

The effect of education of computer on creativity

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Abstract. The main purpose of this research was the effect of education of computer on creativity in girl student of high school. Population of this study was all girl students of sirjan branch subjects to be comforted in two groups, experimental and control groups the sample of this research consisted of 60 students, selected by randomly and survey placed in experimental and control groups. Measurement tool was creativity Torrance test in figural A form that assess participant ability in fluency, flexibility, originality and elaboration traits. Reliability coefficient percentage of this test estimated 80 ,90 respectively.

Design research was of kind pre-test and post-test with control group. First creativity test administrated in every one of two group that include (control and experiment group) as pre-test. Then all students experiment group participated in computer class for four month, every week two section and every section 45 minute and finally do post-test. Presented materials in experiment group were (programming to language C, writing Web lag, Internet and Photoshop , etc). research Data analyzed with use of (ANCOVA) test and results showed significant differences between performance of experimental and control group in post-test in flexibility, originality and elaboration traits but there is no significant difference in fluency trait. Students have noticeable achievement in post-test in these variables. In the end with regard to results of this study, computer training can have an effective role in student's creativity.

Keywords education, computer, creativity, girl students and high school

1. Introduction

Torrance America researcher said “we needed to motivate children creativity for the life survival because there are psycho stress and we have to use creativity weapon to fight problem [1] Creative thinking is an important concepts in education system that ways access to it be taken as no deniable necessity. One of new responses for creative thinking with consideration to recent changes in educational system is use of information and communication technology (IT). Produced capabilities by IT such as log, viki, social network and figurative learning environment, motivation of change in role of student, commitment of learning by learner, activation and independence in learning process and cooperation with other in learning process, presentation and division of opinions and various solutions between each other and producing of space for discussion and seeking that all of them have an important the role in promoting of creative thinking. In other word, IT is success in reaching of student to maturity and innovation of knowledge and solve of problem by themselves and as result of development logy and stimulation of creative thinking that it has particular important in curriculum and their performance [2]. Today problems of communities is not solvable with yesterday solutions and future prediction not remove next difficulties , but we should perform future preconstruction. Today, environmental condition been without assured and complicate and cruel that other communities can't be hopeful without education of creative minds for its survive, In today's societies is so much progress that with delay moment become more distance, so there is need that we pay attention to creativity as a necessary need. If communities will continue to their survival, They should pay attention to creativity that has following 4 characteristics[3]:

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Fluency: It is ability of establishment meaningful relation between thought and expression that it are measured base on thoughts and or solutions in a specific time.

originality: It is ability of think to unusual style and against common habit that it is accompanied by unusual and wonderful and cleverly responses.

Flexibility: Ability of thought to different solutions for remove a new problem.

elaboration: It is ability of pay attention to detail in doing of an action,.

[4]expressed only few numbers of American colleges and university performed education of creativity. [5] felt regretted of results of his research for universities that recently pay attention to creativity such as, NORS creativity central university and in midland and MISHGAN". In these universities, classroom space is relaxed as felt students are free in discovery of their creative experience and developing of curiosity and creativity and innovation.

[6] composed 2 summer shops in 10 today and annual public invitation due to that youth authors to be encouraged to producing of ways for growing of creativity and skill of writing. When educational program placed in parts of communities and universities, they found that these shops are useful in growing of individual's creativity. [7] found that group's processes like to discussion and reason take effecting to creativity and persons had strong mathematics and persons are opposite in discussion, they have more creativity. of course students violate in discussion, they have lower creativity ratio to above persons. As result of teachers should invite their students to expressing of their ideas as accurate and polite and avoiding of aggressively responses.[8] in their research resulted that having of purposive interviews and specific interactions that be including informal thoughts and producing of interaction between friends and responsible and exploratory amusements and performing risk of formal educations and motivated processes help to producing of research's skills and creativity too, that this problem be necessary in doctorate.

Since in new years, creative learning and localization, learning technology, an humanism and structural design and reinford system of intelligence and etc that all of them depend on to computer, As researcher try to find that Do training of computer course to increasing of creativity or no?

2. Tools of measurement

Studied society be including all girl students 16-17 years old in Sirjan city. In this universe have been selected 30 persons as samples randomly that they set in experimental group and 30 persons in control group too.

Used test the research be figurative creativity test of Torrance (form A). Picture shapes of his creative thinking tests in requiring responses have visual and draw nature. Uses of pictorial tests have been commanded of kindergarten level to higher levels of high school. Reason of choosing this test was its appropriate efficacy and validity and reliability in the research. This test used in researches and educational measurements repeatedly. Base on results published researches in brochure this test, reliability coefficient if 80%-90% that by experts have been typed that subject abilities are assessing in Fluency - originality – Flexibility – elaboration.

3. Method

With consideration of computer education as independent variable and with supervision researcher on it and also existence control group, this research is experimental, It means that is trying with action of independent variable containing computer education, produced results in dependent variable to examine and research creativity in selected students, design of research of pre-test and post-test type be control group.

First, for performing of the research carried out creativity tests for control and experimental groups as pretest. Then all students of test groups take part in education classrooms" computer advanced" during 60 sessions and every session 90 minutes, after pass 5 months reformed post-test in every group. Presented materials in experiment group were (programming to language C and writing Weblog and Internet and Photoshop , etc) that these programs performed for empirical major students on early of summer and students taking part in classrooms actively.

