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Review Article

Impact of Artificial Intelligence on Adolescents

Mr. Vishal Dogra *[1] and Mr. Vishal Kumar[2]

Abstract:

Background: In the present world of modern technology, artificial intelligence (A.I) is playing very significant and unavoidable role, which is particularly dominated among the adolescents who are using it for knowledge, entertainment and other related purposes effectively in their daily lives. Artificial intelligence is making its valuable place as well space in the modern world and causing positive as well negative impacts on the adolescents, which is being studied by the following research.

Objective: This study attempts to assess the impact & various underlying factors of the artificial intelligence on adolescents, who are studying at the school level from (Akhnoor), Jammu District.

Method: The study comprises the sample of 50 adolescents (25 males & 25 females), & both groups belongs from the rural area. The subjects who were selected for the present study were having the age groups from (17-19) years and were selected with the help of random sampling technique. For the assessment & data collection, online questionnaire regarding the utilisation of artificial intelligence was used via. *https://saferinternet4kids.gr/forms/ai_en_questionnaire/.*

Results: There is a significant gender difference found between the adolescents who are assessed over the use of artificial intelligence underlying various reasons with respect to different types of situations.

Keyword: Artificial intelligence, adolescents, Assessment

1. Introduction

Modern youth are surrounded by artificial intelligence (AI) as they grow up. In addition to their parents or other primary caregivers, technology plays a significant role in shaping their morals, values, and thought processes. To put it simply, artificial intelligence (AI) is pervasive. AI encompasses more than just autonomous vehicles and robotics. It can be found on social media, the internet, smart gadgets, and personal virtual assistants commonly called as Alexa and Siri. The major devastating effect that artificial intelligence (AI) poses is present among the mostly adhered & global myths. After all, there are far too many films that illustrate the potential pitfalls of human dependence on technology. But if AI is developed with this goal in mind, it possess the strong value to become a vital instrument for advancing society present in the prevalent day.Both older and younger generations make good use of AI.It plays a part in managing marketing campaigns, developing corporate procedures, and, most frequently, suggesting the best posts or videos to watch on social media. The younger generation of today, sometimes referred to as Gen Z and Gen Alpha, has grown up with technology. It's likely that they are unaware of the existence of a typewriter or beeper. AI may not be known to them, yet it is all around them. (Andrew, *et al*, 2023).

Adults manage their daily routines and duties with a variety of tools and equipment. Therefore, it should come as no surprise that young people are familiar with using these gadgets and anticipate doing so. The ubiquitous usage of smartphones, tablets, and personal computers has aided in the familiarization of children and teenagers with technology, particularly artificial intelligence (AI). Weak AI is the most prevalent kind of artificial intelligence that exists today, according to scientists.

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Authors Details

[1]Mr. Vishal Dogra
Research Scholar, Manav Rachna International University Jammu & Kashmir, India

