A Study on Analysing the Effects of Modern Technology on the Educational System and Student Adoption Rates.

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ABSTRACT

Modern technology in education system is evolved in using advance technology with the help of artificial intelligence it breaks down the barriers, geographical barriers enabling augmented reality and adoptive learning platforms by the help of technology students can seek information anytime, anywhere as the technology is well diverse in this era with new features and updates in learning ability of the student. with the help of modern technology, the internet is something more with the help of mobile phones you can access all the data from the world which we haven't learnt with the help of technology it will be significantly accesses and moderate, expand through wide area of connectivity and learning technology is a gift to this generation, by using this modern technology students can retain and experience better concepts

Keywords: Education, Modern Technology

Introduction

The internet has grown in importance by many folds, over the process of decade. Its importance in the education world can now never be undermined. Despite the chances of fraud and drawbacks, the use of the internet is like a blessing for students. Today, the internet is something that is present in almost everything we use. From television to gaming consoles, and our phones, the internet is literally everywhere. The use of the internet allows students to find amazing convenience, they can find various kinds of help, tutorials and other kinds of assisting material which could be used to academically improve and enhance their learning. we talk about digital and education, then the penetration of digital media within the education sector has now grown. This penetration has resulted in round the clock connectivity with students and different forums that are available for different kinds of assignments or help. As the power of digital increases, there are and there will be more applications that will assist students in development and learning role of technology in the field of education is four-fold: it is included as a part of the curriculum, as an instructional delivery system, as a means of aiding instructions and also as a tool to enhance the entire learning process. Thanks to technology. education has gone from passive and reactive to interactive and aggressive. Education is essential in corporate and academic settings. In the former, education or training is used to help workers do. things differently, then they did before. In the latter; education is geared towards creating curiosity in the minds of students. In either case, the use of technology can help students understand and retain concepts better

Review of Literature

R. Raja, P.C. Naga Subramani 2021 The 21st century is widely recognized as the technological era, with technology playing a significant role in our lives. It is seen as a basis of growth of an economy. An economy which is poor in technology. Can never grow in todays, scenario. This is because technology makes our work much easier less time consuming. The impact of technology can be felt in every possible field one such field is education. Technological advancement serves as a corner stone of economic growth

Wertis Tangguh 2019 Industry 4.o is significantly Impacts global society notably influencing education. This Impact necessitates a shift from traditional, in person classroom interaction to online, internet based. learning. This transformation extends to assessment methods, requiring to facilitate online and in person learning activities. The Educational System must adapt to this revolutionary era The United States, France, and Italy in industrial revolution development, investing in research, innovation, employment, education, training and infrastructure modernization Education is crucial to human progress in development

Anju Walia 2020, Education serves as the primary catalyst for political, economic, and social transformation due to its threefold function: (i) the conservative function of preserving valuable cultural heritage that endures and remains relevant; (ii) the transmissive function of conveying this preserved culture to succeeding generations; and (iii) the progressive function of disseminating new knowledge to foster dynamism and positive societal change. Outdated and obsolete elements must be discarded; myths, legends, philosophies, and moralities, once revered, must be reevaluated

for continued relevance. Only those racial experiences and achievements of lasting value should be preserved and transmitted. Given our era of rapid knowledge expansion

Raji suman 2022: Traditional class room instruction lacks the immediacy, rapid assessment capabilities, and technologies. The effectiveness these technologies provide are unmatched by traditional methods. Given the wide spread Adoption of smartphones and wireless devices, integrating technology into classroom is a logical and efficient step for schools and educational institution. The adaptability and non -disruptive nature of modern technology enhances learning appeal for today students. However initial implementation may present challenges, as some educators. Reservation about integrating technology, viewing it as a potential distraction

Objectives

- o To measure how widely technology is important among students

- o To know significance, increase in modern technology in education

- o To help better understand and expertise in concept with the help of technology

