AN IMPACT OF ARTIFICIAL INTELLIGENCE ON HUMAN BEHAVIOR - A DIGITAL CHALLENGE OF ONLINE COUNSELING

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ABSTRACT

It is estimated that 6%–7% of the population suffers from mental disorders. WHO reported that one in four families is likely to have at least one member with a behavioral or mental disorder? Post-pandemic, the world has experienced a huge surge in mental health issues. Unfortunately, not everyone is able to access the available mental health services due to constraints such as lack of financial assistance, living in remote areas, fear of being stigmatized and lack of awareness. The emergence of online mental health services could solve some of these problems, as these are easily accessible to people from anywhere, are cost effective and also reduce the fear of being judged or labeled. Lots of efforts are being made today to integrate artificial intelligence with the traditional form of psychotherapy. The role of chat bots for mental health services in the form of e-therapies has been found to be highly relevant and important.

Artificial intelligence (AI), known by some as the industrial revolution (IR) 4.0, is going to change not only the way we do things, how we relate to others, but also what we know about ourselves. This article will first examine what AI is, discuss its impact on human behavior as well as social, and economic changes on humankind in the 21st century.

The IR1.0, the IR of the 18th century, impelled a huge social change without directly complicating human relationships. Modern AI, however, has a tremendous impact on how we do things and also the ways we relate to one another. Facing this challenge, new principles of AI

bioethics must be considered and developed to provide guidelines for the AI technology to observe so that the world will be benefited by the progress of this new intelligence.

A detailed descriptive analyses in this paper, as a researcher want to point out new research reflections and perspectives that could help researchers, teachers, educators (and consequently students) to reflect on the introduction of new technologies (e.g., artificial intelligence, robot tutors) and on how these can affect on human behavioral development and on the acquisition of new skills and competences (Specifically: Creativity, Critical Thinking, Problem Solving, and Computational Thinking) for the educational context. The analysis carried on, suggests a perspective on how creativity, critical thinking, and problem-solving can be effective in promoting computational thinking, and how Artificial Intelligence (AI) could be an aid instrument to teachers in the fostering of creativity, critical thinking, and problem-solving in schools and educational contexts.

Keywords: artificial intelligence, human behavior, digital challenge, online counseling

INTRODUCTION

The COVID-19 pandemic shook the entire world, causing havoc and fear everywhere on earth. It exposed our vulnerabilities, affecting us both physically and mentally. Although today we have defeated corona virus, but given the ambiguity and uncertainty of the current times, there has been a rapid surge in various mental health issues across different parts of the world. Even after surviving the pandemic, people continue to suffer from various mental health issues. According to WHO (2020), ‘mental disorders are one of the most significant public health challenges … they are the leading cause of overall disease burden. One of the most common mental illnesses worldwide is depression whereas two-thirds of populations are left with unmet need’. 1 Unfortunately, to address these concerns, we do not have the required number of mental health professionals. 2 The limited availability of specialist mental health human resources, including psychiatrists, clinical psychologists and psychiatric social workers, has been one of the barriers in providing essential mental healthcare to all. 3 So many times, lots of people are not able to get proper help, and they continue to suffer.

The pandemic has encouraged nations to build digital mental healthcare programmes. These include telemedicine, online healthcare, use of chat bots or conversational agents for providing counseling and support to people and virtual consultations, among many others. One of the major advantages of these systems is that they can be accessed from anywhere by people, especially during times of crisis. 4 These are also cost effective and affordable for people who have financial constraints. Also, they can be useful for the practitioners to closely monitor their clients in real time.

The rapid growth of Artificial Intelligence (AI) has heralded a period of significant change in many parts of ourlives. Human behavior and well-being are two of the most important sectors that AI is altering. The impact of AI on how people think, behave, and interact with the environment is growing, and it brings with it both incredible opportunities and possible challenges.

