of the questionnaire is meant to be the strength of relationship between the degrees of all fields and degrees of the total questionnaire and credibility. Simply it is to measure the questionnaire or the test to show their credibility and constancy. It is referred to by this formula.

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right) \dots\dots\dots(7)$$

Where K is the number of elements, $\sigma^2 y_i$ is the sum of elements variances, $\sigma^2 x_i$ is the variances of the total degree .

3.5 Lab, and Non-lab Statistics:

It is noticed that some researchers ends with the findings of their questionnaires with no understanding of what is laboratory and non- laboratory, although the correctness of the questionnaire findings depends on specifying the type of the choice that matches the nature of the research appropriately. The researcher may use statistical equations originally designed for dealing with laboratory statistics while the nature of his data requires the use of non- laboratory statistics. We can explain some of the basic differences between the two previous types of statistics:

Laboratory statistics is a statistical term means the original value which belongs to the population. This means that its value is stable and representing the features desired by the population.

Laboratory statistics requires special conditions such as: moderate distribution, homogeneity and randomness. Therefore, the study sample ought to be drawn according to the moderate curve whereas the non- laboratory test doesn't require any assumptions of information about the qualities of the basic distribution of the population.

Laboratory statistics is more suitable for treatment of data from the relative level (the quantitative variables) whereas the non- laboratory test is more suitable for treatment and analysis of data from the nominal level (the qualitative variables).

Laboratory statistics is used with large size samples whereas the non-laboratory test is generally used with small size samples and in particular with the experimental situations where the sample size is less than 30.

3.6 T – Test:

It was discovered by (Gossett, 1908) and it is known at that time by “student” , therefore it was called “student test”. This test is used to examine a hypothesis related to arithmetic mean. It is not much different from the natural distribution test but more accurate in the case or small samples.

3.6.1 T- Test for one sample:

This test is used for comparing the average of a sample with an assumed mean of a society, provided that these two conditions are realized.

- 1- The variable Should be Naturally distributed, this condition is replaced by increasing the size of the population by more than 30 individuals.
- 2- The sample should be random, that means, its individuals don't depend on each other.

The test can be calculated by the following equation:

$$t = \frac{\bar{x} - \mu_0}{s/\sqrt{n}} \dots\dots\dots(8)$$

X represent the sample average μ Is the population average and S is the standard deviation of the sample the calculated value of the test is compared with the table value of it from the survey table through the intersection of the moral α with the degree of freedom (n-1) .

3.7 uni-variance analysis

It is considered one of the most important measures of diffusion and dispersion which measure the extent of values diffusion from each other or from a certain value. It is considered one of the measures that used for measuring the extent of remoteness of values from arithmetical mean. If the values are remote from it, variance is greater. Variance is the total of the squares of values deviations from their arithmetical mean divided by their number. The main objective of uni-variance analysis is to compare the means of a qualitative variable known as the subordinating variable and to check whether these means are equal in correspondence to two unequal ones at least, before it is used, three conditions should be satisfied:

- Random and independent samples.
- Populations of all these samples are having natural distribution.
- Equality of variance of population from which these random and independent samples are taken, it can be defined with the following table:

Table 1-3. Showing uni-variance analysis

Source	Sum of squares	Degree of Freedom	Mean squares	F	F-test
Treatment	SS_T	k-1	$MS_T = \frac{SS_T}{k-1}$	$F = \frac{MS_T}{MS_E}$	$F > F_{\alpha, k-1, N-k} ?$
Error	SS_E	N-k	$MS_E = \frac{SS_E}{N-k}$		
Total	TotalSS	N-1			

SS_T represents the treated sum of squares, SS_E represents

3.8 Multiple comparisons:

3.8.1 Post Hoc comparisons

When results of uni-variance analysis refer to the non-existence of differences of significance attributed to the levels of treatment, then there is no reasonable justification to conduct any other statistical tests, but if the variance results refer to the existence of differences of significance attributed to the levels of treatment, in other words where do the real differences found? . then, statistical comparisons should be done between groups' means. This is called post Hoc comparisons. There are many post Hoc comparisons, but the real difference between them is that some of them is more reserved than the other. Examples of this test are: "Tukey HSD Test" , "Newman- Keuls Test" "Scheffe Test" and "Duncan Multiple test" But we restrict our study only on Scheffe test.

