Embracing AI in Higher Education: Navigating the Challenges and Opportunities of Digitalization in the New Era

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Abstract: *'Human Distancing' from the hyper conventions of technology through Smart Phones is still a strange Shadowing phenomenon that there are immense deliberations to take control over the situation. Instantaneously, the launch of IA flames spreading reckless in almost all the field is a shocking upliftment in the present scenario. There are enormous antagonisms towards the digital exhaustion but at the same time immense advancement in expanding human works at tranquil. AI is the moon light of technology which is not real but bright like the moon which again looks brightly by the reflection of the sun. We need not have the inferiority towards AI since human brains are the creators of it. It is humans who enacts in the form of machines, on course, a brain without a mind. The scope and purposes of this paper scrutinizes the descriptive analytical and experiential approach and the methodology used is conceptual in nature with the findings synchronized by influential and demand usage. The implications are to set an alert to the system of Higher Education under the scheme of the New 2020 -NEP in India inclined to be digitalized, ensuing the process of multi-disciplinary by inducing the "Open Elective Courses "(OEC) in Degree Programs which have been predictably propagative. Yet, the OEC seems to be inadequate to the present flaming "Machine Revolution" Era. This scenario needs an emergent effort at the Higher Education Institutions to optimize the new AI Pilot Programs and Crash and Add on Courses at the UG levels which is need of the hour. A great deal of predicaments yet to endure at the Higher Educational Standards for the expected competency at the nearer future. It is important for the HEI institutions to set forth the next milestone for the present generation to combat with the multifaceted world of career and opportunities ahead. Embracing AI in Higher Education articulates the hype of digitalization and this paper navigates the implications, challenges, and opportunities of the new Machine Revolutionary Era. Focus: 1) Are we preparing our youth for an AI- Centric World? 2) What are the implications, challenges, and opportunities at the nearer future? 3) What are the strategies to augment the Edu-standards beyond the text for an AI Machine Revolution? 4) Are we optimizing future-oriented knowledge to the learners of the world? 5) What careers and opportunities would look like in the next decades? 6) Could we imagine the future teaching staff as "Teacher Scientists"? 7) Can the role of teachers be shifted from distribution to automations?*

1. Introduction

*'**Human Distancing**'* from the hyper conventions of technology through Smart Phones is still a strange Shadowing phenomenon that there are immense deliberations to take control over the situation.

Instantaneously, the launch of IA flames spreading reckless in almost all the field is a shocking upliftment in the present scenario. There are enormous antagonisms towards the digital exhaustion but at the same time immense advancement in expanding human works at tranquil. AI is the moon light of technology which is not real but bright like the moon which again looks brightly by the reflection of the sun. We need not have the inferiority towards AI since human brains are the creators of it. It is humans who enacts in the form of machines, on course *a brain without a mind*. In 1956 John McCarthy invented the term 'Artificial Intelligence' by implementing its essential features of computer intelligent system by using developed software's equalent to that of the human brains and hardware in the form of human biological system. However, it took few decades to generate it and the applications ultimately mounted towards the creation of Machines and Robotics as an Intelligent Service Provider to the mankind of today to what we name it as generative AI. Knowingly, it is an unspoken phenomena that man has completed his task of understanding the world as much as possible and ultimately needs a place to store the contents to preserve it. Perhaps, man's innovations, discoveries, are set forth into the world of data terrain which has been escalated to the AI machines in an organized amplifying technique. The human inputs are the machine outputs. The interesting factor about AI is all about immense generative and extractive modules that can be used anonymously by anybody from any part of the world bearing zero credit to the originator. It involves the potential interplay between humans and the machines as "*speakers and learners*". The impact "examines the dynamic nature of human receptions of the AI- generated content." (*Muhammad Shidiq 2023*). The **Tech-Transition** at large paves it way to shift the power of knowledge from *curiosity to credits*. An individual can score his credits based on the ability to utilize AI and his performance is stringently validated on the amount of knowledge acquired, mastered, learned and understood. However, AI may not ever at any circumstance replace a teacher. Hitherto, the role of a teacher may be shifted from manually distributing knowledge to computing and automating the required content into a database. Henceforth, the role of teachers by profession is unbound nevertheless their working pattern might change according to the present scenario. The nature of the profession may be challenging, perhaps, to envision teachers as **Teacher-Scientists**. Assimilating AI as a tech-tutor and the teachers as facilitators emphasis the system of higher education as a **hybrid expert system**.