Influence may be seen in a variety of industries, from healthcare and education to social media and the workplace. Understanding these consequences is critical for individuals, societies, and students as we traverse the tangled web of technological growth and our collective human experience. This study considers both the positive and negative implications of AI. On the one hand, AI's ability to tailor experiences, deliver novel healthcare solutions, and boost mental well-being is improving many people's quality of life. Concerns about privacy, employment displacement, and ethical quandaries, on the other hand, loom large, presenting fundamental considerations about the ethical usage and regulation of AI technologies. Throughout this description, the authors examine particular situations where AI is influencing how humans behave, make decisions, and achieve happiness. We will also discuss the ethical concerns and obstacles that come with incorporating AI into our daily lives. Finally, we hope to provide light on the complex and dynamic interaction between AI, human behavior, and well-being, emphasizing the importance of responsible AI development as well as smart social responses to this transformational force.

Information and Communication Technologies (ICTs) play a relevant role in how European societies perceive, discuss, and approach global challenges, including the COVID-19 pandemic, political destabilization, and climate change. Emerging technologies could be key to

understanding and overcoming such challenges but are simultaneously perceived as threats to how we live together in a different social context.

Artificial intelligence (AI), for example, has accelerated the development of medical breakthroughs, but the threats to humanity are well known if AI is left unchecked, for example AI used in educational or vocational training, that may determine the access to education and professional course of someone's life (e.g., scoring of exams). In this regard, EU proposed a regulation on AI2 and the regulatory framework on artificial intelligence. 3 The proposed AI regulations are a first step in the direction to a trustworthy AI. While most AI systems pose limited to no risk and can contribute to solving many societal challenges, certain AI systems have to treat in a more cautious way to avoid undesirable outcomes. Implementing AI algorithms in the field of learning require to the developers consider various factors, ranging from the sensitivity of the data utilized for training the algorithms to the reliability and trustworthiness of these algorithms. In line with this trajectory, a novel and burgeoning field of research known as Explainable Artificial Intelligence (XAI) has emerged. The primary aim of researchers in this field is to furnish comprehensive explanations and interpretations for the decision-making processes employed by AI systems (Gohel, Singh, & Mohanty, 2021). Nevertheless, it is essential to note that examining how these AI systems function in real-world contexts and assessing their alignment with the intended purposes under expert supervision is another crucial perspective that merits significant attention by researchers and practitioners in the field (Orsoni, Pögelt, et al., 2023). These challenges continue yet learning and working online has sustained societies during a pandemic, overcoming time and space limits and barriers. Artificial Intelligence systems will continue to have a tremendous impact on how we address major challenges, as well as how we live our daily lives and learn, changing our behavior (Gillath et al., 2021). Thus, schools need to provide an appropriate education in a ubiquitously digitalized world and within an accordingly complex and changing career landscape. Some research has highlighted that the worker of the future (student of today) is expected to develop critical thinking, problem-solving, communication, and teamwork since these qualities have significant impacts on the development of innovation (and the use of AI systems) (Chen, Chen, & Lin, 2020; Goksel & Bozkurt, 2019). Hence, current, and future generation of workers need to be prepared for the functional use of emerging technologies (i.e., a use that sustains personal and

social development, but also the development of knowledge and skills), preventing the risks of the dysfunctional one (i.e., a use that doesn't sustain human development and could also determine problems in many aspects of human life4). Using and reflecting on AI in schools, often subsumed as “digitalization of education”, is neither systematically addressed in the European educational context, nor is it subject of standardized let alone technology-enhanced, automatized assessment, which would provide instant feedback to stakeholders such as (head) teachers, parents, school boards, and policymakers.

