

Effectiveness of Intel Package on Developing Critical Thinking Skills of Ninth Basic Grade Students in National and Civil Education Subject

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Abstract

This study aimed to identify the effectiveness of Intel Package on developing the critical thinking skills of the ninth basic grade students in National and Civil Education subject . The sample of the study which consisted of 156 male and female students of Al-balqa Directorate Education for the year 2012/2013 was distributed into two groups ;experimental group consisted of 77 male and female students taught by Intel Package and the control group consisted of 79 taught by the traditional method. The results of the study revealed that there were statistically significant differences at the level of significance ($\alpha = 0.05$) in developing the critical thinking skills of the ninth basic grade students in the National and Civil Education subject attributed to the method of teaching and in favor of the experimental group and the results also revealed that there were no statistically differences in developing critical thinking of the students attributed to gender variable or to the interaction between the group and the gender variables.

Keywords: Intel package, critical thinking , National and Civil Education subject.

Introduction:

One of the most important characteristics of this century is the big number of the scientific and technological innovations and their implications that affected all the different aspects of human life and this means that education process has great responsibilities of providing the students with information ,skills , values ,attitudes and skills of thinking to enable them solve their problems .So Ministry of Education in Jordan paid much attention to the innovation and development in technology , computer was used in methods of teaching in order to have the learners' integration of the growth taking into account the century requirements and the computer's role in this field where its integration with the educational programs became a necessity as basics of knowledge and major skills and as a response to the requirements of the developed life(Emad-edin,2004;Al-ayasa&Hasan&Morad,2002).

Intel Package is considered one of the international educational package which Ministry of Education in Jordan introduced to help the teachers to employ information technology and communications in the educational process to improve learning and help the students to achieve higher level of the critical thinking skills which they need to succeed in the field of economy that relies on information (Ministry of Education,2012). And as a result , Ministry of Education in Jordan introduced critical thinking skills in the school curricula as they are considered an important part in the process of developing education (As-sroor,2006). Teaching skills of critical thinking at schools has become a necessity for the situations and cases that students face daily and have to think of them. The importance of critical thinking is represented by the individual ability of judging issues, understanding ,applying , evaluating, making comparison , studying facts, organizing ideas and classifying them looking for the accurate and correct answer so critical thinking consists of many skills as conclusion ,deductions, interpretation and evaluating arguments (Obeidat&Abo Smeed,2013).

National and Civil Education subject is considered one of the important subjects that focuses on developing the students' skills of critical thinking and it plays a role in educating the active individual in his society by developing his capability of understanding the information extracted from different fields of social sciences , developing attitudes , values and the desired patten's behavior in addition to the different skills which are beneficial for him in his daily life ;it develops all aspects of his personality to become a good citizen who understand his problem and solve it (Al-zyadat&Qatawi,2010). Many educationalists pointed out that the common method of teaching National and Civil Education subject depends on drilling and memorization where students will totally depend on the teacher for getting the information and they won't use skills of thinking and technology in teaching (Al-Masri,2003).

Many studies as AL-Jarah &Al-edwan (2011) ,Al-khreisha (2011) studies showed that the traditional methods of teaching which are used in teaching National and Civil Education subject may not suit the society of information so there should be a comprehensive revision to the strategies of teaching , educational output and technology used in education to enable the students cope up with the changes and acquire knowledge and skills which they need in future in light of information society ((Lohman, & Woolf, 2001). And Shiveley & Vanfossen

(2006) indicated that using technology in the social studies makes the process of learning and teaching social studies an effective activity where the students is responsible for his part of special learning .And using multimedia helps effectively in achieving the objectives of the social studies, developing skills of critical thinking (Abo-roman,2009) and these means have the ability to make the learners effective and productive citizens (Fairey, Lee & Bennett, 2000).

It is possible to say that achieving the objectives of National and Civil Education subject can be done only through focusing on the high mental process as skills of critical thinking which in turn need educational technological programs of high level. And according to the researcher's knowledge , there was no research addressed using Intel Package in developing the critical thinking in National and Civil Education subject.