2. The Scope of the paper

The scope and purposes of this paper scrutinizes the descriptive analytical and experiential approach and the methodology used is conceptual in nature with the findings synchronized by influential and demand usage. The implications are set to an alert to the system of Higher Education under the scheme of the New 2020 -NEP in India inclined to be digitalized, and ensuing the process of multi-disciplinary by inducing the "*Open Elective Courses*"(OEC) in Degree Programs which have been predictably propagative. Yet, the Open Elective Courses (OEC) seems to be inadequate to the present flaming "*Machine Revolutionary Era*". This scenario needs an emergent effort at the Higher Education Institutions to optimize new AI Pilot Programs, Crash and Add on Courses at the UG levels which is need of the hour. A great deal of predicaments yet to endure at the Higher Educational Standards for the expected competency at the very nearer future.

However, to witness the recent rapid usage of AI-Chat-GPT-3and other AI tools by the younger generation particularly in Higher Education, it has made an astound impact on teaching and learning objectives. This paper observes to interpret the new challenges enforced by artificial intelligence (AI) and its inclusion by introducing fascinated Pilot Programs and Crash Add on Courses at the under-graduation levels. A great deal of responsibility lies within the teachers and the students to have a substantial benefit of the new prospectus in the higher education system. Nevertheless, Open-AI basics has a lot to give in with chat bots, chat-GPT-3, Dall-E2,Machine Languages, Calculus, python, Programming etc. It is important for the institutions to set forth the next milestone for the present generation to combat with the multifaceted world of career and opportunities ahead.

Human Brains &Machine Revolution
Man by nature dig his brains and constantly keep discovering things to find new ways in terms of survival. Interestingly, the cycle of the past and present generations go hand in hand as inventors and operators. So far, it was the count of human population designated by male and female and now it's time to see that the Robotic machines also are '*creating an artificial biological entity*' in que for its population census and this isn't far. Nature creates humans and human brains creating machines in the same pattern are seemingly astonished. Ironically, earth appears to be insufficient to hold the human population and man in search of another earth in the universe is exculpating. Creating Apps, Machines and Robots are becoming day to day massive in creations and to deal with these aspects we need to formulate our younger generation thoroughly with profound and advanced education for their exciting future career opportunities ahead at the earliest.

The Birth of AI from the world of Computer science is cognitive and appealing to its new panorama. It spurs on fields such as Language, Science, Philosophy, Medical, Engineering, Neuroscience, Economics, Sociology etc. There seems to be a keen acceptance for looking AI in a multidisciplinary perspective. However, to see the European Countries Including the USA with regard to the introduction of AI courses, it has already been introduced in the field of higher education based on IT *(TegMarks -2018)* and the other fields are muddled with thoughts as to what these IA Courses could serve at the UG Levels. "Teachers are unaware of its scope and above all what it consists of. It is important to clarify the elements and methods that AI Applications that might entail in Higher Education". *(Hinojo-Lucena, Aznar-Díaz, Cáceres-Reche, and Romero-Rodríguez -2019)*Artificial Intelligence is a part of technological advancement and "technology changes the learning system in the world of education".*Fahimirad & Kotamjani (2019)* said this, the digital era claims authority to equip the graduates under the integration of future oriented courses. AI has become a new resource progressing at an "accelerated speed" where Fahimirad & Kotamjani' s views have due considerations on the profound nature of AI and its services within higher education. Witnessing, Moles and Wishart in 2016 itself they identified that the Deakin University in Australia had already applied for IBM's super computer Watson as an emerging form of AI and a solution to provide support services for the students and teachers with counselling and preferably advices They also concluded that the innovation of AI significantly made efficient modification on the quality, services, workforce and dynamic time within the university. Hence, its not too late for an augment andAI applications at the UG Levels under the "Open Elective Courses" (OEC) for the Choice-Based, Skill Oriented Courses along with Add on Crash Courses might be a multi-disciplinary approach at the UG levels for the future challenges to adhere. It is important that the HEI Policy must be redesigned and a newly designed curriculum at the UG Levels must be the priority, venturing into AI pilot programs with enhanced resources in terms of infrastructure and facilities which needs to be thoughtfully heightened. This could be a big challenge for the higher education system by developing a whole new agenda and the policies to formulate which is considered inevitable and demanding.