Review Literature

Personalization algorithms driven by artificial intelligence play a vital part in the process of molding human behavior. In his book "The Filter Bubble," Eli Pariser (2011) investigates how personalized web content might lead to the construction of information silos by presenting users with content that is tailored to their interests and, as a result, may restrict their exposure to a variety of points of view. This phenomena influences the decisions and preferences of individuals in spheres such as the intake of news and interactions conducted online. In addition, the research conducted by Nicholas A. Christakis and James H. Fowler (2009) and titled "The Hidden Influence of Social Networks" discusses the ways in which AI-powered social networks and platforms have the potential to influence human behaviors, such as decisions regarding one's political beliefs and one's health, through the dissemination of information among social circles. The fields of healthcare and well-being stand to benefit tremendously from the application of AI. In their paper titled "Artificial Intelligence in Health Care: Anticipating Challenges to Ethics," the law firm Allen & Overy LLP (2018) digs into the ethical implications that surround the use of AI in healthcare, with an emphasis on the effects that it has on patient wellbeing. Artificial intelligence has the potential to improve healthcare by enhancing diagnosis, treatment recommendations, and patient monitoring, which will ultimately have a positive impact on individual wellbeing. In addition, studies such as "Machine Learning and Mental Health: A Review" by Dwyer et al. (2018) investigates how AI and machine learning might contribute to overall well-being by providing mental health support and interventions.

Effectiveness of Artificial Intelligence in Psychotherapy

Chatbots have indeed made significant advancements in simulating human conversation and have found application in various domains including mental health. A chatbot is an application which initiates a conversation using AI that could be done at different platforms like messaging or voice chat. Some of the chatbots are completely automated while some require a human interface. 5 The first chatbot in the world was designed in 1966 by Weizenbaum, which came to be known as ELIZA. It became very popular as it could perform pattern matching to phrase responses based on decomposition rules. 5 It was soon followed by another mental health app called Siri, which was released by Apple. Then, Microsoft developed Cortana and Google developed Assistant. After these came the very famous ALEXA, built by Amazon in 2018. Woebot is a fully automated conversational agent that is used for treating depression and anxiety. It uses a digital version of cognitive behavioural therapy (CBT) for inducing behaviour modification in clients. There are chatbots like Ellie that can detect subtle changes in our facial expressions, our rates of speech or the length of pauses. This information could be used to make diagnostic assessments or provide more personalised interactions.

What is Artificial Intelligence?

Before we jump on to the advantages and disadvantages of Artificial Intelligence, let us understand what is AI in the first place. From a birds eye view, AI provides a computer program the ability to think and learn on its own. It is a simulation of human intelligence (hence, artificial) into machines to do things that we would normally rely on humans. There are three main types of AI based on its capabilities - weak AI, strong AI, and super AI.

Weak AI - Focuses on one task and cannot perform beyond its limitations (common in our daily lives)

Strong AI - Can understand and learn any intellectual task that a human being can (researchers are striving to reach strong AI)

Super AI - Surpasses human intelligence and can perform any task better than a human (still a concept)

Benefits of Artificial Intelligence

1. Reduction in Human Error

One of the biggest benefits of Artificial Intelligence is that it can significantly reduce errors and increase accuracy and precision. The decisions taken by AI in every step is decided by information previously gathered and a certain set of algorithms. When programmed properly, these errors can be reduced to null.

2. Zero Risks

Another big benefit of AI is that humans can overcome many risks by letting AI robots do them for us. Whether it be defusing a bomb, going to space, exploring the deepest parts of oceans, machines with metal bodies are resistant in nature and can survive unfriendly atmospheres. Moreover, they can provide accurate work with greater responsibility and not wear out easily.

3. 24x7 Availability

There are many studies that show humans are productive only about 3 to 4 hours in a day. Humans also need breaks and time offs to balance their work life and personal life. But AI can work endlessly without breaks. They think much faster than humans and perform multiple tasks at a time with accurate results. They can even handle tedious repetitive jobs easily with the help of AI algorithms.

4. Digital Assistance

Some of the most technologically advanced companies engage with users using digital assistants, which eliminates the need for human personnel. Many websites utilize digital assistants to deliver user-requested content. We can discuss our search with them in conversation. Some chatbots are built in a way that makes it difficult to tell whether we are conversing with a human or a chatbot.

