IMPACT OF MODERN EDUCATIONAL TECHNOLOGY ON THE CREATIVITY OF MALE AND FEMALE STUDENTS

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ABSTRACT

Students are differ from each other in a wide variety of ways. They have different backgrounds,different levels of motivation, different attitudes about teaching and learning, and differentresponses to specific classroom environments and instructional practices.In education, issues realted to creative thinking are hihly important and plays an important role. In addition, question of gender differences in creativity is a complex, controversial and contentious topic. In order to investigate the gender issues in creativity of students in education system.

The present study examined the creativity of boys and girls studying in standards 6, 7, and 8, with specific reference to their use of modern educational technology (MET). To achieve the objectives of the investigation, a sample of 600 students (300 boys and 300 girls) was randomly selected from 10 different schools in Agra. To assess creativity, the Divergent Production Abilities Test was administered to all participants. The findings indicate that there is no significant difference in the creativity levels of boys and girls across standards 6, 7, and 8, regardless of whether they use modern educational technology (MET) or not.

1. INTRODUCTION

Over the last decade everything has changed in our lives with the all-pervasive intervention of technology. However education remained untouched by technology. In today's world computer based technology is not a frill but an important component of any modern curriculum. Along with the rapid development of modern educational technology, gain tremendous progress on educational concept, clauses, process, forms, methods and management [1,2].

The term technology can be based to mean a very wide variety of things from computers to pencil. The term to refer broadly to computer based tools – hardware and software, the internet and computer based multimedia [3,4].

Modern educational technology based on information technology play a very significant role in promoting the modernization of education. This modern education technology has leading role smart schools as well as smart class rooms. In the recent COVID 19 situation and social economic order information technology and communication have taken over the leading role has provided educational content by using multimedia and networking software and computers [5,6,7].

Bibhu Dash et al: ICFCSAI-2025
pp. 187-193, 2026. IJCI – 2026 DOI:10.5121/ijci.2026.150120

Modern educational technology is actually a set of tools and methods that collect, store, retrieve process and distribute the information in variety form and provided means to overcome the problem [8]. Modern educational technology created new look in educational scenario due to changes in methods of learning and the function of classrooms. Modern educational technology is flexible with respect to the features and capabilities of the students [9].

Modern educational technology is the theory and practice of the design, development, utilization, management and evaluation of learning resources and learning process [10].
Modern society has become more complex than the past. Thus it demands to demonstrate various abilities in complicated and enforceable situations. Among the divers abilities CREATIVITY is the key capacity in adapting to modern society[11].

The word creativity has various definitions according to the perspectives of the researchers the beginning researchers of creativity in 1950 are mainly focused to internal individual factors like – IQ, Motivation, Personality, Adjustment, etc. [12,13] noticed environmental factors such as positive flexibility administration, fundamental resources, challengeable tasks, active participation, active participation positive personal relations and so on.

The creativity is concerned with various intra personal factors as well as extra personal factors. Changing the educational environment through using modern educational technology not a phenomenon appearing only in India it's a global trend.

Even though, the global trend of actively introducing modern educational technology, affecting the creativity . But how modern educational technology effect creativity is still uncertain, so it is necessary to know how modern educational technology affects the learner's creativity. So that is the need to analysis that how modern educational technology is works and what is the effect on learners creativity.

There are so many researches about the effect of modern educational technology, affects the positive effect on student's attitudes towards learning self-confidence, and self-esteem [10]. Utilization of Educational Media at Primary Stage [14]. Exploring the technological factors affecting creativity in computational thinking -centred learning context [15]. Comparison of creativity of male and female senior college students reference to their achievement [16]. Analysis of distance learning in smart schools [17]. Correlation of creativity, intelligence, personality and achievement [18]. Impact of modern technology in education [22]. Modern educational technology theory and university quality education [19].

Thus review of many researches indicates the space about The Effect of Modern Educational Technology on learner's Creativity .

The models and research on how students learn best with modern educational technology, why this technology should be used in classrooms and in daily study for personalized learning according to their individual differences and how it can help to prepare learner for the modern society in post **COVID-19 situation? Today's students and schools are rapidly becoming more and more** technologically inclined. Students adapt quickly to new technologies, just as they will be expected to in the professional world.
Cameras, remotes and wireless devices are all common technologies that result in more engaging learning for learners and adaptation to a variety of learning styles, So how and how much Modern educational technology effect the creativityunknown and should be to research.

2. PROBLEM STATEMENT & OBJECTIVE

A comparative study of creativity of boys and girlsstudent reference to use of modern educational technology. The objective of the studyare:

i. To compare the creativity of learner's (both boys and girls) those who use the modern educational technology, and those who do not use themodern educational technology in 6, 7, 8standard.

ii. To compare the creativity between the boys those who use moderneducational technology, and those who not use modern educational technology in 6, 7, 8standard.

iii. To compare the creativity between the girls those who use modern educational technology, and those who not use modern educational technology in 6, 7, 8standard.

3. MODERN EDUCATIONAL TECHNOLOGY

Modern educational technology has rich multimedia material for student learning, 3-D and 2-D modules and more interactive and interesting.Curriculum based digital resources and learning system that includes comprehensive facilitator's guidebooks to help them in their day to day learning in class and personalized learning. Modern educational technology is flexible with respect to the features and capabilities of learner's, as the internet and assessing websites are of major infrastructure planning for students gain the ability of processing information so they can increase their amount of learning [16,19,20].