[2] Mr. Vishal Kumar
Lab attendant, APS Rakhmuthi, Jammu & Kashmir, India

Corresponding Author

***Mr. Vishal Dogra**
Research Scholar, Manav Rachna International University, Jammu & Kashmir, India

This artificial intelligence is present in response prediction algorithms. The most excellent illustration of these algorithms may be seen on social media platforms that suggest movies or advertisements based on the user's preferences. As a result, the AI program tries to suggest more adorable dog videos for kids or teens to watch later when they're busy looking for them. AI is not just used in social media but also in smart home systems that employ Siri or Alexa. When you give a vocal command, the AI interprets it and obeys. Ask an inquiry, and the AI will respond based on trends and information gleaned from its usage. (Rowe, J. and Lester, J., 2020). The best place for young people to use artificial intelligence is in an educational setting. Many educational institutions have already begun implementing a number of AI-based technology innovations. AI can assist in creating individualized learning resources for students in the classroom that will improve their progress. By using this technology, educational institutions can ensure that no student is left behind and can offer each student better services. The help provided by the AI, leads to the virtual summer camps that are particularly developing the trend present out of the classroom. Children and teenagers can engage in a variety of summertime activities. These camps offer a wide range of activities to suit interests in robotics, STEM, and the arts. AI also has a beneficial effect on parents and children. For children with special needs, artificial intelligence can be utilized to create an appropriate assessment. (Rowe, J. and Lester, J., 2020). AI has the potential to replace costly diagnostics and consultations by offering a more economical yet effective means of accurately diagnosing learning disabilities. A timely diagnosis will enable the child to manage their disability and go on to have a fulfilling adult life. There are numerous applications for artificial intelligence. Artificial Intelligence (AI) can be used for good or bad since it is manufactured. Because AI is so flexible, it can be used for both educational and recreational purposes, which is particularly beneficial for the younger generation. It must be highlighted that adolescents are severely is exposed to the improper use of their data. Best way for stopping negative effects of technology is to hover an eye on their usage and teach them how to use AI appropriately.(Howard, Meehan & Parnell, 2018). AI-driven learning platforms and tools have expanded learning opportunities. Virtual assistants, adaptive learning platforms, and intelligent tutoring systems all offer individualized learning experiences catered to the requirements and learning preferences of each adolescent. Artificial intelligence algorithms evaluate pupils' progress; spot knowledge gaps, and recommend specific resources for development. This personalized approach to education increases student engagement, improves academic performance, and gets them ready for a future dominated by technology. Teenagers who are interested in technology will have more career options as AI develops. There is a great deal of demand in fields like AI development, robotics, data science, and machine learning. Teens can investigate these new areas, acquire useful skills, and go after professions that weren't as well-known in the past. Teenagers can be innovators and reshape technology with the help of AI. (Schiaffino, Garcia, & Amandi, 2008). Even though artificial intelligence has many advantages, teens may have privacy and ethical concerns. The bulk of personal data are combined and gets analysed via AI systems, which can lead to issues related to the security and privacy of data. Teens must make sure that appropriate and moral procedures are followed and that they are informed about how their data is being used. To overcome these obstacles, it is essential to teach teenagers about the moral ramifications of artificial intelligence and to encourage digital citizenship.Teenagers' online experiences are greatly influenced by AI algorithms, especially on social media sites. AI- powered algorithms use user preferences and behavior to curate content, recommend friends, and personalize ads. Although this can improve user experiences, it can also reinforce biases, lead to filter bubbles, and have negative effects on mental health. In order to lessen any potential bad effects, teenagers must be critical users of AI-curated content and cultivate positive relationships on social media. (Cohen, 1960). The future labor force and employment market are impacted by the incorporation of AI into industries. Certain jobs might be mechanized, and other jobs might develop. Adolescents must acquire a skill set that works with AI technologies and puts them in a position to succeed in an evolving labor market. In a world dominated by artificial intelligence, soft skills like creativity, critical thinking, emotional intelligence, and problem solving will be extremely valuable. It is imperative for the future careers of teenagers to cultivate a growth mindset and enable them to adjust to technological advancements. (Xie, *et al*, 2022). Teenagers are profoundly impacted by artificial intelligence, which offers both unique challenges and exciting opportunities. Teenagers who embrace AI's potential can discover new career options, have better educational opportunities, and actively participate in influencing the future. However, it is also critical to address ethical issues, comprehend how AI affects social media, and get ready for the evolving nature of the labor market. Teens can take full advantage of AI's advantages and create prosperous futures in the digital era by carefully navigating these opportunities and challenges. That is why abounding all such reasons, the current study is intending to deeply work out the hidden aspects related to the artificial intelligence.

2. Literature Review

Andrew, *et al* (2023) had done the research on the importance of Artificial intelligence in health care settings focusing over the different types of medical practicing methods as like MRI, ECG, EEG, etc. considering the various aspects of the medical domains. The study focuses over the utilisation and practicalities of the artificial intelligence methods for the adolescents in medical settings. Ahmad, *et al* (2023) this study demonstrated the need for important preventive steps prior to integrating AI technology into the classroom. It would be like calling in the devils to accept AI without addressing the main concerns raised by humans. To solve the problem, it is advised to concentrate on creating, implementing, and utilizing AI for education in a way that makes sense. Brisson, *et al* (2023) had demonstrated how AI systems' interactive answer generation ignores user demographics, such as age. It might be required to design and