During the researcher's revision of the theoretical frame and the previous studies , it was found that most researches and studies discussed the impact of using technology on the students' achievement in the school subjects and their attitudes towards it. There were few studies that discussed Intel Package in other school subjects as the study of Carter (2000)which showed the students' educational experience and their research skills have been improved much during their search for websites that addressed the school subjects. And the results of the study of Awad(2006) showed that there were statistically significant differences in the eight basic grade students' acquisition of the scientific concepts in favor of the students who studies using an educational electronic package according to Intel Package compared with the traditional method. And the results of the study of Abo-roman(2009) pointed out the efficiency of multimedia in developing the skills of critical thinking in the social studies subject of the ninth basic grade students in Jordan. And the study of al-kasab&ab0-lom(2010) showed a rise in the tenth basic grade students' achievement in geography subject attributed to the method of teaching in favor of using internet and the computer and the results of the study of Al-hawamda&Ashour(2011) revealed that there was a statistical significant difference in the tenth basic grade students' achievement in Arabic subject in favor of the experimental group which learnt using Intel package and the study also revealed that there was statistical significant difference in the achievement attributed to the gender of the student in favor of the females. The study of Al-majali,Al-nsoor,Al-zboon,Ziadat&Al-omari(2011) showed there were statistically significant differences in the ninth basic grade students' achievement in Math subject attributed to the method of teaching variable in favor of teaching using Intel Package and to the gender in favor of females while there were no statistically significant differences if the interaction between the gender variable and method of teaching .

Although of the importance of the National and Civil Education subject in creating the good citizen ,its emphasis on the system of the social values , and its help in developing the scientific thinking and the skills of creative and critical thinking in addition to its influence in increasing the students' interest of the social problems and looking for solutions(Al-khedr,2006). But the means of technology were not introduced in teaching the National and Civil Education subject . So this study aims to identify the efficiency of Intel package and its impact on developing the skills of critical thinking of the ninth basic grade students in the National and Civil Education subject .

Problem of the study:

The problem of the study emerged from the students' weakness in the National and Civil Education subject and this was asserted by some researches and studies as AL-jarah&Al-edwan(2011) & Khreisha(2011). So there was an urgent need to diversify the teaching methods used in teaching the National and Civil Education subject and Ministry of Education has moved forward serious steps in computing the school's curricula and introducing technology in the educational process .

And according to the importance of thinking to the society and the individual , the necessity of introducing thinking and its types especially the critical thinking into the school curricula and the National and Civil Education subject increases for its great importance in providing the students with the mental skills as analysis, conclusion, interpretation ,deduction, problem-solving in more effective methods especially the individual in the century of technology is exposed to variety of class situations that need solutions through thinking and analysis and this requires great emphasis on developing the skills of critical thinking . And because of the scarcity of the studies –according to the researcher's knowledge -that addressed the impact of teaching pattern using the computer on developing the critical thinking, the researcher chose studying the efficiency of Intel Package and investigated its impact on developing the skills of critical thinking of the ninth basic grade students in the National and Civil Education subject.

Objectives of the study:

This study aims to identify the efficiency of Intel package in developing the skills of critical thinking of ninth basic grade students in the National and Civil Education subject in light of some variables.

Questions of the study:

This study tried to answer the following question:

"Are there any statistically significant differences at ($\alpha = 0.05$) among the ninth basic grade students' scores on the critical thinking test after using Intel package attributed to the gender and group variables or to their interaction ?

Significance of the study:

- The importance of this study lies on the subject it addressed which is identifying the efficiency if Intel package in developing the skills of critical thinking of the ninth basic grade students in the National and Civil Education subject.
- The importance of this study also lies in its keeping up with modern educational trends of Ministry of Education in Jordan especially introducing technology in teaching .
- The study's originality and innovation because the Arab and Jordanian environment lack of –according to the researcher's knowledge- studies discussed the problem of this study and its variables.

Conceptual and procedural definitions.

Intel package: is an educational plan includes a set of steps and procedures that depends on employing and using the computer and what it provides of efficient applicable programs in the educational process where a portfolio concerning unit of economic security in National and Civil Education subject of the ninth basic grade and it includes subfolders and each unit has the unit's plan, students' projects , materials support to the teacher and the student and tools of evaluating students' learning level.

