

# ADVENT OF TECHNOLOGY ON CREATIVITY AND LEARNING AS PERCEIVED BY STUDENTS, TEACHERS AND GUARDIANS.

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## ABSTRACT

*Since the emergence of the internet and search engines, many youngsters have been fully reliant on online search engines, and more lately, chat GPT. From the standpoint of various groups, the internet has both advantages and disadvantages. As a result, our research seeks to ascertain the perspectives of instructors, guardians, and students. There are many students in today's generation who are reaching amazing heights at such a young age. The internet has undoubtedly enabled them to broaden their knowledge, but many students have become overly reliant on the internet to accomplish their homework. As a result, the purpose of this study is to learn more about the effects of the internet on human's creativity and knowledge.*

**Key Words:** *Internet, AI technology, Creativity, Knowledge acquisition, Education, Chat GPT*

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## INTRODUCTION

Technology has become a cornerstone in the realm of education, reshaping traditional learning approaches and contributing significantly to both development and learning processes. The infusion of digital tools, interactive platforms, and virtual resources has ushered in a new era, offering students and educators innovative ways to engage with educational content. This evolution not only facilitates personalized learning experiences but also equips individuals with the skills needed to navigate an increasingly tech-driven world. The symbiotic relationship between technology and education continues to redefine how knowledge is acquired, making the pursuit of learning more dynamic, accessible, and tailored to diverse needs.

The advent of technology has revolutionized education, enhancing both development and learning. From interactive online platforms to educational apps, technology provides diverse resources that cater to different learning styles. This integration fosters a dynamic learning environment, preparing students for the tech-driven future while offering educators innovative tools to personalize and optimize teaching methods. As technology continues to evolve, its role in education remains pivotal, shaping the way we acquire knowledge and develop essential skills.

## PROBLEM STATEMENT:

The increasing usage of internet has both positive and negative effects. Prevailing technology is the growing concern for everyone on their health, knowledge and creativity. ever since the technology has played a major role in education, profession, workplace be it anywhere, everyone have started to rely on AI tools such as chat GPT for assignments or writing blogs, etc. the problem this study addresses is to find whether the advent of internet and AI technology such as chat GPT has reduced creativity level or has increased knowledge level of humans from the perspective of teachers, guardians and students.

This paper examines the influence of technological advancements on creativity and knowledge acquisition from the perspective of students, teachers, and guardians. The aim is to provide a comprehensive understanding of the implications that technology has on the educational process. The research explores how the integration of technology affects creativity, learning outcomes, and student engagement. Additionally, it investigates the effects of technology on teaching methods, curriculum design, and parental involvement. By examining the viewpoints of different stakeholders, this study seeks to shed light on the advantages and disadvantages of technology in the educational setting, and ultimately provide recommendations for best practices in the incorporation of technology into the teaching and learning process. The findings of this research will contribute towards a more informed and balanced approach to the integration of technology in education.

## LITERATURE REVIEW

**David De Cremer, Nicola Morini Bianzino, and Ben Falk (2023)** opined that the kinds of work were disrupted by new technologies and how these platforms offered people new ways to make a living through human creativity. Researchers have also come up with 3 possible future scenarios and expressed their opinions on it; An explosion of AI-assisted innovation, Machines monopolize creativity and “Human-made” commands a premium. Researchers concluded the paper by advising people that Creative work is something that brings meaning and emotion to the lives of humans and hence should carefully decide how much importance we wish to assign to the role of human and AI in each situation.

**Dirk Van Damme (2016)** have discussed about the potential of digital technologies in education today increasingly place the issue as part of a more comprehensive approach to innovation in education. He have mentioned that education plays an important role in knowing to efficiently utilize the technology. The quality of schools’ educational resources, including ICT and connectivity, has increased greatly in recent years. However, international surveys have found that digital technologies have not yet been fully integrated in teaching and learning. Teachers do not feel sufficiently skilled to use ICT effectively. The research concludes by discussing the positive effects of using technology in education and how it is beneficial for both teachers as well as students.

This research was conducted by **Joseph Firth, John Torous (2019)** where they have examined on recent psychological, psychiatric and neuroimaging findings to examine several key hypotheses on how the Internet may be changing our cognition. The authors have concluded that use of internet substantially reduces the creativity of students if not used in a limit.