AI in Higher Education and the Future Ahead
It is time for us to acknowledge the hyper progress by technological advancement in the coming decades more than what we have achieved the past centuries. The perception of knowledge associated with our past philosophers and thinkers like Aristotle, Plato, John Dewey, Carl Rogers, etc., encapsulated the idea that, knowledge can be acquired through the process of exploration and discover. Similarly, this has been expressed that the exhaustive nature of knowledge is uncovering the unknown rather than merely receiving information passively. Past the centuries we have been trying in lot many good ways to adhere it. However, to notice that there had always been the so-called 'teaching and learning gaps. A kind of dissatisfaction prevailed where we kept on enriching the teaching and learning process by various methods. But today, we have achieved it through our constant process of discoveries and innovations in technologies which assures *knowledge is discovery and limitless.* Space and time cannot be a hindrance to acquire knowledge. AI- emphasis an active role of any individual seeking, exploring, and discovering knowledge. It is an excellent power plant to advance excellence in academics for the students independently. *(Lund &Wang-2023*) However, it has been noticed that a few aspects to be

stringently dealt on ethical and responsible ways to make use of it. Optimizing the current scenario of AI tool Chat-GPT the implications on advantages and disadvantages are prodigiously understood that the users can either appropriately blend with creativity nor misappropriate immorally with the content they extract. Though, we have many positive vibes as per the current usage of Chat GTP. Views on the lateral edge of disadvantages are seen that the students lose their capacity to think and build their creativity of their own. Of course, and yet the technological adaptations and the operations itself seems to be so complicated where we need to appreciate our youth handling it in a smart way. Here the performance criteria play a major role and its sometimes hilarious in dealing with machines which might end up with serious hazards. Proper way of utilization and extracting information and using it also is a big task of creativity. Hence, the use of AI tools could seemingly increase the mind play and the ability of the students to perform independently. This has been noted as "it could mark a brave new world of challenges"(*Mudit Varma -2023)*Higher Educational System needs a strong policy to induce new learning programs and courses and adapt the new Generative AI for its service as a resource that could help the present generation for the competency of the world at large. The usage of Chat GPT-3 has heightened the actuality of reality. The creativity has been democratised and education acknowledged liberal which are carried over to the next levels. However, the greatest challenge is the data privacy, ethical concerns, adequate training to understand AI. The educators balancing the learning measures along with technological advancements and the ongoing process require massive skills to manage the present state of machine revolution.