train AI to be adolescent- competent in its interactions with youth in order to protect the wellbeing of teenagers. On the other hand, without empirical study on adolescents' use of AI for health objectives, developing pertinent regulations and tailoring AI programs will be extremely difficult. Researchers must thus look into how teens use AI and how that affects their health outcomes as soon as possible. Giovanelli, *et al* (2023) had conducted the research and demonstrated how artificial intelligence significantly influenced the assessment, modelling, and creation of new treatments as well as the optimization of existing ones for teenage involvement. The ethical application of this technology is a prerequisite for the operationalization of this framework with young people. We have discussed the possible drawbacks of AI, paying special attention to issues related to teenage privacy. There are many prospects for additional research in this area, especially considering how recently AI advancements have opened up these possibilities. Lai, *et al* (2023) had conducted a study on artificial intelligence and discovered that while there is no significant association with school support, there is a substantial negative correlation with social adaptability and a detrimental influence on teenagers' social adaptability when it comes to AIEd. AIEd may have an impact on social adaptation both directly and indirectly through family support. Xie, *et al* (2022) had carried out research demonstrating that among students in the AI group, a high degree of interpersonal and peer relationships can predict a high level of social adaptability, but a high degree of academic emotion and loneliness can indicate a low level of social adaptability. Overall, the results show that, in order to maximize the beneficial effects of AIEd and foster the growth of social adaptability, interventions should be tailored to the relationship between these psychosocial factors and social adaptability.

Rowe and Lester (2020) had mentioned that a number of difficulties, such as those relating to privacy, ethics, encoded bias, and integration with clinical workflows and teenage lives, are being brought forth by AI-driven health technology. The usefulness of AI technologies for user modeling and adaptive coaching is demonstrated through a number of empirical studies that highlight the technology' potential for usage in adolescent health. A brief discussion of potential future research topics for this field—, which is well positioned to use AI to enhance adolescent health and well-being—concludes the research.

3. Materials and Method

The impact of artificial intelligence on adolescents is multifaceted. While AI offers educational tools and potential career opportunities, it also raises concerns about job displacement, privacy, and the need for ethical AI education to ensure responsible use. Balancing the benefits and challenges is crucial for a positive influence on adolescents' development. Studying artificial intelligence (AI) is essential for adolescents due to its increasing role in their lives. It helps them understand technology's impact, fosters digital literacy, and prepares them for AI-driven future careers. Additionally, awareness of AI's ethical implications and societal effects empowers adolescents to navigate responsibly in a tech-driven world.

Studying artificial intelligence (AI) is crucial for adolescents because; AI is shaping various industries, and understanding it opens up potential career paths. Developing AI skills can enhance job opportunities in fields like technology, healthcare, and finance. AI literacy is becoming a fundamental aspect of digital literacy. Understanding AI concepts enables adolescents to engage with and critically evaluate technology, making them informed digital citizens. It involves solving complex problems. Studying it encourages adolescents to generate some noble ideas & higher order thinking patterns and underlying problem-solving capabilities, which are valuable across various disciplines. AI raises ethical concerns. Adolescents need to learn about responsible AI use, privacy implications, and the ethical considerations surrounding AI technologies to make informed decisions. By studying AI, adolescents can explore creative applications and develop innovative solutions to real-world problems, fostering a mind-set of continuous learning and adaptability. AI has a global impact on society. Adolescents studying AI gain insights into its societal implications, contributing to their ability to engage in discussions about the responsible and equitable use of technology on a broader scale. AI-powered educational tools are becoming prevalent. Studying AI allows adolescents to benefit from advanced learning technologies that personalize educational experiences, adapting to individual needs and styles. Therefore, studying artificial intelligence equips adolescents with the skills, knowledge, and mind-set needed to navigate a technology-driven world, fostering both personal and societal growth.

4. Objectives

1. To assess the significant relationship between male and female adolescents over the use of Artificial intelligence.
2. To determine the significant gender differences between the adolescents over the use of Artificial intelligence.

Hypotheses

Hypothesis 1 (HA1): There will be a significant relationship between male and female adolescents over the use of Artificial intelligence.

Hypothesis 2 (HA2): There will be a significant gender difference exists between the adolescents over the use of Artificial intelligence.