5. New Inventions

In practically every field, AI is the driving force behind numerous innovations that will aid humans in resolving the majority of challenging issues.

For instance, recent advances in AI-based technologies have allowed doctors to detect breast cancer in a woman at an earlier stage.

Disadvantages of Artificial Intelligence

1. High Costs

The ability to create a machine that can simulate human intelligence is no small feat. It requires plenty of time and resources and can cost a huge deal of money. AI also needs to operate on the latest hardware and software to stay updated and meet the latest requirements, thus making it quite costly.

2. No Creativity

A big disadvantage of AI is that it cannot learn to think outside the box. AI is capable of learning over time with pre-fed data and past experiences, but cannot be creative in its approach. A classic example is the bot Quill who can write Forbes earning reports. These reports only contain data and facts already provided to the bot. Although it is impressive that a bot can write an article on its own, it lacks the human touch present in other Forbes articles.

3. Unemployment

One application of artificial intelligence is a robot, which is displacing occupations and increasing unemployment (in a few cases). Therefore, some claim that there is always a chance of unemployment as a result of chatbots and robots replacing humans.

4. Make Humans Lazy

AI applications automate the majority of tedious and repetitive tasks. Since we do not have to memorize things or solve puzzles to get the job done, we tend to use our brains less and less. This addiction to AI can cause problems to future generations.

5. No Ethics

Ethics and morality are important human features that can be difficult to incorporate into an AI. The rapid progress of AI has raised a number of concerns that one day, AI will grow

uncontrollably, and eventually wipe out humanity. This moment is referred to as the AI singularity.

6. Emotionless

Since early childhood, we have been taught that neither computers nor other machines have feelings. Humans function as a team, and team management is essential for achieving goals. However, there is no denying that robots are superior to humans when functioning effectively, but it is also true that human connections, which form the basis of teams, cannot be replaced by computers.

7. No Improvement

Humans cannot develop artificial intelligence because it is a technology based on pre-loaded facts and experience. AI is proficient at repeatedly carrying out the same task, but if we want any adjustments or improvements, we must manually alter the codes. AI cannot be accessed and utilized akin to human intelligence, but it can store infinite data.

Machines can only complete tasks they have been developed or programmed for; if they are asked to complete anything else, they frequently fail or provide useless results, which can have significant negative effects. Thus, we are unable to make anything conventional.

Findings of the descriptive study based on various reviews

 Artificial intelligence (AI) can improve corporate and individual decision-making. This technology can aid business strategy and personal decision-making. AI guidance or analysis may be used to make important decisions.

 Artificial intelligence (AI)-powered autonomous vehicles can change driving behavior. For instance, driverlessvehicles could change commuting habits, reducing traffic and congestion.

 Mental health apps and chatbots use AI to help and treat mental health issues. These factors may affect stress, anxiety, and depression management.

 Privacy concerns arise when artificial intelligence (AI) systems collect and analyze large amounts of personal data. People may change their internet behavior or be more cautious with personal information.

 AI aids medical diagnosis, treatment, and medication discovery. Early disease detection and better healthcare interventions can improve patient well-being.

 AI can use genetic and health data to build individualized treatment regimens that reduce pharmaceutical side effects and improve efficacy.

Conclusion

The influence of artificial intelligence (AI) on human behavior can be broken down into a number of categories, including personalization, decision-making, social interactions, and ethical considerations. As AI technologies improve and become increasingly interwoven into various facets of our life, so does the scope of its influence, which is ever expanding. A fundamental task for society is to exercise responsible management of this influence and to harness its power. It is vital to prioritize the development of ethical AI, implement solid rules, and ensure that AI technologies are utilized ethically and transparently. This will allow us to maximize the beneficial influence that AI will have on well-being while mitigating the potential negative implications. In addition, continued research and raising awareness among the general public are also essential components for comprehending and managing the complicated relationship that exists between AI and well-being.

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