3.8.2 Scheffe Test:

Scheffe method is considered one of the most flexible method. It is characterized by statistical strength and more reserved. It is used to conduct pair or group comparison as well as it is used in the case of equal and unequal samples. It is less sensitive because it doesn't realize the assumptions related to variance it Scheffe method is based on:

- Transforming T ratio into F test.
- Decreasing the critical area of T distribution for assimilation without exceeding the assumed rate of the desired rate Scheffe equation which is used to find the difference between the means and can be defends as follows:

$$\Psi(S) = \sqrt{(a-1)(F\alpha)} \sqrt{2MS_{error}/n} \dots\dots\dots(9)$$

Where:

A = number of groups.

F α = the value of (*F*) the critical, form the table pertaining to the distribution (*F*) at the specific level of significance and with simple degree of freedom (*n-k*), and *n* = the number of individuals in one of the groups.

Through the increase of the critical value for (*F*), the rejection area of the distribution in kind becomes less in size to protect the experiment from the probability of increasing the frequency of making types one error.

4. Statistical data analysis:

Table 1.4 shows the descriptive statistics of student opinions on the use of modern scientific methods in learning.

Descriptive statistics			
Std. Deviation	Mean	Tendency of phrase	The phrase
.57136	1.5862	Agree	I can't do my study duties without using modern scientific methods.
.64881	1.9655	Agree much	I use them because they assist in understanding information in the curricular
.73198	1.9138	Agree much	I use the modern scientific methods to know the many studies and scientific researches
.69875	1.7586	Agree	I have the complete ability to use the modern scientific methods in learning.
.75884	1.9552	Agree much	I prefer using the modern scientific methods to the paper library
.63914	1.7655	agree	knowledge is through the use of modern scientific methods
.71131	1.9483	Agree much	Using the E-library in the university increase my academic attainment
.81359	1.9034	Agree much	I use the modern scientific methods because they are highly flexible for data collection
.74635	1.6379	Agree	I use the modern scientific methods for down loading books and scientific references, this increase my academic attainment.

.70100	1.9828	Agree much	I use the modern scientific methods because they spare me time and effort for collecting information
.61548	1.9276	Agree much	The university is obliged to provide the sufficient time for the use of modern scientific methods although the time – table is intensive
.66375	1.9517	Agree much	provision of training methods pertaining to the use of modern scientific methods
.72527	1.8448	Agree	Provision of training means pertaining to the use of modern scientific methods
.64646	1.9793	Agree much	All scientific laboratories are avertible in the university
.66193	1.8517	Agree	Spread awareness among university student by the importance of the use of modern scientific methods.
.76370	1.7345	Agree	The university is obliged to use the modern scientific methods in teaching.
.77667	1.9241	Agree much	Teachers should encourage students to use modern scientific methods.
.56113	1.9966	Agree much	The university provides me with all modern scientific methods for learning.
.65372	1.9586	Agree much	Having command in English language in using modern scientific methods
.40745	1.7724	Agree much	The total measure

From the above table, the researcher has found all the means and standard deviation of the students' opinions on the use of modern scientific methods in learning. It is clear for the researcher that the means are limited. Between (1.58,1.99), and the standard deviations are limited between (81,16), and through the general mean, which had the value (1.77) it compared with the mean of Likert measure of the value (3) where moral differences have occurred referring to the general tendency towards using the modern scientific methods in education by the students.