METHODOLOGY

This study will be based on analytical research model aiming to find out whether the modern technology in educational system has been evolved for over a period of time and these consecutive years the education has been vast and can be literate by every individual. using simple random sampling and quantitative approach, as the Primary data is collected through sending questionnaire and based on the respondents, responses. we will know how effectively the students are using the technology on their education and the intellectual data is focused on the students who are pursuing the education PUC, Under Graduate, Post Graduate

The primary data were collected through via self – designed questionnaire which are sent to the students with their response and base on the sample size only we can interpret data and the secondary data is collected through journals, web sites, and research paper. for the valid and reliable result simple random sampling method is applied drawing the users, upon the modern education system based on the technology, the questionnaire and sent through mobile phones, google forms, WhatsApp, and the data responses is collected and analysed and tested with appropriate statistical tool and techniques by using a blend of primary and secondary data upon the study it will be more convincing and satisfied with the data and result. the questionnaire includes a linear scale it will be determined through lines and patterns

Scope of the study

The scope of the study is confined to examine the modern technology in education and student adoption rates, among the college students, the study is also designed to ascertain the factor of encouraging the students to use A.I and other technology tool for better standard and improvement and the learning management system using facilitates new advance in class rooms, online classes, assignment management and student interaction by using this technology you can grasp the information anywhere at any time

Hypothesis of the study

Hypothesis 1: our hypothesis is a positive correlation between regular online learning platform usage and enhanced academic performance.

Hypothesis 2: our hypothesis is that increased teacher technology integration training will result in students perceiving a more positive impact of technology on educational quality.

Hypothesis 3: Our hypothesis is that, explicit instruction in digital literacy, including focus and self -regulation techniques will reduce students reported technology related distraction during learning

Hypothesis 4. A positive correlation is anticipated, between students perception of the crucial importance of critical thinking skills and their level of engagement in problem-solving activities

Hypothesis 5: We hypothesize a higher frequency of collaboration tools usage in online learning environments among female students compared to their male counter parts

Data collection methods

Primary data / sources

The study as used self - designed questionnaire to collect primary data of the study the data is collected means of the structured questionnaires electronically sent through mobile users of college students to different colleges to assemble the data and analyse mostly the data is collected though observation of send questionnaire through WhatsApp, mailed questionnaire and others etc

Statistical tools and techniques

The statistical tools are used for the study include descriptive statistics like mean and standard deviation like corelation, descriptive, cross tabs and chi square the data were collected were analyse based on using simple random method, cross tabs, and statistical tools like chi square

Discussion and analysis

descriptive statistics

Descriptive statistics is a set of methods used to describe and summarize the main features of a dataset. These methods provide a way to organize and present data in a meaningful way, allowing for easier interpretation and understanding

Metric	Technology Impact on Access	Technology Impact on Engagement	Biggest Challenges (Distractions)
COUNT (Number of Observation)	3	4	4
Mean (Average)	18.67	13.5	13.25
Standard Deviation (Std)	14.05	11	9.04
Min (Lowest Value)	4	4	6
Max (Highest Value)	32	24	25
25th Percentile (Q1)	12	4	6
Median (Q2-50th Percentile)	20	13	11
75th Percentile (Q3)	26	22.5	18.25

Sources: Primary data

- Technology 's impact on Access demonstrates significant variability among students, reflected in the high mean (18.67) and standard deviation (14.05) Student engagement with technology averages 13.5, although the substantial standard deviation (11) indicates a wide range of individual experiences. Distractions pose a considerable challenge, with an average score of 13.25 and a maximum reported score of 25, suggesting a significant impact on some students.

Chi square

The chi-square test is a statistical tool used to determine if there's a significant difference between observed data and expected data. In simpler terms, it helps figure out if some event occurred randomly or if there's a pattern to it

Category	Chi-Square	p-value	DOF	Interpretation
Technology Impact on Access	**0.557**	**0.757**	2	No significant difference between genders.
Technology Impact on Engagement	**1.484**	**0.686**	3	No significant difference between genders.
Biggest Challenges in Using Technology	**0.314**	**0.957**	3	No significant difference between genders.