**Annita Ventouris, Constantina Panourgia, Sarah Hodge (2021)** have conducted an exploratory, qualitative research to investigate teachers’ views on how use of technology affects CYP's emotions and behaviors. The objective of the research is to understand the teacher perspective of using technology to know about practical issues surrounding the use of technology in education. The results suggested teachers recognized the importance of technology as a learning and teaching tool, as long as it is used in a balanced way; However, the research held conflicting opinions on issues related to the impact of technology on socialization processes, self-esteem, and the demonstration of specific behaviors like social isolation. Researchers concluded the study by suggesting that Teachers should address the strategies for using technology effectively in the classroom to students and for supporting their mental health and wellbeing, which, now more than ever, should be at the forefront of whole-school approaches.

**Wassnaa Al-Mawee, Keneth Morgan Kwayu, Tasnim Gharaibeh (2021)** researched about the students' experiences, perspectives, and preferences on distant as its fully based on technology. Students reported negative experiences of distance learning such as lack of social interaction and positive experiences such as time and location flexibility. The researchers found that assignments and projects were no longer tougher and challenging for the students as there are many AI such as chat GPT. From the students perspective it is the capacity to adjust to school and life, acceptance of personal responsibility, connection with peers, and time management skills are the most factors that influenced the student's experience. The researchers concluded from the perspective of teachers that more group discussion, collaborative projects and group presentations.

The study by **Charles nechtem associates (2021)** discussed about the negative and positive impacts of the technology on the children in their social relationships, social skills, health problems, and the ability to focus. Since its difficult for the guardians to always monitor the children, the study also has discussed about the dangers of browsing. The study also examines the positive impacts of technology on the children. Internet is an ocean of information providing access to great deal of information and resources which paves way for research and creative thinking, exploring interests, bonding and community and self-expression.

This study by **Tisha Farhana (2021)** have researched about digital platforms positive and negative impacts. Digital platforms have facilitated a medium for developing content-covered discussion groups within the classroom Young People can express their thoughts on social media and find e-commerce marketing channels through social media platforms. In addition, social media has also led more Youth to active participation in the country's development. Social media has helped to build networks. It also has negative impacts on youth. They have stopped interacting face-face, lost human connections, etc. the author concluded by saying even though there are negative effects of technology on youth, the opportunities and possibilities social media brought for our young generation are beyond description.

The study by **Robotical Contributor (2023)** delve into the ways in which technology positively influences children's creativity, highlighting the benefits it brings to their overall development. The writer talks about the gamification elements used by the apps to stimulate children curiosity and motivation. Technology has also allowed the children to build and program their own robots. The author has also mentioned that Technology has revolutionized the realm of creative expression, providing children with powerful digital tools to unleash their imagination and creativity. Technology has opened up to many exciting possibilities such as music creation, storytelling, digital art, video editing & GIF creation. The writer concludes with an important note that it is always important to find a balance between screen time and real-world experiences, ensuring children have opportunities for hands-on activities and social interactions.

This study by **Genomind 360 learning centre (2021)** discusses about the mental health of the children due to increased screen time. The study discuss the positive impacts of social media such as Organizing or participating in a movement for causes they care about, Expressing creativity in a variety of forms, Expanding friend groups to include others with similar interests or different points of view etc. It also discusses about negative impacts such as bullying, depression, and anxiety.

**Siamack Zahedi (2023)** discusses about the positive impacts of technology and how it made easier for students as well as teachers. students with vision or hearing impairments can now easily access and participate in class discussions and activities with use of text to speech software's. Technology has also made it easier for teachers to collaborate and share resources with their colleagues and students. the study further discusses that we should spend some time teaching foundational academics, but this can no longer be treated as an END in the learning journey at school. Instead, such knowledge and skills should be treated as a MEANS or tools that student are trained to utilize and apply towards developing competencies that actually matter for their success in the 21st century. Instead of teaching students to compete with AI, we should teach them to leverage the capabilities of AI and redirect their cognitive bandwidth more strategically towards the highest order thinking processes and creative problem solving that is only capable by the human mind

**Jennifer L. Harris, Mohammed T. Al-Bataineh, Adel Al-Bataineh (2016)** conducted research study on impact of 1:1 technology on 4th grade students to find whether it truly impacts the academic achievement of students and their motivation to study. this research us important as there is a technology shift in all the schools in this 21st century. The results of the test conducted by the researchers does not support hypothesis that technology would increase student

academic achievement and motivation. Hence, the study concluded by saying technology could be a factor in student academic achievement and motivation and may be the catalyst needed but cannot simply be a replacement of best practices in teaching and learning for students. authors suggested that teachers must continue to be learners themselves to produce the best teaching methods and introduce technology that works for their classroom and the specific needs of their students.

