Effectiveness of Using Activities and Teaching Methods Based on the Theory of Multiple Intelligence for Improving the Achievement of Family and Health Education and Developing Some Living Skills for Students of the First Secondary Stage in Nagran

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Abstract:
The present study aimed to investigate the effectiveness of using activities and teaching methods based on the theory of multiple intelligence for improving the achievement of family and health education and developing some living skills for students of the first secondary stage.

The study sample is composed of two groups, the first one is the (experimental) group which consists of 35 students of the first secondary school in the area of Nagran and the second one is the (control) group which consists of the (35) students of the thirteenth secondary school.

As for the collection of research data, cognitive achievement test and measurement of living skills are used.

Research findings showed the following:

- Effectiveness of using activities and teaching methods based on the theory of multiple intelligence for teaching the subject of family and health education for improving the cognitive achievement for students of the experimental group (research sample).

- Effectiveness of using activities and teaching methods based on the theory of multiple intelligence for teaching the subject of the family education for improving some living skills of the students (research sample).

- Existence of positive correlation between the grades of students in the achievement test and their grades in the measurement of living skills.

Keywords: Multiple Intelligence - family and health education - Life Skills

1.Introduction

The theory of multiple intelligence is a cognitive model aims at clarification of individual use of intelligence in different ways, through making use of human mind with contents of the world including things, individuals and others; this theory is designed for identification of intelligence suitable for cognitive employment. This theory supposes every individual has capacities and skills enable her or him to solve problems face her or him in life (Armstrong, 1994).

Gardner (1991) identified seven kinds of intelligence from the start and added two other kinds of the following list: linguistic intelligence, mathematical and logical intelligence, spatial intelligence, kinesthetic physical intelligence, musical intelligence, personal intelligence, natural intelligence, existential intelligence.

The subject of health and family education is one of the easiest subjects to be merged in learning for students with different categories; also it is considered one of the most valuable and useful subjects, as it broadens their experience, provides them with knowledge and skills necessary in life and develops their practical life skills through different learning activities following suitable teaching methods; also this subject is the most incentive one for motivating and encouraging students to act in different practical situations with positive behaviors in simple and easy ways interest them.

Many previous researches indicated to the effectiveness of the activities and teaching methods which are based on the theory of multiple intelligence for improving the achievement of the individuals of the experimental sample, one of them is the research of (Ozdener & Ozcoban, 2004) which aimed at the investigation of the level of the effect of organizing the educational activities and teaching in traditional ways as the differences were statistical function between them for the sake of the experimental group.

Also the practical life skills are important and necessary for the adaptation and familiarity of individuals with changes and shifts that characterize this era, as each individual is in urgent need of a set of skills enable her or him to adapt with actual life, face her or his problems positively, think constructively in the incidents of life around her or him, depend on herself or himself in taking decisions and perceive new technological developments. Life skills are the means that enable each individual to manage her or his life

successfully in taking many responsibilities; also these skills enable each individual to interact efficiently with individuals of her or his society.

Many previous researches indicated that the effectiveness of the activities and teaching methods which are based on the theory of multiple intelligence for improving some life skills for individuals of the experimental group; one of them is the research of Nawar Warda (2010) which aimed at the identification of the effectiveness of a suggested program for teaching history based on the theory of multiple intelligence for improving some life skills. This research concluded that the program which is based on multiple intelligence is effective for improving some life skills for students of the secondary stage.

The problem of the current research appeared due to what the researcher noticed through her communication with teachers and students of the stages of the general education when the students, teachers of the eighth level, specialized in "household economy" go to practical education training; as a supervisor from Nagran University, the researcher remarked that most schools depend on traditional teaching methods; also there is a lack of familiarity with this theory which lacks considerations in our Arabic countries and in the Kingdom of Saudi Arabia in particular; so the researcher tried to get benefit from theory for making a model of lessons prepared depending on the theory of multiple intelligence which is based on the theory that intelligence is composed of many capabilities, and that it appears in many fields; most people have different intelligence with different levels. These intelligence can be developed through using different activities, techniques and tools.

The researcher called for making a research for identification of the effectiveness of using activities and teaching methods depending on the theory of multiple intelligence for teaching health and family education and identification of their effect on improving cognitive achievement and improving some life students of first secondary stage.

2.1 Problem of the study

The research problem constitutes the following question:

What is the effectiveness of the activities and teaching methods which depend on the theory of multiple intelligence for improving the cognitive achievement in the subject of health and family education for students of first secondary stage in the area of Nagran?

The research question resulted into the following questions:

1- What is the effectiveness of the activities and teaching methods depending on the theory of multiple intelligence for improving the cognitive achievement in the subject of health and family education for students of the first secondary stage in the area of Nagran?

2- What is the effectiveness of activities and teaching methods depending on the theory of multiple intelligence for improving some life skills for students of the first secondary stage in the area of Nagran?

3- What is the relationship between the achievement of the first secondary students in the health and family education and some of their life skills?

