# ARTIFICIAL INTELLIGENCE: A BETTER AND INNOVATIVE TECHNOLOGY FOR ENHANCEMENT AND SUSTAINABLE EVOLUTION IN EDUCATION SYSTEM

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## *Abstract*

*Artificial Intelligence is a flourishing technological sphere accomplished of changing every aspect of our social communications. Since the commencement of the institution of education, the teaching methods and approaches of students and educators have progressed expressively. Teaching methods across the world have become more organized to contribute improved and modernized results. Subsequently the inception of the institution of education, the methods of teaching and the bond shared between learners and educators have been evolved significantly. This paper is intended to explore the rise of the use of artificial intelligence in education system along with its impact for the sustainable development of education system. In this paper researcher will investigate educational inferences of artificial intelligence on the students learning aspect and how institutions teach and evolve. At the start of this paper researcher will analyses how Artificial Intelligence can be used for sustainable development in education system. Next to that researcher has focused on impact of Artificial Intelligence in education system. In continuation with the study researcher will provide analysis made by data collected through the respondent's.*

 *Keywords: Artificial Intelligence,Development, Education.*

## INTRODUCTION:

In today's world, technology is growing very fast, and human beings are in touch with such technologies. They are not only in touch with but they are willing ready for implementation of these technologies in their day today life for betterment. Artificial intelligence is one of the booming technologies which have capability to provide better and enhanced solutions by its intelligent ability. Artificial Intelligence can be used in almost all sectors like gaming, medical, mechanical, hotel and many more. Education system is not the barrier for the same. Many researchers' has mentioned that, Artificial Intelligence embraces an inclination to cause a machine to work as a human and it has a inordinate opportunity in future.

Artificial Intelligence is the intelligence which can be as intelligent as human beings. And perform intellectual tasks as we can do.Artificial Intelligence is also known as machine intelligence. Artificial Intelligence is accomplished by studying how human brain thinks and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.The birth of Artificial Intelligence goes back to the 1950s when John McCarthy organised a two-month workshop at Dartmouth College in the USA. In the workshop proposal, McCarthy used the term artificial intelligence for the first time in 1956 (Russel&Norvig, 2010, p. 17).

There are voluminous Artificial Intelligence applications for education system that are being technologically advanced with Artificial Intelligence mentors for learners. Enhancement of smart content and an innovative way of individual development for educators can be provided with Artificial Intelligence through simulated global consultations.

Need for Artificial Intelligence [1]

- To Create Expert Systems − The systems which exhibit intelligent behaviour, learn, demonstrate, explain, and advice its users.

- To Implement Human Intelligence in Machines − Creating systems that understand, think, learn, and behave like humans.

Education system is the pillar for the growth of any nation. Artificial Intelligence embraces abundant potential for education system. As technology has entrenched its way into our day to day way of life, education has been changed. Improving education is an enormous concern for our society and ultimately education system. Artificial Intelligence can provide better and enhanced technologies for the growing of education sector. In the world of education Artificial intelligence is transfiguring schools, colleges and classrooms by making educators jobs tranquil. Artificial Intelligence has many positive benefits. Artificial intelligence applications in education are on the escalation and have acknowledged a lot of consideration in the last few years. Still many of the educators are unacquainted about effects of Artificial Intelligence on the education system. Artificial Intelligence tools are preeminent suitable to education system. Artificial Intelligence tools can offer enhanced environment of learning for students and also can be used as evaluation system, result preparation system, carrier guide system, etc. From the literature review it has been observed that in recent time educators are feeling needs of expertise in education system. Maximum students support that the Artificial Intelligence education methods are more advantageous over the traditional education methods.Below are some the major transformations which can be deliver by Artificial Intelligence for education system:

**What Artificial Intelligence can deliver for education system?**

- ➢ Artificial Intelligence can deliver Smart content
- ➢ Intelligent tutoring systems
- ➢ Virtual facilitators and learning environments
- ➢ Virtual / Artificial reality tools
- ➢ Intelligent mining (and use) of student data
- ➢ Artificial intelligence can automate basic activities in education, like grading.
- ➢ Educational software can be adapted to student needs.
- ➢ It can point out places where courses need to improve.
- ➢ Students could get additional support from Artificial Intelligence tutors.
- ➢ Artificial Intelligence -driven programs can give students and educators helpful feedback.
- ➢ It could change the role of teachers.
- ➢ Artificial Intelligence may change where students learn, who teaches them, and how they acquire basic skills.