-Traditional method :a set of teaching strategies which the teacher used in the classroom to achieve education outputs of the unit of economic security of National and Civil Education subject of the ninth grade students without using Intel package in teaching.

-Skills of critical thinking : is the total degree which the students get for Watson – Glaser Critical Thinking Test which includes the following skills(recognizing assumptions, interpretation ,deduction, evaluating argument, and Drawing inferences.

Limitations of the study:

The results of the study were generalized in light of the following limitations :

- The application of this study was limited on a group of the ninth basic grade students of Al-Balqa Directorate of Education enrolling in the public schools for the second scholastic semester for the year 2012/2013.
- This study was limited to teach the unit of economic security of the book of National and Civil Education subject of the ninth grade.
- Psychometric characteristics of the tools used in the study.

Methodology of the study :

The researcher adopted the semi-experimental approach of two group's design to identify the impact of Intel package on developing critical thinking skills of the ninth basic grade students in National and Civil Education subject.

Sample of the study :

The sample of the study consisted of 156 male and female students of the ninth grade students of schools belonging to Balqa Directorate of Education for the academic year 2012/2013 . Four random sections of two schools were selected and divided into groups; the experimental group consisted of 77 students (37 male and 40 female students) and control group consisted of 79 (36 male and 43 female students). The sample was distributed according to the study variables (group and gender) as shown in Table 1.

Tools of the study

First: Intel package to teach National and Civil Education subject including :

1.Analysis &preparation level

The researcher analyzed the unit of economic security of National and Civil Education subject for the ninth grade students for the academic year 2012/2013. And the researcher also gathered and prepared the requirements of Intel package using scientific materials ,images, animations, sounds, video clips and later they were revised and reproduced appropriately .

1- Designing stage of Intel Package :

- Desired objectives and outputs of the unit(economic security)were identified.
- The educational programs which are necessary to design and implement Intel package were identified as

- Word, Excel, Power point and Publisher.
- A portfolio was established containing sub folders as :
 - a- Students Samples which include three missions that every student has to do during implementing the program Intel package .
 - Power point presentation showing major ideas of the unit.
 - Preparing a website using Publisher program addressing the distinguished aspects of the unit(economic security).
 - Preparing a publication or a newsletter using Publisher program addressing aspects that require talking about the topic of the unit(economy security).
 - b- Unit support including four subfolders prepared previously by the teacher before starting implementing the unit:
 - Subfolder for unit plan.
 - Subfolder for teacher support contains a document for work that has been cited, students' tests and websites.
 - Subfolder for student support contains plans of implementing students' samples , worksheets and beneficial references and addresses to the students.
 - Subfolder for evaluation tools of the students contains special samples of evaluation as groups' evaluation to each other , teacher evaluation and self evaluation. The items of evaluation evaluate content validity and its usefulness , and content's lack of grammatical and spelling errors . Design evaluation includes the beauty standards of the text ,images, background and colors. Participation evaluation through evaluating the students' cooperation with the others.
 - c- Images & Sounds: using images, sounds and video in the teacher's website and actual samples of the students' projects.
 - d- Copyright Permission including information about copyrights and publishing in addition to a list of resources and references .

2- Arbitration stage of Intel Package :

After finishing the final design of Intel Package it is displayed with a list of standards of evaluation on 12 arbitrators specialized in information technology and in the social studies curricula and their methods of teaching . And in light of the arbitrators' opinions and suggestions, the researcher made the proper changes which 80% of the jury of arbitrators agreed on.

3- Experimentation and development:

The researcher applied Intel Package on a pilot study consisted of 33 male and female students before carrying out the current study in order to know the difficulties and problems facing the students during the study's application so as to solve them.

4- Application stage

After finishing the specialized arbitrators' proposed adjustments , the research himself taught the experimental group where the application of this study lasted for 12 classes.