**Abid Haleem , Mohd Javaid , Mohd Asim Qadri , Rajiv Suman (2022)** have studied about the need for digital technologies in education and discusses major applications and challenges in education. After covid role of technology in education has been substantially increased. It is not only a knowledge provider but also a co-creator of information, a mentor, and an assessor. Technology in education can help students to prepare for lifelong learning and hence they must be taught how to use technology responsibly and strategically, which can help them make decisions and develop self-discipline.

### **OBJECTIVES OF THE STUDY**

1. To study the influence of the internet and its importance in a student's life.
2. To examine whether student's creativity has declined due to excessive usage of internet
3. To analyze the opinions of the students regarding usage of internet
4. To evaluate the effect of internet on student's creativity and knowledge
5. To suggest ways in effectively using internet among the students community.

### **DATA COLLECTION:**

#### **PRIMARY SOURCES**

The main primary resource of data for this research work is responses collected through a questionnaire administered to the respondents. The primary data is collected in three phases:

1. During the first phase, the purpose and objective of the study are explained to the respondents, and they are kindly requested to thoroughly review the provided schedule.
2. In the second phase, any doubts the respondents may have about the content of the schedule are clarified.
3. Lastly, in the third phase, the filled-in schedules are collected from the respondents through further discussions aimed at obtaining additional information.

#### **SECONDARY SOURCE**

The secondary source of data are collected from the magazines, journals, bulletins, website and annual report, etc., published by organization.

In addition to this several structured interviews, have also been conducted with experts on the subject and also a number of persons who are connected in one way or other, either directly or indirectly to know about the advent of technology on creativity and learning

### **SAMPLE FRAME:**

The sample size was put to 50 chosen from various functional areas of the organization. Stratified sampling system and simple random sampling has been followed to know about the advent of technology on creativity and learning.

### **TOOLS FOR DATA COLLECTION:**

#### **Questionnaire**

For our project purpose we have formed a structured questionnaire

**Interviews**

At the time of our survey, we had a personal meeting with Students, Teachers and Guardians.

**SCOPE OF THE STUDY:**

The study is confined to the Bangalore Urban area.

**DATA ANALYSIS:**

Both quantitative and qualitative approaches to analysis should be used. For the purpose of assessing the survey and evaluation of data, statistical methods should be used. Utilize a questionnaire in order to get qualitative questionnaire data.

**DEMOGRAPHIC FACTORS:**

<b>FREQUENCY TABLE</b>			
<b>Particulars</b>		<b>Frequency</b>	<b>percentage</b>
<b>Age</b>	Under 18	0	0%
	18-20	7	14%
	21-25	27	54%
	26-30	6	12%
	31 and above	10	20%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Gender</b>	Male	18	36%
	Female	32	64%
	Prefer not to say	0	0%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Educational level</b>	High School	0	0%
	Some College/Associate Degree	1	2%
	Bachelor's Degree	23	46%
	Master's Degree	22	44%
	Doctorate/Ph.D.	3	6%
	Others (Diploma)	1	2%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Occupation</b>	Student	26	52%
	Teacher	14	28%
	Guardian	10	20%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Grade level (only for students and teachers)</b>	First year	11	22%
	Second year	2	4%
	Third year	4	8%
	Fourth year & graduate student	23	46%



	Not applicable (Guardians)	10	20%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Teaching experience</b>	None	18	36%
	1-5 years	24	48%
	6-10 years	2	4%
	11-15 years	4	8%
	16-20 years	1	2%
	20 years and above	1	2%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Technological Proficiency</b>	Novice	5	10%
	Intermediate	27	54%
	Advanced	14	28%
	Expert	4	8%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Geographical Location</b>	Urban	39	78%
	Suburban	8	16%
	Rural	3	6%
	<b>Total</b>	<b>50</b>	<b>100%</b>
<b>Income Level</b>	None	10	20%
	Below ₹30,000	6	12%
	₹30,000 - ₹60,000	13	26%
	₹60,001 - ₹100,000	3	6%
	₹100,00 and above	8	16%
	Prefer not to say	10	20%
	<b>Total</b>	<b>50</b>	<b>100%</b>

The statistics shown in the above frequency table are from a research on Advent of technology on creativity and learning as perceived by students, teachers and guardians. The following is an interpretation of the findings:

**Age:** The majority of the participants (54%) in the research are between the age of 21-25, suggesting that the emphasis of the study is mostly on young adults or persons past their adolescent years.