Computer literacy is the most important factor for the present learned society. Knowingly, handling courses related to AI requires profound computer knowledge enough of tech-oriented. In the context of teaching and learning pedagogy, adapting AI, in higher education, it is important to have a framework introducing the Pilot programs and the crash Courses at the UG Levels irrespective of any discipline emerging with experiential learnings. Courses related to AI perceived as personalised learning courses which enable adaptive learning platforms that cater the student's strengths and weakness, The essentials of AI Assists and Tech handling courses, Predictive and Analytical Courses based on ethical and rational relationships between Man and Machines, Skill Based Courses on Automations and administrative Task, Crash Courses on AI Data Processing Tools and Mission, AI Enabled Virtual Classrooms, Customised Curriculum etc., Afresh agenda along with inclusive policies to makeover may be challenging nevertheless an enormous result could be expected from the present generation to tackle the future oriented jobs and opportunities. Our youth cannot be blind to the future ahead. The careers opportunities could be entirely different by the next decades. Henceforth, a customised tailored *Tech-Edu-system* seems to be mandatory at this juncture.AI Skill-based courses are playing an interregnal role in Higher Education. Since 2019 countries like German and Netherlands have been significantly proactive on AI Adaptive learning technologies. It has been prominently featured in higher education and experts predicted AI-Ede to grow 43% by 2022. (*Baker & Smith, 2019)*Which has been smartly productive. The studies and research experts have distinguished the weak and Strong AI into three categories and have likely assimilated that the future Higher education connects with the potential areas of AI Applications; (a) Software Applications, (b) Intelligent Tutoring System and (3) Intelligent Virtual Reality. *(Luckin, Holmes, Griffiths, and Forcier 2016)* Significantly, AI in Higher education ties with the scientific goals to make knowledge computationally implicit. AI is consumed as an engine so powerful and smart, which acts like a "*Black Box*" to gain refined knowledge.

Unveiling the New Segments of Career

The Careers and opportunities by the next decades are going to be Tec-Oriented. The World of Machine Revolution could be exclusively ruled by computing mechanisms. The AI system of interactions with the humans might lift up to new capabilities and endowers. Momentously, no machine can replace a teacher yet, its crucial to see that the teachers must be equipped for an extraordinary expertise to leverage tech-handled education. Rightly, AI-Ed Tools could be of a great support to the teaching learning methods. An environment to build increasingly intelligent support beyond the text books can provides new innovative imperatives in the knowledge chest. The Open generative AI which is also a spontaneous resistor measures to hold the administrative data intact. These AI applications in Higher Education could solve approximate relief in terms of a few stubborn problems like; admission data, assessments, evaluations, students' learning progress, achievement levels, gradations, inferiority, etc., to endure the gaps of retention in education. Shaping the teaching and learning measures in a new tech-oriented education it is ultimately challengeable by means of quality standards and infrastructure. AI has already emerged as a catalyst of the social norms and as a common encounter in education. It helps us to respond the most significant challenges and acts as a steady replacement from the conventional mode of working patters to the mechanical mode of automotive patterns. Our Higher Education System need to level up for these challenges so that the future of our youth grips the enabled jobs and occupations with clever algorithms and robotics efficiently. Moving smartly, we will need a keen consideration towards the powerful forces of the AI Studies and Jobs ahead in the very nearer future. AI Pedagogy, AI Learnings, AI Tools, AI programs, AI Research, AI Computing, etc., Education system has always been in a *Keep Moving Formula*, and adopting priorities undergoes many initiatives that are usually very challengeable. The adaptations involve teachers, students, and the stakeholders to promote an ethical and safe footprint to encode the novel circumstance of Tech-Ed System ahead. As per the research analysis there are strong predilections that AI applications related to teaching and learning are projected to grow even more significantly. (Educause-2018) Though, major changes may still be a few decades ahead in the future but, the reality is that AI has the potentiality to create a radical change in just everything about education. The Canadian non-profit online learning society concludes that "there is little doubt that the AI Technology is inexorably linked to the future of higher education. (Contact North -2018) Education Powered by AI has wider scope and

it's time for us to ignite our teachers and students for the aptitude.

The concept of "Teacher Scientists"