Second : Critical Thinking Test

The researcher used critical thinking test consisting of 75 items of true and false. and the validity of the test's items was asserted by displaying it on a specialized arbitrators in the social studies' curricula and its methods of teaching and evaluation and measurement in Hashemite university and Balqa Applied University in addition to the teachers of National and Civil Education subject . In light of the arbitrators' opinions, some items were adjusted and the test's reliability was confirmed by applying it on a pilot sample consisted of 33 male and female students using Kuder–Richardson Formula 20 (KR-20) and its value was(0.82).

Equivalence of the study groups:

To ensure that the study groups are equivalent, the researcher applied the critical thinking test before the implementation of the study procedures. The results were as shown in table (2).

Table (2) shows that there is observed differences between the means of the subjects' grades on the pre-critical thinking test according to the groups and gender. To test the significant of these differences, Two Way MANOVA was used as shown in table (3).

Table (3) shows that there aren't any significant differences among the means of the subjects' grades on the pre-critical thinking test according to their group, gender or the interaction between them.

Procedures of the study:

- 1- Preparing the tools of the study Intel Package, critical thinking test).
- 2- Tool of the study was displayed on the arbitrators for validity .
- 3- Application of the tool of the study on a pilot sample for reliability.
- 4- Selecting the sample of the study from the ninth grade students of Balqa Directorate of Education for the year 2012/2013.
- 5- The application of the pre-critical thinking test on the sample of the study. Later, calculating the means,

standard deviations of the students' performance and the two variables to make sure of the groups' equivalence.

- 6- Implementing the study by the researcher where the experimental group was taught using Intel Package and the control group was taught using the traditional method for 12 classes.
- 7- The application of post-critical thinking test on the sample of study.
- 8- Proper statistical treatment were used .
- 9- Discussing the results and providing a number of recommendations.

Variables of the Study

This study has the following variables:

1. The independent variables:
Group: It has two levels: (Control group, Experimental group).
Gender: It has two levels: (Male, Female).
2. The dependent variable:
The ninth grade students' grades on the critical thinking test.

Methods of Data Analysis

Statistical Package for the Social Sciences: SPSS software was used in order to test the questions of this study. The data were analysed in three ways:

1. Descriptive statistics: such as the means, standard deviation, frequencies and percentages were used.
2. Two Way MANOVA.
3. Two Way MANCOVA.

Results & discussion

Results of the study:

The study tried to answer the following question:

"Are there any statistically significant differences at ($\alpha = 0.05$) among the ninth basic grade students' scores on the critical thinking test after using Intel package attributed to the gender and group variables or to their interaction ?

To answer this question, descriptive statistics (means and standard deviations) of the ninth grade students' grades on the post critical thinking test after using an Intel Package according to the group and gender variables were computed. The results were presented in Table (4).

Table (4) shows that there are differences between the means of the students' grades on the post-critical thinking test according to the group and gender variables. To test the significance of these differences, Two Way MANCOVA was used as shown in table (5).

Table (5) shows that there are significant differences between the means of the students' grades on the post critical thinking test according to the group variable in favor of experimental group for all the domains, while there are no significant differences between the means of the students' grades on the post critical thinking test due to their gender or the interaction between groups and gender.

The researcher attributed these differences between the groups to the following reasons:

- Intel Package displays the educational content in an interesting and logical sequence containing attractive colors , animations, images , video clips help in attracting the students' attention. And the researcher noticed the students' positive responses during the application process and this is an indicator to the students' interaction with the educational situation.
- Intel Package provides the student with the feed back after finishing any activity and encourages the student to follow up his progress so the student's motivation for learning will increase and this in turn develops positively the student's skills of critical thinking.
- And the research also attributed these results to the content of the National and Civil Education subject in general and the content of the unit of economic security in particular which addresses local and international issues that need skills of critical thinking and may be designing Intel Package helped significantly in clarifying the content of the educational unit for the elements of suspense it has which develop the students' critical thinking skills.

The results of this study agree with the results of the studies of (Bani-awad,2006;Al-hawamda&Ashour,2011;Al-majali,Al,nsoor,Al-zboon,Zeiadat&Al-omari,2011) which their results showed the effectiveness of using Intel Package in increasing the students' achievement compared with the traditional method. And this study agrees with the study of Abo-roman(2009) which its results showed the effectiveness of using multimedia in developing the skills of critical thinking in the field of social studies of the ninth grade students.