**Gender:** The research had a greater representation of female participants (64%) compared to Males (36%)

**Educational level:** The majority of participants have a Bachelor's degree (46%) and Master's degree (44%), while a very few participants have diploma (2%) and associate degree (2%)

**Occupation:** The participants are majority from student background (52%), then teachers (28%) and guardians (20%)

**Grade level:** Among students and teachers, the majority of the participants are students who are fourth year & graduate students or teachers who teach fourth year (46%)

**Teaching Experience:** Majority of the participants have teaching experience of 1-5 years (48%)

**Technological proficiency:** Majority of the participants have intermediate (54%) knowledge of technical aspects while only 8% of participants are technology experts.

**Geographical location:** The majority of the participants live in urban areas (78%) implying that they are well exposed to internet while a very few participants live in rural areas (6%).

**Income level:** Majority of the participants are earning between Rs 30,000-60,000 per month (26%)

In summary, the research on Advent of technology on creativity and learning as perceived by students, teachers and guardians focuses on young individuals (between 21-25 years) mostly female, with different educational backgrounds, including students, teachers and Guardians. The majority of participants are student and teachers studying / teaching fourth year & graduate. It is focused on people mainly living in urban areas earning between Rs. 30,000- 60,000 per month who have intermediate technological proficiency.

## ANALYSIS:

### 1. Impact of integration of technology in education on Overall Learning Experience

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	3	6%
2	Disagree	3	6%
3	Neutral	5	10%
4	Agree	16	32%
5	Strongly Agree	23	46%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

The results show that the majority of participants strongly agree (46%) that using technology in the classroom improves student learning overall. Additionally, 32% participants also agree with the assertion. Only 12% of the participants disagree to the statement whereas 10% remain neutral regarding the assertion. High degree of agreement among participants imply that there is a need for integration of technology in education system to improve the overall learning experience of the students.

### 2. Technology fosters a more creative and innovative learning environment

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	4	8%
2	Disagree	1	2%
3	Neutral	3	6%
4	Agree	23	46%
5	Strongly Agree	19	38%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

According to the data, the majority of respondents (46%) agree that adopting technology encourages innovation and creativity in the classroom. 38% more people approve with the statement. While 6% of participants have no perspective on the remark, just 2% of participants disagree with it. There is broad agreement among participants that technology demands creativity and innovation.

### 3. The use of technology positively influences student's engagement in educational activities

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	1	2%
2	Disagree	5	10%
3	Neutral	15	30%
4	Agree	15	30%
5	Strongly Agree	14	28%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

The information reflects the participants' opinions regarding the importance for learners using technology to participate in educational activities. A significant number of participants 58% agreed that technology keeps the students positively engaged in educational activities. ( 28% strongly agreed, 30% agreed). In the meantime, 30% of participants expressed neutral toward the statement, while 12% of participants disagreed. It demonstrates a favorable outlook on learning activities. It implies that technology is needed to keep students actively engage in educational activities.

### 4. Impact of technology in making complex concepts more understandable for learners.

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	3	6%
2	Disagree	3	6%
3	Neutral	2	4%
4	Agree	24	48%
5	Strongly Agree	18	36%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

According to the findings, a sizeable percentage of respondents, including 48% of those who agree and 36% of those who strongly agree have reported that the youngsters understand the concept better. In the meantime, 6% of the respondents disagreed while 4% of the respondents reported neutral. This results that the youngsters understands the lessons better with the help of technology which increases the knowledge on the particular area and helps them how to apply in various situations.

### 5. Incorporating technology in education is essential for preparing students for the future.

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	2	4%
2	Disagree	5	10%
3	Neutral	6	12%
4	Agree	19	38%
5	Strongly Agree	18	36%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

The information reflects that the participant opinion regarding the importance of incorporating technology in education. A significant number of participants 38% of the participants partly agreed and 36% of the participants strongly agreed to the statement. while 4% of the participants strongly disagreed and 10% of the participants partly disagreed to the



statement. This results that incorporating technology is necessary. It helps the youngsters to compete with the advancement of learnings in today's generation.

#### 6. Technology enhances communication and collaboration among students, teachers, and guardians.

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	2	4%
2	Disagree	7	14%
3	Neutral	8	16%
4	Agree	16	32%
5	Strongly Agree	17	34%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

From the results obtained, majority of the participants (66%) agree that technology plays a vital role in collaboration among students, teachers and guardians. While 16% of the participants remain neutral about the statement. 18% of the participants thinks that technology plays no role in enhancing collaboration. This implies that technology builds up a healthy relationship among students, teachers and guardians and hence technology is needed to build up communication between them.