2.2 Objectives of the study

The present study aimed to investigate the following:

1. improve the collection of family and health education activities and using teaching methods based on the theory of multiple intelligences to the first grade secondary students in Najran.

2. The development of life skills by using some of the activities and teaching methods based on the theory of multiple intelligences to the first grade secondary students in Najran.

2.3 Terminology of the study (Procedural definitions):

Multiple Intelligence:

The current research defined multiple intelligence procedurally as a set of mental capabilities and skills related to this intelligence which helps the students of first secondary stage with solving essential problems in life, and their capability of creating effective product or valuable service in their culture, and their capability of recognizing or creating problems, which calls for new knowledge for them, which are identified in the current research by grades the students got in in the list of multiple intelligence, this includes: (linguistic, logical, social, spatial, physical) intelligence.

Life Skills:

The current research defined life skills procedurally as a set of positive skills that the student has in daily life which helps her to take responsibility and dealing effectively with the different daily life requirements; these skills include: nutrition skills, thinking skills, skills of managing consumption. These skills are measured by grades that the student got on the measurement of life skills designed for this purpose.

2.4 Hypotheses of the study

1- There are statistical function differences at the level (0.01) between the means of the grades of the students of

the experimental group and the grades of the students of the control group in the post-test on the measurement of the life skills, for the sake of the students of the experimental group.

2- There are statistical function differences at the level (0.01) between the means of the grades of the students of the experimental group and the grades of the students of the control group in the post-test on the measurement of life skills, for the sake of the students of the experimental group.

3- There are a positive correlation and a statistical function among the grades of the students of the experimental group in post-test for cognitive achievement and some life skills

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3. The theoretical background of the study
3.1 Multiple Intelligence
– Description of multiple intelligence:

Many researches such as Gardner (1983), Chapman (1993), Armstrong (1999), Omsia Algendy and others (2006: 141-143), Azza Abdelmasie and others (2006: 141-144), Fadlon Aldemerdash (2008: 28-31) and Ibrahim Allazam (2008) in describing multiple intelligence as the following:

Linguistic Intelligence:

Linguistic intelligence is the capability of using words efficiently orally and/or in writing (as in telling tales, narration, writing poetry, acting, press and composition).

Logical-Mathematical Intelligence:

Logical-mathematical intelligence is the capability of using numbers efficiently and the capability of thinking logically and solving problems and/or forming new results and sensitivity for forms, logical relations and assumptions (cause and result).

Spatial/Visual Intelligence:

Spatial/visual intelligence is the capability of spatial/visual conceptualization, coordination of spatial photos, assimilation of three-dimensional images.

Bodily-Kinesthetic Intelligence:

Bodily-kinesthetic intelligence is the capability of using sensory and kinesthetic intelligence and coordination between mind and body through working for finding masterly coordination between the different movements of the body with all of its limbs or parts of them.

Musical Intelligence:

Musical intelligence is the capability of the identification of accents, melodies and different rhythms; that leads to the expression, innovation and taste through music as it is the case with musicians and music players. Their skills are characterized by the composition of melodies and rhythms.

Interpersonal Intelligence:

Interpersonal intelligence is the capability of understanding others and the way of cooperation between them and the capability of identifying their intentions, targets and feelings and differentiation between them.

Intrapersonal Intelligence:

Intrapersonal intelligence is the ability of the individual to assimilate herself or himself through her or his thoughts and emotions, her or his ability to conceptualize herself or himself in relation to her or his knowledge of the strengths and weaknesses, awareness of her or his mood..

Naturalistic Intelligence:

This capability is clear in the identifying and sorting things that exist in the nature which include plants, flowers, trees, insects, animals, birds, as well as non-living beings such as rocks, clouds and minerals.

- Strategies of teaching multiple intelligence:

Some of the most important strategies of teaching multiple intelligence are as the following (Gaber Abelhamid, 2003: 88 – 109) (Ibrahim Allazam, 2008 A.D.):

Strategies of teaching linguistic/oral intelligence:

Pedagogical strategies based on this intelligence are: hesitation and redundancy – copying, writing and composition – reading and perusal – story telling – tape recording – linguistic puzzles and word games – sayings and speeches for students – brainstorming (Bernadette & Rose, 1997).

Strategies of teaching logical/mathematical intelligence:

Strategies of this intelligence are: mathematical calculations – scientific evidences –logical puzzles and games – classification into categories – quantification and accounting.

Strategies of teaching physical/kinesthetic intelligence:

Strategies of this intelligence are: using body language and responses–acting–kinesthetic conceptions – activities of physical education – using tangible things – class stage (Jean, 2000).

Strategies of teaching musical intelligence:

Pedagogical strategies based on this intelligence as mentioned by (Hubbard & Newell, 1999) are: songs and chants – musical games – using music – inventing new melodies for concepts and words.

Strategies of teaching interpersonal intelligence (social)

Strategies of this intelligence are: brainstorming sessions–interactive programs and interaction between individuals–school clubs–participation with peers–group games (Mohamed Hussein, 2003).