And the results showed that there were no significant differences between the means of the students' grades on the post critical thinking test due to their gender or the interaction between the group and the gender variables. And the researcher attributed this result to the following reasons:

- Intel Package has many activities that facilitate students' interaction regardless of their gender.
- The similarity between the educational environment of male and female students in terms of physical facilitations and the available means of technology .
- The incentives and the enforcements which the male and female students get are similar regardless of their gender.
- And the researcher also attributed this result to the lessons' planning according to Intel Package where there was an emphasis on the skills of critical thinking and their application in the classroom with paying attention to methods of teaching that encourage critical thinking as techniques of searching, problem solving and surveying regardless the gender of the student.

Recommendations

- Design and develop computerized software in the field of teaching National and Civil Education subject to motivate the students towards studying National and Civil Education subject.
- Train and rehabilitate the teachers of National and Civil Education subject in the field of using Intel Package and employing modern technology in teaching National and Civil Education subject.
- Expansion in using the technology in teaching National and Civil Education subject for its positive impact on developing the students' critical thinking skills
- Encourage the teachers to use the technological programs in teaching National and Civil Education subject and this will enable the students to have the major role in the educational process.
- Conduct further studies that address the effectiveness of Intel Package in teaching other subjects with other new variables as developing the skills of creative thinking and problem solving.

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Tables :

Table (1)
 Frequencies of the Distribution of the Study Sample According to its Variables (group and gender)

Groups	Male	Female	Total
Control Group	36	43	79
Experimental Group	37	40	77
Total	73	83	156

Table (2)
 Means and Standard Deviations of the subjects' grades on the pre-critical thinking test according to their gender and group variables

Domains	Group	No.	Male		Female	
			Mean*	Std. Deviation	Mean*	Std. Deviation
Assumption	Control Group	79	5.27	1.59	5.33	1.66
	Experimental Group	77	5.21	1.47	5.29	1.71
Interpretation	Control Group	79	5.86	1.85	5.78	1.68
	Experimental Group	77	5.91	1.73	5.82	1.59
Evaluation of Arguments	Control Group	79	4.87	1.66	4.96	1.84
	Experimental Group	77	4.82	1.59	4.90	1.79
Deduction	Control Group	79	4.63	1.88	4.57	1.96
	Experimental Group	77	4.68	1.93	4.62	2.02
Inference	Control Group	79	4.59	1.79	4.67	1.68
	Experimental Group	77	4.55	1.76	4.61	1.65
Critical Thinking Test	Control Group	79	25.22	2.54	25.31	2.63
	Experimental Group	77	25.17	2.61	25.24	2.67

- Out of (15).

Table (3)

Two Way MANOVA results for the differences among the means of the subjects' grades on the pre-critical thinking test according to the groups and gender

Source	Dependent Variable	Sum of Squares	Df	Mean Square	F	Sig.
GROUP	Assumption	2.056	1	2.056	0.887	.350
	Interpretation	0.753	1	0.753	1.362	.247
	Evaluation of Arguments	1.169	1	1.169	1.732	.193
	Deduction	1.557	1	1.557	1.320	.253
	Inference	.526	1	.526	1.192	.283
	Critical Thinking	11.843	1	11.843	1.648	.199
GENDER	Assumption	1.195	1	1.195	.515	.476
	Interpretation	.487	1	.487	.881	.352
	Evaluation of Arguments	.001	1	.001	.002	.965
	Deduction	.064	1	.064	.137	.712
	Inference	.194	1	.194	.440	.510
	Critical Thinking	.375	1	.375	.052	.820
GROUP * GENDER	Assumption	1.732	1	1.732	1.784	.182
	Interpretation	0.091	1	0.091	.165	.686
	Evaluation of Arguments	1.786	1	1.786	1.647	.199
	Deduction	.206	1	.206	.439	.510
	Inference	.493	1	.493	1.118	.317
	Critical Thinking	10.676	1	10.676	1.877	.695
Error	Assumption	352.488	152	2.319		
	Interpretation	84.056	152	.553		
	Evaluation of Arguments	102.6	152	.675		
	Deduction	71.288	152	.469		
	Inference	67.032	152	.441		
	Critical Thinking	1092.424	152	7.187		
Total	Assumption	366.302	155			
	Interpretation	86.913	155			
	Evaluation of Arguments	107.825	155			
	Deduction	74.214	155			
	Inference	68.245	155			
	Critical Thinking	1140.767	155			