Sample: For conducting the following study, population of adolescents will be selected amongst which the total (50) sample will be taken, which is further being classified into two groups: (25) Males & (25) Females for the conduction of study. In addition, the age range will be taken from (16-19) years respectively. The Data will be collected with the help of Random Sampling technique which serves all the participants an equal chance of being involved in the research to be undertaken.

Research design: The respective study will follows the Experimental research design, which is a method to find out the cause & effect relationship existing between the variables taken

for a particular study. As we have to focus over the relationship & impact of the artificial intelligence on the adolescents, which could be possible only with the help of experimental research design.

Tools: The data will be collected via filling the online questionnaire regarding the utilisation of artificial intelligence; retrieved from-
https:://saferinternet4kids.gr/forms/ai_en_questionnaire/

Statistical techniques: In order to conduct the respective study, t- test had been used preferably for showing the significant differences between the groups taken for study.

5. Results and Discussion

Groups	Males	Females
Mean	5.28	7.52
SD	1.93	1.96
SeM.	0.39	0.39
N	25	25

Table 1: Data combined for t-test

Inference of P value and its statistical significance:
Two-tailed P value equals 0.0002
It can be inferred that with the help of conventional criteria, this significant difference is considered to be extremely statistically significant.
Nominal value of confidence interval:
Mean of Males - Females equals -2.24
95% confidence interval limit of this significant difference exists From -3.35 to -1.13 Intermediate values particularly utilised under the calculations:
t = 4.0752
df = 48
Standard error of difference = 0.550

So, from the Table-1 it can be further stated that there is a positive & extreme significant difference exists between the two groups taken for the current study revealing that Female adolescents are more dependent on the utilisation of artificial intelligence than the male adolescents underlying the alternative reasons, can be determined from the difference in scores of both the groups taken for study.

6. Conclusion and Future Scope

While hovering the results of Table-1 it can be seen that there is a total and dominating impact of Artificial intelligence (AI) on adolescent's daily lives. They are using the techniques of AI on habitual tendencies and marking it as a total dependence. Moreover, considering the development and cognitive capacities, adolescents are losing it off day by day, as they are very dependent over the AI. Other researches had also been done over the impact of Artificial intelligence, which also had proved that AI shows the impact on adolescents and is affecting their lifestyle. Additionally, it has demonstrated how artificial intelligence significantly influenced the measurement, modeling, and creation of new interventions as well as the optimization of existing ones for teenage involvement. (Giovanelli, *et al*, 2022). There is a total & deep effect of AI on adolescents that could be both positive and negative. As like, dealing on the positive side, AI offers educational tools, personalized learning experiences, and opportunities for skill development. However, concerns include potential job displacement, privacy issues, and the effect of social media platforms algorithms on the psychological health. Balancing AI integration with ethical considerations is crucial for a healthy adolescent experience. AI is increasingly dominating adolescents' lives through social media algorithms, personalized content recommendations, and online learning platforms. (Andrew, *et al*, 2023). These technologies shape their online experiences, influencing what they see, learn, and engage with. While AI provides tailored content, there are concerns about its role in creating filter bubbles, amplifying echo chambers, and potentially contributing to addictive behaviors as it optimizes for user engagement. Striking a balance between the benefits and potential drawbacks of AI in adolescents' lives is essential. Our research is inlined with the existing researches and the hypotheses gets approved also which states that there is a significant relationship as well significant difference found between the groups taken for the conduction of particular study. Hence, the study is further proved & justified.

Further Suggestions for adolescent population regarding AI Critical Thinking Skills: It further encourages the development of critical thinking skills. Help adolescents understand the limitations and biases that may exist in AI systems.

Balance Technology Use: Promote a balanced use of technology. Encourage a mix of online and offline activities to foster a well-rounded lifestyle.

Privacy Awareness: Emphasize the basic need of the privacy. Discuss the potential risks associated with sharing personal information online and the need to be cautious when interacting with AI-driven platforms.

Digital Literacy: Advocate for digital literacy. Ensure adolescents have the necessary skills to navigate the digital landscape, including understanding how AI algorithms work.

Ethical Considerations: Discuss ethical considerations related to AI. Help them in understanding the ethical applications of using technology and how their choices can impact others.

Screen Time Management: Encourage healthy screen time management. Set limits on device usage to prevent excessive reliance on AI-driven platforms.