Sources: Primary data

impact on Access The p value of 0.757 exceeds the significantly level of 0.05, indicating no statistically significant difference is improved educational Access between male and female participants. Therefore, we conclude that both genders experience comparable enhancements in Access to education through technology. Technology Impact on Engagement A p-value of 0.686, exceeding 0.05, reveals no significant difference in engagement levels between genders. Consequently, we. Conclude that both male and females report similar increases in engagement facilitated technology Principal challenges in technology utilization the p-value of 0.957 is greater than 0.05, signifying no statistically significant difference in the challenges encountered by males and females in summary, both genders report comparable difficulties, such as distraction, technical malfunctions, and in sufficient Access to internet net connectivity or devices

Correlation

Correlation is a statistically measure the expresses the extent to which two variables are linearly related, meaning how much they change together at a constant rate. It doesn't imply causation (just because two things are correlated doesn't mean one causes the other), but it can identify patterns and relationships.

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Technology's Influence on Access and Engagement → Correlation: 0.939. This indicates a strong positive correlation; improved technological access to education is associated with increased student engagement. The enhanced accessibility afforded by technology directly contributes to heightened student engagement learning Technology's influence on access and principal challenges (Distractions) -> Correlation:.0999. This extremely strong positive correlation reveals theta increased technological Access corresponds to a significance rise in distractions and challenges while technology enhance Access, it concurrently introduces challenges such as diminished focus and technical difficulties Technology's influence on Engagement and principal challenges (Distractions) -> Correlation:.0943. This strong positive correlation suggest. that greater engagement with technology is linked to an increase in distractions. Students leveraging technology for learning may experience difficulties maintain. focus due to digital distractions.

- ▪ Positive correlation: There is a positive correlation between the number of hours you study and your grades

- ▪ Negative correlation: There is a negative correlation between the price of a product and the quantity demanded.

- ▪ **No correlation:** There is no correlation between the number of hours you sleep and your shoe size.

Correlation Analysis of Key Education Variables
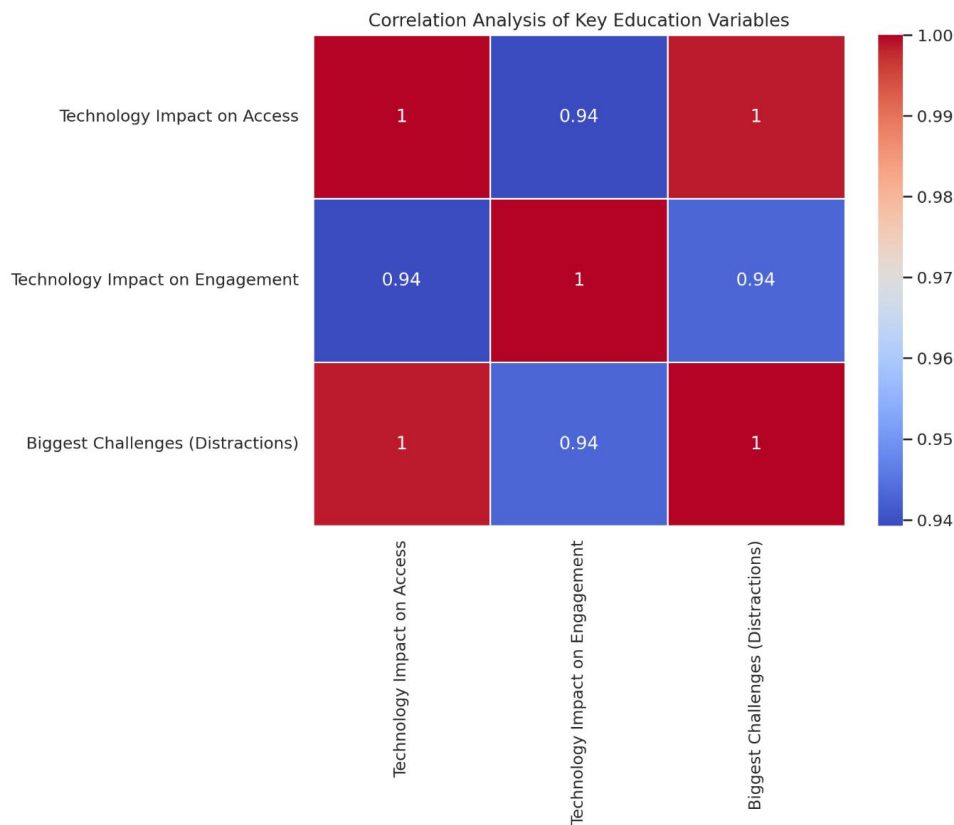
Cross tabs