Table (4)

Means and Standard Deviations of the ninth grade students' grades on the post critical thinking test after using an Intel Package according to group and gender variables

Domains	Group	No.	Male		Female	
			Mean*	Std. Deviation	Mean*	Std. Deviation
Assumption	Control Group	79	9.19	2.05	8.89	2.34
	Experimental Group	77	14.03	2.19	13.79	2.42
Interpretation	Control Group	79	8.67	2.51	8.58	2.74
	Experimental Group	77	13.08	2.46	13.35	3.06
Evaluation of Arguments	Control Group	79	9.58	2.49	9.52	2.44
	Experimental Group	77	12.83	2.53	12.73	2.62
Deduction	Control Group	79	8.66	2.37	8.69	2.51
	Experimental Group	77	13.75	2.23	13.85	2.78
Inference	Control Group	79	9.16	2.74	9.24	2.66
	Experimental Group	77	13.05	2.59	13.21	2.79
Critical Thinking Test	Control Group	79	45.26	3.19	44.92	3.39
	Experimental Group	77	66.74	3.28	66.93	3.34

- Out of (15).

Table (5)

Two Way MANCOVA results for the differences among the means of the students' grades on the post critical thinking test according to the group and gender variables

Source	Dependent Variable	Sum of Squares	Df	Mean Square	F	Sig.
TEST	Assumption	12.859	1	12.859	12.859	0.001*
	Interpretation	10.207	1	10.207	10.207	0.001*
	Evaluation of Arguments	10.106	1	10.106	10.106	0.001*
	Deduction	9.334	1	9.334	9.334	0.001*
	Inference	8.992	1	8.992	8.992	0.001*
	Critical Thinking	31.549	1	31.549	31.549	0.001*
GROUP	Assumption	12.575	1	12.575	12.575	0.001*
	Interpretation	15.288	1	15.288	15.288	0.001*
	Evaluation of Arguments	16.271	1	16.271	16.271	0.001*
	Deduction	15.449	1	15.449	15.449	0.001*
	Inference	11.624	1	11.624	11.624	0.001*
	Critical Thinking	42.451	1	42.451	42.451	0.001*
GENDER	Assumption	2.063	1	2.063	2.063	0.338
	Interpretation	2.127	1	2.127	2.127	0.267
	Evaluation of Arguments	1.883	1	1.883	1.883	0.322
	Deduction	0.826	1	0.826	0.826	0.515
	Inference	0.468	1	0.468	0.468	0.673
	Critical Thinking	3.474	1	3.474	3.474	0.358
GROUP * GENDER	Assumption	2.157	1	2.157	2.157	0.328
	Interpretation	2.604	1	2.604	2.604	0.216
	Evaluation of Arguments	3.209	1	3.209	3.209	0.165
	Deduction	1.732	1	1.732	1.732	0.347
	Inference	2.642	1	2.642	2.642	0.236
	Critical Thinking	9.168	1	9.168	9.168	0.148
Error	Assumption	316.768	152	2.084		
	Interpretation	251.56	152	1.655		
	Evaluation of Arguments	263.872	152	1.736		
	Deduction	290.624	152	1.912		
	Inference	280.44	152	1.845		
	Critical Thinking	625.784	152	4.117		
Total	Assumption	356.836	155			
	Interpretation	290.059	155			
	Evaluation of Arguments	303.98	155			
	Deduction	327.526	155			
	Inference	313.398	155			
	Critical Thinking	732.949	155			

* Significant at ($\alpha = 0.05$).

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