Strategy of personal intelligence (interpersonal):

Pedagogical strategies based on this intelligence as mentioned by (Armstrong, 2003) are: personal programs and games – activities counting on interests and hobbies – emotional moments – sessions of identifying targets – teaching according to personal pace.

Strategies of teaching natural intelligence:

Some of the strategies of teaching natural intelligence are: walking – availability of learning windows – plants and animals as supporters – study of ecology.

3.2 Life Skills

-Concept of life skills:

Gehan Alshafe (2013) defined life skills as social, mental and psychological skills that enable the learner to adapt with physical and social environment around her or him; that enables her or him to take decisions concerning relevant topics; that leads to success and positive participation between them.

Monera Alsalal (2014) defined life skills as the skills required for each individual to enable her or him to adapt with life situations and encounter the modern challenges which include the skills of citizenship, and mental, functional, social and technical skills.

As from above-mentioned the current research defined them procedurally as a set of positive skills which the student does in her daily life, which helps her to take responsibility and deal efficiently with the different requirements of daily life. These skills include: nutrition skills, thinking skills. skills of controlling consumption. These skills are measured by the grades that the student has on the measurement of life skills designed for this purpose.

- Importance of acquiring life skills:

Khadiga Bekhet (2000, 8-9) concluded the importance of life skills in five main axes as the following:

Development of the culture of the learner with her or his ability to deal successfully with life changes.

Development of the learner capability of solving life problems in the local and international environment.

Development of the learner capability of communicating with others.

Development of the learner capability of logical interference and scientific thinking.

Enriching the learner with professional skills and professions prevailing in the environment.

From the above-mentioned we can say that each individual is in need for having life skills that can be practiced in all fields of life to achieve her or his targets and happiness and her or his future life successfully.

4. Methodology and procedures

4.1-Study methodology

This research followed the semi-experimental methodology of both the experimental and control groups, to be suitable for the nature of the current research.

4.2-experimental design

Research variables:

Independent variables: the current research included only one independent variable which is using teaching activities and methods counting on the theory of multiple intelligence.

Dependent variables: This current research included two dependent variables which are: cognitive achievement – life skills.

4.3-preparation of materials and tools of the experimental treatment

- Preparation of the guide of family education required for teaching the content of the two unites being researched by using activities and teaching methods based on multiple intelligence:

The researcher prepared the teacher guide of using activities and teaching methods based on multiple intelligence for preparation and application of some topics of health and family education for the curriculum of first secondary stage. For verification of the suitability of the teacher guide of teaching using activities and teaching methods based on the theory of multiple intelligence for students of the first secondary stage, this guide was presented to the arbitrators to get their viewpoints; according to the viewpoints of the arbitrators, some required amendments were made. The viewpoints of the arbitrators indicated to the suitability of the guide for teaching the two units being researched using activities and teaching methods based on the theory of multiple intelligence for the students of the first secondary stage.

Thus the teacher guide (appendix (2)) became in its final form and valid for use in the execution of the final research experiment.

Preparation of study tools:

-The following tools are used in the current research:

A. List of multiple intelligence: (translated and systemized by the researcher)

B. Examination of the cognitive achievement. (Prepared by the researcher)

C. Measurement of life skills. (prepared by the researcher)

A. List of multiple intelligence: (translated and systemized by the researcher):

McKenzie (1999) prepared this list. It has been got from the internet from the website: (http://Surf aquarium.com/MI/inventory); the following table shows the distribution of the particulars in the list of multiple intelligence:

Table (2)

Distribution of the values on the measurement of multiple intelligence

Intelligence	values
linguistic	1, 8, 15, 22, 29, 36, 43, 50, 57, 64
logical	2, 9, 16, 23, 30, 37, 44, 51, 58, 65
spatial	3, 10, 17, 24, 31, 38, 45, 52, 59, 66
physical	4, 11, 18, 25, 32, 39, 46, 53, 60, 67
music	5, 12, 19, 26, 33, 40, 47,54, 61, 68
personal	6, 13, 20, 27, 34, 41, 48, 55,62, 69
social	7, 14, 21, 28, 35, 42, 49, 56, 63, 70

The researcher translated this list into Arabic and reviewed the translation with one of the members of teaching staff specialized in the field of methods of teaching English, some statements were paraphrased; the two dimensions (natural intelligence and existential intelligence) to become the list of multiple intelligence used in the current research (70) statements only.

For verification of the validity and stability of this list in the Arabic environment, the following procedures were followed:

Estimation of truth:

Truth of arbitrators:

The measurement was showed to some experts in the field of educational and pedagogical measurement, there were (5) arbitrators. These arbitrators made some amendments for some statements.