Table 2.4 shows the moderation of data

Case Processing Summa

The general tendency of scientific colleges' students towards using the modern scientific methods in education	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	290	100.0%	0	0.0%	290	100.0%

Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The general tendency of scientific colleges' students towards using modern scientific methods in education	.245	290	.361	.864	290	.233

The natural distribution, for the above variables, has been chosen through Kolmogorov simirnova, which is used in data exceeding 50 in number. Through the value of the moral level (sig) and comparing it with the probable value (P. value 0.05), we find that the value of (sig=.361) which is bigger than the probable value (P.value 0.50)- this proves, for the researcher, that the data belong to the natural distribution. Also Shapiro- Wilk Test where the value was (Sig=.233), which is also more than the probable value (P. value 0.05), this confirms that the data are naturally distributed.

Table 3.4 shows (T-Test) for one sample:

One-Sample Statistic

The general tendency of scientific colleges' students towards using modern scientific methods in learning	N	Mean	Std. Deviation	Std. Error Mean
	290	1.7724	.40745	.02393

One Sample Test:

The general tendency of scientific colleges' students for using modern scientific methods in learning	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	-51.307	289	.000	1.22759	1.2747	1.1805

From the above table it is clear that the calculated value of (t) was 51.3 with degree of freedom 289, and the arithmetic mean with value 1.77 and standard deviation with value 41, where the value of moral level (sig=.000) which is less that the probable value (P.value=0.05) this means the existence of moral differences with statistical significance between the individuals of sample. This confirms that the students' opinions are positive towards using modern scientific methods in learning.

Table 4.4 showing uni-variance analysis to know the differences in tendencies towards using modern scientific methods in learning by students, attributed to age variable

Source Of Variance	Sum Of Squares (SS)	df	Mean Squares (MS)	F calculated	P Value	Conclusion
Between Groups	834.16	3	278.05	2.29	0.0035	There is significant statistical differences
Within Groups	35861.477	286	125.39			
Total	36695.637	289				

From the above table we find that the value of "f" is (F.calculated-2.29) with a probability value of (P.value=0.0035), this is less than the significance level (0.05). this signifies the existence of moral differences with statistical significance in the tendencies of scientific colleges' students towards using modern methods in education in the university attributed to the students' age variable. When we go back to the post Hoc comparisons test to compare the different means of students' ages by Scheffe test, we find that there are differences with clear statistical significance between students ages. The students' mean ages from (21 to 25) years was 9.12, and the students' mean ages from (26 to 30) years and more than 30 years was 16.8 and 17.2 respectively. This signifies that the views of students of age (21 to 25) is more positive than the other regarding the use of modern scientific methods in learning and that the views of students of more than 30 years were less positive. This difference between students' mean age support the acceptance of the above assumption.

Table 5.4. Showing the uni-variance analysis to know the differences in tendencies towards the use of modern scientific methods in learning by the students attributed to the residence variable.

Source Of Variance	Sum Of Squares (SS)	df	Mean Squares (MS)	F calculated	P Value	Conclusion
Between Groups	911.85	2	455.93	3.45	0.072	There are not differences of statistical significant
Within Groups	37883.869	287	132			
Total	38795.719	289				

It is clear from the above table that the value of F was (F. Calculated=3.45), and the probability value was (P. value=0.072). After comparing it with the significance level (0.05) we find that the probability value is more than the value of the significance level. This signifies that there are no differences of statistical significance in the tendencies of students towards using modern methods in learning that are attributed to residence variable. This signifies that those who live inside or outside the university are having close views which in turn confirms the rejection of the above assumption.

Table 6.4 shows the uni-variance analysis to know the differences in tendencies towards the use of modern scientific methods in learning by student that are attributed to the name of college variable.

Source Of Variance	Sum Of Squares (SS)	df	Mean Squares (MS)	F calculated	P Value	Conclusion
Between Groups	897.37	3	299.12	2.29	0.009	There is significant statistical differences
Within Groups	37350.449	286	130.6			

Total	38247.819	289				
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From the above table it is clear that the value of "F" was (F.calculated=2.29). through the probability value (P.value=0.009) as being less than the significance level (0.05) we deduct that there are substantial differences in students' tendencies towards using the scientific methods in learning attributed to the college variable. If we returned to Scheffe test, it was obvious that the mean of the preparatory year students was 33.16, and the mean of the students of college of engineering was 33.9, and the mean of the students of college of sciences was 19.6, the difference between the means is clear and that the preparatory year college students are less positive than the others in using the modern scientific unit in learning which in turn confirms the soundness of the above assumption.