4. Findings

After collecting of information, Analyses of data are performed using of descriptive and inferential statistics.

Table1-descriptive indexes of students score of experimental group in creativity variables

Groups		mean	meadian	std.deviation	skewntess
Fluency	Pre-test	23.86	28	5.54	-1.46
	Post-test	27.96	28	0.18	-5.47
Flexibility	Pre-test	17.54	18	4.48	-1.72
	Post-test	20.60	21	2.56	-0.46
Originality	Pre-test	38.20	40	10.91	0.03
	Post-test	48.53	48	7.07	-0.28
Elaboration	Pre-test	73.53	75	13.89	0.77
	Post-test	120.06	120	14.90	0.04

As that is shown table number 1, means of students scores in pretest be less than post-test, above table show that students had considerable advanced in post-test.

Table2-descriptive indexes of student scores of control group in creativity variables

Groups		mean	meadian	std.deviation	skewntess
Fluency	Pre-test	22.89	24	4.98	-0.41
	Post-test	27.92	28	0.26	-3.52
Flexibility	Pre-test	19.04	17	6.29	1.11
	Post-test	18.39	19	3.41	-1.36
Originality	Pre-test	35.32	35	10.68	-0.01
	Post-test	34.67	32	6.30	0.92
Elaboration	Pre-test	97.60	90	29.25	-0.05
	Post-test	88.67	83	19.78	0.72

As that is shown table numbers 2, there is no significant different between pre-test and post –test scores of students control group. they have only difference in fluency scale that be result in development subjects.

Table3-Summary of (ANCOVA) analysis result for comparing performance of experimental and control group in post-test

Groups	Sum of squ	F	sig	Eta squared
Fluency	000	00	1.0	000
Flexibility	21.96	45.66	0.00	0.72
Originality	44.26	4.45	0.05	0.20
Elaboration	87.42	4.74	0.04	0.21

Data table 3 showed significant differences between performance of experimental and control group in post-test in flexibility, originality and elaboration traits but there is no significant difference in fluency trait.

5. Summaries

Main goal creative and dynamic education is creation. Creation of able humans to doing new works, humans be discoverer and innovator. This problems is able thought with consideration present condition because today is need to developing of persons for checking with complicate individual and social issues that with assurance will force and self- intellection and logical and thoughtful creative and instead of incorrect dependency and using of other economical and cultural achievements be productive a knowledge and technology and appropriate culture for independent life and with short glance to situation of sicence progress particularly in Industrial communities and producing of developing movements such as creativity aptitude development and invention in that countries find that the world is developing quickly of last [9].

results showed significant differences between performance of experimental and control group in post-test in flexibility, originality and elaboration traits but there is no significant difference in fluency trait. Students have noticeable achievement in post-test in these variables. therefore, computer training can have an effective role in student’s creativity. also [10] are performed the research for students and they result that self-efficiency and creativity students are user of internet is higher of other students. [11] found that creative students became motivate by alive interaction and teacher investigation. Students are without consideration

to internet and have weak abilities in verbal processes and discussion, they have less creativity. Learning by potential art to cause develop in children actions like to exploration and test and innovation and etc. creativity and making – picture in life early years and role of adults and extension of children experiences is very important and valuable for developing of creativity[12]. [13] found that using of colors in paint separate of their nature real to cause creativity stimulation on children and also critical classroom to help to student for increasing of self-confidence, it means that are analyzed their techniques and point of view. Recognizing of different music and paint is indicator of person individual to cause ability adults for contact with their deep emotions and affections[14]. Also [15] believe that in statuary process, children create using of clay statues imaginary specification and after drawing are developed their ideas and painting status and creativity . [16] examined use of computer with music composition in secondary school students, he resulted that consist of :1) Field or context of participations in compost processes is very different, 2) creative thinking skills in music proved without consideration to participations field and their before experiences with data analysis. And also voice of human depend on to how construction their perception and creativity and originality. [17] found that mental development stream in number of children play with computer is performed quickly. A main barrier use of the tool is planning experience and also agents as potential can effect an success consist of : sex, creativity and intellectual ability, planning experience and play time and spent time that results of this research is similar to finding of Michael Resnik. He is a researcher and inventor in media laboratory that he established technique for kindergarten groups that it lead to innovation and after it set sectional learning technology for children that it be including Pico Crickets computer clubs that in consumer produced brain evolution , also digital creativity tool is device that help to tool and relation and interior actions , programming or planning and development and main communications learning. Also effect of this technology is obvious on education and learning [18]. Also, internet and using of web can be have deep very effecton on education and social interaction of students as they can by web share in their thoughts and opinions about everything[19]. [20] examined affection use of internet and SCAMPER students writing creativity, 60 students took part in writing creativity plan. These findings show that children use of internet, their writing creativity developed in fluency and elaboration aspects and other group of children use of SCAMPER, there is no obvious improvement in their writing creativity.

Finally, with consideration to results this study, computer education can be have effective role as it is need that for creativity development and shining aptitude growing of society, to establish periods under title computer education for students

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