Estimation of stability:

Alpha-Cronbach function was used to estimate stability; results were as the following:

Table (3)

Methods and coefficients of measurement stability

Serial	Intelligence	Alpha-Cronbach coefficient
1	Linguistic	0.73
2	Logical	0.76
3	Spatial	0.78
4	Physical	0.63
5	Musical	0.69
6	Personal	0.74
7	Social	0.79

Table (3) shows that the measurement with its dimensions enjoys high degree of stability; as the coefficients of intelligence ranged from 0.63 – 0.79, which represent values, and all these values represent statistical function at the level 0.01, that refer to the stability of the measurement.

B. Test of cognitive achievement: (appendix) prepared by the researcher:

Primitive form of the test:

In identification of the test dimensions, the researcher adhered to (remembrance – assimilation – high skills), the items of right and wrong type (15) items are paraphrased; the scientific concept constitutes (8) items, multiple choice test constitutes (5) items, essay test constitutes (10) items, as the test in its primitive form constitutes (38) items:

* To reach the experimental form of the measurement, the following is applied:

Estimation of the truthfulness of the test:

Truthfulness of the arbitrators:

The viewpoints of the arbitrators showed the suitability of the test of cognitive achievement for application on the research sample after the execution of some suggested amendments, either in formulating questions, or excluding some of them, or adding some of them; the amendment was made in the light of suggestions and recommendations. The researcher made all amendments suggested by arbitrators.

Estimation of internal consistency:

The truthfulness of the test was estimated through internal consistency, which constitutes the coefficient of

correlation between the grade of each statement and the total grade of the test, the results are as the following:

Table (4) Internal consistency of the test /   page eleven

Statement No.	Coefficient of correlation	Statement No.	Coefficient of correlation
1	**0.77	20	**0.82
2	**0.45	21	0.12
3	**0.74	22	**0.54
4	**0.64	23	**0.45
5	**0.85	24	**0.81
6	**0.66	25	**0.51
7	**0.54	26	**0.74
8	0.09	27	**0.76
9	**0.66	28	0.08
10	**0.81	29	**0.45
11	**0.67	30	**0.58
12	**0.71	31	**0.51
13	**0.71	32	**0.81
14	**0.56	33	**0.51
15	**0.69	34	**0.74
16	**0.71	35	0.11
17	**0.61	36	**0.81
18	**0.73	37	**0.51
19	**0.79	38	0.11

(**) statistical function at the level 0.01

The previous table shows that all the statements represent statistical functions at the level 0.01 except the statements (8), (21), (28), (35), (38); so these statements are cancelled from the test, that indicates that the test is true in relation to its measurement, and it is valid for the measurement of the cognitive achievement targeted for measurement in the current research.

Estimation of test stability:

Identification of the coefficient of difficulty for each item: the coefficient of difficulty was estimated for the items of the test, the values ranged from (0.27, 0.72) with average value of 0.49, all the items are accepted in relation to difficulty.

Keodor – Richardson method (K-R21):

The value of coefficient of stability using this method is (0.71) for the achievement test, which represents a value that confirms the stability of the items of the test.

Final form of the test:

After the estimation of the truthfulness and stability of the test, the test in its final form is valid for application, it consists of the test which contains the cover page that shows the instructions, and then it shows the items amounted to (33) items, which represents one grade for each item.

The following table shows the final form of the table specifications of the achievement test, which shows the number of the items of the test and their numbers.

Table (5) Specifications of the achievement test

Topics	Number of sessions	Remembrance	Understanding	High Skills	Total	Percentage
Unit one: food and nutrition						
Definition of food and its importance for human being and its elements	2	15, 19	2, 6	—	4	14.2%
Sources and effectiveness of each one of food elements	2	7, 25	3	4, 30	5	14.3%
Related to food elements – international measurements	2	5, 10, 21	1, 18	—	5	14.3%
Scientific applications for items contain food elements (salads – pastry – sweets)	2	—	16, 28	31, 32, 33	5	14.3%
Unit Two: clothes culture						
Concept of wearing clothes and relevant concepts, and the attitude of Muslim woman towards modern fashion and the principles of choosing clothes	2	20, 23	12	11, 27	5	14.3%
Connected and detached integral parts of general advices before using the integral parts of clothes	2	22, 24	13	8, 9	5	14.3%
scientific applications of innovative ideas on a piece of clothes to be renewed	2	—	14, 17	26, 29	4	14.3%
Total		11	12	10	33	100%
Percentage	100%	33.3%	36.4%	30.3%	100%	100%

Time of test application:

Time of test application is estimated by monitoring the time of the test taken by 75% of the students for answering all the test questions, this time is amounted (45) forty-five minutes after explanation of the instructions for students and conformation that they understand them.

Test correction method:

Each question was estimated by one mark for each correct answer and zero for each wrong answer. Thus the total marks of the test were (33) marks.

C. Measurement of life skills: (prepared by the researcher)

Measurement of life skills was prepared for the students of the secondary stage in Nagran as one of the requirements of the current research, the preparation of the measurement followed the following steps:

Preliminary form of the measurement:

which the most important of them are: research of Hosam Mazen (2002), research of Philip Skawes and others (2005), research of Fathia Allolo (2005), research of Maryem Elsayed (2007), research of Erawan (2010), Khadija Bekhet (2011), research of Abdelkarim Alsodany and Abbas Fadel Almasody (2011), life skills (nutrition skills, health skills, prevention skills, environmental skills).