Table 7.4 shows the uni-variance analysis to know the differences in tendencies towards using modern scientific methods by students attributed to study year variable.

Source Of Variance	Sum Of Squares (SS)	df	Mean Squares (MS)	F calculated	P Value	Conclusion
Between Groups	1994.692	4	498.67	3	0.029	There are differences of statistical significant
Within Groups	47358.816	285	166.17			
Total	49353.511	289				

From the table above we find that the value of "F" is (F. calculated=3) with a probability value of (P.value=0.029), when comparing it with the value of significance level (0.05) which is less from the value of significance level, therefore, the assumption that there are differences of statistical significance between tendencies of students towards using modern scientific methods in learning that are attributed to study year variable is accepted. Upon returning to Sheffe test clear differences occurred between students means. We found that the highest mean with the value of 23.16 for the fifth year students, and the lowest mean were for the second year students

with the value of 19.56. This signifies that the second year students are more positive than the other in using the modern methods in learning. This proves the acceptance of the above assumption.

Table 8.4 showing the mono analysis discrepancy to know the differences in tendencies towards using modern scientific methods in learning by student that are attributed to specialization.

Source Of Variance	Sum Of Squares (SS)	df	Mean Squares (MS)	F calculated	P Value	Conclusion
Between Groups	2919.516	11	265.41	1.92	0.000	There are differences of statistical significant
Within Groups	38277.466	278	137.69			
Total	41196.982	289				

From the table above it is clear that through the value (F. calculated=1.92) and the probability value (P. value=0.000), we find that the probability value is less than significance level (0.05). This significance the existence of differences of statistical significance in the students of scientific colleges towards using scientific methods that are attributed to specialization. Upon returning to Sheffe test to examine the means, it is clear that the highest mean of students' specialization was for the general specialization of the preparatory year students with the value of 44.9, and the lowest mean of students' specialization was for the specialization of computer sciences with the value of 29.6. This signifies that the general specialization students of the preparatory year have less desire in using the modern scientific methods, and the students of computer sciences have more desire. This signifies the acceptance of the above assumption.

RESULTS

After finishing analyses of data and explaining them, the researcher dealt with the most important findings reached by the study which include the tendencies that led to the use of modern scientific methods in learning by the students of the Islamic university in Al-Madinah. Also the recommendations reached by the researcher:

- Findings of analyzing the descriptive reasons for the use of modern scientific methods in learning by scientific colleges students of the Islamic university of Al-Madinah.
- Tendencies of students towards the use of modern scientific methods in learning are positive.
- There are differences of statistical significance about the degree of satisfaction of students upon using such methods.
- There are differences of statistical significance regarding tendencies of scientific colleges' students towards using the modern scientific methods in learning attributed to age variable. This is obvious from the students ranging between (21 to 25) years of age. The mean of their ages was (9.25), and the mean of students age (from 21 to 30) years and more was (17.2 and 16.8) respectively. This refers to that students who ranged between (21 to 25) years are more positive than the others in using the modern scientific methods in learning. This proves the difference in tendencies.
- There are no differences of statistical significance in tendencies of scientific colleges' students of the Islamic university in Al-Madinah towards the use of modern scientific methods in learning that are attributed to residence variables. This means whoever delves inside or outside the university has close positive opinions on the use of modern scientific methods in learning.
- There are differences of statistical significance in tendencies of scientific colleges' students towards the use of modern scientific methods in learning that are attributed to name of college. The difference occur between the mean of students of each college where the mean of the opinions of preparatory college's students (33.6), and the mean of the opinions of college of engineering students (23.9) and the mean of opinions of student of college of sciences (19.6), we deem that the mean of opinions of students of preparatory year less positive than others. This proves difference in tendencies.
- There are differences of statistical significance in tendencies of scientific colleges' students of the Islamic university in Al-Madinah towards the use of modern scientific methods in learning that are attributed to educational year variable. The means of the fifth year students was (23.16), and the second year student was (19.56). This means that the second year students were more positive than the others in using modern scientific methods in learning.
- There are differences of statistical significance in tendencies of scientific colleges' students of the Islamic university Al-Madinah towards the use of modern scientific methods in education that are attributed to specialization variable. We find that the mean of the opinions or general specialization students of the preparatory year was (44.9) and the mean of opinions of students who specialized in computer sciences was (29.6). This