The Role of a teacher since the ages has been acknowledged as *knowledge distributors*. They are always seen by their noble profession as knowledge-contributors, donors, supporters, patrons etc., when an AI machine has the capability to identify genuinely the credit holders, bank card users, its limits, its scores, and balances, why not in education? Searching techniques in AI mainly focus on the solutions since they have been programmed for the advanced resolutions. In terms of advancement, we need to understand that the *content experts* have a strong role-play to the open AI Generative system. A teacher as a personality the orator, lecture, debater, storyteller, has to be replaced as a Teacher-Scientist who could handle their expertise through tech-based, voice module and generative innards, who are totally invisible by nature of the present machine revolution. So, here the teachers' roles as distributers of knowledge shifts to compute and automate the knowledge. As AI has the components of natural language processing where human beings can directly communicate with the machine in their natural language and can get the service directly. Henceforth, it is true that AI research has expanded and are becoming more and more powerful. These transformations concentrate more and more on AI as integral integration mainly in higher education. The probability of online programs and courses have shown increase interest by the student's community. The scenario of abroad studies and various courses anywhere, elsewhere, anybody, and everybody are becoming handy which seems to be restrained by time, space and more favourably being inexpensive. The online courses: Moocs, Swyam, Udemy, Unacademy etc., and the E-learning apps and websites have made a massive impact on the culture of digital learnings. AI is an absolute Plus of digitalisation which exactly has the feasibility of acquiring knowledge independently. By all means education has been liberated and the future ahead is certainly an unrest. To observe the new trends and shifts in higher education which has been powered by AI: Chabot's chat GPT, queries, enrolment process, counselling, guidance and support etc, has been perceived as improving student's experience. Predictive analytical data of the students, teachers, and stakeholders are in terrain for mining resources and facilities. Automating the education contents, administrative tasks, process, grading's, scheduling and managing resources have espoused the sustainability of time and space at ease. Obliterating the inferiority and phobia of performance pressure etc., are the practical areas that AI system can be supportive. Streamlining the large datasets, generating the insights of machine interactive sessions, assisting complex stimulation, and personalized teachings emphasis the AI mode of teaching and learning approaches. AI aids to enhances virtual classrooms, adaptive learning environment, the instant language and translations, computer immersive experience and the augmented reality, which helps to customise the learning experience, designing AI linked curriculum to fit the emerging machine revolution era at the nearer future. Inclusively, AI based Courses may ensure education relevant and up to date in gaining progression. The concurrent discussions about AI states: Artificial Intelligence is often referred to as a technology that can transform "traditional" education where students are passive recipients of information, to more dynamic and better forms of education through " highly personalized, scalable and affordable alternative AI Solutions" (***Breines and Gallagher 2020 P-1***) Further, it is seen as a means to support teachers and thereby AI augmentation could be the best tool to create super educator minds (***Cukurova, Kent and Luckin (2019, 3033***) However, an historical definition from Keith Barkerin regard to 'Distance Education Learning' in 2006 had analysed the solutions in learning from far ends with a ***video recorded formula*** as supplementary form of education. (***Barker -1986 P-20***) which matches with today's concept of "***Teacherbot*** and ***Teacher-Scientists*** and his predictions to rethink the development of educational technology predominantly, promotes the AI technical rational efficiency models as a teaching tool in the future. His research identifies the use case for bots in what spaces they would be situated, and how they would supplement the teachers' functions. His methods on "distance education" were energised through community driven approaches combined with sociometrical conceptualisation". Prior to digital culture the 'distance education' concepts generated a shift from the tradition to technology in teaching patterns. His views therefore delineate that Artificial Intelligence which is said to be exhibited when a computer is made to behave in a way that would be classified as "intelligent", significantly, it is understood that a real teacher can be a replicate in the form of a machine.

3. Conclusion

Artificial Intelligence diversely associated with changes and challenges at the scaling speed of conflagrations through the terms used unprecedented, radical, transformation, revolution, unleashed phenomenon, utopian, etc., persists on congruent ideas and imperative notions that responds strongly to claim authority over the policy makers of the higher education system. Surprisingly, AI acts as an agency to support the education system systematically and invoke key analytical moves extensively for progression and productivity. It is the students, who are placed at the centre of the pedestal for challenges. Therefore tech-oriented courses based on AI motivates the learners. However, we see that the culture of digital learnings and online centric courses have embraced resistance through past a decade and the notion of professionalism and humanistic values of a teacher has in no way was a hindrance. Hence, it's all about orienting technology and a teacher seen in a new light as a scientist who would be assisting with the machines and set boundaries with a sophisticated planned framework and executions. Henceforth, AI is a kind of solution or collaboration that can support hand in hand and assist the younger youth generation to confront the challenges and opportunities ahead in the fourth coming decades.

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