From the above-mentioned the researcher concluded three of life skills which are: (nutrition skills, skills of controlling consumption); the researcher found the suitability and importance of these skills for all subjects in general and the subject of health and family education in particular; thus the researcher prepared the measurement of life skills which consist of (45) items distributed on three branch dimensions. each item corresponds to three alternatives; these alternatives are (always, sometimes, never).

Experimental form of the measurement:

To reach the experimental form of the measurement, the following were done:

Estimation of the truthfulness and stability of the measurement:

Estimation of the truthfulness of the measurement:

Truthfulness of the arbitrators:

The measurement was shown to a group of arbitrators who have previous experience in this field, the viewpoints of the arbitrators on the statements were written with consideration of the notes and suggestions related to each one of the statements including any omissions, additions and alterations.

Estimation of the internal consistency:

Table (6)

Internal consistency of the items of the measurement of life skills with dimensions they belong to

First skill: nutrition skills			Second skill: skills of thinking			Third skill: skills of controlling consumption		
Serial	Number of the statement	Coefficient of correlation	Serial	Number of the statement	Coefficient of correlation	Serial	Number of the statement	Coefficient of correlation
1	1	0.57**	1	4	0.70**	1	7	0,74**
2	2	0.63**	2	5	0.65**	2	8	0.70**
3	3	0.67**	3	6	0.63**	3	9	0.74**
4	10	0.62**	4	13	0.54**	4	16	0.72**
5	11	0.68**	5	14	0.05	5	17	0.73**
6	12	0.50**	6	15	0.47**	6	18	0.67**
7	19	0.61**	7	22	0.50**	7	25	0.06
8	20	0.76**	8	23	0.72**	8	26	0.67**
9	21	0.09	9	24	0.63**	9	27	0.62**
10	28	0.71**	10	31	0.45**	10	34	0.53**
11	29	0.80**	11	32	0.69**	11	35	0.71**
12	30	0.78**	12	33	0.62**	12	36	0.53**
13	37	0.71**	13	38	0,08	13	41	0.43**
			14	39	0.74**	14	42	0.63**
			15	40	0.73**	15	43	0.11
						16	44	0.78**
						17	45	0.60**

(**) statistical function at the level 0.01

The previous table shows that all the statements represent statistical functions at the level 0.01 except the statements 14, 21, 25, 38, 43 as they do not represent functions so they are cancelled from the measurement; the following table shows the internal consistency between the grades of each skill and the total grade of the measurement:

Table (7)

Internal consistency between the grades of each skill and total grade of the measurement

Skill	Coefficient of correlation	Function Level
First	0.72	Function at the level 0.01
Second	0.76	Function at the level 0.01
Third	0.66	Function at the level 0.01

The previous table shows that the coefficients of correlation between grades of each skill and total grade of the measurement represent statistical functions at the level 0.01; that indicates that the measurement is true in relation to its purpose; it is valid to measure some life skills which are intended to be measured in the current research.

Estimation of the stability of the measurement:

The methods of the method of half division using Spearman– Brown equation, and Alpha– Cronbach equation to measure the stability were used; the results were as the following:

Table (8)

Methods and coefficients of the stability of the measurement

Skill	half division using Spearman– Brown equation	Alpha– Cronbach equation
Thinking Skills	0.71	0.73
Health Skills	0.79	0.80
Skills of controlling consumption	0.81	0.83
Measurement as a whole	0.88	0.90

The previous table shows that the measurement as a whole enjoys high level of stability; the coefficients of stability ranged from 0.71 – 0.90, which represent values, which all of them represent statistical functions at the level 0.01, which indicates to the stability of the measurement.

Final form of the measurement:

After the estimation of the truthfulness and stability of the measurement, the number of the items of the measurement in its final form became (40) items, (appendix).

Time of the application of the measurement:

The time of the application of the measurement of life skills was estimated by monitoring the time taken by each one of the students of the research sample; it is found that the average required time is forty-five (45) minutes to perform this measurement after explanation of the instructions for students and confirmation of their understanding of these instructions.

Method of correcting the measurement of life skills:

The items of the measurement were arranged and responses were graduated in threesome graduation as the following (always – sometimes – rarely), responses showed the grades 3, 2, 1 in arrangement for positive items; on the contrary, responses showed grades 1, 2, 3 for negative items; thus the maximum grade of the measurement was (120) grades, the minimum grade was (40) grades.

In the light of the findings that the researcher concluded, we can say that this measurement enjoys high level of stability; thus the measurement took its final form which became applicable on the main research sample.

5. implementation of research experiment:
5.1 Purpose of the research experiment:
The research experiment aimed at the identification of the effectiveness of using activities and teaching methods based on multiple intelligence for teaching the two units of (food and nutrition, clothes culture) in the curriculum of health and family education for improving the cognitive achievement and developing some life skills for the students of the first secondary stage.