means that the students of the general specialization for the preparatory year less desirous in using the modern scientific methods in learning.

RECOMMENDATIONS

- The most important recommendations suggested by the researcher in this study are :
- The use of the modern scientific methods in learning in all scientific colleges in the university.
- Generalization this idea on all colleges of the university.
- Benefiting from students in the future upon using such methods.
- Availability of modern technological devices in all colleges of the university and generalizing this idea on all Saudi's universities.
- Students having command in English language facilitate dealing with modern technologies for learning.
- Spread the educational curriculum on the internet reinforce academic attainment.
- Held training sessions for students in using modern methods in learning.
- Spreading the culture of scientific research with the use of modern scientific methods in learning.

We can deduct, from the opinions of students who use the modern methods in learning the following:

- Increasing academic attainment.
- Searching for knowledge with the least of effort .
- Caring for scientific research.

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Appendixes:

In the name of Allah

The compassionate, the merciful

Here, before you, is a questionnaire meant to be used in an academic research entitled:

A statistical analytical study to know the tendencies of scientific colleges' students of the Islamic university in Al-Madinah towards using the modern scientific methods in education.

Please supply accurate answers for all paragraphs of the questionnaire by putting the sign (✓) before the answer suiting you once for each question. Be sure that data supplied are used only for the purposes of the research.

Thank very much

1-Age :	15 – 20 years	<input type="checkbox"/>	21- 25 years	<input type="checkbox"/>
	26- 30 years	<input type="checkbox"/>	more than 30 years	<input type="checkbox"/>
2- Residence	Inside the university	<input type="checkbox"/>	the eastern area	<input type="checkbox"/>
	The western area	<input type="checkbox"/>		
3-Name of college specialization.			
4-Study year :	the First	<input type="checkbox"/>	the second	<input type="checkbox"/>
	the Third	<input type="checkbox"/>	the forth	<input type="checkbox"/>
	the fifth	<input type="checkbox"/>	the preparatory	<input type="checkbox"/>

The first trend: the use of modern scientific methods in relation with educational curriculum and academic attainment:

No	Phrase	Agree much	Agree	Neutral	Don't agree	Don't agree much
1-	I can't do my study tasks without the use of modern scientific methods					
2-	I use modern scientific methods because they help in understanding information.					
3-	I use the modern scientific methods to know much about the many studies and scientific researches					
4-	I have the total ability to use the scientific methods in learning					
5-	I prefer using modern scientific methods the paper library					
6-	The knowledge of the use of modern scientific methods					
7-	The use of E-library in the university increase my academic attainment .					
8-	I use the modern scientific methods because they are highly flexible in collection of information.					
9-	The use of modern scientific methods in downloading book and scientific references increase my academic attainment					
10-	I use modern scientific methods because they aspire me time and effort of collection of information					

The second trend: The role of the university in using the modern scientific methods.

No	Phrase	Agree much	Agree	Neutral	Don't agree	Don't agree much
11-	The provision of apparatuses in computer labs in the university					
12-	The university shall be obliged to provide sufficient time for the use					
13-	Provision of means of training pertaining to the use of modern scientific methods					
14-	All scientific labs are available in the university					
15-	Making students aware of the importance of the use of modern scientific methods					
16-	The university shall be obliged to use the modern scientific methods					
17-	Teachers should encourage students for using modern scientific methods					
18-	The university provide me with all modern scientific methods in learning					
19-	Having command in English language to benefit from in using modern scientific methods .					