## WHY ARTIFICIAL INTELLIGENCE FOR EDUCATION SYSTEM?

From the literature review it has been found that, most of the articles in the have highlighted that our students are deprived of of worthy quality education. Artificial Intelligence can be aelucidation to this problem.Artificial Intelligence has an ability to fill this gap in education system by helping and allow all entities in education system to do more than ever before. The most significant aim is that Artificial Intelligence systems can adapt to Individual student learning and grasping abilities. It can also help to identify strengths and weaknesses of the students. Artificial Intelligence can drive efficiency, personalization and modernize admin tasks. This will give extra time to the teachers which can be utilised more efficiently for better enhancement of teacher and students.Researcher believes that, Artificial Intelligencein education system is the better solution to resolve the problem of poor quality and inaccessibility at one stroke.

Below are some the major advantages of Artificial Intelligence for education system:

- ➢ Automate Grading
- ➢ Assistance to Teachers
- ➢ Support Students by improving weakness
- ➢ Meet a Variety of Student Needs
- ➢ Save teachers time
- ➢ Allow Teachers to Act as Learning Motivators
- ➢ Provide Personalized Help
- ➢ Identify Weaknesses in the Classroom
- ➢ Simplifying Administrative Tasks by providing data accumulation and personalization
- ➢ Deliver smart content
- ➢ Global Learning
- ➢ Proctored Online Assessments

**Applications of Artificial Intelligence for educational purpose:**

- ➢ Thinkster Math
- ➢ Brainly
- ➢ Content Technologies, Inc.
- ➢ MATHiaU
- ➢ Netex Learning

For the current paper researcher has done survey to discern about educator's view about Artificial Intelligence adoption and implementation in education system. A well-structured questionnaire was designed to collect the data from the respondents. While designing the questionnaire researcher has engrossed on objective and hypothesis of the study. Further, collected data is analysed though SPSS to acquire the results of the study. The detailed explanation for the same is prearranged in underneath fragment of the paper i.e. research methodology.

**RESEARCH METHODOLOGY:**

This splinter of the paper provides an ephemeral description of research methodology for the present study. It enlightens the research objectives and a suitable methodology to accomplish those objectives. The research methodology has to be robust in order to minimize errors in data collection and

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analysis. Owing to this, various methodologies namely survey, interview, site visit, articles and case study were selected for data collection. This paper describes the sample survey data collection, and data analysis procedures of the intact study. The persistence of this segment of the paper is to present the philosophical assumptions sustaining this research, as well as to familiarise the research strategy and the pragmatic techniques applied. It delineates the scope and limitations of the research design, and lays the research amongst existing research traditions in Artificial Intelligence and Education System.

Research Methodology is the systematic, theoretical analysis of the methods applied to a field of research. In this paper the theoretical and philosophical assumptions underlying the research methodology of Artificial Intelligence for education system were reviewed. This paper provides insight on what is Artificial Intelligence, how it helps for better and sustainable growth of education system. The current paper is basically designed to give general introduction about Artificial Intelligence, Education system and assessing educator's view about Artificial Intelligence adoption and implementation.

For this paper researcher has used primary and secondary data.Primary data of the study is collected through survey method. The secondary data related to the proposed study is collected through various local and international journals, articles, web sites and published and unpublished thesis, reports, blogs, articles etc.

## STATEMENT OF THE PROBLEM:

In current paper researcher has focused on main domains like Artificial Intelligent, Education System and assessing the educators. Researcher has also enlightened on various aspects of Artificial Intelligence like what Artificial Intelligence offers for education system along with advantages of Artificial Intelligence. In continuation of this researcher has also highlighted some of the major applications of Artificial Intelligence for education system.

In second and most important part of the research paper researcher has collected the data from educators to know their view about Artificial Intelligence adoption and implementation in education system.

## OBJECTIVE OF RESEARCH:

The main objectives of this paper were:

1. To Study Artificial Intelligence.
2. To identify benefits of Artificial Intelligence for education system.
3. To asses educators approach towards Artificial Intelligence implementation in education system.