5.2 Experimental design and preparation for research experiment:
To achieve the purpose of the research experiment, the semi-experimental curriculum was used to design the post-measurement for two equivalent groups; one of them is the experimental group which studies the two units which represent the topic of the research using activities and teaching methods based on the theory of multiple intelligence; the other group is the control group which studies the same two units using the familiar method.

Specifications of the individuals of the study sample:

The specifications of the individuals of the research sample are represented in the following points:

Age: ranges from 15-16 years.

Gender: both groups are females.

Social, economic and cultural rank: students of the two groups are from the same geographical and social environment.

The previous specifications show that there is homogeneity between age, and social, economic and cultural rank among the individuals of the research sample.

The equivalence of the experimental group and the control group was confirmed before the execution of the research experiment in each of the cognitive achievement and life skills through the application of the research tools beforehand. The findings indicated that there are no statistical differences between the two groups as shown in the following two tables:

Table (9)

Value of (t) and its statistical meaning between the mean grades of the students of the experimental group and mean grades of the students of the control group in the pre-application of the test of the cognitive achievement (N = 35)

Test	Experimental group		Control group		Value of (t)	Level of meaning
	Mean	Number	Mean	Number		
test of the cognitive achievement	19.735	7.172	17.182	6.287	1.451	Not function

The previous table shows that the estimated value of "t" of the cognitive achievement is less than the "t" table value (2.65) at the level (0.01) and the level of (68); this indicates that there are no statistical differences between the students of the experimental group and the students of the control group in relation to this variable, thus the two research groups are equivalent in the level of life skills before the execution of the experiment.

Procedures of the application of the research tools and experiment included the following:

Identification of the research sample:

The research sample consists of two groups; the first one is the experimental group which consists of the (35) students of the first secondary stage and the second one is the control group which consists of the (35) students of the thirteenth secondary.

The list of multiple intelligence was applied; the responses were recorded; the mean values and standard deviances were calculated; the results were as shown in the following table:

Table (11)

Mean values and standard deviances of the responses of students for the list of multiple intelligence

Serial	Intelligence	Experimental group			Arrangement		Arrangement
		Mean values	Standard deviances		Mean values	Standard deviances	
1	linguistic	33,579	3,657	first	31,453	3,054	first
2	physical	30,193	3,846	second	29,765	3,123	third
3	spatial	28,339	2,798	third	30,431	3,546	second
4	social	27,031	2,257	fourth	28,061	2,023	fourth
5	logical	26,951	2,417	fifth	25,876	2,567	fifth
6	musical	25,691	1,170	sixth	24,678	2,786	sixth
7	personal	23,519	2,810	seventh	22,971	2,864	seventh

The previous table shows that the linguistic intelligence was in the first rank, then comes the physical intelligence, then comes the spatial intelligence, then comes the social intelligence, then comes the logical intelligence, then comes the musical intelligence; while the personal intelligence was in the seventh last rank.

In using the theory of multiple intelligence in teaching health and family education, the researcher considered choosing activities and teaching methods based on the most remarkable types of intelligence for the students of the first secondary stage (research community); these types of intelligence are: (linguistic intelligence, logical intelligence, spatial intelligence, social intelligence); in addition these four types of intelligence are the most suitable for teaching the two units of (food and nutrition – clothes culture). Also, the researcher anticipates that these four types of intelligence participates in the development of some life skills for the students of the first secondary stage like nutrition skills – thinking skills – skills of controlling consumption.

Pre-application of the test of cognitive achievement and the measurement of life skills:

The test of cognitive achievement and the measurement of life skills were pre-applied at the end of the third week from Shawal on 23/10/1435 – 25/10/1435 for the experimental group and the control group to get pre-information which helps with identifying equivalence between them in the cognitive achievement and life skills.

Teaching the two units:

Teaching the two units of the research of the subject of family and health education started by using activities and teaching methods based on the theory of multiple intelligence for the students of the experimental group at

the beginning of the second week of Ze-Alkeda on 5/11/1435 A.H (Islamic calendar) at the first secondary school in Nagran; also the students of the control group studied the same two units at the same time in the usual manner; teaching continued until the end of the first week of Moharam on 6/1/1436 A.H. (Islamic calendar).
Post-application for choosing the cognitive achievement and the measurement of life skills:

The test of cognitive achievement and the measurement of life skills was post-applied at the beginning of the second week of Moharam on 9/1/1436 A.H. (Islamic calendar) for the experimental group and control group to identify the level of the improvement of the achievement and develop life skills for the students of the first secondary stage.

The test sheets of the cognitive achievement and measurement of life skills were marked for the students of the groups of the research, the experimental group and the control group; the grades were monitored to be ready to be handled statistically to get the findings of the research and explain them.

6. The study procedures:
6.1Findings and Discussion:
In the light of the problem, purposes and inquiries of the research, statistical methods suitable for answering research questions and verifying research assumptions.