Modern educational technology developed for the transmission of traditional concept, information and communication technology tools will be used. These tools include computer programs specially the use of applications, such as slides (PPT), lexicography and spreadsheets and internet facilities [17]. In this technology, using the internet student has access tovast reservoirs of information. In case of not getting answers to their questions, students interact not only with teachers but also with other students. Content is presented electronically and teachers acts as a guide [15]. The aspects of moden technology are:

i. Massive data storage and rich knowledge forms
ii. Real time access capability
iii. Computer information technology
iv. Electronic tele communication technology
v. Artificial intelligence technology
vi. Virtual reality technology
vii. Provides a good platform for the integration of other teaching

Generally for utilize this technology learners and teachers use many helpful tools or devices such as – Computer, Projector, Interactive board, Touch screen, Pointed Device, Laptop, Tablet, modem and any other internet devices and software etc.Thus the modern educational technology is the medium or platform which includes over mentioned aspects like: physics wallah, byju'sect… called study or educational portals.

4. CREATIVITY

Creativity is the act of turning new and imaginative ideas into reality. Creativity is characterized by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena and to generate solutions. Creativity involves two processes, Thinking then Producing. If you have ideas, but don't act on them, you are imaginative but not creative.

The lexeme in the English word creativity comes from the Latin term Creo "To create, make." Its derivational suffixes also come from Latin, the word 'create' appeared in English as early as the fourteen century notably in Chaucer to indicate divine creation (in the person's tale.) However its modern meaning as an act of human creation did not emerge until the enlightenment.

There has been much empirical study in psychology and cognitive sciences of the process through which creativity occurs. There are so many theories of creativity like –

i. Incubation convergent and divergent productions (thinking.)
ii. Creative cognition approach – EII theory.
iii. Conceptual blending – Henning theory.
iv. Everyday imaginative thought, etc.

Creativity is the capacity of a person to produce composition products or idea or any short which are essentially new or noble and previously unknown to the producer. Although, it deed not have immediate practical application or be a perfect and complete product. Itmay take the form of an artistic, literary or scientific production or may be of a procedural or methodological nature.

Creativity involves not one but many abilities, there is fluency, flexibility and originality, beyond these abilities must also be productivity. The creative and writers have been found more intelligent, emotional, sensitive, unconventional radical and selfsufficient. Creativity the so called divergent thinking in Gilford's terminology includes -

(A) Fluency – coming with a large quantity of ideas and ways of expressing things.
(B) Flexibility – thinking up variety of ideas, new ways of dealingwith bad situation.
(C) Originality – thinking of uncommon, clever and moved ideas and images.
(D) Elaboration – packing detail in to the response.

Thusthe definition of Creativity could be as the ability to explore something NEW including the reshaping of what already exists.

5. EXPERIMENTAL RESULTS AND ANALYSIS

In order to find the results of objectives of the study survey method was used. The study includes only schools of district Agra, U. P. Students of standard 6, 7, and 8 standards are population of the study.

i. Data Sample

A sample of 600 students of different schools was used for the investigation. The sample was randomly selected from 10 schools of district Agra U.P. Affiliated from CBSE and U.P. Board.

ii. Tool

The subject would administer "Divergent Production Abilities" test (Developed byDr. K. N. Sharma) which measures creativity in four areas- Fluency, Flexibility, Originality and Elaboration.

iii. Hypothesis

a. There is no significant difference between the creativity of learner's (both boys and girls) those who use modern educational technology and those who do not use the modern educational technology in 6, 7, 8standard.
b. There is no significant difference between the creativity of boys those who use modern educational technology, and those who don't use modern educational technology in 6, 7, 8 standard.
c. There is no significant difference between the creativity of girls those who use modern educational technology, and those who do not use modern educational technology in 6, 7, 8 standard.

iv. Statistical Analysis

The collected data would be analysed by using t-test of significance between the means of Boys and girlslearners creativity (those who use modern educational technology and those who do not use modern educational technology).

Table 1: Distribution of boys and girls according to use of MET

Sex	User	Non user	Total
Male	171	129	300
Female	156	144	300
Total	327	273	600

Table 2: Comparison of Creativity Scores of Boys and Girls Based on Use of MET

Type	No.	Mean	SD	't'	'p'
User	327	43.42	15.90	0.326	>0.05
Not user	273	42.99	16.28		
Total	600	43.22	16.08		

Table 3: Creativity Comparison of Boys by MET Usage

Type	No.	Mean	SD	't'	'p'
User	171	40.61	16.26	1.197	>0.05
Not user	129	42.11	17.57		
Total	300	41.26	16.85		

Table 4: Creativity Comparison of Girls by MET Usage

Type	No.	Mean	SD	't'	'p'
User	156	46.49	14.90	1.575	>0.05
Not user	144	43.77	15.00		
Total	300	45.19	15.01		

6. CONCLUSION & DISCUSSION

The study tested three null hypotheses: (1) there is no significant difference in the creativity of boys and girls who use MET and those who do not use MET; (2) there is no significant difference in the creativity of boys who use MET and those who do not; and (3) there is no significant difference in the creativity of girls who use MET and those who do not.

As shown in Table 2, the t-ratio for the creativity of both boys and girls who use and do not use MET is 0.326, which is insignificant at both the 0.01 and 0.05 levels of confidence; therefore, the first null hypothesis is accepted. Table 3 indicates that the t-ratio for creativity among boys using and not using MET is 1.197, which is also insignificant, leading to the acceptance of the second null hypothesis. Similarly, Table 4 shows that the t-ratio for creativity among girls using and not using MET is 1.575, which is insignificant at both levels of confidence, thus supporting the acceptance of the third null hypothesis.

Overall, the results confirm that creativity levels are comparable among boys and girls in standards 6, 7, and 8 regardless of their use of MET; both MET users and non-users, whether boys or girls, exhibit similar levels of creativity.

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