Cross tabs, short for cross-tabulation, are a way to summarize and analyse the relationship between two or more categorical variables. They're a fundamental mental tool in statistics and data analysis, especially when dealing with survey data or situations where you want to see how different groups relate to each other

Category	Male	Female	Total
Moderately increased Access	19	13	32
Significantly increased Access	11	9	20
Had Little to No Impact	3	1	4

Sources: Primary data

Technological advancements resulted in a 2.8% increase in student Access to educational resources. A slightly higher positive impact was observed among males (57.6%) compared to females (52.1%) Conclusion: Technology demonstrably enhances educational Access for both genders

Limitation of the study

1) The samples chosen for the study may not be the representation of the whole population.

2) The respondents were reluctant and disinclined to spare their valuable time in answering the questionnaire

3) The study is based upon the primary data may be lengthy depending on the number of data available to analyse

Recommendation

- According to the study my recommendation for further students while preparing a paper here are some recommended features. Prioritize on longitudinal studies thoroughly assess the long- term effect of technology

- The integration on student learning and development. Use qualitative research methodology including case studies and to be employed to gain understanding of the complexity between technology

- Educators and students within educational environment should design the and combining quantitative and qualitative data will provide more holistic understandings

- The cross – cultural research is to investigate the adoption and impact of educational technology across diverse national and cultural context

- Use A.I for comprehensive investigation into long-term impact of A.I – driven technology and personalized learning platforms on student motivation, academic achievement and critical thinking abilities are required

- VR/AR is used in education sector this technology is diverse into learning environment and the accessibility of these technologies are yet to be conducted

Findings

correlation (0.999) was also found between technological access and digital distraction Modern technology has enhanced education by making it more interactive and engaging through various multi-media content, simulation. Technology has significantly broadened access to educational resources, making learning possible anytime and anywhere. Online learning platforms and digital tools have democratized education, enabling access for students in diverse location and circumstances. according to the study the internet has a vast source of information materials and offering up-to-date knowledge and digital tools promote collaboration and communication.

Increased digital distraction negatively affects students focus and academics performance the equitable access remains a concern, with some students facing limitation in connectivity and device availability. No significant gender difference was found in terms of technology's impact on education male students are reported a slightly increase in access to educational resources compared to female students (57

.6% vs 52.1%) A strong positive corelation (0.939) exists between improved technological access increased student engagement .an extremely strong

Conclusion

Advances in technology have largely impacted the education sector in 2025, bringing with them many benefits and possibilities. Better accessibility, interaction, customized learning experience are made available to learners of all ages and levels in addition, teachers are equipped with creative tools and resources to maximize teaching practices and facilitate student achievement. Yet, technology integration in education also comes with challenges such as providing equitable access, meeting data privacy needs, and maintaining the critical human touch in learning process. Conclusion, the future of education depends on using technology effectively and responsibly to foster a vibrant and inclusive learning community that prepares students well for the challenges and opportunities of the 21st century

Reference

Anju Walia. (2020).? Traditional Education versus Modern Education: A Reference to Indian Education System, Volume-3, Issue-1 https://doi.org/10.1017/s0140525x0999152x

Raja, R., & Naga Subramani, P. C. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research*, S33–S35. https://doi.org/10.21839/jaar.2018.v3is1.165

Raji suman. (2022). Understanding the role of digital technologies in education. Volume 3 2022 https://doi.org/10.1016/j.susoc.2022.05.004

Tangguh, W., Rahmat, A., & Husain, R. (2021). Modern education in Revolution 4.0. *International Journal of Innovations in Engineering Research and Technology*, *8*(1), 1–5. https://repo.ijiert.org/index.php/ijiert/article/view/2