## HYPOTHESIS OF RESEARCH:

H1: Artificial Intelligence can deliver better options for education system.

H2: Adaption ration of Artificial Intelligence in education system is low.

H3: Educators are willingly ready to adopt Artificial Intelligence as solution for education system.

## RESEARCH SCOPE:

For this paper researcher has designed closed ended questionnaire to collect the data from respondents.  Scope of the paper is limited to respondents from Pune city only. At the same time researcher has provided information only on few aspects of Artificial Intelligence i.e. Artificial Intelligence and education system and view of educators towards Artificial Intelligence adoption and implementation in education system. Due to the limited time period it was not possible to collect the data from all the entities of education system. So, for the current paper researcher has only focused on educators view.

Basically, the researcher has divided the scope of the study in following ways:

- To know about what artificialintelligenceis.
- To study what Artificial Intelligence offers for education system.
- What are the advantages of Artificial Intelligence for education system.
- To asses view of educators about Artificial Intelligence adoption and implementation in education system.

Basically, to accomplish first two objectives of the study researcher has collected secondary data from innumerable sources however the third objective of the study is accomplished by primary data collection method. To collect the data from the respondents researcher has premeditated well structure questionnaire.

## GEOGRAPHICAL SCOPE:

The geographical scope of this research is to accumulate the data from educators In Pune City. To accumulatecorresponding data researcher has used innumerable data collection techniques like interview, formal and informal discussions, observations and questionnaire.

## CONTENT VALIDITY:

In this study the content validity of the survey instrument ensured by:

- Printed and digital books
- Extensive Literature Review
- Data collection through questionnaire

Though the content are ensured by various ways mentioned above all the content from this paper are own contribution of the researcher.

## DATA COLLECTION AND ANALYSIS:

For the current study researcher has analysed the data and made it easier to understand. To collect the data from the respondents researcher has designed questionnaire which consists of 10 questions. Questionnaire was made available online to the respondents through Google form. Further questionnaire was made accessible to the educators in Pune city for lawful data filling. The details of data collection and analysis done are as described in lower section of the paper.

**COLLECTION OF THE DATA**:

This research is based on the primary and secondary data. Primary data is obtained with the questionnaire and the secondary data has been collected from different types of sources as local and international journals, articles, web sites and published and unpublished thesis, reports, blogs, articles etc.

Primary data had collected from educators in Pune City. For the current study researcher has considered UG and PG colleges from Pune City.

**DATA ANALYSIS:**

Researcher has done a survey on an educators view on Artificial Intelligence adoption in education system so as to comprehend actual scenario in education system with Artificial Intelligence implications. The survey samples of the study were selected from the Pune City. Educators of the Pune City from Under Graduate and Post Graduate institutions were the respondents. Questionnaire was made up of 10 questions which were focused on the aim, objective and hypothesis of study. The discussion of this survey and the division of the responses are done in this paper. While forming the questionnaire researcher has focused on following aspects:

- ➢ Educators from Pune city are selected as samples
- ➢ Questions formed to get a view of preferences of the respondents.

Questions were formed to know about:

- ➢ Awareness of educators about Artificial Intelligence application available for education system
- ➢ Educators believe on Artificial Intelligence to bring advancement in education system and Artificial Intelligence to deliver better options for education system
- ➢ To know adoption ration of Artificial Intelligence in education system.
- ➢ To know Artificial Intelligence tools used at their premises and adaptability of Artificial Intelligence in education system.
- ➢ To know about educators view on Artificial Intelligence implementation in their educational institute.

**HYPOTHESIS TESTING:**

Researcher has done analysis on collected data i.e. responses received through SPSS. The conclusions based on the analysis and hypothesis tested are as discussed below:

**H1: Artificial Intelligence can deliver better options for education system.**

**Table No. 1: Artificial Intelligence has better options for educations system.**

| Test Statistics | |
|---|---|
| | Better Options |
| Chi-Square | 23.273[a] |
| df | 1 |

| Asymp. Sig. | .000 |
|---|---|

**Source: Compiled by researcher through SPSS**

The above statistical table reveals that the chi square value is 23.273[a]

The p value is .000

If $p < 0.05$ then, accept the hypothesis i.e. "Artificial Intelligence can deliver better options for education system."