#### 7. Positive contribution of technology to students' critical thinking skills.

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	5	10%
2	Disagree	6	12%
3	Neutral	13	26%
4	Agree	18	36%
5	Strongly Agree	8	16%
	<b>Total</b>	<b>50</b>	<b>100%</b>

#### Interpretation;

From the results above, 36% of participants agree that technology positively contributes to student's critical thinking skills, but only 16% of the participants strongly agree to it. 26% of the participants remain neutral about the statement. 22% of the participants states that technology does not positively contributes to the critical thinking skills of students. This implies that technology is needed to develop critical thinking of students but it might not be a necessary tool to improve critical thinking skills. There are many hands-on activities which can develop critical skills of students. Since 26% of participants remain neutral about the statements there still remains a little amount of dilemma about the positive contribution of technology in developing critical skills, but majority of people (52%) agree to the statement.

#### 8. The advent of technology allows for more personalized and adaptive learning experiences.

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	4	8%
2	Disagree	3	6%
3	Neutral	3	6%
4	Agree	23	46%
5	Strongly Agree	17	34%
	<b>Total</b>	<b>50</b>	<b>100%</b>

**Interpretation;**

From the results above, majority of the participants 80% of the people agree that advent of technology allows for more personalized and adaptive learning experience. Only 14% of participants disagree to the statement. While 6% remain neutral about it. It strongly implies that technology is useful in a customized learning experience for people. It allows personalized and adaptive learning for people. Technology plays a vital role in people's learning at their own pace.

**9. Having technology as a valuable tool for addressing diverse learning styles and preferences**

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	4	8%
2	Disagree	2	4%
3	Neutral	7	14%
4	Agree	22	44%
5	Strongly Agree	15	30%
	<b>Total</b>	<b>50</b>	<b>100%</b>

**Interpretation;**

From the results above, 30% of the participants strongly agree that technologies acts as a valuable tool for addressing diverse learning styles and preferences. 44% of the participants also agree to that statement. 12% of the participants disagree to the statement. It implies that technology is important in helping people to learn in their own diverse learning style and preferences

**10. Overall, there is a positive impact of technology on education and is beneficial.**

S.No.	Responses	Frequency	Percentage
1	Strongly disagree	3	6%
2	Disagree	4	8%
3	Neutral	7	14%
4	Agree	22	44%
5	Strongly Agree	14	28%
	<b>Total</b>	<b>50</b>	<b>100%</b>

**Interpretation;**

From the results, it implies opinion of the participants on overall impact of technology and its benefits. 44% of the participants agree that technology has positive impact on education in overall and its beneficial to education. While only 28% of the strongly agree to the statement. 14% of them remains neutral whereas a very few participants of 14% disagree to the statement. So, it implies that from this research on overall participants feels that technology is a must in education as it contributes positively on the students development and learning process. Technology is beneficial in education system.

**FINDINGS:**

**Access to Data :** Technology makes a great deal of information accessible to everyone, improving students capacity for learning and encouraging creativity.

**Interactive Learning:** Students have invested in more dynamic learning experiences using interactive tools such as educational applications, tests, and digital platforms, which promote critical thinking and creativity.

**Different Learning Methods:**Technology allows customised learning experiences that meet different types of learning and styles, which may promote understanding and innovation.

**The collaborative Opportunities:** Students are able to collaborate into a team, share ideas, and develop to provide creative approaches when they're granted accessibility to digital technologies which encourage work together.

**Issues about Distractions:** A number of parents and educators express issues regarding how technology may occupy learners' attention and cause distractions.

**The digital Communication:** For optimal use of technology for educational purposes, teachers and pupils both need to have digital literacy skills.

## SUGGESTIONS;

1. **Public education technology initiatives:** There should be an initiative to bring technology into education system in an optimum use in government schools as well as private schools.
2. **Parents intervention:** parents should closely watch out students internet and technology usage in order to ensure that technology is being used by students in a right way.
3. **Technology Usage awareness program:** awareness programs should be conducted to let students know how to use technology efficiency in order to support their learning and development process. More insights new technology should be given to students and also the right way of usage .
4. **Technology based projects:** more projects should be given in school which is technical based. So, this allows students to learn more about the topic

## CONCLUSION

The result is that technology may greatly improve learning results when it is properly incorporated into education with an emphasis on fostering creativity, critical thinking, and problem-solving skills.

It has transformed information availability, enabled personalised and interactive learning, and encouraged student cooperation. But among teachers and parents, worries about possible distractions and the necessity of learning digital literacy skills continue to be common.

The findings reveals that the development of technology had a variety of effects on learning and creativity.

By putting these recommendations into practice, educational institutions can take use of technology's benefits while addressing issues and guaranteeing a more all-encompassing approach to learning that encourages students' creativity and critical thinking with the help of instructors and parents.

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