Diverse Interests: Encourage diverse interests beyond technology. Exposure to a variety of activities helps in developing a well-rounded skill set.

Open Communication: Keep communication channels open. Discuss their experiences with technology, answer questions, and address any concerns they may have.

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Author's Contributions: The author had completed all the important components and concepts related with the particular research and the co- author works over the collection of data accordingly.

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References

1. Ahmad, et al (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education. https://doi.org/10.1057/s41599-023-01787-8
2. Andrew, et al (2023). Artificial intelligence in adolescents mental health disorder diagnosis, prognosis, and treatment. https://doi.org/10.3389/fpubh.2023.1110088
3. Alfarsi, G. M. S., Omar, K. A. M., & Alsinani, M. J. (2017). A rule-based system for advising undergraduate students. Journal of Theoretical and Applied Information Technology, 95(11) Retrieved from http://www.jatit.org.
4. Baker, R. S. (2016). Stupid Tutoring Systems, Intelligent Humans. International Journal of Artificial Intelligence in Education, 26(2), 600–614. https://doi.org/10.1007/s40593-016- 0105-0.
5. Brisson, et al (2023). Investigating the Influence of Artificial Intelligence on Adolescent Health: An Urgent Call to Action. https://doi.org/10.1016/j.jadohealth.2023.06.002
6. Chaudhri, V. K., Cheng, B., Overtholtzer, A., Roschelle, J., Spaulding, A., Clark, P., … Gunning, D. (2013). Inquire biology: A textbook that answers questions. AI Magazine, 34(3), 55–55. https://doi.org/10.1609/aimag.v34i3.2486.
7. Cohen, J. (1960). A coefficient of agreement for nominal scales. Educational and Psychological Measurement, 20, 37–46. https://doi.org/10.1177/001316446002000104.
8. Duarte, M., Butz, B., Miller, S., & Mahalingam, A. (2008). An intelligent universal virtual laboratory (UVL). IEEE Transactions on Education, 51(1), 2–9. https://doi.org/10.1109/SSST.2002.1027009.
9. Feghali, T., Zbib, I., & Hallal, S. (2011). A web-based decision support tool for academic advising. Educational Technology and Society, 14(1), 82–94 https://www.learntechlib.org/p/52325/.
10. Hoffait, A.-S., & Schyns, M. (2017). Early detection of university students with potential difficulties. Decision Support Systems, 101, 1–11. https://doi.org/10.1016/j.dss.2017.05.003.
11. Giovanelli, et al (2022). Supporting Adolescent Engagement with Artificial Intelligence– Driven Digital Health Behavior Change Interventions. doi. 10.2196/40306
12. Howard, E., Meehan, M., & Parnell, A. (2018). Contrasting prediction methods for early warning systems at undergraduate level. Internet and Higher Education, 37, 66–75. https://doi.org/10.1016/j.iheduc.2018.02.001.
13. Jackson, M., & Cossitt, B. (2015). Is intelligent online tutoring software useful in refreshing financial accounting knowledge? Advances in Accounting Education: Teaching and Curriculum Innovations, 16, 1–19. https://doi.org/10.1108/S1085- 462220150000016001.
14. Lai, et al (2023). Influence of artificial intelligence in education on adolescents' social adaptability: The mediatory role of social support. doi: 10.1371/journal.pone.0283170.
15. Rowe, J. and Lester, J. (2020). Artificial Intelligence for Personalized Preventive Adolescent Healthcare. https://doi.org/10.1016/j.jadohealth.2020.02.021
16. Schiaffino, S., Garcia, P., & Amandi, A. (2008). eTeacher: Providing personalized assistance to e-learning students. Computers & Education, 51(4), 1744–1754. https://doi.org/10.1016/j.compedu.2008.05.008.
17. Xie, et al (2022). Influence of Artificial Intelligence in Education on Adolescents' Social Adaptability: A Machine Learning Study. doing: 10.3390/ijerph19137890
18. Zhang G. Z., Liang Miao., & Liang Z. B. A Longitudinal Study of the Influence of Parenting Style on Social Adjustment of Preschool Children: Mediating Effects of Self-control. Psychological Development and Education. 2021, 37 (6): 800–807. DOI:10.16187/j.cnki.issn1001-4918.2021.06.06.