To answer the first question and verify the first assumption:
The first question provides that "what is the effectiveness of using activities and teaching methods based on the theory of multiple intelligence in teaching health education for improving the cognitive achievement for the students of the first secondary stage?"
The first assumption provides that "there is a statistical function difference at the level (0.01) between the mean grades of the students of the experimental group and the mean grades of the students of the control group in the post-application of the test of the cognitive achievement for the sake of the students of the experimental group".
To answer the first question and verify the first assumption, the researcher estimated the "t" value for the meaning of the differences between the mean grades of the students of the experimental group and the mean grades of the students of the control group in the test of the cognitive achievement; the results were as the following:

Table (12)
"t" test for the meaning of the differences between the mean grades of the students of the experimental group and the mean grades of the control group in the post-application of the test of the cognitive achievement

The test	Experimental group		Control group		Estimated "t" value	Level of meaning
	Mean value	Number	Mean value	Number		
The test as a whole	32.721	3.164	18.011	3.257	8.358	0.01

Tabular "t" value is (2.65) at the level 0.01 at the level of freedom (68).

The previous table shows that the estimated "t" value is (8.076) is bigger than the tabular "t" value (2.65), that indicates that the differences between the mean values of the grades of the students of the two research groups (experimental group and control group) in the test of the cognitive achievement are statistical functions at the level 0.01 for the sake of the students of the experimental group, that indicates that the use of activities and teaching methods based on the theory of multiple intelligence in teaching the two units of the research resulted in the improvement of the performance of the students of the experimental group in the test of cognitive achievement.

So it is easy to answer the first question of the research, also it is easy to verify the validity of the first assumption of the research.

To identify the effect of using activities and teaching methods based on the theory of multiple intelligence in the current research, the square value of Eta "2ζ", the following table shows the effect of activities and teaching methods based on the theory of multiple intelligence on the improvement of the cognitive achievement for the students (research sample).

Table (13)
The effect of using activities and teaching methods based on the theory of multiple intelligence on the cognitive achievement for the students (research sample)

Independent variable	Dependent variable	Value of "d"	Extent of effect
activities and teaching methods based on the theory of multiple intelligence	Cognitive achievement	4.52	great

The previous table shows the following:
The extent of the effect of the independent variable (using activities and teaching methods based on the theory of multiple intelligence) on the dependent variable of the dependent variable of the cognitive achievement for the

students (research sample) was big; as the value of "d" is greater than (0.8).

This indicates that using activities and teaching methods based on the theory of multiple intelligence has great effect on the improvement of the cognitive achievement for the students of the research.

To verify that the effectiveness is statistical function or not, which means that it has genuine differences or differences by chance; the researcher applied Blake equation to measure the effectiveness, we reached the findings shown in the following table:

Table (14)

Meaning of adjusted returns for the research sample in the test of the cognitive achievement

Group	Mean value (M)	Maximum Grade (D)	Level of adjusted returns	Meaning of adjusted returns
Experimental	32.721	33	1.28	There is a meaning
Control	18.011			

The previous table shows that the level of the adjusted returns equals (1.3), this percentage is greater than 1.2, and this indicates the effectiveness of using activities and teaching methods based on the theory of multiple intelligence in teaching the subject of health and family education for the improvement of the cognitive achievement for the students of the experimental group (research sample).

To answer the second question and verify the second assumption:

The second question provides that: "what is the effectiveness of using activities and teaching methods based on the theory of multiple intelligence in teaching health and family education for development of life skills for the students of the first secondary stage?

The second assumption provides that: "there are statistical differences at the level (0.01) between the mean values of the grades of the students of the experimental group and the mean values of the grades of the students of the control group in the post-application of the measurement of life skills for the sake of the students of the experimental group".

To answer the second question and verify the validity of the second assumption, the researcher calculated "t" test for the meaning of differences between the mean values of the grades of the students of the experimental group and the mean values of the grades of the students of the control group in the post application for the measurement of life skills; results were as the following:

Table (15)

"t" test for the meaning of differences between the mean values of the grades of the students of the experimental group and the mean values of the grades of the students of the control group in the post application for the measurement of life skills

Measurement Skills	Experimental		Control		Calculated "t" value	Level of meaning
	Mean value	Number	Mean Value	Number		
Thinking skills	31.398	2.586	24.953	2.319	10.814	0.01
Health skills	34.258	3.423	25.957	2.591	11.279	0.01
Skills of controlling consumption	39.293	3.768	27.954	3.210	13.356	0.01
Measurement as a whole	104.949	4.559	78.864	3.928	25.276	0.01

Table "t" value (2.65) at the level 0.01 at the level of freedom (68)

The previous table shows that the calculated "t" value (10.814, 11.279, 13.356, 25.267) is greater than the table "t" value (2.65); that means that the differences between the mean values of the grades of the students of the experimental group and the mean values of the grades of the students of the control group are statistical functions at the level (0.01) for the sake of the students of the experimental group; this indicates that using activities and teaching methods based on the theory of multiple intelligence in teaching the two units of the research led to the improvement of some life skills for the students of the (research sample).