**H2: Adaption ration of Artificial Intelligence in education system is low.**

**Table No. 2: Artificial Intelligence adaption ratio**

| Test Statistics | |
|---|---|
| | V10 |
| Chi-Square | 29.455[a] |
| df | 1 |
| Asymp. Sig. | .000 |

**Source: Compiled by researcher through SPSS**

The above statistical table reveals that the chi square value is 29.455[a]

The p value is .000

If $p < 0.05$ then, accept the hypothesis i.e. "Adaption ration of Artificial Intelligence in education system is low."

**H3: Educators are willingly ready to adopt Artificial Intelligence as solution for education system.**

**Table No. 3: Educators willingness towards Artificial Intelligenceimplementation**

| Test Statistics | |
|---|---|
| | V17 |
| Chi-Square | 23.273[a] |
| df | 1 |
| Asymp. Sig. | .000 |

**Source: Compiled by researcher through SPSS**

The above statistical table reveals that the chi square value is 23.273[a]

The p value is .000

If $p < 0.05$ then, accept the hypothesis i.e. "Educators are willingly ready to adopt Artificial Intelligence as solution for education system."

Researcher is very pleased to share that the entire hypothesis considered for the current study are accepted. In the continuation of the analysis researcher has also come out with following result of the study:

➢ Almost all respondents mentioned that they are aware about Artificial Intelligence applications available for education system.

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- ➢ Many of the respondents i.e. educators are agree that Artificial Intelligence can deliver better options for education system.
- ➢ At the same time it has been observed that, maximum numbers of educational institutions are not using any of the Artificial Intelligence tool in their institution.
- ➢ Educators are willing ready for Artificial intelligence adoption and implementation in their institute.
- ➢ Many of the respondents are agree that, Artificial Intelligence is a better and innovative technology for enhancement and sustainable evolution in education system.

## CONCLUSION:

This paper elaborates on Artificial Intelligence for education system, and benefits/advantages of Artificial Intelligence for education system along with available Artificial Intelligence tools in same area. In continuation to this researcher has also elaborated on research philosophy, statement of the problem, objectives of the study, the hypothesis of the study along with hypothesis test result and observations from received responses.

From the various process acquired for the current study researcher has come with the conclusion that many of the educational institute are aware about Artificial Intelligence benefits for the education system but still usage ration of the same in this sector is very less. There are many reasons behind less adaption of the Artificial Intelligence in education system some of them are Less Awareness, current Infrastructure,Cost associated with the applications and tools and Government support. Researcher also concludes that educators are now willing ready for Artificial Intelligence adoption and implementation in their institute; as they believes that, Artificial Intelligence is a better and innovative technology for enhancement and sustainable evolution in education system.

## LIMITATIONS:

The present paper was focused on Artificial Intelligence as a better and innovative technology for enhancement and sustainable evolution in education system.

There were a few limitations confronted by researcher while conducting this research. These have listed below:

- ➢ Like any research, the data has been collected for a few samples and is not a comprehensive list.
- ➢ The respondents deliberated for the study were only educators. It was not possible to study all the entities from the same sector due to inadequate time period.
- ➢ The method used for this is only on the basis of the questionnaire considering the time available for the research.
- ➢ The data is analysed with single tool only.

## TOPICS FOR FURTHER RESEARCH:

Despite the enormous opportunities that Artificial Intelligence might afford to support teaching and learning, new ethical implications and risks come in with the development of Artificial Intelligence applications in higher education.  Inspite of many transformations there are number of challenges in education system one of that is students learn differently and at different rates. Students go through the education system with conflicting levels of learning capability and propensity.

During the study researcher comes to know many of the aspects of the respective topic. Due to focus on main aim of the study, objective defined and hypothesis considered researcher of the paper was unable to describe other area related to study. Here, researcher would like to suggest some topics which can be considered for future research.

- Challenges of Artificial Intelligence implementation in education system.
- Comparison of traditional and technically advance institution (Education systems after adoption of Artificial Intelligence)
- Survey of Artificial Intelligence in education system with respect to all entities like student, admin etc.

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