Table (16)

The level of the effect of the activities and teaching methods based on the theory of multiple intelligence on life skills for the students of the (research sample)

Independent variable	Dependent variables	Value of d	Level of effect
activities and teaching methods based on the theory of multiple intelligence	Life skills for the students of (research sample)	6.64	great

The previous table shows the following:

The level of the effect of the independent variable (activities and teaching methods based on the theory of multiple intelligence) on the dependent variable of life skills for the students of the (research sample) was great, as the value of "d" is greater than (0.08).

This means that the activities and teaching methods based on the theory of multiple intelligence have great effect

on the development of some life skills for the students of the research group.

To verify whether this efficiency is a statistical function or not, which means that it has genuine differences or differences by chance, the researcher applied Blake equation to measure the efficiency, we reached the following results as shown in the following table:

Table (17)

Meaning of the adjusted returns for the research sample in the measurement of life skills

Data of the group	Mean Value	Maximum grade (D)	Level of adjusted returns	Meaning of adjusted returns
Experimental	104.949	120	1.34	There is meaning
Control	78.864			

The previous table shows that the level of adjusted returns equals (1.34), this percentage is greater than 1.2; that indicates the effectiveness of using activities and teaching methods based on the theory of multiple intelligence for teaching the subject of family education for the development of some life skills for the students of the (research sample).

So it is possible to answer the second research question; also it is possible to verify the validity of the second research assumption.

To answer the third question and verify the validity of the third assumption:

The third question provides that "what is the correlation between the grades of the students of the experimental research group in the cognitive achievement test and their grades in the measurement of life skills?"

The third hypothesis provides that "there is a positive correlation between the grades of the students of the experimental research group in the cognitive achievement test and their grades in the measurement of life skills in the post-application".

To answer the third question and verify the validity of the third hypothesis, the researcher calculated the coefficient of correlation between the grades of the students (experimental group) in the measurement of life skills and their grades in the cognitive achievement test in the post-application (0.734) which represents a function at the level 0.01.

From the above-mentioned, it is clear that there is a positive correlation between the grades of the students in the achievement test and their grades in the measurement of life skills, the third research question can be answered; the third research assumption can be verified.

Seventh: Explanation and discussion of the research findings:

1- Explanation of the research findings related to the first question and first assumption of the current research:

The findings of the test of the validity of the first research assumption of the current research showed the excellence of the research group (experimental) over the control research group in the post-application after the study of the two research units using the activities and teaching methods based on the theory of multiple intelligence.

The findings of this research corresponded to the findings of the study of Gebrel Hemeda (2007), Amany Alhosan (2012), Badawiah Radwan (2014), while the findings of the current research were different from the findings of the research of Abdelrahman Wafi (2010), as the findings of Abdelrahman Wafi showed that there is no positive correlation function between the level of life skills and multiple intelligence for the students of the secondary stage in the district of Gaza.

3- Explanation of the findings related to the third question and third assumption of the current research:

According to the existence of a positive correlation which is statistical at the level of 0.01 between the grades of the students (experimental group) in the information and knowledge included in the two units (of the research) and life skills in the post-application; that means that using teaching methods and activities based on multiple intelligence in teaching the subject of health and family education developed some information and knowledge included in the two units (of the research) for the students of the experimental group; that enabled the students to develop their capabilities of life skills; that means that there is direct proportion and positive connection between the development of the achievement and capability of life skills for the students.

The findings of the current research corresponded with the findings of the study of Algawharah Aldosary (2009), Afrah Mlebary (2012), Naglaa Mansour (2014).

6.2 Research suggestions and recommendations:

First: research recommendations:

In the light of the findings of the current research, it is possible to present the following recommendations:

1. Training the pedagogical supervisors and teachers on how to use strategies based on the theory of multiple intelligence in teaching the subject of family education through holding seminars, training courses and workshops.

2. Family education teachers using strategies of multiple intelligence in teaching the scientific content of the

subject of family education for their students.

3. Inclusion of strategies of multiple intelligence and the forms of learning and teaching these strategies included in the curriculum of teaching methods related to the students of the faculty of education.

4. Interest of those responsible for planning, designing and executing curriculums family education through the development and preparation of these curriculums or parts of them in a way matches activities and teaching methods based on the theory of multiple intelligence.

Second: Research recommendations:

In the light of the findings of the current research, the researcher suggests performing the following studies and researches:

1- Effectiveness of using strategies of multiple intelligence in teaching family education for the development of the attitudes towards the subject and high thinking skills for the students of the secondary stage.

2- Effectiveness of using teaching activities and methods based on the theory of multiple intelligence in teaching family education for the development of different types of thinking for the students of the preparatory stage.

3- Suggested program of family education based on teaching activities and methods based on the theory of multiple intelligence based on the theory of multiple intelligence and its effect on the development of skills of taking decision for the teachers of family education.

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